

Competencies

Rotation: Anesthesiology

Goal: Formulate and implement an appropriate plan of management, including: appropriate anesthesia management when indicated, including: **local anesthesia.**

Objectives - Knowledge

- Understands history and physical at examination that would contribute to the selection of the appropriate local anesthetic with or without epinephrine.
- Understands laboratory values that would contribute to the assessment and selection of appropriate local anesthetics, with or without epinephrine.
- Understands pharmacology of local anesthetics and epinephrine.
- Understands advantages/disadvantages of use of local anesthetics versus other forms of anesthesia.
- Understands various techniques for performing sensory and/or motor blocks and nerve blocks used in the lower extremity.
- Understands universal precautions and needle precautions.
- Understands appropriate injection techniques used in administering the local anesthetic.
- Understands allergies and adverse reactions to local anesthetics, epinephrine and preservatives.
- Understands the management of allergies and adverse reactions to local anesthetics, epinephrine and preservatives.

Objectives - Skills

- Performs an appropriate preanesthetic evaluation.
- Administers field blocks, digital blocks, Mayo blocks, and isolated nerve blocks of the lower extremities with proper technique.
- Utilizes proper technique while injecting the local anesthetic.
- Utilizes adjunctive topical agents, as needed.
- Utilizes universal precautions and appropriate needle precautions.
- Monitors for, recognizes, and manages adverse reactions to the local anesthetic.

Goal: Formulate and implement an appropriate plan of management, including: appropriate anesthesia management when indicated, including: **general, spinal, epidural, regional, and conscious sedation anesthesia.**

Objectives - Knowledge

- Understands the components, techniques, and normals/abnormals of the history and physical examination pertinent to the preanesthetic assessment.
- Understands the laboratory tests pertinent to the preanesthetic assessment, and their normals/abnormals.

- Understands ASA Physical Status classification system and the impact of medical comorbidities on preanesthetic assessment and management.
- Understands the stages and planes of ether anesthesia as described by Guedel in 1937.
- Understands the advantages/disadvantages of general, spinal, epidural, regional, and conscious sedation anesthesia versus other potentially applicable forms of anesthesia.
- Understands the pharmacology of preanesthesia medications (barbituates, benzodiazepines, narcotics, anticholinergics).
- Understands the pharmacology of neuromuscular blocking agents (depolarizing and nondepolarizing).
- Understands the pharmacology of the intravenous induction and maintenance agents.
- Understands the pharmacology of inhalational medications.
- Understands the pharmacology of the various reversal agents.
- Understands anesthetic complications and their management.
- Understands pertinent regional anatomy, including the airway.
- Understands the technical aspects of maintaining an airway.
- Understands the technical aspects of intubation.
- Understands the technical aspects of introducing an LMA.
- Understands the technical aspects of obtaining IV access.
- Understands the technical aspects of inserting an oropharyngeal or nasopharyngeal airway.
- Understands the technical aspects of performing a Bier block.
- Understands the technical aspects of administration of spinal anesthesia.
- Understands the technical aspects of perianesthesia monitoring of a patient.

Objectives - Skills

- Performs preanesthetic evaluation, including history and physical examination.
- Orders and interprets appropriate preoperative diagnostic tests.
- Assigns correct ASA status.
- Secures and positions patient properly.
- Places and secures intravenous line.
- Administers agents for conscious sedation.
- Monitors patient during the surgical procedure.

Objectives - Attitudes

- Accepts criticism constructively.
- Acts as a patient advocate, involving the patient/family in the decision-making process.
- Communicates effectively with the patient/family, recognizing their concern for safety, comfort, and medical necessity.
- Provides high quality, comprehensive care in an ethical manner.
- Demonstrates moral and ethical conduct.
- Respects and adapts to cultural differences.
- Establishes trust and rapport with patients and peers.
- Demonstrates primary concern for patient's welfare and well-being.

- Functions appropriately in a multidisciplinary setting, using good communication skills.
- Demonstrates responsible, reliable, punctual, cooperative behavior, and maintains records in a timely manner.

Competencies

Rotation: Emergency Medicine

Objectives - Attitudes

- Accepts criticism constructively.
- Acts as a patient advocate, involving the patient/family in the decision-making process.
- Communicates effectively with the patient/family, recognizing their concern for safety, comfort, and medical necessity.
- Provides high quality, comprehensive care in an ethical manner.
- Demonstrates moral and ethical conduct.
- Respects and adapts to cultural differences.
- Establishes trust and rapport with patients and peers.
- Demonstrates primary concern for patient's welfare and well-being.
- Functions appropriately in a multidisciplinary setting, using good communication skills.
- Demonstrates responsible, reliable, punctual, cooperative behavior, and maintains records in a timely manner.

Competencies

Rotation: Other Clinical Rotations

Objectives - Attitudes

- Accepts criticism constructively.
- Acts as a patient advocate, involving the patient/family in the decision-making process.
- Communicates effectively with the patient/family, recognizing their concern for safety, comfort, and medical necessity.
- Provides high quality, comprehensive care in an ethical manner.
- Demonstrates moral and ethical conduct.
- Respects and adapts to cultural differences.
- Establishes trust and rapport with patients and peers.
- Demonstrates primary concern for patient's welfare and well-being.
- Functions appropriately in a multidisciplinary setting, using good communication skills.
- Demonstrates responsible, reliable, punctual, cooperative behavior, and maintains records in a timely manner.

Competencies

Rotation: Pathology

Objectives - Knowledge

Objectives - Skills

- Provides health care services aimed at preventing health problems or maintaining health.
- Applies basic and clinically supportive sciences which are appropriate to their discipline.
- Analyzes the sociocultural dimension of one's own practice site and the implications for practice management.
- Incorporates the principles and practices of health maintenance into each patient encounter where appropriate.
- Obtains data about the community in which one works pertaining to the population/community's demographics, culture, and epidemiology of major health problems.
- Applies clinical decision analysis including identifying alternative actions and possible outcomes, developing a decision tree, and assigning probabilities to outcomes.
- Demonstrates awareness of sociocultural risk factors and interventions that can be used to modify these risk factors.
- Demonstrates awareness of cultural problems having high mortality and morbidity rates.
- Demonstrates awareness of cultural problems relating to the nation's health promotion and disease prevention objectives.
- Is aware of how one's own cultural values, assumptions, and beliefs affect patient care and clinical decision-making.
- Demonstrates sensitivity and respect when interacting with individuals whose culture is different from our own.
- Exhibits a willingness and tendency to learn and apply culture-specific knowledge to the care of patients.
- Advocates for quality patient care and assists patients in dealing with system complexities.
- Facilitates cultural sensitization for office/clinic staff.
- Understands all cultural systems are sources of beliefs about health, recognition of symptoms, communication about symptoms, and treatment.
- Uses the assistance of family members, translators/interpreters, and other community resources and advocacy groups.
- Conducts history, physical examination, and diagnostic and therapeutic interventions in a culturally sensitive manner.
- Recognizes the role of continuing medical education in the maintenance of competency.
- Chooses continuing medical education activities based on personal needs and deficiencies.

- Fulfills hospital, state, and certifying board continuing medical education requirements.
- Recognizes level of patient understanding of illness, the rationale for the management plan, expected outcomes, and potential economic and social problems.
- Seeks the appropriate alternative decision maker when a patient lacks satisfactory decision-making abilities.
- Knows how to proceed when a patient refuses a recommended intervention or requests ineffective or harmful treatment.
- Knows how to determine when a treatment has failed or succeeded and when to change.
- Applies principles of age-specific diagnostics and therapeutics.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **problem-focused history.**

Objectives - Knowledge

- Understands the logical organization of a problem-focused history to include:
 - chief complaint.
 - history of chief complaint (history of present illness).
 - past medical history including:
 - illnesses.
 - medications.
 - allergies.
 - past surgical history.
 - hospitalizations.
 - social history.
 - family history.
 - review of systems.
- Understands the details to be asked in obtaining a history of chief complaint (NLDOCATS), past medical history, social history, family history, and review of systems.

Objectives - Skills

- Obtains a problem-focused history using logical organization.
- Obtains a problem-focused history in appropriate period of time.
- Obtains a problem-focused history in adequate detail.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **neurologic examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of a problem-focused neurologic examination:
 - sensory evaluation, including; gross epicritic sensations (light touch, sharp/dull, vibratory, and hot/cold), Semmes-Weinstein monofilament testing, and two-point discrimination testing.
 - reflex evaluation, including: patellar and Achilles reflexes, pathologic reflexes (Babinski, Chaddock, Oppenheim, and Gordon tests), and primitive reflexes.
 - specific muscle testing.
 - evaluation of coordination (stance and gait), including tests of cerebellar function (see also musculoskeletal examination).
 - other clinical tests.
 - nerve palpation and percussion (Tinel's, Valleix's).
- Understands the normal and abnormal findings for each of the neurologic exam components.
- Understands the rationale for performing each of the neurologic exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of a problem-focused neurologic examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the neurologic exam components when performed upon a patient.
- Utilizes appropriate neurologic exam components indicated by patient's chief complaint.
- Performs the problem-focused neurologic exam in an appropriate period of time.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **vascular examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of a problem-focused vascular examination:
 - palpation of abdominal aorta, femoral, popliteal, and pedal (posterior tibial and dorsalis pedis) pulses.
 - auscultation of the arterial tree from abdominal aorta to popliteal artery.
 - observation of capillary (subpapillary venous plexus) filling time and venous filling time.
 - observation for pallor on elevation/dependent rubor.
 - observation for secondary skin changes of vascular disease, including temperature, turgor, color, hair distribution, texture, and the presence of ischemic, vasculitic, or varicose ulcers.
 - observation for varicosities.
 - examination for superficial and deep venous thrombophlebitis, including:
 - Homan's test.
 - palpation of inguinal and popliteal lymph nodes.

- observation of lymphangitis and cellulitis.
 - observation of level/distribution, severity, and density of peripheral edema.
- Understands the normal and abnormal findings for each of the vascular exam components.
- Understands the rationale for performing each of the vascular exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of a problem-focused vascular examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the vascular exam components when performed upon a patient.
- Utilizes appropriate vascular exam components indicated by patient's chief complaint.
- Performs the problem-focused vascular exam in an appropriate period of time.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **dermatologic examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of a problem-focused dermatologic examination:
 - observation of skin tone, color, texture, moisture, temperature, turgor, and integrity.
 - observation of hair distribution.
 - observation of nail shape, color, thickness, orientation, and integrity.
 - observation of characteristics (qualitative and quantitative) of potential neoplastic skin changes.
 - observation of characteristics (qualitative and quantitative) of potential ulcerative skin changes.
 - observation of qualities and characteristics of potential infectious (viral, bacterial, fungal) skin changes.
 - observation of qualities and characteristics of skin changes associated with metabolic/systemic diseases.
 - observation of qualities and characteristics of skin changes associated with trauma.
 - observation of qualities and characteristics of primary skin disorders.
- Understands the normal and abnormal findings for each of the dermatologic exam components.
- Understands the rationale for performing each of the dermatologic exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of a problem-focused dermatologic examination.

- Recognizes (correctly interprets) the normal or abnormal findings of each of the dermatologic exam components when performed upon a patient.
- Utilizes appropriate dermatologic exam components indicated by patient's chief complaint.
- Performs the problem-focused dermatologic exam in an appropriate period of time.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **musculoskeletal examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of a problem-focused musculoskeletal examination:
 - Qualitative and/or quantitative evaluation of positional/structural alignment, including:
 - spine.
 - limb length.
 - pelvis.
 - hip.
 - femur.
 - knee.
 - tibia.
 - ankle.
 - hindfoot.
 - midfoot.
 - resting calcaneal stance position.
 - forefoot to rearfoot alignment.
 - forefoot - rays, MTPJs, toes.
 - Qualitative determination of range, axis, and quality of motion of the following joints:
 - hip.
 - knee.
 - ankle.
 - subtalar.
 - midtarsal (long and oblique axis).
 - first ray.
 - fifth ray.
 - metatarsophalangeal.
 - interphalangeal.
 - Quantitative measurement of range of motion of the following joints:
 - hip.
 - knee.
 - ankle.
 - subtalar.
 - first ray.
 - fifth ray.
 - metatarsophalangeal.

- Understands characteristics of normal and abnormal gait, including alignment, coordination, cadence, compensation, and phasic muscle activity.
- Understands characteristics of and differentiates abnormal gait patterns including, but not limited to:
 - Trendelenberg gait.
 - steppage gait / dropfoot.
 - scissors gait (bilateral spastic paresis).
 - spastic hemiparesis/other spastic gait forms.
 - sensory ataxia.
 - cerebellar ataxia.
 - Parkinsonism.
 - other gait forms.
- Palpation of musculoskeletal structures, including specific bone, tendon, and joint landmarks.
- Special tests including:
 - heel raise test.
 - Coleman block or book test.
 - Simmond's test.
 - Hubscher maneuver.
 - provocation tests for intermetatarsal neuroma (Mulder's sign).
 - Kelikian push-up test.
 - dynamic tests of strength (heel walking, toe walking).
 - evaluation of hip derangement:
 - hip dislocatability tests.
 - Ortollani's sign.
 - Anchor sign.
 - Barlow's sign.
 - Galeazzi's sign.
 - telescoping.
 - straight leg raise test.
 - Braggard's test.
 - Faber (Patrick) test.
 - femoral stretch test (Ely test).
 - Adams test
 - Trendelenberg test.
 - Ober test.
 - Thomas test.
 - LaSeagues test.
 - modified LaSeagues test.
 - FLIP test (seated LaSeagues).
 - Neri's bowing.
 - Bowstring sign.
 - Kempfi's test.
 - Piriformis stretch.
 - Nachlas prone test.
 - Yeoman's test.
 - Gaenslen's test.
- evaluation of internal knee derangement:
 - collateral stress test (varus/valgus).
 - Lachman stress test (anterior).

- patellar tracking test/Q angle.
- McMurray test.
- Apley's test.
- Clark's test.
- femoral grinding test.
- evaluation of ankle derangement:
 - cotton test.
 - squeeze test.
 - talar tilt test.
 - anterior drawer test.
 - Silverskiold test.

- Understands the normal and abnormal findings for each of the musculoskeletal exam components.
- Understands the rationale for performing each of the musculoskeletal exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of a problem-focused musculoskeletal examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the musculoskeletal exam components when performed upon a patient.
- Utilizes appropriate musculoskeletal exam components indicated by patient's chief complaint.
- Performs the problem-focused musculoskeletal exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **plain radiography.**

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.
- Understands the correct technique for both weight-bearing and non-weight-bearing plain radiographic views, including:
 - the infant foot:
 - AP view.
 - lateral view.
 - oblique view(s).
 - club foot - Kite method.
 - the foot:
 - AP view.
 - oblique view:
 - medial oblique view.
 - lateral oblique view.
 - lateral view.
 - phalangeal view.
 - oblique phalangeal view.
 - lateral phalangeal view.
 - axial calcaneal view.
 - lateral calcaneal view.

- Harris and Beath projection.
 - specialized subtalar joint views (trauma):
 - Isherwood.
 - Broden's.
 - axial sesamoid view.
 - axial forefoot view.
- the ankle:
 - AP view.
 - AP mortise view.
 - oblique view (45').
 - lateral view.
- the leg:
 - AP view.
 - oblique view.
 - lateral view.
- the knee:
 - AP view.
 - oblique view.
 - lateral view.
- the knee - intercondylar fossa:
 - PA axial.
- patella and patellofemoral joint:
 - PA view.
 - lateral.
 - tangential - Merchant method.
 - tangential - inferosuperior projection.
 - oblique.
- the femur:
 - AP view.
 - lateral.
- the hip:
 - AP - pelvis.
 - AP - hip.
 - unilateral frog leg.
 - axiolateral view.
 - the pediatric hip:
 - AP view.
 - lateral (bilateral frog-leg position).
- the pelvis:
 - AP view.
 - AP bilateral frog leg.
 - AP axial view.
 - anterior oblique view.
- the sacroiliac joints:
 - AP pelvis view.
 - oblique view.
- the sacrum and coccyx:
 - AP axial sacrum.
 - AP axial coccyx.
 - lateral sacrum.
 - lateral coccyx.

- the scoliosis and spinal fusion series:
 - PA or AP view.
 - erect lateral view.
 - R and L bending views.
 - lateral - hyperextension and flexion views.
- the spine:
 - lumbar spine:
 - AP or PA view.
 - oblique view.
 - lateral view.
 - AP axial view.
 - thoracic spine:
 - AP view.
 - lateral view.
 - oblique view.
 - cervical spine:
 - AP view.
 - AP/open mouth view.
 - lateral.
 - oblique (anterior and posterior).
 - swimmer's lateral view.
 - lateral view (flexion and extension).
 - AP "chewing" view.
 - AP dens view.
 - PA dens view.
- scanogram/limb length measurement views.
- Understands normal and abnormal findings that may present on plain radiographic views.
- Understands the rationale for ordering plain radiographic views.

Objectives - Skills

- Utilizes the correct technique for performing each of the plain radiographic views.
- Reads plain radiographic films in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each plain radiographic view.
- Selects appropriate plain film views as indicated by patient's chief complaint.
- Selection of plain film views fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when plain film findings indicate further history, physical exam, diagnostic studies, or consultation.
- Performs the exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **radiographic contrast studies.**

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.

- Understands the pharmacology of various available radiographic contrast materials.
- Understands the contraindications of and co-morbidity factors for various available radiographic contrast materials.
- Understands the correct technique for radiographic contrast studies, including:
 - arthrography.
 - tenography.
 - sinography.
 - bursography.
 - contrast-enhanced CT.
 - contrast-enhanced MRI.
- Understands normal and abnormal findings that may present on radiographic contrast studies.
- Understands the rationale for ordering radiographic contrast studies.

Objectives - Skills

- Utilizes the correct technique for performing each of the radiographic contrast studies.
- Reads radiographic contrast study films in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each radiographic contrast study.
- Selects appropriate radiographic contrast study indicated by patient's chief complaint.
- Selection of radiographic contrast study fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when radiographic contrast study findings indicate further history, physical exam, diagnostic studies, or consultation.
- Performs the exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **stress radiography.**

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.
- Understands the correct technique for stress radiography, including:
 - manual ankle anterior drawer technique.
 - manual ankle varus/valgus stress technique.
 - stress ankle plantarflexion and dorsiflexion technique.
 - Lisfranc's joint stress technique.
 - mechanical stress devices (Telos) and techniques.
 - ankle syndesmotomic stress technique.
 - other lower extremity stress techniques.
- Understands normal and abnormal findings that may present on stress radiography tests.
- Understands the rationale for ordering stress radiography tests.

Objectives - Skills

- Utilizes the correct technique for performing each of the stress radiography studies.
- Reads stress radiograph films in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each stress radiography study.
- Selects appropriate stress radiography test indicated by patient's chief complaint.
- Selection of stress radiography tests fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when stress radiography test findings indicate further history, physical exam, diagnostic studies, or consultation.
- Performs the exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **fluoroscopy**.

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.
- Understands the correct technique for fluoroscopy, including:
 - static.
 - dynamic (real time).
- Understands normal and abnormal findings that may present on fluoroscopy.
- Understands the rationale for performing fluoroscopy.

Objectives - Skills

- Utilizes the correct technique for performing fluoroscopy.
- Reads/evaluates dynamic and static fluoroscopic images in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on fluoroscopy.
- Selection of fluoroscopy is indicated by patient's chief complaint.
- Selection of fluoroscopy fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when fluoroscopy findings indicate further history, physical exam, diagnostic studies, or consultation.
- Performs the exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **nuclear medicine imaging**.

Objectives - Knowledge

- Understands the general technical aspects of nuclear medicine imaging studies, including:
 - Technetium 99 bone scan (three-phase/four-phase).
 - HMPAO scan (Ceretek).
 - Gallium scan.
 - Indium WBC scan.

- Understands normal and abnormal findings that may present on the nuclear medicine imaging.
- Understands the rationale for ordering nuclear medicine imaging.

Objectives - Skills

- Reads nuclear medicine imaging in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on the nuclear medicine imaging.
- Selects appropriate nuclear medicine imaging as indicated by patient's chief complaint.
- Selection of nuclear medicine imaging fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when nuclear medicine imaging findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **MRI**.

Objectives - Knowledge

- Understands the general technical aspects of MR imaging studies, including:
 - pulse sequences and their effects on image.
 - contrast techniques.
 - slice thickness.
 - contraindications.
 - available vs. appropriate planes of imaging.
- Understands normal and abnormal findings that may present on MR imaging, including normal sectional anatomy.
- Understands the rationale for ordering MR imaging.

Objectives - Skills

- Reads MRI imaging studies in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on MR imaging.
- Selection of MR imaging is indicated by patient's chief complaint.
- Selection of MR imaging fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when MR imaging findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **CT**.

Objectives - Knowledge

- Understands the general technical aspects of CT imaging studies, including:
 - slice thickness.

- available vs. appropriate planes of imaging.
 - three-dimensional CT reconstruction.
- Understands normal and abnormal findings that may present on CT imaging, including normal sectional anatomy.
- Understands the rationale for ordering CT imaging.

Objectives - Skills

- Reads CT scan in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on CT imaging.
- Selection of CT imaging is indicated by patient's chief complaint.
- Selection of CT imaging fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when CT imaging findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **diagnostic ultrasound.**

Objectives - Knowledge

- Understands the general technical aspects of diagnostic ultrasound studies, including:
 - duplex ultrasound (DVT).
 - soft tissue ultrasound (tendon pathology, foreign body).
- Understands normal and abnormal findings that may present on diagnostic ultrasound.
- Understands the rationale for ordering diagnostic ultrasound.

Objectives - Skills

- Reads static and/or dynamic ultrasound study in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on diagnostic ultrasound.
- Selection of diagnostic ultrasound is indicated by patient's chief complaint.
- Selection of diagnostic ultrasound fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when diagnostic ultrasound findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **vascular imaging.**

Objectives - Knowledge

- Understands the pharmacology of various available radiographic contrast materials.

- Understands the contraindications of and co-morbidity factors for various available radiographic contrast materials.
- Understands the correct technique for vascular imaging studies, including:
 - contrast arteriography.
 - contrast venography.
 - MRI angiography.
 - digital subtraction angiography.
- Understands normal and abnormal findings that may present on the vascular imaging studies.
- Understands the rationale for ordering the vascular imaging studies.

Objectives - Skills

- Reads vascular imaging studies in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each vascular imaging study.
- Selects appropriate vascular imaging study indicated by patient's chief complaint and clinical presentation.
- Selection of vascular imaging study fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when vascular imaging study findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **hematology**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal hematologic values, including:
 - hemoglobin.
 - hematocrit.
 - CBC.
 - differential.
 - platelet count.
 - reticulocyte count.
 - Westergren sedimentation rate.
 - CD4/CD8.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for each hematology test.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.

- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **serology/immunology**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal serology/immunology values, including:
 - RPR.
 - VDRL.
 - HIV screen.
 - Mono screen.
 - serum pregnancy.
 - ANA.
 - rheumatoid factor.
 - blood group, Rh.
 - antibody screen.
 - direct Coombs.
 - Hepatitis A IgM (acute).
 - Hepatitis A IgG (immunity).
 - Hepatitis B Surface Antigen.
 - Hepatitis B Core Antibody.
 - Hepatitis B Surface Antibody.
 - Hepatitis C Antibody.
 - Rubella.
 - Rubeola.
 - Varicella.
 - CMV.
 - H. pylori.
 - Mumps.
 - Toxoplasma.
 - Lyme.
 - Cryoglobulins.
 - HLA B27.
 - C reactive protein.
 - serum complement.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for each serology/immunology test.

- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **blood chemistries**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal blood chemistry values, including:
 - sodium.
 - potassium.
 - chloride.
 - carbon dioxide.
 - magnesium.
 - creatinine.
 - BUN.
 - blood glucose (random and fasting).
 - hemoglobin A1C.
 - fructosamine.
 - calcium.
 - phosphorous.
 - uric acid.
 - total bilirubin.
 - serum protein electrophoresis.
 - ferritin.
 - iron.
 - total iron binding capacity.
 - hemoglobin electrophoresis.
 - T4 / FTI.
 - TSH.
 - alkaline phosphatase.
 - AST (SGOT).
 - ALT (SGPT).
 - albumin.
 - PSA.
 - acid phosphatase.
 - creatine kinase (CK or CPK).
 - CKMB - cardiac.
 - amylase.
 - cholesterol.
 - HDL.
 - LDL.
 - triglycerides.
 - acetone.
 - vitamin B12.
 - folate.
 - ACTH challenge.

- cortisol.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for blood chemistry tests.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **toxicology/drug screens.**

Objectives - Knowledge

- Understands normal and abnormal toxicology and drug screen findings and values, including:
 - vancomycin.
 - gentamicin.
 - theophylline.
 - phenytoin.
 - carbamazepine.
 - digoxin.
 - lithium.
 - valproic acid.
 - acetaminophen.
 - salicylate.
 - lead.
 - alcohol.
 - anabolic steroids.
 - barbiturates.
 - narcotics.
 - sedative-hypnotics.
 - cocaine.
 - other illicit drugs.
- Understands the rationale for ordering the tests listed in the section above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands the correct technique for venipuncture and specimen storage and processing.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **coagulation studies.**

Objectives - Knowledge

- Understands normal and abnormal coagulation study values, including:
 - prothrombin time.
 - INR.
 - activated PTT.
 - bleeding time.
 - fibrinogen.
 - fibrin split products.
- Understands the rationale for ordering the tests listed above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands the correct technique for venipuncture and specimen storage and processing.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **blood gases.**

Objectives - Knowledge

- Understands normal and abnormal blood gas values, including:
 - arterial P O₂.
 - arterial pH.
 - arterial P CO₂.
 - bicarbonate.
- Understands the rationale for ordering the tests listed above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.

- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands appropriate method for collection and processing of arterial blood gases.

Objectives - Skills

- Appropriately procures arterial blood gas specimen.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **microbiology.**

Objectives - Knowledge

- Understands the technique for performing:
 - gram stain.
 - KOH prep.
 - aerobic cultures.
 - anaerobic cultures.
 - fungal cultures.
 - acid-fast (mycobacterial) cultures.
 - GC cultures.
 - other.
- Can correctly interpret the results of the test listed in section above.
- Understands the correct technique for obtaining specimens and specimen storage and processing, including:
 - arthrocentesis.
 - tissue biopsy (nails, soft tissue, bone).
 - swabs or aspirants.
 - blood cultures.
 - stool cultures.
 - CSF cultures.
 - urine cultures.
 - sputum cultures.
- Understands the rationale for selecting specimen procurement methods listed in section above.
- Understands laboratory processing of the specimens, including:
 - the identification of organisms.
 - the determination of organism sensitivities by Kirby-Bauer disc diffusion.
 - the determination of organism sensitivities to antimicrobials by minimal inhibitory concentrations.
 - the determination of organism sensitivities to antimicrobials by minimal bacteriocidal concentrations.
 - serum bacteriocidal levels.

- Differentiates normal flora from pathogenic microbes.
- Understands the common pathogens associated with specific infectious disease states (e.g., postoperative, diabetic fetid foot, etc.).
- Identifies antimicrobial resistance, based upon sensitivity results.
- Understands the rationale for ordering HIV screening.

Objectives - Skills

- Appropriately performs and reads a gram stain and a KOH prep.
- Obtains specimens using appropriate techniques, as listed in the section above.
- Choice of specimen collection method is appropriate for the patient's type and location of suspected infection.
- Correctly interprets the results of cultures and sensitivities.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **synovial fluid analysis.**

Objectives - Knowledge

- Understands the correct technique for arthrocentesis.
- Understands the correct technique for specimen storage and processing.
- Understands the various tests that can be performed on synovial fluid, including:
 - volume.
 - general appearance.
 - viscosity.
 - cells / WBCs / neutrophils.
 - crystals.
 - Mucin clot.
 - Fibrin clot.
 - pH.
 - gram stain.
 - culture and sensitivity.
 - glucose.
 - protein.
- Understands normal and abnormal values for the tests listed in section above.
- Understands the rationale for selecting the tests listed in the section above.

Objectives - Skills

- Utilizes the correct technique for performing an arthrocentesis.
- Recognizes (correctly interprets) the normal or abnormal test values for each test in section above.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.

- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation.

Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation or repeat/serial analysis.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **urinalysis**.

Objectives - Knowledge

- Understands normal and abnormal urinalysis findings and values, including:
 - appearance/odor.
 - dipstick analysis.
 - microscopic analysis.
 - urine pregnancy.
 - urine microalbumin.
 - 24-hour creatinine clearance.
 - 24-hour uric acid.
 - myoglobins.
- Understands the rationale for ordering the tests listed in the section above.
- Correctly interprets the normal and abnormal test findings/values for each test listed in the section above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands appropriate methods for collection of specimens.

Objectives - Skills

- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: pathology, including: **anatomic and cellular pathology**.

Objectives - Knowledge

- Understands the correct technique and protocols for procuring pathology specimens, including:
 - excisional biopsy.
 - incisional biopsy.
 - punch biopsy.

- shave biopsy.
 - needle aspiration.
 - surgical excision.
- Understands the rationale for selecting each of the procurement methods listed in the section above.
- Understands the correct technique, protocol, and rationale for utilizing a frozen section during a surgical case.
- Understands the correct technique and protocols for processing of pathology specimens for gross and microscopic evaluation, including: preparation of specimens, standard staining techniques, and special staining techniques.
- Understands the gross features, clinical and laboratory, of various pathologic entities.
- Understands the microscopic features of various pathologic entities.
- Understands the clinical, gross pathologic, and microscopic features that differentiate benign from malignant lesions.

Objectives - Skills

- Performs the correct technique for procuring pathology specimens, including each of the techniques listed in the knowledge indicator.
- Recognizes (correctly interprets) the normal or abnormal gross features of the specimen.
- Recognizes (correctly interprets) the normal or abnormal microscopic features of the specimen.
- Utilizes appropriate specimen procurement method (including frozen section) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **electrodiagnostic studies.**

Objectives - Knowledge

- Understands the general principles of electrodiagnostic testing including:
 - nerve conduction studies - sensory and motor.
 - electromyogram:
 - static.
 - dynamic.
- Understands the general technical aspects of performing electrodiagnostic tests listed in the section above.
- Understands normal and abnormal findings that may present on electrodiagnostic testing listed in the section above.
- Understands the rationale for ordering the electrodiagnostic tests listed in the section above.

Objectives - Skills

- Recognizes when electrodiagnostic test results indicate further history, physical exam, diagnostic studies, or consultation.
- Selection of electrodiagnostic test fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Selects appropriate electrodiagnostic test as indicated by patient's chief complaint.
- Recognizes (correctly interprets) the normal or abnormal findings on each test listed in the section above.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **non-invasive vascular studies.**

Objectives - Knowledge

- Understands the general principles of noninvasive vascular testing including:
 - arterial doppler:
 - Ankle Brachial Pressure Index.
 - Modified Exercise Test of Carter.
 - transcutaneous oximetry.
 - thermography.
 - photoplethysmography:
 - digital blood pressure.
 - volume plethysmography.
 - digital Doppler.
 - elevation/dependency testing.
 - five-minute reactive hyperemia test.
 - crossed hand thermal perception test.
 - palpation of normal and abnormal pulses.
 - venous duplex study.
 - subpapillary venous plexus filling time (SPVPFT).
 - Perthes test.
 - Trendelenburg's maneuver.
 - other.
- Understands the correct technique for performing noninvasive vascular tests listed in the section above.
- Understands normal and abnormal findings that may present on noninvasive vascular tests listed in the section above.
- Understands the rationale for ordering the noninvasive vascular tests listed in the section above.

Objectives - Skills

- Recognizes (correctly interprets) the normal or abnormal findings on each test listed in the section above.
- Selects appropriate noninvasive vascular test as indicated by patient's chief complaint and clinical findings.
- Recognizes when noninvasive vascular test results indicate further history, physical exam, diagnostic studies, or consultation.
- Selection of noninvasive vascular test fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **computerized gait/force plate studies.**

Objectives - Knowledge

- Understands the general principles of computerized gait and force plate testing.
- Understands the correct technique for performing computerized gait and force plate studies.
- Understands normal and abnormal findings that may present on computerized gait and force plate studies.
- Understands the rationale for ordering the computerized gait and force plate studies.

Objectives - Skills

- Performs or orders computerized gait and force plate studies.
- Recognizes (correctly interprets) the normal or abnormal findings.
- Selection of computerized gait and force plate study fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when computerized gait and force plate test results indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **bone mineral densitometry - radiographic/ultrasonographic.**

Objectives - Knowledge

- Understands the general principles that may present on bone mineral densitometry and ultrasonographic testing.
- Understands normal and abnormal findings that may present on bone mineral densitometry and ultrasonographic studies.
- Understands the rationale for ordering bone mineral densitometry and ultrasonographic studies.

Objectives - Skills

- Recognizes and correctly interprets the normal and abnormal findings.
- Selection of bone mineral densitometry and ultrasonographic testing fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when bone mineral densitometry and ultrasonographic testing results indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **compartment pressure studies.**

Objectives - Knowledge

- Understands the general principles of compartment pressure studies.

- Understands the technique of performing compartment pressure studies, including the use of various devices.
- Understands normal and abnormal findings that may present on compartment pressure studies.
- Understands the rationale for ordering compartment pressure studies.

Objectives - Skills

- Utilizes appropriate technique in obtaining a compartment pressure.
- Recognizes (correctly interprets) the normal or abnormal findings.
- Selection of compartment pressure studies fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when compartment pressure study results indicate further history, physical exam, diagnostic studies, consultation, or surgical intervention.
- Performs the test in an appropriate period of time.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. **Formulate an appropriate diagnosis and/or differential diagnosis.**

Objectives - Knowledge

- Understands the history, physical exam, and diagnostic study findings consistent with diagnosis of lower extremity abnormalities, including diagnoses in the following ICD-9 subsections:
 - Infectious and Parasitic Diseases of the Musculoskeletal System (001-139).
 - Neoplasms (140-239).
 - Endocrine, Nutritional, and Metabolic diseases and Immunity Disorders (240-279).
 - Mental Disorders (290-319).
 - Diseases of the Nervous system and Sense Organs.
 - Diseases of the Circulatory System (390-459).
 - Diseases of the Genitourinary System (680-686).
 - Diseases of the Skin and Subcutaneous Tissue (680-709).
 - Diseases of the Musculoskeletal System and Connective Tissue (710-739).
 - Congenital Anomalies (740-759).
 - Certain Conditions originating in the Perinatal Period (760-779).
 - Symptoms, Signs, and Ill-defined Conditions (780-799).
 - Injury and Poisoning (800-999).
- Understands the etiology and contributing factors for each of the lower extremity diagnoses listed in the Orthopedic ICD-9 Codes Manual.
- Understands the possible course and individual/public health implications for each of the diagnoses listed in the section above.
- Understands the management alternatives and urgency of management for each of the diagnoses listed in the section above.
- Utilizes the concept of formulating a differential diagnosis.
- Can logically justify the diagnosis and contributing factors.

Objectives - Skills

- Based upon history, physical exam, and appropriate diagnostic studies, can recognize and correctly diagnose patients with any of the diagnoses listed in the section above.
- Appropriately charts most likely diagnosis, other possible diagnoses and contributing factors.
- Reassesses and revises differential diagnosis as indicated during the course of patient evaluation and management.

Goal: appropriate non-surgical management when indicated, including: palliation of: **keratotic lesions.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this treatment.
- Understands etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition.
- Understands the risks and benefits of performing the treatment.
- Understands the risks and benefits of not performing the treatment.
- Understands the advantages/disadvantages of the treatment versus other potentially applicable treatment.
- Understands the instrument and material needs for performance of the treatment.
- Understands the regional anatomy.
- Understands the technique involved with this treatment.
- Understands the appropriate procedure for disposal of biomedical waste.
- Understands universal precautions.

Objectives - Skills

- Utilizes proper positioning.
- Utilizes scalpel appropriately, when indicated.
- Utilizes appropriate measures for self-protection (gloves), when indicated.
- Treats iatrogenic lesions appropriately, when indicated.
- Utilizes appropriate procedure for disposal of biomedical waste.

Goal: palliation of: toenails: **manual or electric.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this treatment.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition.
- Understands the risks and benefits of performing the treatment.
- Understands the risks and benefits of not performing the treatment.
- Understands the advantages/disadvantages of the treatment versus other potentially applicable treatment.
- Understands the instrument and material needs for performance of the treatment.

- Understands the regional anatomy.
- Understands the technique involved with this treatment.
- Understands the appropriate procedure for disposal of biomedical waste.
- Understands measures for protection against inhalation of airborne particles.

Objectives - Skills

- Utilizes proper positioning.
- Utilizes nail nippers appropriately, when indicated.
- Utilizes electric grinder appropriately.
Utilizes appropriate measures for self-protection (mask, gloves), when indicated.
- Treats iatrogenic lesions appropriately, when indicated.
- Utilizes appropriate procedure for disposal of biomedical waste.

Goal: appropriate non-surgical management when indicated, including: manipulation/mobilization of: **foot/ankle joint to increase range of motion/reduce associated pain.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this technique.
- Understands imaging study normals/abnormals that would indicate/contraindicate this technique.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands the risks and benefits of performing the procedure.
- Understands the risks and benefits of not performing the procedure.
- Understands the advantages/disadvantages of the procedure versus other potentially applicable procedures.
- Understands the regional anatomy.
- Understands the biomechanics of the joint in question, including axis of motion and normal range of motion.
- Understands anesthesia and/or sedation techniques required by the procedure (see pertinent sections elsewhere in this document).
- Understands technique of joint mobilization/manipulation.
- Understands follow-up care requirements.

Objectives - Skills

- Assess range of motion pre/post-procedure.
- Secures proper patient positioning.
- Uses appropriate magnitude and direction of force to achieve improved range of motion.

Goal: appropriate non-surgical management when indicated, including: manipulation/mobilization of: **congenital foot deformity.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this technique.
- Understands imaging study normals/abnormals that would indicate/contraindicate this technique.
- Understands the etiologic characteristics. (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands the risks and benefits of performing the procedure.
- Understands the risks and benefits of not performing the procedure.
- Understands the advantages/disadvantages of the procedure versus other potentially applicable procedures.
- Understands the appropriate age range for application of this technique.
- Understands the regional anatomy.
- Understands technique of joint mobilization for congenital deformities and contractures, including:
 - talipes equinovarus.
 - talipes calcaneovalgus.
 - congenital metatarsus adductus.
 - equinus.
 - other.
- Understands appropriate sequence of mobilizing a complex congenital deformity.
- Understands follow-up care requirements.

Objectives - Skills

- Effectively presents the procedure, alternatives, risks and after-care requirements to the patient's parents/legal guardians.
- Can teach the technique to parents for home treatments.
- Secures proper patient positioning.
- Uses appropriate magnitude and direction of force to achieve reduction of the deformity component.
- Uses appropriate counterpressure maneuvers to prevent associated joint subluxation.

Goal: appropriate non-surgical management when indicated, including: closed management of fractures and dislocations: **closed management of pedal fractures and dislocations.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this procedure.
- Understands and recognizes the need for assessment of potential concurrent injuries that may be associated with the fracture/dislocation.
- Understands the etiologic characteristics, mechanogenesis, and classification of the fracture/dislocation.
- Understands the potential complications and sequellae of the injury and treatment.
- Understands the relative stability of the condition following reduction, based on bone and soft tissue injury.
- Understands imaging study that would indicate/contraindicate this procedure.

- Understands real time fluoroscopic imaging, technique, risks and alternatives for closed reduction of fractures and dislocations.
- Understands the advantages/disadvantages, risks and benefits of closed reduction versus open reduction or no reduction.
- Understands the regional anatomy.
- Understands the strategic manipulation to gain reduction.
- Understands the likely anatomic impairments to closed reduction.
- Understands pertinent instrumentation (finger-trap, traction devices, padding, bolsters, etc.).
- Understands immediate perireduction care requirements.
- Selection of the procedure is appropriate for the patient.
- Can justify the chosen technical pathway to completion of the procedure (appropriate manipulation of anatomic segments involved/procedural steps, selection/application of splints, casts or percutaneous fixation).

Objectives - Skills

- Can effectively present the procedure, alternatives, risks and perireduction recovery process to the patient.
- Secures proper patient positioning.
- Utilizes anesthesia, sedation, and/or muscular relaxation appropriately, when indicated.
- Demonstrates appropriate reduction methodology.
- Recognizes perireduction variations and adapts accordingly.
- Recognizes appropriate endpoint for determination of reduction failure.
- Demonstrates appropriate use of instrumentation and related appliances.
- Demonstrates appropriate use of imaging to direct and confirm reduction and fixation (if required).
- Handles and applies fixation devices appropriately, if indicated.
- Applies appropriate bandage, splint and/or cast.
- Selects appropriate weight bearing status and assistive devices.
- Procedural steps are followed appropriately.
- Procedure is performed in appropriate period of time.

Goal: appropriate non-surgical management when indicated, including: closed management of fractures and dislocations: **closed management of ankle fracture/dislocation.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this procedure.
- Understands and recognizes the need for assessment of potential concurrent injuries that may be associated with the fracture/dislocation.
- Understands the etiologic characteristics, mechanogenesis, and classification of the fracture/dislocation.
- Understands the potential complications and sequelae of the injury and treatment.
- Understands the relative stability of the condition following reduction, based on bone and soft tissue injury.
- Understands imaging study that would indicate/contraindicate this procedure.

- Understands real time fluoroscopic imaging, technique, risks and alternatives for closed reduction of fractures and dislocations.
- Understands the advantages/disadvantages, risks and benefits of closed reduction versus open reduction or no reduction.
- Understands the regional anatomy.
- Understands the strategic manipulation to gain reduction.
- Understands the likely anatomic impairments to closed reduction.
- Understands pertinent instrumentation (traction devices, padding, bolsters, etc.).
- Understands immediate perireduction care requirements.
- Selection of the procedure is appropriate for the patient.
- Can justify the chosen technical pathway to completion of the procedure (appropriate manipulation of anatomic segments involved/procedural steps, selection/application of splints, casts).

Objectives - Skills

- Can effectively present the procedure, alternatives, risks and perireduction recovery process to the patient.
- Secures proper patient positioning.
- Utilizes anesthesia, sedation, and/or muscular relaxation appropriately, when indicated.
- Demonstrates appropriate reduction methodology.
- Recognizes perireduction variations and adapts accordingly.
- Recognizes appropriate endpoint for determination of reduction failure.
- Demonstrates appropriate use of instrumentation and related appliances.
- Demonstrates appropriate use of imaging to direct and confirm reduction.
- Applies appropriate bandage, splint and/or cast.
- Selects appropriate weight bearing status and assistive devices.
- Procedural steps are followed appropriately.
- Procedure is performed in appropriate period of time.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **cast management.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate cast management for conditions including:
 - concurrent with closed management of a fracture or dislocation.
 - congenital foot deformities.
 - tendon injuries.
 - musculoskeletal overuse syndromes.
 - neuromuscular disorders.
 - foot ulcers.
 - Charcot arthropathy.
 - delayed/nonunion.
 - postoperative surgical care.
 - others.

- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate cast management for the conditions listed in the section above.
- Understands the risks and benefits of utilizing cast management for the conditions listed in the first section above.
- Understands the variety of cast immobilization devices/techniques that are available including:
 - long leg cast.
 - short leg cast.
 - compression dressing.
 - posterior splint.
 - prefabricated walking cast.
 - unna boot.
 - total contact cast.
 - other.
- Understands the advantages/disadvantages of each of the devices/techniques listed in section above.
- Understands the potential risks/complications of each of the devices/techniques listed in section above.
- Selection of type of immobilization is appropriate for the patient's condition.
- Understands the material needs for the application of each of the devices/techniques listed.
- Understands the regional anatomy and appropriate anatomic positioning necessary for application of each of the devices/techniques listed above.
- Understands procedural steps used in the application of each of the devices/techniques listed above.
- Understands and selects the appropriate period of immobilization for each of the conditions listed.
- Understands and selects the appropriate weight-bearing status for cast management for each of the conditions listed.
- Can justify the type of immobilization, weight-bearing status, and duration of immobilization that was selected.
- Understands the indications, contraindications, and physiology of adjunctive therapies, including:
 - electromagnetic bone stimulation.
 - ultrasonic bone stimulation.
 - assistive devices.
 - other.
- Understands the appropriate techniques for removal and disposal of the various devices listed.

Objectives - Skills

- Assures patient can manage weightbearing status with selected assistive device.
- Secures proper patient positioning.
- Appropriately pads/avoids neurovascular compression.
- Utilizes appropriate technique in applying the various devices/techniques listed in knowledge indicators.
- Procedure is performed in appropriate period of time.
- Orders adjunctive therapies listed in knowledge indicators when appropriate.

- Utilizes appropriate technique for removal and disposal of the various devices listed in knowledge indicators section.
- Effectively presents potential risks and monitoring instructions to the patient.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **tape immobilization, including:**

Objectives - Knowledge

- Understands indications and contraindications to the use of tape immobilization including:
 - low Dye.
 - high Dye.
 - ankle taping.
 - plantar rest strap.
 - posterior rest/Achilles strap.
- Understands the materials utilized in tape immobilization types listed.
- Understands the application techniques utilized in tape immobilization types listed.
- Selection of tape immobilization fits the overall management of the patient in terms of management sequence, indication/contraindication and cost-effectiveness.

Objectives - Skills

- Can appropriately apply the tape immobilization types listed in knowledge indicators section.
- Applies tape immobilization in an appropriate amount of time

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **orthotic, brace, prosthetic, and custom shoe management.**

Objectives - Knowledge

- Understands foot deformities or conditions amenable to the use of orthotics/braces/prosthetics, including:
 - functional foot orthoses.
 - accommodative foot orthoses and insoles.
 - ankle/foot orthoses.
 - drop foot braces and shoe/brace combinations.
 - patellar bearing brace.
 - night splints for plantar fasciitis or Achilles tendonitis.
 - night/day splints for pediatric torsional/pedal deformities.
 - foot prostheses.
 - lower limb prostheses.
- Understands the impact of concurrent medical conditions that affect the prescribing of orthotics/braces/prosthetics, including but not limited to:
 - the neuropathic foot.
 - the partially-amputated foot.
 - the brain-injured patient.

- the pediatric congenital or acquired disorder.
- Understands how to write a proper orthotic prescription for foot orthoses.
- Understands standard terminology for foot orthoses.
- Understands the materials utilized in the manufacture of orthotics/braces/prosthetics listed.
- Understands the techniques utilized in the manufacture of the devices listed.
- Understands casting technique utilized in the manufacture of orthotics/braces/prosthetics listed.
- Understands technique utilized for the fit, measurement, and modification of orthotics/braces/prosthetics listed.
- Understands the design features, costs, advantages and disadvantages, indications and contraindications of orthotics/braces/prosthetics listed.
- Understands the proper shoe gear to use with foot orthoses.
- Understands various techniques and equipment to modify foot orthoses.
- Understands the design features, costs, advantages and disadvantages - including indications and contraindications - of extra-depth and custom-molded shoes.
- Possesses awareness of resources for referring, prescribing or obtaining extra-depth and custom-made shoes.
- Understands the indications, contraindications, and prescribing procedures for shoe modifications including:
 - rocker soles.
 - metatarsal bars.
 - limb length corrections.
 - Velcro closures.
 - heel stabilizers.
 - flares.

Objectives - Skills

- Casts patient to obtain appropriate negative cast for: custom-made soles and insoles, functional foot orthoses, accommodative foot orthoses.
- Can fabricate the following devices: custom-made shoes and insoles, functional foot orthoses, accommodative foot orthoses, night splints for plantar fasciitis or Achilles tendonitis, foot prostheses.
- Can select appropriate orthotic material for patient complaints or deformity.
- Can properly write prescription for devices listed in section.
- Can properly dispense and instruct patients in the proper use of custom-made shoes and insoles; functional and accommodative foot orthoses; splints for plantar fasciitis, Achilles tendonitis, pediatric torsional or pedal deformities; foot prostheses.
- Properly ascertain correct fit and adjust as necessary the devices listed in knowledge indicators section.
- Can prescribe or recommend and/or adjust appropriate shoe for use with devices listed in knowledge indicators section.
- Can communicate with prosthetist/orthotist to suggest appropriate modifications of ankle/foot orthoses.
- Can determine appropriate shoe size using a Brannock device and/or foot and shoe tracings.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **footwear and padding.**

Objectives - Knowledge

- Understands techniques of determining appropriate footwear fit, including application of the Brannock device and use of foot and shoe tracings.
- Understands the design features and potential functional implications of the various components of over-the-counter footwear including:
 - last type.
 - lacing configuration.
 - instep type.
 - heel counter stability.
 - midsole and outersole construction.
- Understands normal and abnormal wear patterns of footwear.
- Understands the indications for use of various pads including: long arch pads, heel lifts, metatarsal pads, dancer pads, pontoon pads, Cobra pads, Budin splint, buttress pads, crest pads, moldable silicone pads and splints, accommodative pads.
- Understands the correct techniques for creating various pads including those listed above.

Objectives - Skills

- Can position over-the-counter and customized padding appropriately.
- Prescribes appropriate shoe gear based on patient foot type and orthotic use
- Can fabricate various pads, including: long arch pads, heel lifts, metatarsal pads, dancer pads, pontoon pads, Cobra pads, Budin splint, buttress pads, crest pads, moldable silicone pads and splints, accommodative pads.
- Provides appropriate advice to patients regarding non-prescription footwear styles, desirable components, fitting, and size.
- Can determine appropriate shoe size using a Brannock device.
- Can determine if a patient's shoe fits appropriately using foot and shoe tracings.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **injections and aspirations.**

Objectives - Knowledge

- Understands the indications and contraindications for injection and/or aspiration.
- Understands the history and physical examination normals/abnormals that would indicate injection and/or aspiration.
- Understands pharmacology of medications used for diagnostic and/or therapeutic injection/aspiration.
- Understands the technique of performing injection and/or aspiration including the following:
 - injection of trigger points.
 - injection of nerve lesions, including Morton's neuroma.
 - injection of musculoskeletal disorders, including plantar fasciitis.
 - aspiration/injection of pedal or ankle joints.

- aspiration/injection of bursae and tendon sheaths.
- aspiration/injection of cystic lesions and soft tissue masses.
- aspiration/injection of hematoma.
- needle biopsy.
- Understands the rationale for performing the techniques listed.
- Understands potential complications of injection and proper management.

Objectives - Skills

- Utilizes appropriate technique while performing techniques listed in knowledge indicators section.
- Monitors the patient during the injection.
- Diagnoses and manages adverse reactions to the injection/aspiration.
- Recognizes when aspiration results indicate further history, physical exam, diagnostic studies, consultation, or surgical intervention.
- Performs the injection/aspiration in an appropriate period of time.
- Utilizes universal precautions while performing aspiration/injections listed in knowledge indicators section.
- Selection of injection and/or aspiration fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **physical therapy**.

Objectives - Knowledge

- Understands appropriate assessment/evaluation of the patient re: history and physical range of motion palpation.
- Understands functional anatomy.
- Understands treatment principles of physical therapy including: pain reduction modalities, increasing range of motion, stretching/strengthening programs.
- Understands indications/contraindications of physical therapy.
- Understands indications for referral to physical therapy.
 - Musculoskeletal or neurogenic pain resulting from injury, inflammation or immobilization.
 - Musculoskeletal disorders including: muscle sprains/strains, tendinitis, joint stiffness, laxity, inflammation, bursitis/fasciitis, arthritis.
 - Impaired range of motion, strength and/or function following surgery, illness or disuse.
 - Impaired movement, coordination and function following CVA, spinal cord injury or neurological or progressive neurological disorder.
- Understands contraindications for referral to physical therapy.
 - The patient's inability to cooperate due to mental impairment.
 - Inability to cooperate/participate with therapy due to medical condition (COPD, DVT).
 - Recognition of less than optimal rehabilitation due to length of time since onset (RSD, longstanding joint contractures).
- Understands principles and indications of specific modalities.
 - Heat treatments: moist heat packs, parafin baths, ultrasound, hydrotherapy.

- Cold treatments: cold/ice packs, ice massage, hydrotherapy.
- Electrical stimulation: galvanic/continuous DC (iontophoresis).
- Mechanical traction.
- Massage: superficial/deep.
- Joint and soft tissue mobilization.
- Exercise.
- Functional re-training.

Objectives - Skills

- Should be able to write a referral for appropriate physical therapy for the patient and the patient's condition.
- Should be able to evaluate the patient periodically for progress and be able to modify the treatment plan as needed.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **NSAIDs**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands drug mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **antibiotics**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **antifungals**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **narcotic analgesics**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **muscle relaxants**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.

- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **medications for neuropathy.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **sedative/hypnotics.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **peripheral vascular agents.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **anticoagulants**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **antihyperuricemic/uricosuric agents**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **tetanus toxoid/immune globulin.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **laxatives/cathartics.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **fluid and electrolyte agents.**

Objectives - Knowledge

- Understands indications and usage.

- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **corticosteroids**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **antirheumatic medications**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Knowledge drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **topicals**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **debridement of superficial ulcer or wound**.

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this procedure.
- Understands imaging study normals/abnormals that would indicate/contraindicate this procedure.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate this procedure.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition.
- Understands the risks and benefits of performing the procedure.
- Understands the risks and benefits of not performing the procedure.
- Understands the advantages/disadvantages of the procedure versus other potentially applicable procedures.
- Understands the instrument and material needs for performance of the procedure.
- Understands the regional anatomy.
- Understands peri-procedure and associated care requirements.

Objectives - Skills

- Selects appropriate instrument(s) (tissue nipper, scalpel, rongeur, curette).
- Uses instrumentation appropriately.
- Removes tissue appropriately, based on tissue type, quality, and depth.
- Obtains microbiology and/or pathology specimens, as indicated.
- Applies appropriate wound care agent. Applies appropriate wound cover.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **excision or destruction of skin lesion (including skin biopsy and laser procedures).**

Objectives - Knowledge

- Understands normal/abnormal dermatologic anatomy and histology.
- Understands normal/abnormal clinical exam that would indicate/contraindicate appropriate procedure.
- Understands etiology and pathology of lesion.
- Understands surgical excision techniques including punch biopsy, incisional biopsy, excisional biopsy, and wide excision techniques.
- Understands surgical lesion destruction techniques including lasers, electrocautery, cryotherapy.
- Understands the risks, benefits, potential complications, and alternatives to procedure.
- Understands postoperative care requirements.
- Understands adjunctive medical therapies for care of malignant skin lesions.
- Understands instrument and material needs for the procedure.

Objectives - Skills

- Can perform appropriate local anesthetic block.
- Can perform appropriate skin incision as indicated (i.e., wide excision, punch biopsy, incisional and excisional biopsy techniques).
- Can perform anatomic dissection appropriate to this anatomic area.
- Can perform suture repair of deep tissue as indicated.
- Can apply laser, electrocautery, or cryotherapy for destruction of skin lesion - as indicated.
- Can apply appropriate bandage.
- Can initiate proper care for postoperative complications
- Can interpret histologic/pathology report when indicated.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **nail avulsion (partial or complete).**

Objectives - Knowledge

- Understands the regional anatomy.
- Understands normal/abnormal clinical exam.
- Understands etiologies and pathomechanics of nail deformities and associated soft tissue infections (paronychia).
- Understands the risks, benefits, potential complications and alternatives of the procedure.
- Understands the postoperative care requirements.
- Understands the instrument needs for the performance of the procedure.

Objectives - Skills

- Can perform appropriate local anesthetic digital block.

- Can dissect, split, and avulse part of the nail plate (partial nail avulsion).
- Can dissect and avulse the nail plate (total nail avulsion).
- Can apply appropriate bandage.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **matrixectomy (partial or complete, by any means)**.

Objectives - Knowledge

- Understands the regional anatomy.
- Understands normal/abnormal clinical exam that would indicate/contraindicate procedure.
- Understands etiologies and pathomechanics of nail and associated soft tissue deformities.
- Understands the risks, benefits, potential complications and alternatives of the procedure.
- Understands postoperative care requirements.
- Understands instrument and chemical needs for the performance of the procedure.
- Understands the properties of chemicals if used in performance of the procedure.
- Understands the properties of laser physics if used in performance of the procedure.

Objectives - Skills

- Can perform appropriate local anesthetic digital block.
- Can dissect, split, and avulse part of the nail plate (partial matrixectomy).
- Can dissect, avulse the nail plate (total matrixectomy).
- Can apply chemical agents of laser to nail matrix for permanent correction.
- Can apply appropriate bandage.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **removal of hardware**.

Objectives - Knowledge

- Understands the regional anatomy.
- Understands clinical exam normals/abnormals that would indicate/contraindicate procedure.
- Understands imaging studies to aid in diagnosis.
- Understands risks, benefits, potential complications and alternative to procedure.
- Understands postoperative care requirements.
- Understands instrument and material needs for the performance of the procedure (including fluoroscopy).

Objectives - Skills

- Can perform appropriate local anesthetic block, if indicated.
- Can perform appropriate skin incision.

- Can perform anatomic dissection appropriate to the anatomic area.
- Can identify and remove the hardware.
- Can perform suture repair of deep tissues as indicated.
- Can perform suture repair of skin appropriately.
- Can apply appropriate bandage.
- Can select and prescribe proper antibiotics as indicated.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **repair of simple laceration (no neurovascular, tendon, or bone/joint involvement).**

Objectives - Knowledge

- Understands the regional anatomy.
- Understands normal/abnormal clinical exam that would indicate/contraindicate the procedure.
- Understands the principles of wound repair.
- Understands the risks, benefits, potential complications and alternatives to procedure.
- Understands postoperative care requirements.
- Understands suture repair techniques.
- Understands instrument and material needs for the performance of the procedure.

Objectives - Skills

- Can perform appropriate local anesthetic block.
- Can perform suture repair of the laceration.
- Can apply appropriate bandage.
- Can initiate proper care of postoperative complications.

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **digital surgery.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following digital procedures including:
 - partial ostectomy/exostectomy.
 - phalangectomy.
 - arthroplasty (IPJ).
 - implant.
 - diaphysectomy.
 - phalangeal osteotomy.
 - fusion (IPJ).
 - amputation.
 - management of osseous tumor/neoplasm.
 - management of bone/joint infection.
 - open management of digital fracture/dislocation.
 - revision/repair of poor surgical outcome.

- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc) of the condition/deformity.
- Understands the risks and benefits of performing the procedures listed in section above.
- Understands the risks and benefits of not performing the procedures listed in section above.
- Understands the advantages/disadvantages of the procedures listed in section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in section above.
- Understands the regional anatomy.
- Understands appropriate incisional approach(s).
- Understands procedural steps.
- Understands tissue-specific handling and repair techniques (skin, nerve, bone, tendon, ligament, capsule, cartilage, muscle).
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent fixation materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent graft materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application (autograft, allograft, xenograft, and synthetic graft for bone, tendon, etc.).
- Understands postoperative care requirements.
- Selection of the procedure listed in section above is appropriate for the patient.

Objectives - Skills

- Selects the appropriate procedure(s).
- Justifies the chosen technical pathway to completion of the procedure.
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.
- Secures proper patient positioning.
- Utilizes hemostatis appropriately when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately when indicated.
- Uses manual instrumentation appropriately.
- Uses power instrumentation appropriately.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Recognizes perioperative variations and adapts accordingly.
- Follows procedural steps correctly.

- Procedure is performed in appropriate period of time.

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **first ray surgery**.

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following first ray procedures including:
 - hallux valgus surgery.
 - bunionectomy (partial ostectomy/Silver procedure).
 - bunionectomy with capsulotendon balancing procedure.
 - bunionectomy with phalangeal osteotomy.
 - bunionectomy with distal first metatarsal osteotomy.
 - bunionectomy with first metatarsal base/shaft osteotomy.
 - bunionectomy with first metatarsocuneiform fusion.
 - metatarsophalangeal joint fusion.
 - metatarsophalangeal joint implant.
 - metatarsophalangeal joint arthroplasty.
 - hallux limitus surgery, including:
 - cheilectomy.
 - joint salvage with capsulotendon balancing procedure.
 - joint salvage with phalangeal osteotomy (e.g., Kessel-Bonney, enclavement).
 - joint salvage with distal first metatarsal osteotomy.
 - joint salvage with first metatarsal base/shaft osteotomy.
 - joint salvage with first metatarsocuneiform fusion.
 - metatarsophalangeal joint fusion.
 - metatarsophalangeal joint implant.
 - metatarsophalangeal joint arthroplasty.
 - other first ray surgery, including:
 - tendon transfer/lengthening/capsulotendon balancing procedure.
 - osteotomy (e.g., dorsiflexory).
 - metatarsocuneiform fusion (other than for hallux abductovalgus or hallux limitus).
 - amputation
 - management of first ray osseous tumor/neoplasm.
 - management of first ray bone/joint infection.
 - open management of first ray fracture/dislocation.
 - corticotomy with callus distraction.
 - revision/repair of poor surgical outcome (e.g., nonunion, hallux varus).
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in first section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands the risks and benefits of performing the procedures listed in first section above.

- Understands the risks and benefits of not performing the procedures listed in first section above.
- Understands the advantages/disadvantages of the procedures listed in first section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in first section above.
- Understands the regional anatomy.
- Understands appropriate incisional approach(es).
- Understands procedural steps.
- Understands the axis guide concept to create uniplanar, biplanar versus triplanar correction
- Understands tissue-specific handling and repair techniques (skin, nerve, bone, tendon, ligament, capsule, cartilage, muscle).
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent fixation materials and techniques, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent graft materials, including physical characteristics, advantages/disadvantages, indications/ contraindications, and application (autograft, allograft, xenograft, and synthetic graft for bone, tendon, etc).
- Understands postoperative care requirements.
- Selection of the procedure listed in first section above is appropriate for the patient.

Objectives - Skills

- Selects the appropriate procedure(s).
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.
- Secures proper patient positioning.
- Utilizes hemostasis appropriately, when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Uses manual instrumentation appropriately.
- Uses power instrumentation appropriately.
- Uses special instrumentation appropriately, when indicated.
- Handles and applies fixation devices appropriately.
- Handles and applies bioimplants appropriately, when indicated
- Handles and applies graft materials appropriately.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately, when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Procedural steps are followed correctly.
- Procedure is performed in appropriate period of time.

- Recognizes preoperative, intraoperative and postoperative variations/complications and adapts accordingly.
- Justifies the chosen technical pathway to completion of the procedure.

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **other soft tissue foot surgery.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following soft tissue foot procedures including:
 - excision of ossicle/sesamoid.
 - excision of neuroma.
 - removal of deep foreign body (excluding hardware).
 - plantar fasciotomy/plantar fasciectomy.
 - lesser MTPJ capsulotendon balancing.
 - tendon repair, lengthening, or transfer involving the forefoot.
 - open management of dislocation (MTP or tarsometatarsal).
 - incision and drainage with wide debridement of soft tissue infection.
 - excision of soft tissue tumor/mass of the foot (without reconstructive surgery)
 - external neurolysis/decompression (including tarsal tunnel)
 - plastic surgery techniques of the forefoot (including skin graft, skin plasty, skin flaps, syndactylization, desyndactylization, and debulking procedures).
 - microscopic nerve/vascular repair of the forefoot.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in first section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity, including the predisposing factors and the microbial pathogens associated with soft tissue infections (including deep space infections).
- Understands proper adjunctive medical care of puncture wounds, including antibiotics and tetanus prophylaxis.
- Understands proper adjunctive medical care of infections, including antibiotics.
- Understands pathology associated with benign or malignant masses.
- Understands adjunctive medical therapies for care of malignant masses.
- Understands the risks and benefits of performing the procedures listed in first section above.
- Understands the risks and benefits of not performing the procedures listed in first section above.
- Understands the advantages/disadvantages of the procedures listed in first section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in first section above.
- Understands the regional and/or microscopic anatomy.
- Understands appropriate incisional approach(es).
- Understands procedural steps.

- Understands tissue-specific handling and repair techniques (skin, nerve, tendon, ligament, capsule, muscle).
- Understands the principles of tendon transfer.
- Understands the principles of skin grafting, skin plasty, skin flaps, etc.
- Understands suture repair techniques for primary repair, lengthening, and/or transfer of tendon(s) of the forefoot.
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent soft tissue graft materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application (autograft, allograft, xenograft).
- Understands postoperative care requirements.
- Selection of the procedure listed in first section above is appropriate for the patient.

Objectives - Skills

- Justifies the chosen technical pathway to completion of the procedure.
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.
- Secures proper patient positioning.
- Utilizes hemostasis appropriately, when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Uses manual instrumentation appropriately.
- Uses special instrumentation appropriately, when indicated.
- Performs appropriate tendon repair/lengthening or transfer, as indicated.
- Evaluates dislocation with fluoroscopic imaging under anesthesia.
- Reduces dislocation and applies percutaneous fixation.
- Recognizes and debrides all purulent material and necrotic soft tissue from the surgical site by sharp and/or blunt means.
- Plans return to surgery with repeat debridement and delayed primary closure with quantitative cultures when appropriate.
- Interprets histology/pathology report and initiates proper medical consultation for evaluation of malignant masses.
- Performs suture repair of skin utilizing appropriate plastic surgery techniques for skin plasty, skin flaps, syndactylization, desyndactylization, and debulking procedures.
- Isolates affected nerve(s) or vessel(s) and repairs them appropriately using microscopic techniques.
- Handles and applies soft tissue bioimplants appropriately, when indicated.
- Handles and applies soft tissue graft materials appropriately.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately, when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Procedural steps are followed correctly.
- Procedure is performed in appropriate period of time.

- Recognizes preoperative, intraoperative and postoperative variations/complications and adapts accordingly.
- Selects the appropriate procedure(s).

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **other osseous foot surgery (distal to the tarsometatarsal joints, except where specifically indicated).**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following other osseous foot surgery procedures, including:
 - partial ostectomy (distal to and including the talus). lesser MTPJ arthroplasty.
 - bunionectomy of the fifth metatarsal without osteotomy.
 - metatarsal head resection (single or multiple).
 - lesser MTPJ implant.
 - central metatarsal osteotomy.
 - bunionectomy of the fifth metatarsal with osteotomy.
 - open management of lesser metatarsal fractures.
 - harvesting of bone graft distal to the ankle.
 - amputation (e.g., lesser ray, TMA)
 - management of bone/joint infection distal to the tarsometatarsal joints (with or without bone graft).
 - management of bone tumor/neoplasm distal to the tarsometatarsal joints (with or without bone graft).
 - open management of tarsometatarsal joint fracture/dislocation.
 - multiple osteotomy management of metatarsus adductus.
 - tarsometatarsal fusion (partial or complete).
 - corticotomy with callus distraction of lesser metatarsal.
 - revision/repair of poor surgical outcome in the forefoot.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in first section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands pathology associated with benign or malignant masses.
- Understands adjunctive medical therapies for care of malignant masses.
- Understands the risks and benefits of performing the procedures listed in first section above.
- Understands the risks and benefits of not performing the procedures listed in first section above.
- Understands the advantages/disadvantages of the procedures listed in first section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in first section above.
- Understands the regional anatomy.
- Understands appropriate incisional approach(es).

- Understands procedural steps.
- Understands the axis guide concept to create uniplanar, biplanar versus triplanar correction
- Understands tissue-specific handling and repair techniques (skin, nerve, bone, tendon, ligament, capsule, cartilage, muscle).
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent fixation materials and techniques, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent graft materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application (autograft, allograft, xenograft, and synthetic graft for bone, tendon, etc.).
- Understands postoperative care requirements.
- Selection of the procedure listed in first section above is appropriate for the patient.

Objectives - Skills

- Justifies the chosen technical pathway to completion of the procedure.
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.
- Secures proper patient positioning.
- Utilizes hemostasis appropriately, when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Uses manual instrumentation appropriately.
- Uses power instrumentation appropriately.
- Uses special instrumentation appropriately, when indicated.
- Handles and applies fixation devices appropriately.
- Handles and applies bioimplants appropriately, when indicated.
- Handles and applies graft materials appropriately.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Utilizes wound irrigation appropriately.
- Applies wound drainage system appropriately, when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Procedural steps are followed correctly.
- Procedure is performed in appropriate period of time.
- Recognizes preoperative, intraoperative and postoperative variations/complications and adapts accordingly.
- Selects the appropriate procedure(s).

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **reconstructive rearfoot and ankle surgery.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following reconstructive rearfoot and ankle surgery procedures, including:
 - elective soft tissue procedures, including:
 - plastic surgery techniques involving the midfoot, rearfoot, or ankle.
 - tendon transfer involving the midfoot, rearfoot, ankle, or leg.
 - tendon lengthening involving the midfoot, hindfoot, ankle, or leg.
 - soft tissue repair of complex congenital foot/ankle deformity (e.g., clubfoot, vertical talus).
 - delayed repair of ligamentous structures.
 - ligament or tendon
 - augmentation/supplementation/restoration.
 - open synovectomy of the hindfoot or ankle.
 - elective osseous procedures, including:
 - operative arthroscopy.
 - detachment/reattachment of the Achilles with partial ostectomy.
 - subtalar arthroeresis.
 - midfoot, hindfoot, or ankle fusion.
 - midfoot, hindfoot, or tibial osteotomy.
 - coalition resection.
 - open management of talar dome lesion (with or without osteotomy)
 - ankle arthrotomy with removal of loose body or other osteochondral debridement.
 - ankle implant.
 - corticotomy or osteotomy with callus distraction correction of complex deformity of the midfoot, rearfoot, ankle, or tibia.
 - nonelective soft tissue procedures, including:
 - repair of acute tendon injury.
 - repair of acute ligament injury.
 - microscopic nerve/vascular repair of the midfoot, hindfoot, or ankle.
 - excision of soft tissue tumor/mass of the foot (with reconstructive surgery).
 - excision of soft tissue tumor/mass of the ankle (with or without reconstructive surgery).
 - open repair of dislocation (proximal to tarsometatarsal joints).
 - nonelective osseous procedures, including:
 - open repair of adult midfoot fracture.
 - open repair of adult hindfoot fracture.
 - open repair of adult ankle fracture.
 - open repair of pediatric hindfoot/ankle fractures.
 - management of bone tumor/neoplasm (with or without bone graft).
 - management of bone/joint infection (with or without bone graft).
 - amputation proximal to tarsometatarsal joints.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.

- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in first section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands pathology associated with benign or malignant masses.
- Understands gross and histological pathology.
- Understands adjunctive medical therapies for care of malignant masses.
- Understands the risks and benefits of performing the procedures listed in first section above.
- Understands the risks and benefits of not performing the procedures listed in first section above.
- Understands the advantages/disadvantages of the procedures listed in first section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in first section above.
- Understands the regional anatomy.
- Understands appropriate incisional approach(es).
- Understands procedural steps.
- Understands appropriate reconstructive techniques.
- Understands the axis guide concept to create uniplanar, biplanar versus triplanar correction
- Understands tissue-specific handling and repair techniques (skin, nerve, bone, tendon, ligament, capsule, cartilage, muscle).
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent fixation materials and techniques, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent graft materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application (autograft, allograft, xenograft, and synthetic graft for bone, tendon, etc.).
- Understands postoperative care requirements.
- Selection of the procedure listed in first section above is appropriate for the patient.

Objectives - Skills

- Justifies the chosen technical pathway to completion of the procedure.
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.
- Secures proper patient positioning.
- Utilizes hemostasis appropriately, when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Performs open reduction of fracture/dislocation.
- Performs appropriate fixation to maintain reduction (k-wire, external fixator, etc.) if needed.
- Uses manual instrumentation appropriately.

- Uses power instrumentation appropriately.
- Uses special instrumentation appropriately, when indicated.
- Handles and applies fixation devices appropriately.
- Handles and applies bioimplants appropriately, when indicated.
- Handles and applies graft materials appropriately.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately, when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Procedural steps are followed correctly.
- Procedure is performed in appropriate period of time.
- Recognizes preoperative, intraoperative and postoperative variations/complications and adapts accordingly.
- Selects the appropriate procedure(s).

Goal: Formulate and implement an appropriate plan of management, including: appropriate anesthesia management when indicated, including: **local anesthesia**.

Objectives - Knowledge

- Understands history and physical at examination that would contribute to the selection of the appropriate local anesthetic with or without epinephrine.
- Understands laboratory values that would contribute to the assessment and selection of appropriate local anesthetics, with or without epinephrine.
- Understands pharmacology of local anesthetics and epinephrine.
- Understands advantages/disadvantages of use of local anesthetics versus other forms of anesthesia.
- Understands various techniques for performing sensory and/or motor blocks and nerve blocks used in the lower extremity.
- Understands universal precautions and needle precautions.
- Understands appropriate injection techniques used in administering the local anesthetic.
- Understands allergies and adverse reactions to local anesthetics, epinephrine and preservatives.
- Understands the management of allergies and adverse reactions to local anesthetics, epinephrine and preservatives.

Objectives - Skills

- Performs an appropriate preanesthetic evaluation.
- Administers field blocks, digital blocks, Mayo blocks, and isolated nerve blocks of the lower extremities with proper technique.
- Utilizes proper technique while injecting the local anesthetic.
- Utilizes adjunctive topical agents, as needed.
- Utilizes universal precautions and appropriate needle precautions.
- Monitors for, recognizes, and manages adverse reactions to the local anesthetic.

Goal: Formulate and implement an appropriate plan of management, including: appropriate anesthesia management when indicated, including: **general, spinal, epidural, regional, and conscious sedation anesthesia.**

Objectives - Knowledge

- Understands the components, techniques, and normals/abnormals of the history and physical examination pertinent to the preanesthetic assessment.
- Understands the laboratory tests pertinent to the preanesthetic assessment, and their normals/abnormals.
- Understands ASA Physical Status classification system and the impact of medical comorbidities on preanesthetic assessment and management.
- Understands the stages and planes of ether anesthesia as described by Guedel in 1937.
- Understands the advantages/disadvantages of general, spinal, epidural, regional, and conscious sedation anesthesia versus other potentially applicable forms of anesthesia.
- Understands the pharmacology of preanesthesia medications (barbituates, benzodiazepines, narcotics, anticholinergics).
- Understands the pharmacology of neuromuscular blocking agents (depolarizing and nondepolarizing).
- Understands the pharmacology of the intravenous induction and maintenance agents.
- Understands the pharmacology of inhalational medications.
- Understands the pharmacology of the various reversal agents.
- Understands anesthetic complications and their management.
- Understands pertinent regional anatomy, including the airway.
- Understands the technical aspects of maintaining an airway.
- Understands the technical aspects of intubation.
- Understands the technical aspects of introducing an LMA.
- Understands the technical aspects of obtaining IV access.
- Understands the technical aspects of inserting an oropharangeal or nasopharangeal airway.
- Understands the technical aspects of performing a Bier block.
- Understands the technical aspects of administration of spinal anesthesia.
- Understands the technical aspects of perianesthesia monitoring of a patient.

Objectives - Skills

- Performs preanesthetic evaluation, including history and physical examination.
- Orders and interprets appropriate preoperative diagnostic tests.
- Assigns correct ASA status.
- Secures and positions patient properly.
- Places and secures intravenous line.
- Administers agents for conscious sedation.
- Monitors patient during the surgical procedure.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical

means. Formulate and implement an appropriate plan of management, including: **appropriate consultation and/or referrals.**

Objectives - Knowledge

- Recognizes when consultation with another podiatric or medical specialist is necessary for either diagnosis or management.
- Recognizes when referral to another podiatric or medical specialist is necessary for either diagnosis or management.
- Understands appropriate written and verbal communication methods in obtaining consultation or referral.
- Interprets consultation report and/or recommendations appropriately.
- Selection of consultation and/or referral fits the overall management of the patient in terms of evaluation or management sequence, timeliness, and cost-effectiveness.
- Recognizes when consultation results indicate further history, physical exam, diagnostic studies, therapeutic intervention or further consultation.

Objectives - Skills

- Utilizes effective written/oral communication skills when requesting consultation or referral.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Formulate and implement an appropriate plan of management, including: **appropriate lower extremity health promotion and education.**

Objectives - Knowledge

- Understands the indications for lower extremity health promotion and education, including:
 - lower extremity disease prevention related to concurrent medical disease states, including but not limited to diabetes mellitus.
 - lower extremity disease prevention related to substance abuse, including tobacco and alcohol.
 - factors associated with surgical and nonsurgical treatment plans.
 - etiology and progression of pediatric deformities.
- Understands pertinent aspects of patient education related to specific surgical and nonsurgical treatment plans.
- Understands the natural history of diseases affecting the lower extremity, including etiologic and contributory factors and associated preventive measures.
- Understands the methodologies for communicating health promotion, education and home care via verbal, written, or other media.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. **Assess the treatment plan and revise it as necessary.**

Objectives - Knowledge

- Understands appropriate follow-up management as indicated by patient's condition, including:
 - understands appropriate intervals for follow-up evaluation.
 - understands and recognizes the indications for additional evaluation or diagnostic measures.
 - understands and recognizes the indications for additional therapeutic measures.
 - understands appropriate post-procedure management.
 - understands appropriate rehabilitative care.
 - understands and recognizes when a therapeutic endpoint has been achieved.
 - recognizes sequelae.
 - determines long-term prognosis.
 - assesses and quantifies current level of disability.
- Understands appropriate documentation.

Objectives - Skills

- Appropriately documents patient progress.
- Generates/revises treatment plan based on diagnostic and therapeutic results.

Goal: Assess and manage the patient's general medical status. Perform and interpret the findings of a comprehensive medical history and physical examination (including preoperative history and physical examination), including: **comprehensive medical history.**

Objectives - Knowledge

- Understands the logical organization of a comprehensive history to include:
 - Chief complaint.
 - History of chief complaint (history of present illness).
 - Past medical history.
 - Illnesses.
 - Medications.
 - Allergies.
 - Past surgical history.
 - Hospitalizations.
 - Social history.
 - Family history.
 - Review of systems.
- Understands the details to be asked in obtaining a history of chief complaint (NLDOCATS), past medical history, social history, family history, and review of systems.

Objectives - Skills

- Obtains a comprehensive history in adequate detail.
- Obtains a comprehensive history in appropriate period of time.
- Obtains a comprehensive history using logical organization.

Goal: Perform and interpret the findings of a comprehensive medical history and physical examination (including preoperative history and physical examination), including: comprehensive physical examination, including: **vital signs**.

Objectives - Knowledge

- Understands the correct technique for obtaining the following vital signs, including:
 - height.
 - weight.
 - blood pressure.
 - temperature.
 - pulse.
 - respiratory rate.
- Understands the normal and abnormal findings for each of the vital signs listed above.
- Understands the rationale for obtaining each of the exam components listed above.

Objectives - Skills

- Utilizes the correct technique for obtaining each of the vital signs.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the components performed upon a patient.
- Obtains vital signs in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **head, eyes, ears, nose, and throat (HEENT)**.

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the HEENT:
 - inspection/observation of:
 - scalp - skin lines, fluctuant masses, organized masses.
 - skull - malformations, masses.
 - cheek - symmetry, edema, ulceration.
 - facies - shape, features, nature of muscular movement.
 - eyes - extraocular movement, convergence, visual fields, globe protrusion/recession.
 - eyelids - motion, secretion, edema.
 - sclera - color, vascular engorgement.
 - cornea - scars, abrasions.
 - iris - color, shape, deposits.
 - pupils - equality, shape, reaction to light, accommodation.
 - lens - clarity, shape.
 - nose - symmetry, profile.
 - lips - defects, color, ulceration.
 - gums - inflammation, color, hemorrhaging.
 - breath odor - acetone, fetor.

- tongue - size, deviation, color, lesions, vascular engorgement.
- oral cavity/oropharynx - color, size, edema, ulceration, uvula position, tonsil color, tonsil size, tonsil swelling.
- jaw - range of motion.
- ear - shape, color, masses.
- palpation:
 - scalp - fluctuant masses, organized masses.
 - skull - masses.
 - cheek - swelling, ulceration.
 - nose - swelling, masses, points of tenderness.
 - lips - defects, ulceration.
 - gums - masses.
 - tongue - lesions.
 - oral cavity/oropharynx- masses, ulceration.
 - jaw - range of motion.
 - ear - lesions.
- special tests:
 - ophthalmoscopic examination - color and clarity of media; vascular engorgement, hemorrhaging, vascular nicking, scarification of fundus; color, shape and size of optic disc; integrity of optic nerve.
 - otoscopic examination - swelling, redness, drainage.
 - nasal speculum examination - integrity, color, swelling, hemorrhaging.
 - cranial nerves.
- Understands the normal and abnormal findings for each of the exam components listed.
- Understands the rationale for performing each of the exam components listed.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the HEENT.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate HEENT exam components indicated by patient's chief complaint.
- Performs the HEENT exam in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **neck.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the neck:
 - inspection/observation of:
 - alignment.
 - range of motion.
 - observable masses.
 - symmetry.

- jugular venous distention (JVD).
 - auscultation of:
 - carotid artery.
 - breath sounds.
 - palpation of:
 - carotid pulse
 - C spine - static and dynamic.
 - musculature.
 - thyroid gland.
 - lymph nodes.
 - other masses.
- Understands the normal and abnormal findings for each of the exam components.
- Correctly interprets the normal or abnormal findings of each of the exam components when performed upon a patient.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the neck.
- Recognizes the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate neck exam components indicated by patient's chief complaint.
- Performs the neck exam in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: chest/breast.

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the chest:
 - inspection/observation of:
 - alignment and symmetry.
 - observable masses/deformities.
 - chest wall motion.
 - nipple characteristics including color, discharge, position, symmetry, size, edema, lesions.
 - Breast characteristics including symmetry, dilation of veins, observable masses, size and shape, dimpling, edema, lesions.
 - palpation of:
 - nipple including induration, tenderness, adhesions.
 - breast tissue including temperature, masses, induration, tenderness, consistency, adhesions.
 - thorax, including ribs, T spine, sternum, clavicle, scapula costal cartilages, axillary nodes.
 - percussion for:
 - level of diaphragm.
- Understands the normal and abnormal findings for each of the exam components.

- Correctly interprets the normal or abnormal findings of each of the exam components when performed upon a patient.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the chest.
- Recognizes the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate chest exam components indicated by patient's chief complaint
- Performs the chest exam in an appropriate period of time

Goal: comprehensive physical examination, including: physical examination, including: **heart.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the heart:
 - inspection/observation of:
 - apical impulse.
 - palpation of:
 - PMI.
 - auscultation of:
 - heart sounds - normal and abnormal.
 - murmurs and gallops.
 - rubs.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the correct method of grading heart murmurs and the distinguishing features between benign and pathologic murmurs.
- Correctly interprets the normal or abnormal findings of each of the exam components when performed upon a patient.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the heart.
- Recognizes the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate heart exam components indicated by patient's chief complaint.
- Performs the heart exam in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **lungs.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the lungs:
 - inspection/observation of:
 - chest wall excursion.
 - palpation of:
 - tactile fremitus.
 - percussion (direct and indirect) for:
 - hyporesonance.
 - hyperresonance.
 - auscultation of:
 - breath sounds - normal and abnormal.
 - fremitus.
 - rubs.
 - special tests:
 - match test.
- Understands the normal and abnormal findings for each of the exam components.
- Correctly interprets the normal or abnormal findings of each of the exam components when performed upon a patient.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the lungs.
- Recognizes the normal or abnormal findings of each of the exam components when performed upon a patient
- Utilizes appropriate lung exam components indicated by patient's chief complaint
- Performs the lung exam in an appropriate period of time

Goal: comprehensive physical examination, including: physical examination, including: **abdomen.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the abdomen:
 - inspection/observation:
 - scars, distension, engorged veins, pulsations, color, rashes, masses.
 - auscultation:
 - bruits, bowel sounds, friction rubs.
 - palpation:
 - normal landmarks, fluctuance, masses and protrusions, rigidity, pulsations, organomegaly, tenderness.
 - percussion:
 - fluctuance, tenderness, rebound tenderness, sounds.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the abdomen.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate abdomen exam components indicated by patient's chief complaint.
- Performs the abdominal examination in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **genitourinary.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the genitourinary system:
 - inspection/observation:
 - male and female - normal landmarks, lesions, masses, color, inflammation, symmetry, position, discharge.
 - palpation:
 - Male and female - normal landmarks, skin lesions, masses, hernias.
 - special tests:
 - vaginal examination with speculum - color, lesions, masses, smears.
 - smears, cultures.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the genitourinary system.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate genitourinary system exam components indicated by patient's chief complaint.
- Performs the genitourinary system examination in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **rectal.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of the rectal examination:
 - inspection/observation:
 - inflammation, sinuses, fistulas, bulges, lesions, masses.
 - palpation:
 - anus - sphincter size, tone, foreign body, laceration.
 - rectum - normal landmarks, masses, constrictions, tenderness.
 - special tests:

- stool guiac examination.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of the rectal examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate rectal exam components indicated by patient's chief complaint.
- Performs the rectal examination in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **upper extremities.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the upper and lower extremities:
 - inspection/observation:
 - size and symmetry, contour, masses, swelling, skin lesions.
 - range and quality of motion.
 - palpation:
 - normal landmarks, strength, range and quality of motion, including but not limited to tenosynovium, joint quality, tendon sheath, etc.
 - superficial and deep sensory parameters.
 - percussion:
 - reflexes - normal and abnormal/pathologic.
 - superficial and deep sensory parameters.
 - special tests:
 - cutaneous mapping, EMG/NCV, imaging studies, joint fluid analysis.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the upper and lower extremities.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate upper and lower extremity exam components indicated by patient's chief complaint.
- Performs the upper and lower extremity examination in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **neurologic examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of the neurologic examination:
 - inspection/observation:
 - cranial nerves - all.
 - spasticity, tremors, rigidity, flaccidity, fasciculation.
 - equilibrium and coordination.
 - gait (see musculoskeletal examination section).
 - autonomic deficit: dyhidrosis, vasospasm, trophic changes, dermatographia.
 - palpation/maneuver:
 - cranial nerves - VII, IX, XI, XII.
 - muscle strength, tone and bulk.
 - clonus.
 - superficial and deep sensory nerve parameters: sharp/dull, pain, temperature, vibration, proprioception.
 - range and quality of motion:
 - percussion:
 - deep tendon reflexes.
 - special tests:
 - pathologic reflexes - Adult: Babinski, Chaddock, Oppenheim, Gordon.
 - Pathologic reflexes - Pediatric: Babinski, Chaddock, Oppenheim, Gordon, parachute, startle, grasp, Moro.
 - Romberg.
 - testing of dysdiadochokinesia - alternating motion, rebound sign, etc.
 - testing of dyssynergia - finger to nose, heel to shin, etc.
 - sensory mapping/dermatome.
 - other.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of the neurologic examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate neurologic exam components indicated by patient's chief complaint.
- Performs the neurologic examination in an appropriate period of time.

Goal: Assess and manage the patient's general medical status. **Formulate an appropriate differential diagnosis of the patient's general medical problem(s), which includes diagnoses**

in the following tabular ICD-9 subsections (Please refer to Index A for complete listing of appropriate diagnoses).

Objectives - Knowledge

- Understands the history and physical exam findings that would contribute to the formation of a general medical differential diagnosis that includes diagnoses in the following tabular ICD-9 subsections. (Please refer to Index A.)
 - Infectious and Parasitic Diseases of the Musculoskeletal System (001-139)
 - Neoplasms (140-239)
 - Endocrine, Nutritional, and Metabolic Diseases and Immunity Disorders (240-279)
 - Mental Disorders (290-319)
 - Diseases of the Nervous System and Sense Organs (320-389)
 - Diseases of the Circulatory System (390-459)
 - Diseases of the Genitourinary System (680-686)
 - Diseases of the Skin and Subcutaneous Tissue (687-709)
 - Diseases of the Musculoskeletal System and Connective Tissue (710-739)
 - Congenital Anomalies (740-759)
 - Certain Conditions Originating in the Perinatal Period (760-779)
 - Symptoms, Signs, and Ill-defined Conditions (780-799)
 - Injury and Poisoning (800-999)
- Understands the etiology and contributing factors for any of the diagnoses in Index A that may impact podiatric management.
- Understands the possible course and individual/public health implications for each of the diagnoses listed in Index A.
- Understands the urgency of management for each of the diagnoses listed in Index A.

Objectives - Skills

- Charts most likely diagnosis appropriately as well as other possible diagnoses.
- Reassesses and revises differential diagnosis as indicated during the course of patient evaluation and management.

Goal: Assess and manage the patient's general medical status. Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: **EKG**.

Objectives - Knowledge

- Understands the general principles of EKG testing, including:
 - rhythm strip evaluation.
 - Holter monitoring.
 - event monitoring.
- Understands normal and abnormal findings that may present on the cardiac studies listed.
- Understands the rationale for ordering cardiac studies.

Objectives - Skills

- Recognizes (correctly interprets) the normal or abnormal findings.
- Selection of EKG/cardiac testing fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when EKG/cardiac testing results indicate further history, physical exam, diagnostic studies or consultation.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **plain radiography.**

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.
- Understands the correct technique for plain radiographic views, including:
 - PA and lateral chest xray.
 - skull.
 - upper extremity.
 - KUB.
 - pelvis.
 - mammography.
 - other radiographic contrast studies.
- Understands normal and abnormal findings that may present on plain radiographic views.
- Understands the rationale for ordering the plain radiographic views.
- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when plain film findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Objectives - Skills

- Reads plain radiographic films in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each view.
- Selects appropriate plain film views as indicated by patient's chief complaint.
- Selection of plain film views fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **nuclear medicine imaging.**

Objectives - Knowledge

- Understands the rationale for ordering the following nuclear medicine imaging studies:
 - total body Technetium 99 bone scan, including Ceretec.
 - gallium scan.
 - indium WBC scan.
 - V/Q scan.
 - PET scan (positron emission tomography).
 - SPECT scan (single photon emission computed tomography).

- thallium perfusion scan.
 - other.
- Understands normal and abnormal findings that may present on nuclear medicine imaging studies.
- Correctly interprets the normal or abnormal findings on the nuclear medicine imaging.
- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when nuclear medicine imaging findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Objectives - Skills

- Recognizes the normal or abnormal findings on the nuclear medicine imaging.
- Selects appropriate nuclear medicine imaging as indicated by patient's medical signs and symptoms.
- Selection of nuclear medicine imaging fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **MRI**.

Objectives - Knowledge

- Understands the rationale for ordering MR imaging for non-lower extremity abnormalities, including but not limited to: brain, abdomen, heart and spine.
- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when MR findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Objectives - Skills

- Selection of lumbar spine MR fits the overall management of the patient in terms of appropriateness, evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **CT**.

Objectives - Knowledge

- Understands the rationale for ordering CT imaging for non-lower extremity abnormalities, including but not limited to: head, abdomen, heart and spine.
- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when CT findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **diagnostic ultrasound**.

Objectives - Knowledge

- Understands the rationale for ordering non-lower extremity diagnostic ultrasound including but not limited to: abdominal, cardiac, and pelvic regions.
- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when diagnostic ultrasound findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Assess and manage the patient's general medical status. Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: **other diagnostic studies.**

Objectives - Knowledge

- Understands the rationale for ordering diagnostic tests, other than those listed, that may be utilized in the evaluation of the patient's general medical status, including but not limited to:
 - intake and output (I&Os).
 - EEG.
 - allergy/patch testing.
 - pathology.
 - pulmonary function tests.
 - diagnostic endoscopy.
 - gastrointestinal function tests.
 - cardiac function tests.
 - other.
- Understands normal and abnormal findings referred to in a report or result.
- Recognizes when findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Assess and manage the patient's general medical status. Formulate and implement an appropriate plan of management, when indicated, including: **appropriate therapeutic intervention.**

Objectives - Knowledge

- Understands the indications and contraindications for general therapeutic intervention including:
 - Perioperative medical/surgical management of patients with the following:
 - infectious disease.
 - neoplasms.
 - endocrine/nutritional/metabolic/immune disorders.
 - blood and blood forming organ disorders.
 - mental disorders.
 - nervous system/sense organ disorders.
 - cardiovascular disease.

- respiratory disease.
- digestive disorders.
- genitourinary disorders.
- pregnancy.
- skin and subcutaneous tissue disorders.
- concurrent musculoskeletal disorders.
- polytrauma.
- Inpatient and outpatient medical/surgical management, acute and subacute, of patients with the following:
 - infectious disease.
 - neoplasms.
 - endocrine/nutritional/metabolic/immune disorders.
 - blood and blood forming organ disorders.
 - mental disorders.
 - nervous system/sense organ disorders.
 - cardiovascular disease.
 - respiratory disease.
 - digestive disorders.
 - genitourinary disorders.
 - pregnancy.
 - skin and subcutaneous tissue disorders.
 - concurrent musculoskeletal disorders.
 - polytrauma.
- Basic Life Support (BLS).
- Advanced Cardiac Life Support (ACLS).
- Advanced Trauma Life Support (ATLS).
- Understands the technical aspects of general therapeutic intervention for the entities listed.
- Understands the instrument and material needs for the therapeutic intervention.
- Understands the normal and abnormal interactions between therapeutic modalities.

Objectives - Skills

- Basic Life Support (BLS).
- Advanced Cardiac Life Support (ACLS).
- Advanced Trauma Life Support (ATLS).
- Establishes IV access.
- Performs core surgical skills.
- Orders appropriate perioperative medical care.
- Orders appropriate inpatient medical care.
- Orders appropriate ancillary therapeutic services, including but not limited to: physical and occupational therapy, wound care, chronic pain management, psychosocial services, assistive devices, other.

Goal: Assess and manage the patient's general medical status. Formulate and implement an appropriate plan of management, when indicated, including: **appropriate consultations and/or referrals.**

Objectives - Knowledge

- Recognizes when consultation with another medical specialist is necessary for either diagnosis or management.
- Recognizes when referral to a medical specialist is necessary for either diagnosis or management.
- Understands appropriate written and verbal communication methods in obtaining consultation or referral.
- Interprets consultation report and/or recommendations appropriately.
- Selection of consultation and/or referral fits the overall management of the patient in terms of evaluation or management sequence, timeliness, and cost-effectiveness.
- Recognizes when consultation results indicate further history, physical exam, diagnostic studies, therapeutic intervention or further consultation.

Objectives - Skills

- Utilizes effective written/oral communication skills when requesting consultation or referral.

Goal: Assess and manage the patient's general medical status. Formulate and implement an appropriate plan of management, when indicated, including: **appropriate general medical health promotion and education.**

Objectives - Knowledge

- Understands the indications for general medical health promotion and education, when appropriate, including:
 - disease prevention related to general medical disease states, including but not limited to diabetes mellitus.
 - disease prevention related to substance abuse, including tobacco, alcohol, and illegal substances.
- Understands the natural history of diseases, including etiologic and contributory factors and associated preventive measures.
- Understands the methodologies for communicating health promotion and education (verbal, written, other media).

Objectives - Skills

- Utilizes effective communication skills (verbal, written, other media) in general medical health promotion and education.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Abides by state and federal laws governing the practice of podiatric medicine and surgery.**

Objectives - Knowledge

- Understands DEA regulations.
- Understands Stark regulations.
- Understands individual state practice acts.
- Understands OSHA regulations.

- Understands Americans with Disabilities Act.
- Understands regulations and requirements in the operations of health care organizations in such areas as liability, trade restraint, conflict of interest, privileging, credentialing, certification practices, CME, confidentiality, discrimination, and unionism.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Practices and abides by the principles of informed consent.**

Objectives - Knowledge

- Understands what constitutes informed consent.
- Understands circumstances under which informed consent can or cannot be obtained.
- Understands issues of legal guardianship in relation to informed consent.

Objectives - Skills

- Obtains informed consent.
- Appropriately documents informed consent.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Understand and respects the ethical boundaries of interactions with patients, colleagues and employees.**

Objectives - Knowledge

- Knows how to access resources for ethical problems.
- Aware of parameters of informed consent.
- Understands the principles used to direct ethical decision-making in complex patient care circumstances, including those that may arise at the beginning and end of life.
- Knows how to proceed when a patient refuses a recommended intervention or requests ineffective or harmful treatment.
- Understands the ethical principles that underlie a physician's fiduciary relationship with a patient.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Demonstrates professional humanistic qualities.**

Objectives - Skills

- Demonstrates compassion, sensitivity, and respect in interactions with patients and families.
- Accepts responsibility.
- Demonstrates reliability and leadership.
- Is well organized, punctual, and efficient.
- Embraces self-learning and professional development skills.
- Is aware of one's own limitations of knowledge, experience, and skills.

- Accepts criticism, performs realistic self-assessments, and develops and implements a plan that addresses their personal learning needs.
- Personifies honesty and integrity through one's behaviors.
- Advocates for quality patient care.
- Assists patients in dealing with healthcare system complexities.
- Maintains a sustained commitment to service by accepting inconvenience to meet patients' needs.
- Volunteers one's skills and expertise to advance the welfare of patients and community.
- Behaves with high regard and respect for colleagues, other members of the health care team, and patients and their families.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Demonstrates ability to formulate a methodical and comprehensive treatment plan with appreciation of health care costs.**

Objectives - Knowledge

- Understands appropriate treatment modalities.
- Awareness of the costs of comparative therapies.
- Studies and understands evidence-based practice patterns.
- Studies and understands "best practices" and "preferred provider guidelines".
- Carries over the knowledge performance indicators required in the first section.
- Understands the relative costs of applied diagnostic and therapeutic interventions.

Objectives - Skills

- Uses an evidence-based approach to therapeutic intervention.
- Derives a treatment plan based upon a thorough history, physical examination, and appropriate diagnostic tests.
- Adheres to the principle "above all else, do no harm" in formulating and applying a treatment plan.
- Uses a treatment approach that logically progresses from less interventional (conservative) to more interventional (surgical) when applicable.
- Uses a treatment approach that considers cost-to-benefit and chooses the least costly, most effective therapeutic approach when applicable.
- Uses a comprehensive treatment approach that responds to the etiologic factors as well as resultant pathology when applicable.

Goal: Demonstrate the ability to communicate effectively and function in a multi-disciplinary setting. **Communicate in oral and written form with patients, colleagues, payers and the public.**

Objectives - Skills

- Teaches effectively to ensure patient and family understand rationale for management plan, expected outcomes, and potential problems.
- Utilizes effective methods to modify behavior and enhance compliance.
- Involves patient and family in coordinating decisions.
- Patiently reinforces learning for patients and family.

- Creates and sustains therapeutic relationships with patients.
- Demonstrates attentiveness, active listening, and good interviewing skills.
- Obtains essential data for decision analysis.
- Provides the opportunity for participants to request, provide, and receive information.
- Asks questions and provides information using language that is understandable.
- Learns and applies strategies for dealing with individuals who present significant communication challenges such as domination, anger, confusion, or an ethno-cultural background different than one's own.
- Effectively facilitates conflict resolution.
- Is collegial in interpersonal relationships with colleagues.
- Discusses pertinent aspects of patient's condition with consultant.
- Demonstrates caring and respectful behavior when interacting with patients.
- Recognizes and responds appropriately to nonverbal communication.
- Negotiates a mutually agreed upon treatment plan.
- Communicates with clerical staff and nursing staff in a manner that fosters mutual respect and facilitates an effectively run practice.
- Communicates with colleagues and other professionals on the health care team in a manner that fosters mutual respect and facilitates the effective handling of patient care issues.
- Effectively communicates by telephonic and electronic means.

Goal: Demonstrate the ability to communicate effectively and function in a multidisciplinary setting. **Is able to partner with health care managers and health care providers to assess, coordinate and improve health care.**

Objectives - Knowledge

- Understands the areas of expertise or other health care providers.
- Knows efficient methods to coordinate care among disciplines.

Objectives - Skills

- Distinguishes when it is appropriate to refer to other health care providers.
- Communicates and collaborates effectively with other members of the health care team.
- Refers efficiently for consultations, diagnostic tests, procedures, and therapeutic intervention.
- Facilitates team approach to develop and implement a preventative/therapeutic plan.
- Recognizes team members' areas of expertise and shows respect for the opinions and roles of individual team members, both physicians and non-physicians.
- Participates in the team's task by contributing one's own expertise, eliciting information, and providing feedback.

Goal: Demonstrate the ability to communicate effectively and function in a multidisciplinary setting. **Maintains appropriate medical records.**

Objectives - Knowledge

- Understands medical record components to include face sheet, history and physical, admit note, progress note, operative note, operative report, and discharge summary.
- Understands appropriate documentation for reporting adverse occurrences.
- Understands advanced directives and power of attorney issues.

Objectives - Skills

- Completes medical record components (see didactic indicators) in appropriate format and detail.
- Completes medical record components in a timely fashion.
- Updates the medical problem list and medication list at each visit.

Goal: Has the capacity to manage individuals and populations in a variety of socioeconomic and health care settings. **Advocates for quality patient care and assists patients in dealing with system complexities.**

Objectives - Knowledge

- Understands the interactions and roles of all players in healthcare delivery.
- Understands mechanisms for addressing resource and care delivery issues.

Objectives - Skills

- Places a priority on quality patient care above all else.
- Assists patients in addressing resource and health care delivery issues.

Goal: Has the capacity to manage a podiatric practice in a multitude of health care delivery settings. **Demonstrate familiarity with utilization management and quality improvement.**

Objectives - Knowledge

- Knows the process of cost-benefit analysis.
- Understand the use of comparative data to measure variation in practice and thus identify best practices.
- Understands the methodology of quality improvement and utilization management.
- Know how to measure patient satisfaction.
- Know the methods used to develop practice guidelines and critical pathways and how physicians use them in the management of disease.
- Know the respective roles of the regulatory agencies involved in maintaining quality of medical care, including JCAHO, NCQA, HCFA and state health care councils.
- Knows the methodology of outcomes measurement.

Goal: Has the capacity to manage a podiatric practice in a multitude of health care delivery settings. **Understands health care reimbursement.**

Objectives - Knowledge

- Knows the basic systems of payment, including indemnity plans, managed indemnity plans, and capitation.
- Knows the principal types of payers and their methodologies for healthcare reimbursement, including Medicare, Medicaid, B+/BS, worker's compensation, insurance companies (both for-profit and not-for-profit).
- Knowledge of diagnostic (ICD) and procedural (CPT) codes.

Objectives - Skills

- Utilizes diagnostic and procedural codes effectively.

Goal: Has the capacity to manage a podiatric practice in a multitude of health care delivery settings. **Understands medical-legal considerations involving health care delivery.**

Objectives - Knowledge

- Knows how to inform patients and obtain voluntary consent for a plan of medical care and specific diagnostic and therapeutic interventions.
- Understands the legal basis of the physician-patient relationship.
- Understands the concepts of standards of care.
- Understands how to identify the appropriate alternate decision maker when a patient lacks satisfactory decision-making abilities.
- Understands medical malpractice issues, including available carriers, types of coverage, how to respond to a claim of malpractice, limits of coverage, insurance tails, and national database.

Goal: Has the capacity to manage a podiatric practice in a multitude of health care delivery settings. **Demonstrate understanding of common business practices.**

Objectives - Knowledge

- Understands components and process of establishing an employee handbook.
- Understands components and process of creating a business plan.
- Know how the forms of medical practice differ from one another, including solo practice, group practice, preferred provider organizations, independent practice associations, or HMOs.
- Knows the basic business skills important to effective patient care, including accounting, personnel management, insurance billing, evaluating contracts, reading financial statements and using basic spreadsheet and databases.
- Understands legal and financial issues pertaining to employment contracts, practice associations and partnerships, purchasing a practice and establishing a practice.

Objectives - Skills

- Utilizes legal and business professional resources for all pertinent practice decisions.

Goal: Be professionally inquisitive, lifelong learners and teachers utilizing research, scholarly activity and information technologies to enhance professional knowledge and clinical practice.
Reads, interprets, critically examines, and presents medical and scientific literature.

Objectives - Knowledge

- Understands the designs most commonly used in medical research.
- Understands the basic concepts underlying inferential statistics.

Objectives - Skills

- Applies research design and statistical techniques to the critical analysis of research.
- Regularly reviews, either individually or in group journal club participation, the scientific literature to enhance professional knowledge and patient care.

Goal: Be professionally inquisitive, lifelong learners and teachers utilizing research, scholarly activity and information technologies to enhance professional knowledge and clinical practice.
Designs, collects, interprets data and presents the findings in a formal study related to podiatric medicine and surgery.

Objectives - Knowledge

- Understands designs most commonly used in medical research proposals e.g., abstract, protocol, objectives, review in literature, methods, recruitment and resources, funding and references.
- Understands the basic concepts underlying inferential statistics.
- Understands basic institutional review board (IRB) policies and regulations with special emphasis on protection of human subjects, informed consent of human subjects and issues of confidentiality.
- Understands the various regulatory agencies associated with medical research and development, including:
 - National Institute of Health (NIH).
 - Department of Health and Human Services (DHHS).
 - Office for the Protection of Research Risks (OPRR).
 - Office of Research Compliance and Assurance (ORCA).
- Understands designs most commonly used in medical research proposals, e.g., abstract, protocol, objectives, review in literature, methods, recruitment and resources, funding and references.
- Understands the basic concepts underlying inferential statistics.
- Understands basic institutional review board (IRB) policies and regulations with special emphasis on protection of human subjects, informed consent of human subjects, and issues of confidentiality.
- Understands principles for consideration in balancing legally allowable and ethical issues that may arise in medical research involving human subjects.
References:
 - The Nuremberg Code.
 - The Declaration of Helsinki.
 - The Belmont Report.

- Understands medical associations relative to ethical issues in medical research involving human subjects, including:
 - Public Responsibility in Medicine and Research (PRIM+R).
 - Applied Research Ethics National Association (ARENA).

Objectives - Skills

- Completes a formal study in the form of either clinical study, basic science study, or outcome study.
- Prepares a study in publishable form.

Goal: Be professionally inquisitive, lifelong learners and teachers utilizing research, scholarly activity and information technologies to enhance professional knowledge and clinical practice.

Demonstrates information technology (IT) skills in learning, teaching, and clinical practice.

Objectives - Knowledge

- Know what databases and information sources are available that report results on diagnosis, treatment effectiveness, prognosis, and prevention.
- Can efficiently search and locate relevant information from computer-based sources.
- Understands the essential aspects of file organization, information storage, and the basic issues related to computer and copyright law.

Objectives - Skills

- Demonstrates basic keyboarding and Internet access skills.
- Uses word processing, spreadsheet, database, desktop publishing, and desktop presentation packages and adapts these tools for medical use.
- Identifies, evaluates, selects, and appropriately uses electronic sources of medical information.
- Identifies, evaluates, selects, and appropriately uses computer-based resources for patient education.
- Makes informed decisions regarding the purchase and use of computer equipment and software, including patient-care related services.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **hematology**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal hematologic values, including:
 - hemoglobin.
 - hematocrit.
 - CBC.
 - differential.
 - platelet count.
 - reticulocyte count.

- Westergren sedimentation rate.
 - CD4/CD8.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for each hematology test.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **serology/immunology**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal serology/immunology values, including:
 - RPR.
 - VDRL.
 - HIV screen.
 - Mono screen.
 - serum pregnancy.
 - ANA.
 - rheumatoid factor.
 - blood group, Rh.
 - antibody screen.
 - direct Coombs.
 - Hepatitis A IgM (acute).
 - Hepatitis A IgG (immunity).
 - Hepatitis B Surface Antigen.
 - Hepatitis B Core Antibody.
 - Hepatitis B Surface Antibody.
 - Hepatitis C Antibody.
 - Rubella.
 - Rubeola.
 - Varicella.
 - CMV.
 - H. pylori.
 - Mumps.
 - Toxoplasma.
 - Lyme.
 - Cryoglobulins.

- HLA B27.
- C reactive protein.
- serum complement.
- other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for each serology/immunology test.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation or repeat/serial analysis.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **blood chemistries**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal blood chemistry values, including:
 - sodium.
 - potassium.
 - chloride.
 - carbon dioxide.
 - magnesium.
 - creatinine.
 - BUN.
 - blood glucose (random and fasting).
 - hemoglobin A1C.
 - fructosamine.
 - calcium.
 - phosphorous.
 - uric acid.
 - total bilirubin.
 - serum protein electrophoresis.
 - ferritin.
 - iron.
 - total iron binding capacity.
 - hemoglobin electrophoresis.
 - T4 / FTI.
 - TSH.
 - alkaline phosphatase.
 - AST (SGOT).
 - ALT (SGPT).

- albumin.
 - PSA.
 - acid phosphatase.
 - creatine kinase (CK or CPK).
 - CKMB - cardiac.
 - amylase.
 - cholesterol.
 - HDL.
 - LDL.
 - triglycerides.
 - acetone.
 - vitamin B12.
 - folate.
 - ACTH challenge.
 - cortisol.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for blood chemistry tests.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **toxicology/drug screens.**

Objectives - Knowledge

- Understands normal and abnormal toxicology and drug screen findings and values, including:
 - vancomycin.
 - gentamicin.
 - theophylline.
 - phenytoin.
 - carbamazepine.
 - digoxin.
 - lithium.
 - valproic acid.
 - acetaminophen.
 - salicylate.
 - lead.
 - alcohol.
 - anabolic steroids.

- barbiturates.
 - narcotics.
 - sedative-hypnotics.
 - cocaine.
 - other illicit drugs.
- Understands the rationale for ordering the tests listed in the section above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands the correct technique for venipuncture and specimen storage and processing.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **coagulation studies.**

Objectives - Knowledge

- Understands normal and abnormal coagulation study values, including:
 - prothrombin time.
 - INR.
 - activated PTT.
 - bleeding time.
 - fibrinogen.
 - fibrin split products.
- Understands the rationale for ordering the tests listed above.
-
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands the correct technique for venipuncture and specimen storage and processing.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.

- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **blood gases**.

Objectives - Knowledge

- Understands normal and abnormal blood gas values, including:
 - arterial P O₂.
 - arterial pH.
 - arterial P CO₂.
 - bicarbonate.
- Understands the rationale for ordering the tests listed above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands appropriate method for collection and processing of arterial blood gases.

Objectives - Skills

- Appropriately procures arterial blood gas specimen.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **microbiology**.

Objectives - Knowledge

- Understands the technique for performing:
 - gram stain.
 - KOH prep.
 - aerobic cultures.
 - anaerobic cultures.
 - fungal cultures.
 - acid-fast (mycobacterial) cultures.
 - GC cultures.
 - other.
- Can correctly interpret the results of the test listed in section above.
- Understands the correct technique for obtaining specimens and specimen storage and processing, including:
 - arthrocentesis.
 - tissue biopsy (nails, soft tissue, bone).
 - swabs or aspirants.

- blood cultures.
 - stool cultures.
 - CSF cultures.
 - urine cultures.
 - sputum cultures.
- Understands the rationale for selecting specimen procurement methods listed in section above.
- Understands laboratory processing of the specimens, including:
 - the identification of organisms.
 - the determination of organism sensitivities by Kirby-Bauer disc diffusion.
 - the determination of organism sensitivities to antimicrobials by minimal inhibitory concentrations.
 - the determination of organism sensitivities to antimicrobials by minimal bacteriocidal concentrations.
 - serum bacteriocidal levels.
- Differentiates normal flora from pathogenic microbes.
- Understands the common pathogens associated with specific infectious disease states (e.g., postoperative, diabetic fetid foot, etc.).
- Identifies antimicrobial resistance, based upon sensitivity results.
- Understands the rationale for ordering HIV screening.

Objectives - Skills

- Appropriately performs and reads a gram stain and a KOH prep.
- Obtains specimens using appropriate techniques, as listed in the section above.
- Choice of specimen collection method is appropriate for the patient's type and location of suspected infection.
- Correctly interprets the results of cultures and sensitivities.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **synovial fluid analysis.**

Objectives - Knowledge

- Understands the correct technique for arthrocentesis.
- Understands the correct technique for specimen storage and processing.
- Understands the various tests that can be performed on synovial fluid, including:
 - volume.
 - general appearance.
 - viscosity.
 - cells / WBCs / neutrophils.
 - crystals.
 - Mucin clot.
 - Fibrin clot.
 - pH.

- gram stain.
 - culture and sensitivity.
 - glucose.
 - protein.
- Understands normal and abnormal values for the tests listed in section above.
- Understands the rationale for selecting the tests listed in the section above.

Objectives - Skills

- Utilizes the correct technique for performing an arthrocentesis.
- Recognizes (correctly interprets) the normal or abnormal test values for each test in section above.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **urinalysis**.

Objectives - Knowledge

- Understands normal and abnormal urinalysis findings and values, including:
 - appearance/odor.
 - dipstick analysis.
 - microscopic analysis.
 - urine pregnancy.
 - urine microalbumin.
 - 24-hour creatinine clearance.
 - 24-hour uric acid.
 - myoglobins.
- Understands the rationale for ordering the tests listed in the section above.
- Correctly interprets the normal and abnormal test findings/values for each test listed in the section above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands appropriate methods for collection of specimens.

Objectives - Skills

- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Objectives - Attitudes

- Accepts criticism constructively.
- Acts as a patient advocate, involving the patient/family in the decision-making process.
- Communicates effectively with the patient/family, recognizing their concern for safety, comfort, and medical necessity.
- Provides high quality, comprehensive care in an ethical manner.
- Demonstrates moral and ethical conduct.
- Respects and adapts to cultural differences.
- Establishes trust and rapport with patients and peers.
- Demonstrates primary concern for patient's welfare and well-being.
- Functions appropriately in a multidisciplinary setting, using good communication skills.
- Demonstrates responsible, reliable, punctual, cooperative behavior, and maintains records in a timely manner.

Competencies

Rotation: Podiatric Clinic Office

Objectives - Knowledge

Objectives - Skills

- Recognizes level of patient understanding of illness, the rationale for the management plan, expected outcomes, and potential economic and social problems.
- Seeks the appropriate alternative decision maker when a patient lacks satisfactory decision-making abilities.
- Knows how to proceed when a patient refuses a recommended intervention or requests ineffective or harmful treatment.
- Knows how to determine when a treatment has failed or succeeded and when to change.
- Applies principles of age-specific diagnostics and therapeutics.
- Is aware of how one's own cultural values, assumptions, and beliefs affect patient care and clinical decision-making.
- Demonstrates sensitivity and respect when interacting with individuals whose culture is different from our own.
- Exhibits a willingness and tendency to learn and apply culture-specific knowledge to the care of patients.
- Advocates for quality patient care and assists patients in dealing with system complexities.
- Facilitates cultural sensitization for office/clinic staff.
- Understands all cultural systems are sources of beliefs about health, recognition of symptoms, communication about symptoms, and treatment.
- Uses the assistance of family members, translators/interpreters, and other community resources and advocacy groups.
- Conducts history, physical examination, and diagnostic and therapeutic interventions in a culturally sensitive manner.
- Provides health care services aimed at preventing health problems or maintaining health.
- Applies basic and clinically supportive sciences which are appropriate to their discipline.
- Analyzes the sociocultural dimension of one's own practice site and the implications for practice management.
- Incorporates the principles and practices of health maintenance into each patient encounter where appropriate.
- Obtains data about the community in which one works pertaining to the population/community's demographics, culture, and epidemiology of major health problems.
- Applies clinical decision analysis including identifying alternative actions and possible outcomes, developing a decision tree, and assigning probabilities to outcomes.

- Demonstrates awareness of sociocultural risk factors and interventions that can be used to modify these risk factors.
- Demonstrates awareness of cultural problems having high mortality and morbidity rates.
- Demonstrates awareness of cultural problems relating to the nation's health promotion and disease prevention objectives.
- Recognizes the role of continuing medical education in the maintenance of competency.
- Chooses continuing medical education activities based on personal needs and deficiencies.
- Fulfills hospital, state, and certifying board continuing medical education requirements.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **problem-focused history.**

Objectives - Knowledge

- Understands the logical organization of a problem-focused history to include:
 - chief complaint.
 - history of chief complaint (history of present illness).
 - past medical history including:
 - illnesses.
 - medications.
 - allergies.
 - past surgical history.
 - hospitalizations.
 - social history.
 - family history.
 - review of systems.
- Understands the details to be asked in obtaining a history of chief complaint (NLDOCATS), past medical history, social history, family history, and review of systems.

Objectives - Skills

- Obtains a problem-focused history using logical organization.
- Obtains a problem-focused history in appropriate period of time.
- Obtains a problem-focused history in adequate detail.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **neurologic examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of a problem-focused neurologic examination:
 - sensory evaluation, including; gross epicritic sensations (light touch, sharp/dull, vibratory, and hot/cold), Semmes-Weinstein monofilament testing, and two-point discrimination testing.
 - reflex evaluation, including: patellar and Achilles reflexes, pathologic reflexes (Babinski, Chaddock, Oppenheim, and Gordon tests), and primitive reflexes.
 - specific muscle testing.
 - evaluation of coordination (stance and gait), including tests of cerebellar function (see also musculoskeletal examination).
 - other clinical tests.
 - nerve palpation and percussion (Tinel's, Valleix's).
- Understands the normal and abnormal findings for each of the neurologic exam components.
- Understands the rationale for performing each of the neurologic exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of a problem-focused neurologic examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the neurologic exam components when performed upon a patient.
- Utilizes appropriate neurologic exam components indicated by patient's chief complaint.
- Performs the problem-focused neurologic exam in an appropriate period of time.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **vascular examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of a problem-focused vascular examination:
 - palpation of abdominal aorta, femoral, popliteal, and pedal (posterior tibial and dorsalis pedis) pulses.
 - auscultation of the arterial tree from abdominal aorta to popliteal artery.
 - observation of capillary (subpapillary venous plexus) filling time and venous filling time.
 - observation for pallor on elevation/dependent rubor.
 - observation for secondary skin changes of vascular disease, including temperature, turgor, color, hair distribution, texture, and the presence of ischemic, vasculitic, or varicose ulcers.
 - observation for varicosities.
 - examination for superficial and deep venous thrombophlebitis, including:
 - Homan's test.
 - palpation of inguinal and popliteal lymph nodes.

- observation of lymphangitis and cellulitis.
 - observation of level/distribution, severity, and density of peripheral edema.
- Understands the normal and abnormal findings for each of the vascular exam components.
- Understands the rationale for performing each of the vascular exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of a problem-focused vascular examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the vascular exam components when performed upon a patient.
- Utilizes appropriate vascular exam components indicated by patient's chief complaint.
- Performs the problem-focused vascular exam in an appropriate period of time.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **dermatologic examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of a problem-focused dermatologic examination:
 - observation of skin tone, color, texture, moisture, temperature, turgor, and integrity.
 - observation of hair distribution.
 - observation of nail shape, color, thickness, orientation, and integrity.
 - observation of characteristics (qualitative and quantitative) of potential neoplastic skin changes.
 - observation of characteristics (qualitative and quantitative) of potential ulcerative skin changes.
 - observation of qualities and characteristics of potential infectious (viral, bacterial, fungal) skin changes.
 - observation of qualities and characteristics of skin changes associated with metabolic/systemic diseases.
 - observation of qualities and characteristics of skin changes associated with trauma.
 - observation of qualities and characteristics of primary skin disorders.
- Understands the normal and abnormal findings for each of the dermatologic exam components.
- Understands the rationale for performing each of the dermatologic exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of a problem-focused dermatologic examination.

- Recognizes (correctly interprets) the normal or abnormal findings of each of the dermatologic exam components when performed upon a patient.
- Utilizes appropriate dermatologic exam components indicated by patient's chief complaint.
- Performs the problem-focused dermatologic exam in an appropriate period of time.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **musculoskeletal examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of a problem-focused musculoskeletal examination:
 - Qualitative and/or quantitative evaluation of positional/structural alignment, including:
 - spine.
 - limb length.
 - pelvis.
 - hip.
 - femur.
 - knee.
 - tibia.
 - ankle.
 - hindfoot.
 - midfoot.
 - resting calcaneal stance position.
 - forefoot to rearfoot alignment.
 - forefoot - rays, MTPJs, toes.
 - Qualitative determination of range, axis, and quality of motion of the following joints:
 - hip.
 - knee.
 - ankle.
 - subtalar.
 - midtarsal (long and oblique axis).
 - first ray.
 - fifth ray.
 - metatarsophalangeal.
 - interphalangeal.
 - Quantitative measurement of range of motion of the following joints:
 - hip.
 - knee.
 - ankle.
 - subtalar.
 - first ray.
 - fifth ray.
 - metatarsophalangeal.

- Understands characteristics of normal and abnormal gait, including alignment, coordination, cadence, compensation, and phasic muscle activity.
- Understands characteristics of and differentiates abnormal gait patterns including, but not limited to:
 - Trendelenberg gait.
 - steppage gait / dropfoot.
 - scissors gait (bilateral spastic paresis).
 - spastic hemiparesis/other spastic gait forms.
 - sensory ataxia.
 - cerebellar ataxia.
 - Parkinsonism.
 - other gait forms.
- Palpation of musculoskeletal structures, including specific bone, tendon, and joint landmarks.
- Special tests including:
 - heel raise test.
 - Coleman block or book test.
 - Simmond's test.
 - Hubscher maneuver.
 - provocation tests for intermetatarsal neuroma (Mulder's sign).
 - Kelikian push-up test.
 - dynamic tests of strength (heel walking, toe walking).
 - evaluation of hip derangement:
 - hip dislocatability tests.
 - Ortollani's sign.
 - Anchor sign.
 - Barlow's sign.
 - Galeazzi's sign.
 - telescoping.
 - straight leg raise test.
 - Braggard's test.
 - Faber (Patrick) test.
 - femoral stretch test (Ely test).
 - Adams test
 - Trendelenberg test.
 - Ober test.
 - Thomas test.
 - LaSeagues test.
 - modified LaSeagues test.
 - FLIP test (seated LaSeagues).
 - Neri's bowing.
 - Bowstring sign.
 - Kempfi's test.
 - Piriformis stretch.
 - Nachlas prone test.
 - Yeoman's test.
 - Gaenslen's test.
- evaluation of internal knee derangement:
 - collateral stress test (varus/valgus).
 - Lachman stress test (anterior).

- patellar tracking test/Q angle.
- McMurray test.
- Apley's test.
- Clark's test.
- femoral grinding test.
- evaluation of ankle derangement:
 - cotton test.
 - squeeze test.
 - talar tilt test.
 - anterior drawer test.
 - Silverskiold test.

- Understands the normal and abnormal findings for each of the musculoskeletal exam components.
- Understands the rationale for performing each of the musculoskeletal exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of a problem-focused musculoskeletal examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the musculoskeletal exam components when performed upon a patient.
- Utilizes appropriate musculoskeletal exam components indicated by patient's chief complaint.
- Performs the problem-focused musculoskeletal exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **plain radiography.**

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.
- Understands the correct technique for both weight-bearing and non-weight-bearing plain radiographic views, including:
 - the infant foot:
 - AP view.
 - lateral view.
 - oblique view(s).
 - club foot - Kite method.
 - the foot:
 - AP view.
 - oblique view:
 - medial oblique view.
 - lateral oblique view.
 - lateral view.
 - phalangeal view.
 - oblique phalangeal view.
 - lateral phalangeal view.
 - axial calcaneal view.
 - lateral calcaneal view.

- Harris and Beath projection.
 - specialized subtalar joint views (trauma):
 - Isherwood.
 - Broden's.
 - axial sesamoid view.
 - axial forefoot view.
- the ankle:
 - AP view.
 - AP mortise view.
 - oblique view (45').
 - lateral view.
- the leg:
 - AP view.
 - oblique view.
 - lateral view.
- the knee:
 - AP view.
 - oblique view.
 - lateral view.
- the knee - intercondylar fossa:
 - PA axial.
- patella and patellofemoral joint:
 - PA view.
 - lateral.
 - tangential - Merchant method.
 - tangential - inferosuperior projection.
 - oblique.
- the femur:
 - AP view.
 - lateral.
- the hip:
 - AP - pelvis.
 - AP - hip.
 - unilateral frog leg.
 - axiolateral view.
 - the pediatric hip:
 - AP view.
 - lateral (bilateral frog-leg position).
- the pelvis:
 - AP view.
 - AP bilateral frog leg.
 - AP axial view.
 - anterior oblique view.
- the sacroiliac joints:
 - AP pelvis view.
 - oblique view.
- the sacrum and coccyx:
 - AP axial sacrum.
 - AP axial coccyx.
 - lateral sacrum.
 - lateral coccyx.

- the scoliosis and spinal fusion series:
 - PA or AP view.
 - erect lateral view.
 - R and L bending views.
 - lateral - hyperextension and flexion views.
- the spine:
 - lumbar spine:
 - AP or PA view.
 - oblique view.
 - lateral view.
 - AP axial view.
 - thoracic spine:
 - AP view.
 - lateral view.
 - oblique view.
 - cervical spine:
 - AP view.
 - AP/open mouth view.
 - lateral.
 - oblique (anterior and posterior).
 - swimmer's lateral view.
 - lateral view (flexion and extension).
 - AP "chewing" view.
 - AP dens view.
 - PA dens view.
- scanogram/limb length measurement views.
- Understands normal and abnormal findings that may present on plain radiographic views.
- Understands the rationale for ordering plain radiographic views.

Objectives - Skills

- Utilizes the correct technique for performing each of the plain radiographic views.
- Reads plain radiographic films in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each plain radiographic view.
- Selects appropriate plain film views as indicated by patient's chief complaint.
- Selection of plain film views fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when plain film findings indicate further history, physical exam, diagnostic studies, or consultation.
- Performs the exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **radiographic contrast studies.**

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.

- Understands the pharmacology of various available radiographic contrast materials.
- Understands the contraindications of and co-morbidity factors for various available radiographic contrast materials.
- Understands the correct technique for radiographic contrast studies, including:
 - arthrography.
 - tenography.
 - sinography.
 - bursography.
 - contrast-enhanced CT.
 - contrast-enhanced MRI.
- Understands normal and abnormal findings that may present on radiographic contrast studies.
- Understands the rationale for ordering radiographic contrast studies.

Objectives - Skills

- Utilizes the correct technique for performing each of the radiographic contrast studies.
- Reads radiographic contrast study films in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each radiographic contrast study.
- Selects appropriate radiographic contrast study indicated by patient's chief complaint.
- Selection of radiographic contrast study fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when radiographic contrast study findings indicate further history, physical exam, diagnostic studies, or consultation.
- Performs the exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **stress radiography.**

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.
- Understands the correct technique for stress radiography, including:
 - manual ankle anterior drawer technique.
 - manual ankle varus/valgus stress technique.
 - stress ankle plantarflexion and dorsiflexion technique.
 - Lisfranc's joint stress technique.
 - mechanical stress devices (Telos) and techniques.
 - ankle syndesmotomic stress technique.
 - other lower extremity stress techniques.
- Understands normal and abnormal findings that may present on stress radiography tests.
- Understands the rationale for ordering stress radiography tests.

Objectives - Skills

- Utilizes the correct technique for performing each of the stress radiography studies.
- Reads stress radiograph films in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each stress radiography study.
- Selects appropriate stress radiography test indicated by patient's chief complaint.
- Selection of stress radiography tests fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when stress radiography test findings indicate further history, physical exam, diagnostic studies, or consultation.
- Performs the exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **fluoroscopy**.

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.
- Understands the correct technique for fluoroscopy, including:
 - static.
 - dynamic (real time).
- Understands normal and abnormal findings that may present on fluoroscopy.
- Understands the rationale for performing fluoroscopy.

Objectives - Skills

- Utilizes the correct technique for performing fluoroscopy.
- Reads/evaluates dynamic and static fluoroscopic images in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on fluoroscopy.
- Selection of fluoroscopy is indicated by patient's chief complaint.
- Selection of fluoroscopy fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when fluoroscopy findings indicate further history, physical exam, diagnostic studies, or consultation.
- Performs the exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **nuclear medicine imaging**.

Objectives - Knowledge

- Understands the general technical aspects of nuclear medicine imaging studies, including:
 - Technetium 99 bone scan (three-phase/four-phase).
 - HMPAO scan (Ceretek).
 - Gallium scan.
 - Indium WBC scan.

- Understands normal and abnormal findings that may present on the nuclear medicine imaging.
- Understands the rationale for ordering nuclear medicine imaging.

Objectives - Skills

- Reads nuclear medicine imaging in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on the nuclear medicine imaging.
- Selects appropriate nuclear medicine imaging as indicated by patient's chief complaint.
- Selection of nuclear medicine imaging fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when nuclear medicine imaging findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **MRI**.

Objectives - Knowledge

- Understands the general technical aspects of MR imaging studies, including:
 - pulse sequences and their effects on image.
 - contrast techniques.
 - slice thickness.
 - contraindications.
 - available vs. appropriate planes of imaging.
- Understands normal and abnormal findings that may present on MR imaging, including normal sectional anatomy.
- Understands the rationale for ordering MR imaging.

Objectives - Skills

- Reads MRI imaging studies in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on MR imaging.
- Selection of MR imaging is indicated by patient's chief complaint.
- Selection of MR imaging fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when MR imaging findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **CT**.

Objectives - Knowledge

- Understands the general technical aspects of CT imaging studies, including:
 - slice thickness.
 - available vs. appropriate planes of imaging.

- three-dimensional CT reconstruction.
- Understands normal and abnormal findings that may present on CT imaging, including normal sectional anatomy.
- Understands the rationale for ordering CT imaging.

Objectives - Skills

- Reads CT scan in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on CT imaging.
- Selection of CT imaging is indicated by patient's chief complaint.
- Selection of CT imaging fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when CT imaging findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **diagnostic ultrasound.**

Objectives - Knowledge

- Understands the general technical aspects of diagnostic ultrasound studies, including:
 - duplex ultrasound (DVT).
 - soft tissue ultrasound (tendon pathology, foreign body).
- Understands normal and abnormal findings that may present on diagnostic ultrasound.
- Understands the rationale for ordering diagnostic ultrasound.

Objectives - Skills

- Reads static and/or dynamic ultrasound study in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on diagnostic ultrasound.
- Selection of diagnostic ultrasound is indicated by patient's chief complaint.
- Selection of diagnostic ultrasound fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when diagnostic ultrasound findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **vascular imaging.**

Objectives - Knowledge

- Understands the pharmacology of various available radiographic contrast materials.
- Understands the contraindications of and co-morbidity factors for various available radiographic contrast materials.

- Understands the correct technique for vascular imaging studies, including:
 - contrast arteriography.
 - contrast venography.
 - MRI angiography.
 - digital subtraction angiography.
- Understands normal and abnormal findings that may present on the vascular imaging studies.
- Understands the rationale for ordering the vascular imaging studies.

Objectives - Skills

- Reads vascular imaging studies in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each vascular imaging study.
- Selects appropriate vascular imaging study indicated by patient's chief complaint and clinical presentation.
- Selection of vascular imaging study fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when vascular imaging study findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **hematology**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal hematologic values, including:
 - hemoglobin.
 - hematocrit.
 - CBC.
 - differential.
 - platelet count.
 - reticulocyte count.
 - Westergren sedimentation rate.
 - CD4/CD8.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for each hematology test.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **serology/immunology.**

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal serology/immunology values, including:
 - RPR.
 - VDRL.
 - HIV screen.
 - Mono screen.
 - serum pregnancy.
 - ANA.
 - rheumatoid factor.
 - blood group, Rh.
 - antibody screen.
 - direct Coombs.
 - Hepatitis A IgM (acute).
 - Hepatitis A IgG (immunity).
 - Hepatitis B Surface Antigen.
 - Hepatitis B Core Antibody.
 - Hepatitis B Surface Antibody.
 - Hepatitis C Antibody.
 - Rubella.
 - Rubeola.
 - Varicella.
 - CMV.
 - H. pylori.
 - Mumps.
 - Toxoplasma.
 - Lyme.
 - Cryoglobulins.
 - HLA B27.
 - C reactive protein.
 - serum complement.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for each serology/immunology test.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation or repeat/serial analysis.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **blood chemistries.**

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal blood chemistry values, including:
 - sodium.
 - potassium.
 - chloride.
 - carbon dioxide.
 - magnesium.
 - creatinine.
 - BUN.
 - blood glucose (random and fasting).
 - hemoglobin A1C.
 - fructosamine.
 - calcium.
 - phosphorous.
 - uric acid.
 - total bilirubin.
 - serum protein electrophoresis.
 - ferritin.
 - iron.
 - total iron binding capacity.
 - hemoglobin electrophoresis.
 - T4 / FTI.
 - TSH.
 - alkaline phosphatase.
 - AST (SGOT).
 - ALT (SGPT).
 - albumin.
 - PSA.
 - acid phosphatase.
 - creatine kinase (CK or CPK).
 - CKMB - cardiac.
 - amylase.
 - cholesterol.
 - HDL.
 - LDL.
 - triglycerides.
 - acetone.
 - vitamin B12.
 - folate.
 - ACTH challenge.
 - cortisol.
 - other.

- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for blood chemistry tests.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **toxicology/drug screens.**

Objectives - Knowledge

- Understands normal and abnormal toxicology and drug screen findings and values, including:
 - vancomycin.
 - gentamicin.
 - theophylline.
 - phenytoin.
 - carbamazepine.
 - digoxin.
 - lithium.
 - valproic acid.
 - acetaminophen.
 - salicylate.
 - lead.
 - alcohol.
 - anabolic steroids.
 - barbiturates.
 - narcotics.
 - sedative-hypnotics.
 - cocaine.
 - other illicit drugs.
- Understands the rationale for ordering the tests listed in the section above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands the correct technique for venipuncture and specimen storage and processing

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.

- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **coagulation studies.**

Objectives - Knowledge

- Understands normal and abnormal coagulation study values, including:
 - prothrombin time.
 - INR.
 - activated PTT.
 - bleeding time.
 - fibrinogen.
 - fibrin split products.
- Understands the rationale for ordering the tests listed above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands the correct technique for venipuncture and specimen storage and processing.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **blood gases.**

Objectives - Knowledge

- Understands normal and abnormal blood gas values, including:
 - arterial P O₂.
 - arterial pH.
 - arterial P CO₂.
 - bicarbonate.
- Understands the rationale for ordering the tests listed above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

- Understands appropriate method for collection and processing of arterial blood gases.

Objectives - Skills

- Appropriately procures arterial blood gas specimen.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **microbiology.**

Objectives - Knowledge

- Understands the technique for performing:
 - gram stain.
 - KOH prep.
 - aerobic cultures.
 - anaerobic cultures.
 - fungal cultures.
 - acid-fast (mycobacterial) cultures.
 - GC cultures.
 - other.
- Can correctly interpret the results of the test listed in section above.
- Understands the correct technique for obtaining specimens and specimen storage and processing, including:
 - arthrocentesis.
 - tissue biopsy (nails, soft tissue, bone).
 - swabs or aspirants.
 - blood cultures.
 - stool cultures.
 - CSF cultures.
 - urine cultures.
 - sputum cultures.
- Understands the rationale for selecting specimen procurement methods listed in section above.
- Understands laboratory processing of the specimens, including:
 - the identification of organisms.
 - the determination of organism sensitivities by Kirby-Bauer disc diffusion.
 - the determination of organism sensitivities to antimicrobials by minimal inhibitory concentrations.
 - the determination of organism sensitivities to antimicrobials by minimal bacteriocidal concentrations.
 - serum bacteriocidal levels.
- Differentiates normal flora from pathogenic microbes.

- Understands the common pathogens associated with specific infectious disease states (e.g., postoperative, diabetic fetid foot, etc.).
- Identifies antimicrobial resistance, based upon sensitivity results.
- Understands the rationale for ordering HIV screening.

Objectives - Skills

- Appropriately performs and reads a gram stain and a KOH prep.
- Obtains specimens using appropriate techniques, as listed in the section above.
- Choice of specimen collection method is appropriate for the patient's type and location of suspected infection.
- Correctly interprets the results of cultures and sensitivities.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **synovial fluid analysis**.

Objectives - Knowledge

- Understands the correct technique for arthrocentesis.
- Understands the correct technique for specimen storage and processing.
- Understands the various tests that can be performed on synovial fluid, including:
 - volume.
 - general appearance.
 - viscosity.
 - cells / WBCs / neutrophils.
 - crystals.
 - Mucin clot.
 - Fibrin clot.
 - pH.
 - gram stain.
 - culture and sensitivity.
 - glucose.
 - protein.
- Understands normal and abnormal values for the tests listed in section above.
- Understands the rationale for selecting the tests listed in the section above.

Objectives - Skills

- Utilizes the correct technique for performing an arthrocentesis.
- Recognizes (correctly interprets) the normal or abnormal test values for each test in section above.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **urinalysis**.

Objectives - Knowledge

- Understands normal and abnormal urinalysis findings and values, including:
 - appearance/odor.
 - dipstick analysis.
 - microscopic analysis.
 - urine pregnancy.
 - urine microalbumin.
 - 24-hour creatinine clearance.
 - 24-hour uric acid.
 - myoglobins.
- Understands the rationale for ordering the tests listed in the section above.
- Correctly interprets the normal and abnormal test findings/values for each test listed in the section above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands appropriate methods for collection of specimens.

Objectives - Skills

- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: pathology, including: **anatomic and cellular pathology**.

Objectives - Knowledge

- Understands the correct technique and protocols for procuring pathology specimens, including:
 - excisional biopsy.
 - incisional biopsy.
 - punch biopsy.
 - shave biopsy.
 - needle aspiration.
 - surgical excision.
- Understands the rationale for selecting each of the procurement methods listed in the section above.
- Understands the correct technique, protocol, and rationale for utilizing a frozen section during a surgical case.

- Understands the correct technique and protocols for processing of pathology specimens for gross and microscopic evaluation, including: preparation of specimens, standard staining techniques, and special staining techniques.
- Understands the gross features, clinical and laboratory, of various pathologic entities.
- Understands the microscopic features of various pathologic entities.
- Understands the clinical, gross pathologic, and microscopic features that differentiate benign from malignant lesions.

Objectives - Skills

- Performs the correct technique for procuring pathology specimens, including each of the techniques listed in the knowledge indicator.
- Recognizes (correctly interprets) the normal or abnormal gross features of the specimen.
- Recognizes (correctly interprets) the normal or abnormal microscopic features of the specimen.
- Utilizes appropriate specimen procurement method (including frozen section) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **electrodiagnostic studies.**

Objectives - Knowledge

- Understands the general principles of electrodiagnostic testing including:
 - nerve conduction studies - sensory and motor.
 - electromyogram:
 - static.
 - dynamic.
- Understands the general technical aspects of performing electrodiagnostic tests listed in the section above.
- Understands normal and abnormal findings that may present on electrodiagnostic testing listed in the section above.
- Understands the rationale for ordering the electrodiagnostic tests listed in the section above.

Objectives - Skills

- Recognizes when electrodiagnostic test results indicate further history, physical exam, diagnostic studies, or consultation.
- Selection of electrodiagnostic test fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Selects appropriate electrodiagnostic test as indicated by patient's chief complaint.

- Recognizes (correctly interprets) the normal or abnormal findings on each test listed in the section above.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **non-invasive vascular studies.**

Objectives - Knowledge

- Understands the general principles of noninvasive vascular testing including:
 - arterial doppler:
 - Ankle Brachial Pressure Index.
 - Modified Exercise Test of Carter.
 - transcutaneous oximetry.
 - thermography.
 - photoplethysmography:
 - digital blood pressure.
 - volume plethysmography.
 - digital Doppler.
 - elevation/dependency testing.
 - five-minute reactive hyperemia test.
 - crossed hand thermal perception test.
 - palpation of normal and abnormal pulses.
 - venous duplex study.
 - subpapillary venous plexus filling time (SPVPFT).
 - Perthes test.
 - Trendelenburg's maneuver.
 - other.
- Understands the correct technique for performing noninvasive vascular tests listed in the section above.
- Understands normal and abnormal findings that may present on noninvasive vascular tests listed in the section above.
- Understands the rationale for ordering the noninvasive vascular tests listed in the section above.

Objectives - Skills

- Recognizes (correctly interprets) the normal or abnormal findings on each test listed in the section above.
- Selects appropriate noninvasive vascular test as indicated by patient's chief complaint and clinical findings.
- Recognizes when noninvasive vascular test results indicate further history, physical exam, diagnostic studies, or consultation.
- Selection of noninvasive vascular test fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **computerized gait/force plate studies.**

Objectives - Knowledge

- Understands the general principles of computerized gait and force plate testing.
- Understands the correct technique for performing computerized gait and force plate studies.
- Understands normal and abnormal findings that may present on computerized gait and force plate studies.
- Understands the rationale for ordering the computerized gait and force plate studies.

Objectives - Skills

- Selection of computerized gait and force plate study fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when computerized gait and force plate test results indicate further history, physical exam, diagnostic studies, or consultation.
- Performs or orders computerized gait and force plate studies.
- Recognizes (correctly interprets) the normal or abnormal findings.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **bone mineral densitometry - radiographic/ultrasonographic.**

Objectives - Knowledge

- Understands the general principles that may present on bone mineral densitometry and ultrasonographic testing.
- Understands normal and abnormal findings that may present on bone mineral densitometry and ultrasonographic studies.
- Understands the rationale for ordering bone mineral densitometry and ultrasonographic studies.

Objectives - Skills

- Recognizes and correctly interprets the normal and abnormal findings.
- Selection of bone mineral densitometry and ultrasonographic testing fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when bone mineral densitometry and ultrasonographic testing results indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **compartment pressure studies.**

Objectives - Knowledge

- Understands the general principles of compartment pressure studies.
- Understands the technique of performing compartment pressure studies, including the use of various devices.
- Understands normal and abnormal findings that may present on compartment pressure studies.
- Understands the rationale for ordering compartment pressure studies.

Objectives - Skills

- Utilizes appropriate technique in obtaining a compartment pressure.
- Recognizes (correctly interprets) the normal or abnormal findings.
- Selection of compartment pressure studies fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when compartment pressure study results indicate further history, physical exam, diagnostic studies, consultation, or surgical intervention.
- Performs the test in an appropriate period of time.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. **Formulate an appropriate diagnosis and/or differential diagnosis.**

Objectives - Knowledge

- Understands the history, physical exam, and diagnostic study findings consistent with diagnosis of lower extremity abnormalities, including diagnoses in the following ICD-9 subsections:
 - Infectious and Parasitic Diseases of the Musculoskeletal System (001-139).
 - Neoplasms (140-239).
 - Endocrine, Nutritional, and Metabolic diseases and Immunity Disorders (240-279).
 - Mental Disorders (290-319).
 - Diseases of the Nervous system and Sense Organs.
 - Diseases of the Circulatory System (390-459).
 - Diseases of the Genitourinary System (680-686).
 - Diseases of the Skin and Subcutaneous Tissue (680-709).
 - Diseases of the Musculoskeletal System and Connective Tissue (710-739).
 - Congenital Anomalies (740-759).
 - Certain Conditions originating in the Perinatal Period (760-779).
 - Symptoms, Signs, and Ill-defined Conditions (780-799).
 - Injury and Poisoning (800-999).
- Understands the etiology and contributing factors for each of the lower extremity diagnoses listed in the Orthopedic ICD-9 Codes Manual.
- Understands the possible course and individual/public health implications for each of the diagnoses listed in the section above.
- Understands the management alternatives and urgency of management for each of the diagnoses listed in the section above.
- Utilizes the concept of formulating a differential diagnosis.
- Can logically justify the diagnosis and contributing factors.

Objectives - Skills

- Based upon history, physical exam, and appropriate diagnostic studies, can recognize and correctly diagnose patients with any of the diagnoses listed in the section above.

- Appropriately charts most likely diagnosis, other possible diagnoses and contributing factors.
- Reassesses and revises differential diagnosis as indicated during the course of patient evaluation and management.

Goal: appropriate non-surgical management when indicated, including: palliation of: **keratotic lesions.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this treatment.
- Understands etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition.
- Understands the risks and benefits of performing the treatment.
- Understands the risks and benefits of not performing the treatment.
- Understands the advantages/disadvantages of the treatment versus other potentially applicable treatment.
- Understands the instrument and material needs for performance of the treatment.
- Understands the regional anatomy.
- Understands the technique involved with this treatment.
- Understands the appropriate procedure for disposal of biomedical waste.
- Understands universal precautions.

Objectives - Skills

- Utilizes proper positioning.
- Utilizes scalpel appropriately, when indicated.
- Utilizes appropriate measures for self-protection (gloves), when indicated.
- Treats iatrogenic lesions appropriately, when indicated.
- Utilizes appropriate procedure for disposal of biomedical waste.

Goal: palliation of: toenails: **manual or electric.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this treatment.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition.
- Understands the risks and benefits of performing the treatment.
- Understands the risks and benefits of not performing the treatment.
- Understands the advantages/disadvantages of the treatment versus other potentially applicable treatment.
- Understands the instrument and material needs for performance of the treatment.
- Understands the regional anatomy.
- Understands the technique involved with this treatment.
- Understands the appropriate procedure for disposal of biomedical waste.
- Understands measures for protection against inhalation of airborne particles.

Objectives - Skills

- Utilizes proper positioning.
- Utilizes nail nippers appropriately, when indicated.
- Utilizes electric grinder appropriately.
- Utilizes appropriate measures for self-protection (mask, gloves), when indicated.
- Treats iatrogenic lesions appropriately, when indicated.
- Utilizes appropriate procedure for disposal of biomedical waste.

Goal: appropriate non-surgical management when indicated, including: manipulation/mobilization of: **foot/ankle joint to increase range of motion/reduce associated pain.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this technique.
- Understands imaging study normals/abnormals that would indicate/contraindicate this technique.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands the risks and benefits of performing the procedure.
- Understands the risks and benefits of not performing the procedure.
- Understands the advantages/disadvantages of the procedure versus other potentially applicable procedures.
- Understands the regional anatomy.
- Understands the biomechanics of the joint in question, including axis of motion and normal range of motion.
- Understands anesthesia and/or sedation techniques required by the procedure (see pertinent sections elsewhere in this document).
- Understands technique of joint mobilization/manipulation.
- Understands follow-up care requirements.

Objectives - Skills

- Assess range of motion pre/post-procedure.
- Secures proper patient positioning.
- Uses appropriate magnitude and direction of force to achieve improved range of motion.

Goal: appropriate non-surgical management when indicated, including: manipulation/mobilization of: **congenital foot deformity.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this technique.
- Understands imaging study normals/abnormals that would indicate/contraindicate this technique.

- Understands the etiologic characteristics. (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands the risks and benefits of performing the procedure.
- Understands the risks and benefits of not performing the procedure.
- Understands the advantages/disadvantages of the procedure versus other potentially applicable procedures.
- Understands the appropriate age range for application of this technique.
- Understands the regional anatomy.
- Understands technique of joint mobilization for congenital deformities and contractures, including:
 - talipes equinovarus.
 - talipes calcaneovalgus.
 - congenial metatarsus adductus.
 - equinus.
 - other.
- Understands appropriate sequence of mobilizing a complex congenital deformity.
- Understands follow-up care requirements.

Objectives - Skills

- Effectively presents the procedure, alternatives, risks and after-care requirements to the patient's parents/legal guardians.
- Can teach the technique to parents for home treatments.
- Secures proper patient positioning.
- Uses appropriate magnitude and direction of force to achieve reduction of the deformity component.
- Uses appropriate counterpressure maneuvers to prevent associated joint subluxation.

Goal: appropriate non-surgical management when indicated, including: closed management of fractures and dislocations: **closed management of pedal fractures and dislocations.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this procedure.
- Understands and recognizes the need for assessment of potential concurrent injuries that may be associated with the fracture/dislocation.
- Understands the etiologic characteristics, mechanogenesis, and classification of the fracture/dislocation.
- Understands the potential complications and sequelae of the injury and treatment.
- Understands the relative stability of the condition following reduction, based on bone and soft tissue injury.
- Understands imaging study that would indicate/contraindicate this procedure.
- Understands real time fluoroscopic imaging, technique, risks and alternatives for closed reduction of fractures and dislocations.
- Understands the advantages/disadvantages, risks and benefits of closed reduction versus open reduction or no reduction.
- Understands the regional anatomy.

- Understands the strategic manipulation to gain reduction.
- Understands the likely anatomic impairments to closed reduction.
- Understands pertinent instrumentation (finger-trap, traction devices, padding, bolsters, etc.).
- Understands immediate perireduction care requirements.
- Selection of the procedure is appropriate for the patient.
- Can justify the chosen technical pathway to completion of the procedure (appropriate manipulation of anatomic segments involved/procedural steps, selection/application of splints, casts or percutaneous fixation).

Objectives - Skills

- Can effectively present the procedure, alternatives, risks and perireduction recovery process to the patient.
- Secures proper patient positioning.
- Utilizes anesthesia, sedation, and/or muscular relaxation appropriately, when indicated.
- Demonstrates appropriate reduction methodology.
- Recognizes perireduction variations and adapts accordingly.
- Recognizes appropriate endpoint for determination of reduction failure.
- Demonstrates appropriate use of instrumentation and related appliances.
- Demonstrates appropriate use of imaging to direct and confirm reduction and fixation (if required).
- Handles and applies fixation devices appropriately, if indicated.
- Applies appropriate bandage, splint and/or cast.
- Selects appropriate weight bearing status and assistive devices.
- Procedural steps are followed appropriately.
- Procedure is performed in appropriate period of time.

Goal: appropriate non-surgical management when indicated, including: closed management of fractures and dislocations: **closed management of ankle fracture/dislocation.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this procedure.
- Understands and recognizes the need for assessment of potential concurrent injuries that may be associated with the fracture/dislocation.
- Understands the etiologic characteristics, mechanogenesis, and classification of the fracture/dislocation.
- Understands the potential complications and sequelae of the injury and treatment.
- Understands the relative stability of the condition following reduction, based on bone and soft tissue injury.
- Understands imaging study that would indicate/contraindicate this procedure.
- Understands real time fluoroscopic imaging, technique, risks and alternatives for closed reduction of fractures and dislocations.
- Understands the advantages/disadvantages, risks and benefits of closed reduction versus open reduction or no reduction.
- Understands the regional anatomy.

- Understands the strategic manipulation to gain reduction.
- Understands the likely anatomic impairments to closed reduction.
- Understands pertinent instrumentation (traction devices, padding, bolsters, etc.).
- Understands immediate perireduction care requirements.
- Selection of the procedure is appropriate for the patient.
- Can justify the chosen technical pathway to completion of the procedure (appropriate manipulation of anatomic segments involved/procedural steps, selection/application of splints, casts).

Objectives - Skills

- Can effectively present the procedure, alternatives, risks and perireduction recovery process to the patient.
- Secures proper patient positioning.
- Utilizes anesthesia, sedation, and/or muscular relaxation appropriately, when indicated.
- Demonstrates appropriate reduction methodology.
- Recognizes perireduction variations and adapts accordingly.
- Recognizes appropriate endpoint for determination of reduction failure.
- Demonstrates appropriate use of instrumentation and related appliances.
- Demonstrates appropriate use of imaging to direct and confirm reduction. Applies appropriate bandage, splint and/or cast.
- Selects appropriate weight bearing status and assistive devices.
- Procedural steps are followed appropriately.
- Procedure is performed in appropriate period of time.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **cast management.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate cast management for conditions including:
 - concurrent with closed management of a fracture or dislocation.
 - congenital foot deformities.
 - tendon injuries.
 - musculoskeletal overuse syndromes.
 - neuromuscular disorders.
 - foot ulcers.
 - Charcot arthropathy.
 - delayed/nonunion.
 - postoperative surgical care.
 - others.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate cast management for the conditions listed in the section above.
- Understands the risks and benefits of utilizing cast management for the conditions listed in the first section above.
- Understands the variety of cast immobilization devices/techniques that are available including:

- long leg cast.
- short leg cast.
- compression dressing.
- posterior splint.
- prefabricated walking cast.
- unna boot.
- total contact cast.
- other.
- Understands the advantages/disadvantages of each of the devices/techniques listed in section above.
- Understands the potential risks/complications of each of the devices/techniques listed in section above.
- Selection of type of immobilization is appropriate for the patient's condition.
- Understands the material needs for the application of each of the devices/techniques listed.
- Understands the regional anatomy and appropriate anatomic positioning necessary for application of each of the devices/techniques listed above.
- Understands procedural steps used in the application of each of the devices/techniques listed above.
- Understands and selects the appropriate period of immobilization for each of the conditions listed.
- Understands and selects the appropriate weight-bearing status for cast management for each of the conditions listed.
- Can justify the type of immobilization, weight-bearing status, and duration of immobilization that was selected.
- Understands the indications, contraindications, and physiology of adjunctive therapies, including:
 - electromagnetic bone stimulation.
 - ultrasonic bone stimulation.
 - assistive devices.
 - other.
- Understands the appropriate techniques for removal and disposal of the various devices listed.

Objectives - Skills

- Effectively presents potential risks and monitoring instructions to the patient.
- Secures proper patient positioning.
- Appropriately pads/avoids neurovascular compression.
- Utilizes appropriate technique in applying the various devices/techniques listed in knowledge indicators.
- Procedure is performed in appropriate period of time.
- Orders adjunctive therapies listed in knowledge indicators when appropriate.
- Utilizes appropriate technique for removal and disposal of the various devices listed in knowledge indicators section.
- Assures patient can manage weightbearing status with selected assistive device.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **tape immobilization, including:**

Objectives - Knowledge

- Understands indications and contraindications to the use of tape immobilization including:
 - low Dye.
 - high Dye.
 - ankle taping.
 - plantar rest strap.
 - posterior rest/Achilles strap.
- Understands the materials utilized in tape immobilization types listed.
- Understands the application techniques utilized in tape immobilization types listed.
- Selection of tape immobilization fits the overall management of the patient in terms of management sequence, indication/contraindication and cost-effectiveness.

Objectives - Skills

- Can appropriately apply the tape immobilization types listed in knowledge indicators section.
- Applies tape immobilization in an appropriate amount of time

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **orthotic, brace, prosthetic, and custom shoe management.**

Objectives - Knowledge

- Understands foot deformities or conditions amenable to the use of orthotics/braces/prosthetics, including:
 - functional foot orthoses.
 - accommodative foot orthoses and insoles.
 - ankle/foot orthoses.
 - drop foot braces and shoe/brace combinations.
 - patellar bearing brace.
 - night splints for plantar fasciitis or Achilles tendonitis.
 - night/day splints for pediatric torsional/pedal deformities.
 - foot prostheses.
 - lower limb prostheses.
- Understands the impact of concurrent medical conditions that affect the prescribing of orthotics/braces/prosthetics, including but not limited to:
 - the neuropathic foot.
 - the partially-amputated foot.
 - the brain-injured patient.
 - the pediatric congenital or acquired disorder.
- Understands how to write a proper orthotic prescription for foot orthoses.
- Understands standard terminology for foot orthoses.
- Understands the materials utilized in the manufacture of orthotics/braces/prosthetics listed.
- Understands the techniques utilized in the manufacture of the devices listed.

- Understands casting technique utilized in the manufacture of orthotics/braces/prosthetics listed.
- Understands technique utilized for the fit, measurement, and modification of orthotics/braces/prosthetics listed.
- Understands the design features, costs, advantages and disadvantages, indications and contraindications of orthotics/braces/prosthetics listed.
- Understands the proper shoe gear to use with foot orthoses.
- Understands various techniques and equipment to modify foot orthoses.
- Understands the design features, costs, advantages and disadvantages - including indications and contraindications - of extra-depth and custom-molded shoes.
- Possesses awareness of resources for referring, prescribing or obtaining extra-depth and custom-made shoes.
- Understands the indications, contraindications, and prescribing procedures for shoe modifications including:
 - rocker soles.
 - metatarsal bars.
 - limb length corrections.
 - Velcro closures.
 - heel stabilizers.
 - flares.

Objectives - Skills

- Casts patient to obtain appropriate negative cast for: custom-made soles and insoles, functional foot orthoses, accommodative foot orthoses.
- Can fabricate the following devices: custom-made shoes and insoles, functional foot orthoses, accommodative foot orthoses, night splints for plantar fasciitis or Achilles tendonitis, foot prostheses.
- Can select appropriate orthotic material for patient complaints or deformity.
- Can properly write prescription for devices listed in section.
- Can properly dispense and instruct patients in the proper use of custom-made shoes and insoles; functional and accommodative foot orthoses; splints for plantar fasciitis, Achilles tendonitis, pediatric torsional or pedal deformities; foot prostheses.
- Properly ascertain correct fit and adjust as necessary the devices listed in knowledge indicators section.
- Can prescribe or recommend and/or adjust appropriate shoe for use with devices listed in knowledge indicators section.
- Can communicate with prosthetist/orthotist to suggest appropriate modifications of ankle/foot orthoses.
- Can determine appropriate shoe size using a Brannock device and/or foot and shoe tracings.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **footwear and padding.**

Objectives - Knowledge

- Understands techniques of determining appropriate footwear fit, including application of the Brannock device and use of foot and shoe tracings.

- Understands the design features and potential functional implications of the various components of over-the-counter footwear including:
 - last type.
 - lacing configuration.
 - instep type.
 - heel counter stability.
 - midsole and outersole construction.
- Understands normal and abnormal wear patterns of footwear.
- Understands the indications for use of various pads including: long arch pads, heel lifts, metatarsal pads, dancer pads, pontoon pads, Cobra pads, Budin splint, buttress pads, crest pads, moldable silicone pads and splints, accommodative pads.
- Understands the correct techniques for creating various pads including those listed above.

Objectives - Skills

- Can fabricate various pads, including: long arch pads, heel lifts, metatarsal pads, dancer pads, pontoon pads, Cobra pads, Budin splint, buttress pads, crest pads, moldable silicone pads and splints, accommodative pads.
- Can position over-the-counter and customized padding appropriately.
- Prescribes appropriate shoe gear based on patient foot type and orthotic use
- Provides appropriate advice to patients regarding non-prescription footwear styles, desirable components, fitting, and size.
- Can determine appropriate shoe size using a Brannock device.
- Can determine if a patient's shoe fits appropriately using foot and shoe tracings.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **injections and aspirations.**

Objectives - Knowledge

- Understands the indications and contraindications for injection and/or aspiration.
- Understands the history and physical examination normals/abnormals that would indicate injection and/or aspiration.
- Understands pharmacology of medications used for diagnostic and/or therapeutic injection/aspiration.
- Understands the technique of performing injection and/or aspiration including the following:
 - injection of trigger points.
 - injection of nerve lesions, including Morton's neuroma.
 - injection of musculoskeletal disorders, including plantar fasciitis.
 - aspiration/injection of pedal or ankle joints.
 - aspiration/injection of bursae and tendon sheaths.
 - aspiration/injection of cystic lesions and soft tissue masses.
 - aspiration/injection of hematoma.
 - needle biopsy.
- Understands the rationale for performing the techniques listed.
- Understands potential complications of injection and proper management.

Objectives - Skills

- Utilizes appropriate technique while performing techniques listed in knowledge indicators section.
- Selection of injection and/or aspiration fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Monitors the patient during the injection.
- Diagnoses and manages adverse reactions to the injection/aspiration.
- Recognizes when aspiration results indicate further history, physical exam, diagnostic studies, consultation, or surgical intervention.
- Performs the injection/aspiration in an appropriate period of time.
- Utilizes universal precautions while performing aspiration/injections listed in knowledge indicators section.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **physical therapy**.

Objectives - Knowledge

- Understands appropriate assessment/evaluation of the patient re: history and physical range of motion palpation.
- Understands functional anatomy.
- Understands treatment principles of physical therapy including: pain reduction modalities, increasing range of motion, stretching/strengthening programs.
- Understands indications/contraindications of physical therapy.
- Understands indications for referral to physical therapy.
 - Musculoskeletal or neurogenic pain resulting from injury, inflammation or immobilization.
 - Musculoskeletal disorders including: muscle sprains/strains, tendinitis, joint stiffness, laxity, inflammation, bursitis/fasciitis, arthritis.
 - Impaired range of motion, strength and/or function following surgery, illness or disuse.
 - Impaired movement, coordination and function following CVA, spinal cord injury or neurological or progressive neurological disorder.
- Understands contraindications for referral to physical therapy.
 - The patient's inability to cooperate due to mental impairment.
 - Inability to cooperate/participate with therapy due to medical condition (COPD, DVT).
 - Recognition of less than optimal rehabilitation due to length of time since onset (RSD, longstanding joint contractures).
- Understands principles and indications of specific modalities.
 - Heat treatments: moist heat packs, parafin baths, ultrasound, hydrotherapy.
 - Cold treatments: cold/ice packs, ice massage, hydrotherapy.
 - Electrical stimulation: galvanic/continuous DC (iontophoresis).
 - Mechanical traction.
 - Massage: superficial/deep.
 - Joint and soft tissue mobilization.
 - Exercise.
 - Functional re-training.

Objectives - Skills

- Should be able to write a referral for appropriate physical therapy for the patient and the patient's condition.
- Should be able to evaluate the patient periodically for progress and be able to modify the treatment plan as needed.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **NSAIDs**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands drug mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **antibiotics**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **antifungals**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **narcotic analgesics.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **muscle relaxants.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.

- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **medications for neuropathy.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **sedative/hypnotics.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **peripheral vascular agents.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.

- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **anticoagulants.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **antihyperuricemic/uricosuric agents.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **tetanus toxoid/immune globulin.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **laxatives/cathartics.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **fluid and electrolyte agents.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.

- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **corticosteroids**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **antirheumatic medications**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Knowledge drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **topicals**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.

- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **debridement of superficial ulcer or wound.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this procedure.
- Understands imaging study normals/abnormals that would indicate/contraindicate this procedure.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate this procedure.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition.
- Understands the risks and benefits of performing the procedure.
- Understands the risks and benefits of not performing the procedure.
- Understands the advantages/disadvantages of the procedure versus other potentially applicable procedures.
- Understands the instrument and material needs for performance of the procedure.
- Understands the regional anatomy.
- Understands peri-procedure and associated care requirements.

Objectives - Skills

- Selects appropriate instrument(s) (tissue nipper, scalpel, rongeur, curette).
- Uses instrumentation appropriately.
- Removes tissue appropriately, based on tissue type, quality, and depth.
- Obtains microbiology and/or pathology specimens, as indicated.
- Applies appropriate wound care agent. Applies appropriate wound cover.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **excision or destruction of skin lesion (including skin biopsy and laser procedures).**

Objectives - Knowledge

- Understands normal/abnormal dermatologic anatomy and histology.
- Understands normal/abnormal clinical exam that would indicate/contraindicate appropriate procedure.
- Understands etiology and pathology of lesion.

- Understands surgical excision techniques including punch biopsy, incisional biopsy, excisional biopsy, and wide excision techniques.
- Understands surgical lesion destruction techniques including lasers, electrocautery, cryotherapy.
- Understands the risks, benefits, potential complications, and alternatives to procedure.
- Understands postoperative care requirements.
- Understands adjunctive medical therapies for care of malignant skin lesions.
- Understands instrument and material needs for the procedure.

Objectives - Skills

- Can perform appropriate local anesthetic block.
 - Can perform appropriate skin incision as indicated (i.e., wide excision, punch biopsy, incisional and excisional biopsy techniques).
 - Can perform anatomic dissection appropriate to this anatomic area.
 - Can perform suture repair of deep tissue as indicated.
 - Can apply laser, electrocautery, or cryotherapy for destruction of skin lesion - as indicated.
 - Can apply appropriate bandage.
 - Can initiate proper care for postoperative complications
 - Can interpret histologic/pathology report when indicated.
- Goal:** Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **nail avulsion (partial or complete).**

Objectives - Knowledge

- Understands the regional anatomy.
- Understands normal/abnormal clinical exam.
- Understands etiologies and pathomechanics of nail deformities and associated soft tissue infections (paronychia).
- Understands the risks, benefits, potential complications and alternatives of the procedure.
- Understands the postoperative care requirements.
- Understands the instrument needs for the performance of the procedure.

Objectives - Skills

- Can perform appropriate local anesthetic digital block.
- Can dissect, split, and avulse part of the nail plate (partial nail avulsion).
- Can dissect and avulse the nail plate (total nail avulsion).
- Can apply appropriate bandage.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **matrixectomy (partial or complete, by any means).**

Objectives - Knowledge

- Understands the regional anatomy.
- Understands normal/abnormal clinical exam that would indicate/contraindicate procedure.
- Understands etiologies and pathomechanics of nail and associated soft tissue deformities.
- Understands the risks, benefits, potential complications and alternatives of the procedure.
- Understands postoperative care requirements.
- Understands instrument and chemical needs for the performance of the procedure.
- Understands the properties of chemicals if used in performance of the procedure.
- Understands the properties of laser physics if used in performance of the procedure.

Objectives - Skills

- Can perform appropriate local anesthetic digital block.
- Can dissect, split, and avulse part of the nail plate (partial matrixectomy).
- Can dissect, avulse the nail plate (total matrixectomy).
- Can apply chemical agents of laser to nail matrix for permanent correction.
- Can apply appropriate bandage.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **removal of hardware.**

Objectives - Knowledge

- Understands the regional anatomy.
- Understands clinical exam normals/abnormals that would indicate/contraindicate procedure.
- Understands imaging studies to aid in diagnosis.
- Understands risks, benefits, potential complications and alternative to procedure.
- Understands postoperative care requirements.
- Understands instrument and material needs for the performance of the procedure (including fluoroscopy).

Objectives - Skills

- Can perform appropriate local anesthetic block, if indicated.
- Can perform appropriate skin incision.
- Can perform anatomic dissection appropriate to the anatomic area.
- Can identify and remove the hardware.
- Can perform suture repair of deep tissues as indicated.
- Can perform suture repair of skin appropriately.
- Can apply appropriate bandage.
- Can select and prescribe proper antibiotics as indicated.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **repair of simple laceration (no neurovascular, tendon, or bone/joint involvement).**

Objectives - Knowledge

- Understands the regional anatomy.
- Understands normal/abnormal clinical exam that would indicate/contraindicate the procedure.
- Understands the principles of wound repair.
- Understands the risks, benefits, potential complications and alternatives to procedure.
- Understands postoperative care requirements.
- Understands suture repair techniques.
- Understands instrument and material needs for the performance of the procedure.

Objectives - Skills

- Can perform appropriate local anesthetic block.
- Can perform suture repair of the laceration.
- Can apply appropriate bandage.
- Can initiate proper care of postoperative complications.

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **digital surgery**.

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following digital procedures including:
 - partial ostectomy/exostectomy.
 - phalangectomy.
 - arthroplasty (IPJ).
 - implant.
 - diaphysectomy.
 - phalangeal osteotomy.
 - fusion (IPJ).
 - amputation.
 - management of osseous tumor/neoplasm.
 - management of bone/joint infection.
 - open management of digital fracture/dislocation.
 - revision/repair of poor surgical outcome.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc) of the condition/deformity.
- Understands the risks and benefits of performing the procedures listed in section above.
- Understands the risks and benefits of not performing the procedures listed in section above.

- Understands the advantages/disadvantages of the procedures listed in section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in section above.
- Understands the regional anatomy.
- Understands appropriate incisional approach(s).
- Understands procedural steps.
- Understands tissue-specific handling and repair techniques (skin, nerve, bone, tendon, ligament, capsule, cartilage, muscle).
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent fixation materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent graft materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application (autograft, allograft, xenograft, and synthetic graft for bone, tendon, etc.).
- Understands postoperative care requirements.
- Selection of the procedure listed in section above is appropriate for the patient.

Objectives - Skills

- Selects the appropriate procedure(s).
- Justifies the chosen technical pathway to completion of the procedure.
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.
- Secures proper patient positioning.
- Utilizes hemostasis appropriately when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately when indicated.
- Uses manual instrumentation appropriately.
- Uses power instrumentation appropriately.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Recognizes perioperative variations and adapts accordingly.
- Follows procedural steps correctly.
- Procedure is performed in appropriate period of time.

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **first ray surgery.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following first ray procedures including:

- hallux valgus surgery.
 - bunionectomy (partial ostectomy/Silver procedure).
 - bunionectomy with capsulotendon balancing procedure.
 - bunionectomy with phalangeal osteotomy.
 - bunionectomy with distal first metatarsal osteotomy.
 - bunionectomy with first metatarsal base/shaft osteotomy.
 - bunionectomy with first metatarsocuneiform fusion.
 - metatarsophalangeal joint fusion.
 - metatarsophalangeal joint implant.
 - metatarsophalangeal joint arthroplasty.
 - hallux limitus surgery, including:
 - cheilectomy.
 - joint salvage with capsulotendon balancing procedure.
 - joint salvage with phalangeal osteotomy (e.g., Kessel-Bonney, enclavement).
 - joint salvage with distal first metatarsal osteotomy.
 - joint salvage with first metatarsal base/shaft osteotomy.
 - joint salvage with first metatarsocuneiform fusion.
 - metatarsophalangeal joint fusion.
 - metatarsophalangeal joint implant.
 - metatarsophalangeal joint arthroplasty.
 - other first ray surgery, including:
 - tendon transfer/lengthening/capsulotendon balancing procedure.
 - osteotomy (e.g., dorsiflexory).
 - metatarsocuneiform fusion (other than for hallux abductovalgus or hallux limitus).
 - amputation
 - management of first ray osseous tumor/neoplasm.
 - management of first ray bone/joint infection.
 - open management of first ray fracture/dislocation.
 - corticotomy with callus distraction.
 - revision/repair of poor surgical outcome (e.g., nonunion, hallux varus).
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
 - Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in first section above.
 - Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
 - Understands the risks and benefits of performing the procedures listed in first section above.
 - Understands the risks and benefits of not performing the procedures listed in first section above.
 - Understands the advantages/disadvantages of the procedures listed in first section above versus other potentially applicable procedures.
 - Understands immediate perioperative care requirements.
 - Understands the instrument and material needs for performance of the procedures listed in first section above.
 - Understands the regional anatomy.
 - Understands appropriate incisional approach(es).
 - Understands procedural steps.

- Understands the axis guide concept to create uniplanar, biplanar versus triplanar correction
- Understands tissue-specific handling and repair techniques (skin, nerve, bone, tendon, ligament, capsule, cartilage, muscle).
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent fixation materials and techniques, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent graft materials, including physical characteristics, advantages/disadvantages, indications/ contraindications, and application (autograft, allograft, xenograft, and synthetic graft for bone, tendon, etc).
- Understands postoperative care requirements.
- Selection of the procedure listed in first section above is appropriate for the patient.

Objectives - Skills

- Selects the appropriate procedure(s).
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.
- Secures proper patient positioning.
- Utilizes hemostasis appropriately, when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Uses manual instrumentation appropriately.
- Uses power instrumentation appropriately.
- Uses special instrumentation appropriately, when indicated.
- Handles and applies fixation devices appropriately.
- Handles and applies bioimplants appropriately, when indicated
- Handles and applies graft materials appropriately.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately, when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Procedural steps are followed correctly.
- Procedure is performed in appropriate period of time.
- Recognizes preoperative, intraoperative and postoperative variations/complications and adapts accordingly.
- Justifies the chosen technical pathway to completion of the procedure.

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **other soft tissue foot surgery.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following soft tissue foot procedures including:
 - excision of ossicle/sesamoid.
 - excision of neuroma.
 - removal of deep foreign body (excluding hardware).
 - plantar fasciotomy/plantar fasciectomy.
 - lesser MTPJ capsulotendon balancing.
 - tendon repair, lengthening, or transfer involving the forefoot.
 - open management of dislocation (MTP or tarsometatarsal).
 - incision and drainage with wide debridement of soft tissue infection.
 - excision of soft tissue tumor/mass of the foot (without reconstructive surgery)
 - external neurolysis/decompression (including tarsal tunnel)
 - plastic surgery techniques of the forefoot (including skin graft, skin plasty, skin flaps, syndactylization, desyndactylization, and debulking procedures).
 - microscopic nerve/vascular repair of the forefoot.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in first section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity, including the predisposing factors and the microbial pathogens associated with soft tissue infections (including deep space infections).
- Understands proper adjunctive medical care of puncture wounds, including antibiotics and tetanus prophylaxis.
- Understands proper adjunctive medical care of infections, including antibiotics.
- Understands pathology associated with benign or malignant masses.
- Understands adjunctive medical therapies for care of malignant masses.
- Understands the risks and benefits of performing the procedures listed in first section above.
- Understands the risks and benefits of not performing the procedures listed in first section above.
- Understands the advantages/disadvantages of the procedures listed in first section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in first section above.
- Understands the regional and/or microscopic anatomy.
- Understands appropriate incisional approach(es).
- Understands procedural steps.
- Understands tissue-specific handling and repair techniques (skin, nerve, tendon, ligament, capsule, muscle).
- Understands the principles of tendon transfer.
- Understands the principles of skin grafting, skin plasty, skin flaps, etc.
- Understands suture repair techniques for primary repair, lengthening, and/or transfer of tendon(s) of the forefoot.
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.

- Understands pertinent soft tissue graft materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application (autograft, allograft, xenograft).
- Understands postoperative care requirements.
- Selection of the procedure listed in first section above is appropriate for the patient.

Objectives - Skills

- Secures proper patient positioning.
- Utilizes hemostasis appropriately, when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Uses manual instrumentation appropriately.
- Uses special instrumentation appropriately, when indicated.
- Performs appropriate tendon repair/lengthening or transfer, as indicated.
- Evaluates dislocation with fluoroscopic imaging under anesthesia.
- Reduces dislocation and applies percutaneous fixation.
- Recognizes and debrides all purulent material and necrotic soft tissue from the surgical site by sharp and/or blunt means.
- Plans return to surgery with repeat debridement and delayed primary closure with quantitative cultures when appropriate.
- Interprets histology/pathology report and initiates proper medical consultation for evaluation of malignant masses.
- Performs suture repair of skin utilizing appropriate plastic surgery techniques for skin plasty, skin flaps, syndactylization, desyndactylization, and debulking procedures.
- Isolates affected nerve(s) or vessel(s) and repairs them appropriately using microscopic techniques.
- Handles and applies soft tissue bioimplants appropriately, when indicated.
- Handles and applies soft tissue graft materials appropriately.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately, when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Procedural steps are followed correctly.
- Procedure is performed in appropriate period of time.
- Recognizes preoperative, intraoperative and postoperative variations/complications and adapts accordingly.
- Selects the appropriate procedure(s).
- Justifies the chosen technical pathway to completion of the procedure.
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **other osseous foot surgery (distal to the tarsometatarsal joints, except where specifically indicated).**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following other osseous foot surgery procedures, including:
 - partial osteotomy (distal to and including the talus). lesser MTPJ arthroplasty.
 - bunionectomy of the fifth metatarsal without osteotomy.
 - metatarsal head resection (single or multiple).
 - lesser MTPJ implant.
 - central metatarsal osteotomy.
 - bunionectomy of the fifth metatarsal with osteotomy.
 - open management of lesser metatarsal fractures.
 - harvesting of bone graft distal to the ankle.
 - amputation (e.g., lesser ray, TMA)
 - management of bone/joint infection distal to the tarsometatarsal joints (with or without bone graft).
 - management of bone tumor/neoplasm distal to the tarsometatarsal joints (with or without bone graft).
 - open management of tarsometatarsal joint fracture/dislocation.
 - multiple osteotomy management of metatarsus adductus.
 - tarsometatarsal fusion (partial or complete).
 - corticotomy with callus distraction of lesser metatarsal.
 - revision/repair of poor surgical outcome in the forefoot.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in first section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands pathology associated with benign or malignant masses.
- Understands adjunctive medical therapies for care of malignant masses.
- Understands the risks and benefits of performing the procedures listed in first section above.
- Understands the risks and benefits of not performing the procedures listed in first section above.
- Understands the advantages/disadvantages of the procedures listed in first section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in first section above.
- Understands the regional anatomy.
- Understands appropriate incisional approach(es).
- Understands procedural steps.
- Understands the axis guide concept to create uniplanar, biplanar versus triplanar correction
- Understands tissue-specific handling and repair techniques (skin, nerve, bone, tendon, ligament, capsule, cartilage, muscle).
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.

- Understands pertinent fixation materials and techniques, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent graft materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application (autograft, allograft, xenograft, and synthetic graft for bone, tendon, etc.).
- Understands postoperative care requirements.
- Selection of the procedure listed in first section above is appropriate for the patient.

Objectives - Skills

- Justifies the chosen technical pathway to completion of the procedure.
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.
- Secures proper patient positioning.
- Utilizes hemostasis appropriately, when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Uses manual instrumentation appropriately.
- Uses power instrumentation appropriately.
- Uses special instrumentation appropriately, when indicated.
- Handles and applies fixation devices appropriately.
- Handles and applies bioimplants appropriately, when indicated.
- Handles and applies graft materials appropriately.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately, when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Procedural steps are followed correctly.
- Procedure is performed in appropriate period of time.
- Recognizes preoperative, intraoperative and postoperative variations/complications and adapts accordingly.
- Selects the appropriate procedure(s).

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **reconstructive rearfoot and ankle surgery.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following reconstructive rearfoot and ankle surgery procedures, including:
 - elective soft tissue procedures, including:
 - plastic surgery techniques involving the midfoot, rearfoot, or ankle.

- tendon transfer involving the midfoot, rearfoot, ankle, or leg.
 - tendon lengthening involving the midfoot, hindfoot, ankle, or leg.
 - soft tissue repair of complex congenital foot/ankle deformity (e.g., clubfoot, vertical talus).
 - delayed repair of ligamentous structures.
 - ligament or tendon
 - augmentation/supplementation/restoration.
 - open synovectomy of the hindfoot or ankle.
- elective osseous procedures, including:
 - operative arthroscopy.
 - detachment/reattachment of the Achilles with partial ostectomy.
 - subtalar arthroeresis.
 - midfoot, hindfoot, or ankle fusion.
 - midfoot, hindfoot, or tibial osteotomy.
 - coalition resection.
 - open management of talar dome lesion (with or without osteotomy)
 - ankle arthrotomy with removal of loose body or other osteochondral debridement.
 - ankle implant.
 - corticotomy or osteotomy with callus distraction correction of complex deformity of the midfoot, rearfoot, ankle, or tibia.
- nonelective soft tissue procedures, including:
 - repair of acute tendon injury.
 - repair of acute ligament injury.
 - microscopic nerve/vascular repair of the midfoot, hindfoot, or ankle.
 - excision of soft tissue tumor/mass of the foot (with reconstructive surgery).
 - excision of soft tissue tumor/mass of the ankle (with or without reconstructive surgery).
 - open repair of dislocation (proximal to tarsometatarsal joints).
- nonelective osseous procedures, including:
 - open repair of adult midfoot fracture.
 - open repair of adult hindfoot fracture.
 - open repair of adult ankle fracture.
 - open repair of pediatric hindfoot/ankle fractures.
 - management of bone tumor/neoplasm (with or without bone graft).
 - management of bone/joint infection (with or without bone graft).
 - amputation proximal to tarsometatarsal joints.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in first section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands pathology associated with benign or malignant masses.
- Understands gross and histological pathology.
- Understands adjunctive medical therapies for care of malignant masses.

- Understands the risks and benefits of performing the procedures listed in first section above.
- Understands the risks and benefits of not performing the procedures listed in first section above.
- Understands the advantages/disadvantages of the procedures listed in first section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in first section above.
- Understands the regional anatomy.
- Understands appropriate incisional approach(es).
- Understands procedural steps.
- Understands appropriate reconstructive techniques.
- Understands the axis guide concept to create uniplanar, biplanar versus triplanar correction
- Understands tissue-specific handling and repair techniques (skin, nerve, bone, tendon, ligament, capsule, cartilage, muscle).
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent fixation materials and techniques, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent graft materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application (autograft, allograft, xenograft, and synthetic graft for bone, tendon, etc.).
- Understands postoperative care requirements.
- Selection of the procedure listed in first section above is appropriate for the patient.

Objectives - Skills

- Secures proper patient positioning.
- Utilizes hemostasis appropriately, when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Performs open reduction of fracture/dislocation.
- Performs appropriate fixation to maintain reduction (k-wire, external fixator, etc.) if needed.
- Uses manual instrumentation appropriately.
- Uses power instrumentation appropriately.
- Uses special instrumentation appropriately, when indicated.
- Handles and applies fixation devices appropriately.
- Handles and applies bioimplants appropriately, when indicated
- Handles and applies graft materials appropriately.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately, when indicated.
- Performs wound closure appropriately.

- Applies appropriate bandage, splint and/or cast.
- Procedural steps are followed correctly.
- Procedure is performed in appropriate period of time.
- Recognizes preoperative, intraoperative and postoperative variations/complications and adapts accordingly.
- Selects the appropriate procedure(s).
- Justifies the chosen technical pathway to completion of the procedure.
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.

Goal: Formulate and implement an appropriate plan of management, including: appropriate anesthesia management when indicated, including: **local anesthesia.**

Objectives - Knowledge

- Understands history and physical at examination that would contribute to the selection of the appropriate local anesthetic with or without epinephrine.
- Understands laboratory values that would contribute to the assessment and selection of appropriate local anesthetics, with or without epinephrine.
- Understands pharmacology of local anesthetics and epinephrine.
- Understands advantages/disadvantages of use of local anesthetics versus other forms of anesthesia.
- Understands various techniques for performing sensory and/or motor blocks and nerve blocks used in the lower extremity.
- Understands universal precautions and needle precautions.
- Understands appropriate injection techniques used in administering the local anesthetic.
- Understands allergies and adverse reactions to local anesthetics, epinephrine and preservatives.
- Understands the management of allergies and adverse reactions to local anesthetics, epinephrine and preservatives.

Objectives - Skills

- Performs an appropriate preanesthetic evaluation.
- Administers field blocks, digital blocks, Mayo blocks, and isolated nerve blocks of the lower extremities with proper technique.
- Utilizes proper technique while injecting the local anesthetic.
- Utilizes adjunctive topical agents, as needed.
- Utilizes universal precautions and appropriate needle precautions.
- Monitors for, recognizes, and manages adverse reactions to the local anesthetic.

Goal: Formulate and implement an appropriate plan of management, including: appropriate anesthesia management when indicated, including: **general, spinal, epidural, regional, and conscious sedation anesthesia.**

Objectives - Knowledge

- Understands the components, techniques, and normals/abnormals of the history and physical examination pertinent to the preanesthetic assessment.

- Understands the laboratory tests pertinent to the preanesthetic assessment, and their normals/abnormals.
- Understands ASA Physical Status classification system and the impact of medical comorbidities on preanesthetic assessment and management.
- Understands the stages and planes of ether anesthesia as described by Guedel in 1937.
- Understands the advantages/disadvantages of general, spinal, epidural, regional, and conscious sedation anesthesia versus other potentially applicable forms of anesthesia.
- Understands the pharmacology of preanesthesia medications (barbituates, benzodiazepines, narcotics, anticholinergics).
- Understands the pharmacology of neuromuscular blocking agents (depolarizing and nondepolarizing).
- Understands the pharmacology of the intravenous induction and maintenance agents.
- Understands the pharmacology of inhalational medications.
- Understands the pharmacology of the various reversal agents.
- Understands anesthetic complications and their management.
- Understands pertinent regional anatomy, including the airway.
- Understands the technical aspects of maintaining an airway.
- Understands the technical aspects of intubation.
- Understands the technical aspects of introducing an LMA.
- Understands the technical aspects of obtaining IV access.
- Understands the technical aspects of inserting an oropharyngeal or nasopharyngeal airway.
- Understands the technical aspects of performing a Bier block.
- Understands the technical aspects of administration of spinal anesthesia.
- Understands the technical aspects of perianesthesia monitoring of a patient.

Objectives - Skills

- Performs preanesthetic evaluation, including history and physical examination.
- Orders and interprets appropriate preoperative diagnostic tests.
- Assigns correct ASA status.
- Secures and positions patient properly.
- Places and secures intravenous line.
- Administers agents for conscious sedation.
- Monitors patient during the surgical procedure.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Formulate and implement an appropriate plan of management, including: **appropriate consultation and/or referrals.**

Objectives - Knowledge

- Recognizes when consultation with another podiatric or medical specialist is necessary for either diagnosis or management.
- Recognizes when referral to another podiatric or medical specialist is necessary for either diagnosis or management.

- Understands appropriate written and verbal communication methods in obtaining consultation or referral.
- Interprets consultation report and/or recommendations appropriately.
- Selection of consultation and/or referral fits the overall management of the patient in terms of evaluation or management sequence, timeliness, and cost-effectiveness.
- Recognizes when consultation results indicate further history, physical exam, diagnostic studies, therapeutic intervention or further consultation.

Objectives - Skills

- Utilizes effective written/oral communication skills when requesting consultation or referral.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Formulate and implement an appropriate plan of management, including: **appropriate lower extremity health promotion and education.**

Objectives - Knowledge

- Understands the indications for lower extremity health promotion and education, including:
 - lower extremity disease prevention related to concurrent medical disease states, including but not limited to diabetes mellitus.
 - lower extremity disease prevention related to substance abuse, including tobacco and alcohol.
 - factors associated with surgical and nonsurgical treatment plans.
 - etiology and progression of pediatric deformities.
- Understands pertinent aspects of patient education related to specific surgical and nonsurgical treatment plans.
- Understands the natural history of diseases affecting the lower extremity, including etiologic and contributory factors and associated preventive measures.
- Understands the methodologies for communicating health promotion, education and home care via verbal, written, or other media.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. **Assess the treatment plan and revise it as necessary.**

Objectives - Knowledge

- Understands appropriate follow-up management as indicated by patient's condition, including:
 - understands appropriate intervals for follow-up evaluation.
 - understands and recognizes the indications for additional evaluation or diagnostic measures.
 - understands and recognizes the indications for additional therapeutic measures.

- understands appropriate post-procedure management.
- understands appropriate rehabilitative care.
- understands and recognizes when a therapeutic endpoint has been achieved.
- recognizes sequelae.
- determines long-term prognosis.
- assesses and quantifies current level of disability.
- Understands appropriate documentation.

Objectives - Skills

- Appropriately documents patient progress.
- Generates/revises treatment plan based on diagnostic and therapeutic results.

Goal: Assess and manage the patient's general medical status. Perform and interpret the findings of a comprehensive medical history and physical examination (including preoperative history and physical examination), including: **comprehensive medical history.**

Objectives - Knowledge

- Understands the logical organization of a comprehensive history to include:
 - Chief complaint.
 - History of chief complaint (history of present illness).
 - Past medical history.
 - Illnesses.
 - Medications.
 - Allergies.
 - Past surgical history.
 - Hospitalizations.
 - Social history.
 - Family history.
 - Review of systems.
- Understands the details to be asked in obtaining a history of chief complaint (NLDOCATS), past medical history, social history, family history, and review of systems.

Objectives - Skills

- Obtains a comprehensive history in adequate detail.
- Obtains a comprehensive history in appropriate period of time.
- Obtains a comprehensive history using logical organization.

Goal: Perform and interpret the findings of a comprehensive medical history and physical examination (including preoperative history and physical examination), including: comprehensive physical examination, including: **vital signs.**

Objectives - Knowledge

- Understands the correct technique for obtaining the following vital signs, including:

- height.
- weight.
- blood pressure.
- temperature.
- pulse.
- respiratory rate.
- Understands the normal and abnormal findings for each of the vital signs listed above.
- Understands the rationale for obtaining each of the exam components listed above.

Objectives - Skills

- Utilizes the correct technique for obtaining each of the vital signs.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the components performed upon a patient.
- Obtains vital signs in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **head, eyes, ears, nose, and throat (HEENT).**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the HEENT:
 - inspection/observation of:
 - scalp - skin lines, fluctuant masses, organized masses.
 - skull - malformations, masses.
 - cheek - symmetry, edema, ulceration.
 - facies - shape, features, nature of muscular movement.
 - eyes - extraocular movement, convergence, visual fields, globe protrusion/recession.
 - eyelids - motion, secretion, edema.
 - sclera - color, vascular engorgement.
 - cornea - scars, abrasions.
 - iris - color, shape, deposits.
 - pupils - equality, shape, reaction to light, accommodation.
 - lens - clarity, shape.
 - nose - symmetry, profile.
 - lips - defects, color, ulceration.
 - gums - inflammation, color, hemorrhaging.
 - breath odor - acetone, fetor.
 - tongue - size, deviation, color, lesions, vascular engorgement.
 - oral cavity/oropharynx - color, size, edema, ulceration, uvula position, tonsil color, tonsil size, tonsil swelling.
 - jaw - range of motion.
 - ear - shape, color, masses.
 - palpation:
 - scalp - fluctuant masses, organized masses.
 - skull - masses.

- cheek - swelling, ulceration.
- nose - swelling, masses, points of tenderness.
- lips - defects, ulceration.
- gums - masses.
- tongue - lesions.
- oral cavity/oropharynx- masses, ulceration.
- jaw - range of motion.
- ear - lesions.
- special tests:
 - ophthalmoscopic examination - color and clarity of media; vascular engorgement, hemorrhaging, vascular nicking, scarification of fundus; color, shape and size of optic disc; integrity of optic nerve.
 - otoscopic examination - swelling, redness, drainage.
 - nasal speculum examination - integrity, color, swelling, hemorrhaging.
 - cranial nerves.
- Understands the normal and abnormal findings for each of the exam components listed.
- Understands the rationale for performing each of the exam components listed.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the HEENT.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate HEENT exam components indicated by patient's chief complaint.
- Performs the HEENT exam in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **neck.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the neck:
 - inspection/observation of:
 - alignment.
 - range of motion.
 - observable masses.
 - symmetry.
 - jugular venous distention (JVD).
 - auscultation of:
 - carotid artery.
 - breath sounds.
 - palpation of:
 - carotid pulse
 - C spine - static and dynamic.
 - musculature.

- thyroid gland.
 - lymph nodes.
 - other masses.
- Understands the normal and abnormal findings for each of the exam components.
- Correctly interprets the normal or abnormal findings of each of the exam components when performed upon a patient.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the neck.
- Recognizes the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate neck exam components indicated by patient's chief complaint.
- Performs the neck exam in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **chest/breast.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the chest:
 - inspection/observation of:
 - alignment and symmetry.
 - observable masses/deformities.
 - chest wall motion.
 - nipple characteristics including color, discharge, position, symmetry, size, edema, lesions.
 - Breast characteristics including symmetry, dilation of veins, observable masses, size and shape, dimpling, edema, lesions.
 - palpation of:
 - nipple including induration, tenderness, adhesions.
 - breast tissue including temperature, masses, induration, tenderness, consistency, adhesions.
 - thorax, including ribs, T spine, sternum, clavicle, scapula costal cartilages, axillary nodes.
 - percussion for:
 - level of diaphragm.
- Understands the normal and abnormal findings for each of the exam components.
- Correctly interprets the normal or abnormal findings of each of the exam components when performed upon a patient.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the chest.

- Recognizes the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate chest exam components indicated by patient's chief complaint
- Performs the chest exam in an appropriate period of time

Goal: comprehensive physical examination, including: physical examination, including: **heart.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the heart:
 - inspection/observation of:
 - apical impulse.
 - palpation of:
 - PMI.
 - auscultation of:
 - heart sounds - normal and abnormal.
 - murmurs and gallops.
 - rubs.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the correct method of grading heart murmurs and the distinguishing features between benign and pathologic murmurs.
- Correctly interprets the normal or abnormal findings of each of the exam components when performed upon a patient.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the heart.
- Recognizes the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate heart exam components indicated by patient's chief complaint.
- Performs the heart exam in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **lungs.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the lungs:
 - inspection/observation of:
 - chest wall excursion.
 - palpation of:
 - tactile fremitus.
 - percussion (direct and indirect) for:
 - hyporesonance.
 - hyperresonance.

- auscultation of:
 - breath sounds - normal and abnormal.
 - fremitus.
 - rubs.
- special tests:
 - match test.
- Understands the normal and abnormal findings for each of the exam components.
- Correctly interprets the normal or abnormal findings of each of the exam components when performed upon a patient.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the lungs.
- Recognizes the normal or abnormal findings of each of the exam components when performed upon a patient
- Utilizes appropriate lung exam components indicated by patient's chief complaint
- Performs the lung exam in an appropriate period of time

Goal: comprehensive physical examination, including: physical examination, including: **abdomen.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the abdomen:
 - inspection/observation:
 - scars, distension, engorged veins, pulsations, color, rashes, masses.
 - auscultation:
 - bruits, bowel sounds, friction rubs.
 - palpation:
 - normal landmarks, fluctuance, masses and protrusions, rigidity, pulsations, organomegaly, tenderness.
 - percussion:
 - fluctuance, tenderness, rebound tenderness, sounds.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the abdomen.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate abdomen exam components indicated by patient's chief complaint.

- Performs the abdominal examination in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **genitourinary**.

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the genitourinary system:
 - inspection/observation:
 - male and female - normal landmarks, lesions, masses, color, inflammation, symmetry, position, discharge.
 - palpation:
 - Male and female - normal landmarks, skin lesions, masses, hernias.
 - special tests:
 - vaginal examination with speculum - color, lesions, masses, smears.
 - smears, cultures.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the genitourinary system.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate genitourinary system exam components indicated by patient's chief complaint.
- Performs the genitourinary system examination in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **rectal**.

Objectives - Knowledge

- Understands the correct technique for performing the following components of the rectal examination:
 - inspection/observation:
 - inflammation, sinuses, fistulas, bulges, lesions, masses.
 - palpation:
 - anus - sphincter size, tone, foreign body, laceration.
 - rectum - normal landmarks, masses, constrictions, tenderness.
 - special tests:
 - stool guaiac examination.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of the rectal examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate rectal exam components indicated by patient's chief complaint.
- Performs the rectal examination in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **upper extremities.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the upper and lower extremities:
 - inspection/observation:
 - size and symmetry, contour, masses, swelling, skin lesions.
 - range and quality of motion.
 - palpation:
 - normal landmarks, strength, range and quality of motion, including but not limited to tenosynovium, joint quality, tendon sheath, etc.
 - superficial and deep sensory parameters.
 - percussion:
 - reflexes - normal and abnormal/pathologic.
 - superficial and deep sensory parameters.
 - special tests:
 - cutaneous mapping, EMG/NCV, imaging studies, joint fluid analysis.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the upper and lower extremities.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate upper and lower extremity exam components indicated by patient's chief complaint.
- Performs the upper and lower extremity examination in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **neurologic examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of the neurologic examination:

- inspection/observation:
 - cranial nerves - all.
 - spasticity, tremors, rigidity, flaccidity, fasciculation.
 - equilibrium and coordination.
 - gait (see musculoskeletal examination section).
 - autonomic deficit: dyshidrosis, vasospasm, trophic changes, dermatographia.
 - palpation/maneuver:
 - cranial nerves - VII, IX, XI, XII.
 - muscle strength, tone and bulk.
 - clonus.
 - superficial and deep sensory nerve parameters: sharp/dull, pain, temperature, vibration, proprioception.
 - range and quality of motion:
 - percussion:
 - deep tendon reflexes.
 - special tests:
 - pathologic reflexes - Adult: Babinski, Chaddock, Oppenheim, Gordon.
 - Pathologic reflexes - Pediatric: Babinski, Chaddock, Oppenheim, Gordon, parachute, startle, grasp, Moro.
 - Romberg.
 - testing of dysdiadochokinesia - alternating motion, rebound sign, etc.
 - testing of dyssynergia - finger to nose, heel to shin, etc.
 - sensory mapping/dermatome.
 - other.
- Understands the normal and abnormal findings for each of the exam components.
 - Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of the neurologic examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate neurologic exam components indicated by patient's chief complaint.
- Performs the neurologic examination in an appropriate period of time.

Goal: Assess and manage the patient's general medical status. **Formulate an appropriate differential diagnosis of the patient's general medical problem(s), which includes diagnoses in the following tabular ICD-9 subsections (Please refer to Index A for complete listing of appropriate diagnoses).**

Objectives - Knowledge

- Understands the history and physical exam findings that would contribute to the formation of a general medical differential diagnosis that includes diagnoses in the following tabular ICD-9 subsections. (Please refer to Index A.)

- Infectious and Parasitic Diseases of the Musculoskeletal System (001-139)
- Neoplasms (140-239)
- Endocrine, Nutritional, and Metabolic Diseases and Immunity Disorders (240-279)
- Mental Disorders (290-319)
- Diseases of the Nervous System and Sense Organs (320-389)
- Diseases of the Circulatory System (390-459)
- Diseases of the Genitourinary System (680-686)
- Diseases of the Skin and Subcutaneous Tissue (687-709)
- Diseases of the Musculoskeletal System and Connective Tissue (710-739)
- Congenital Anomalies (740-759)
- Certain Conditions Originating in the Perinatal Period (760-779)
- Symptoms, Signs, and Ill-defined Conditions (780-799)
- Injury and Poisoning (800-999)
- Understands the etiology and contributing factors for any of the diagnoses in Index A that may impact podiatric management.
- Understands the possible course and individual/public health implications for each of the diagnoses listed in Index A.
- Understands the urgency of management for each of the diagnoses listed in Index A.

Objectives - Skills

- Charts most likely diagnosis appropriately as well as other possible diagnoses.
- Reassesses and revises differential diagnosis as indicated during the course of patient evaluation and management.

Goal: Assess and manage the patient's general medical status. Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: **EKG**.

Objectives - Knowledge

- Understands the general principles of EKG testing, including:
 - rhythm strip evaluation.
 - Holter monitoring.
 - event monitoring.
- Understands normal and abnormal findings that may present on the cardiac studies listed.
- Understands the rationale for ordering cardiac studies.

Objectives - Skills

- Recognizes (correctly interprets) the normal or abnormal findings.
- Selection of EKG/cardiac testing fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when EKG/cardiac testing results indicate further history, physical exam, diagnostic studies or consultation.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **plain radiography**.

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.
- Understands the correct technique for plain radiographic views, including:
 - PA and lateral chest xray.
 - skull.
 - upper extremity.
 - KUB.
 - pelvis.
 - mammography.
 - other radiographic contrast studies.
- Understands normal and abnormal findings that may present on plain radiographic views.
- Understands the rationale for ordering the plain radiographic views.
- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when plain film findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Objectives - Skills

- Reads plain radiographic films in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each view.
- Selects appropriate plain film views as indicated by patient's chief complaint.
- Selection of plain film views fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **nuclear medicine imaging**.

Objectives - Knowledge

- Understands the rationale for ordering the following nuclear medicine imaging studies:
 - total body Technetium 99 bone scan, including Ceretec.
 - gallium scan.
 - indium WBC scan.
 - V/Q scan.
 - PET scan (positron emission tomography).
 - SPECT scan (single photon emission computed tomography).
 - thallium perfusion scan.
 - other.
- Understands normal and abnormal findings that may present on nuclear medicine imaging studies.
- Correctly interprets the normal or abnormal findings on the nuclear medicine imaging.

- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when nuclear medicine imaging findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Objectives - Skills

- Recognizes the normal or abnormal findings on the nuclear medicine imaging.
- Selects appropriate nuclear medicine imaging as indicated by patient's medical signs and symptoms.
- Selection of nuclear medicine imaging fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **MRI**.

Objectives - Knowledge

- Understands the rationale for ordering MR imaging for non-lower extremity abnormalities, including but not limited to: brain, abdomen, heart and spine.
- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when MR findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Objectives - Skills

- Selection of lumbar spine MR fits the overall management of the patient in terms of appropriateness, evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **CT**.

Objectives - Knowledge

- Understands the rationale for ordering CT imaging for non-lower extremity abnormalities, including but not limited to: head, abdomen, heart and spine.
- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when CT findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **diagnostic ultrasound**.

Objectives - Knowledge

- Understands the rationale for ordering non-lower extremity diagnostic ultrasound including but not limited to: abdominal, cardiac, and pelvic regions.

- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when diagnostic ultrasound findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Assess and manage the patient's general medical status. Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: **other diagnostic studies.**

Objectives - Knowledge

- Understands the rationale for ordering diagnostic tests, other than those listed, that may be utilized in the evaluation of the patient's general medical status, including but not limited to:
 - intake and output (I&Os).
 - EEG.
 - allergy/patch testing.
 - pathology.
 - pulmonary function tests.
 - diagnostic endoscopy.
 - gastrointestinal function tests.
 - cardiac function tests.
 - other.
- Understands normal and abnormal findings referred to in a report or result.
- Recognizes when findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Assess and manage the patient's general medical status. Formulate and implement an appropriate plan of management, when indicated, including: **appropriate therapeutic intervention.**

Objectives - Knowledge

- Understands the indications and contraindications for general therapeutic intervention including:
 - Perioperative medical/surgical management of patients with the following:
 - infectious disease.
 - neoplasms.
 - endocrine/nutritional/metabolic/immune disorders.
 - blood and blood forming organ disorders.
 - mental disorders.
 - nervous system/sense organ disorders.
 - cardiovascular disease.
 - respiratory disease.
 - digestive disorders.
 - genitourinary disorders.
 - pregnancy.
 - skin and subcutaneous tissue disorders.
 - concurrent musculoskeletal disorders.
 - polytrauma.

- Inpatient and outpatient medical/surgical management, acute and subacute, of patients with the following:
 - infectious disease.
 - neoplasms.
 - endocrine/nutritional/metabolic/immune disorders.
 - blood and blood forming organ disorders.
 - mental disorders.
 - nervous system/sense organ disorders.
 - cardiovascular disease.
 - respiratory disease.
 - digestive disorders.
 - genitourinary disorders.
 - pregnancy.
 - skin and subcutaneous tissue disorders.
 - concurrent musculoskeletal disorders.
 - polytrauma.
- Basic Life Support (BLS).
- Advanced Cardiac Life Support (ACLS).
- Advanced Trauma Life Support (ATLS).
- Understands the technical aspects of general therapeutic intervention for the entities listed.
- Understands the instrument and material needs for the therapeutic intervention.
- Understands the normal and abnormal interactions between therapeutic modalities.

Objectives - Skills

- Basic Life Support (BLS).
- Advanced Cardiac Life Support (ACLS).
- Advanced Trauma Life Support (ATLS).
- Establishes IV access.
- Performs core surgical skills.
- Orders appropriate perioperative medical care
- Orders appropriate inpatient medical care.
- Orders appropriate ancillary therapeutic services, including but not limited to: physical and occupational therapy, wound care, chronic pain management, psychosocial services, assistive devices, other.

Goal: Assess and manage the patient's general medical status. Formulate and implement an appropriate plan of management, when indicated, including: **appropriate consultations and/or referrals.**

Objectives - Knowledge

- Recognizes when consultation with another medical specialist is necessary for either diagnosis or management.
- Recognizes when referral to a medical specialist is necessary for either diagnosis or management.
- Understands appropriate written and verbal communication methods in obtaining consultation or referral.

- Interprets consultation report and/or recommendations appropriately.
- Selection of consultation and/or referral fits the overall management of the patient in terms of evaluation or management sequence, timeliness, and cost-effectiveness.
- Recognizes when consultation results indicate further history, physical exam, diagnostic studies, therapeutic intervention or further consultation.

Objectives - Skills

- Utilizes effective written/oral communication skills when requesting consultation or referral.

Goal: Assess and manage the patient's general medical status. Formulate and implement an appropriate plan of management, when indicated, including: **appropriate general medical health promotion and education.**

Objectives - Knowledge

- Understands the indications for general medical health promotion and education, when appropriate, including:
 - disease prevention related to general medical disease states, including but not limited to diabetes mellitus.
 - disease prevention related to substance abuse, including tobacco, alcohol, and illegal substances.
- Understands the natural history of diseases, including etiologic and contributory factors and associated preventive measures.
- Understands the methodologies for communicating health promotion and education (verbal, written, other media).

Objectives - Skills

- Utilizes effective communication skills (verbal, written, other media) in general medical health promotion and education.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Abides by state and federal laws governing the practice of podiatric medicine and surgery.**

Objectives - Knowledge

- Understands DEA regulations.
- Understands Stark regulations.
- Understands individual state practice acts.
- Understands OSHA regulations.
- Understands Americans with Disabilities Act.
- Understands regulations and requirements in the operations of health care organizations in such areas as liability, trade restraint, conflict of interest, privileging, credentialing, certification practices, CME, confidentiality, discrimination, and unionism.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Practices and abides by the principles of informed consent.**

Objectives - Knowledge

- Understands what constitutes informed consent.
- Understands circumstances under which informed consent can or cannot be obtained.
- Understands issues of legal guardianship in relation to informed consent.

Objectives - Skills

- Obtains informed consent.
- Appropriately documents informed consent.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Understand and respects the ethical boundaries of interactions with patients, colleagues and employees.**

Objectives - Knowledge

- Knows how to access resources for ethical problems.
- Aware of parameters of informed consent.
- Understands the principles used to direct ethical decision-making in complex patient care circumstances, including those that may arise at the beginning and end of life.
- Knows how to proceed when a patient refuses a recommended intervention or requests ineffective or harmful treatment.
- Understands the ethical principles that underlie a physician's fiduciary relationship with a patient.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Demonstrates professional humanistic qualities.**

Objectives - Skills

- Demonstrates compassion, sensitivity, and respect in interactions with patients and families.
- Accepts responsibility.
- Demonstrates reliability and leadership.
- Is well organized, punctual, and efficient.
- Embraces self-learning and professional development skills.
- Is aware of one's own limitations of knowledge, experience, and skills.
- Accepts criticism, performs realistic self-assessments, and develops and implements a plan that addresses their personal learning needs.
- Personifies honesty and integrity through one's behaviors.
- Advocates for quality patient care.
- Assists patients in dealing with healthcare system complexities.

- Maintains a sustained commitment to service by accepting inconvenience to meet patients' needs.
- Volunteers one's skills and expertise to advance the welfare of patients and community.
- Behaves with high regard and respect for colleagues, other members of the health care team, and patients and their families.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Demonstrates ability to formulate a methodical and comprehensive treatment plan with appreciation of health care costs.**

Objectives - Knowledge

- Understands appropriate treatment modalities.
- Awareness of the costs of comparative therapies.
- Studies and understands evidence-based practice patterns.
- Studies and understands "best practices" and "preferred provider guidelines".
- Carries over the knowledge performance indicators required in the first section.
- Understands the relative costs of applied diagnostic and therapeutic interventions.

Objectives - Skills

- Uses an evidence-based approach to therapeutic intervention.
- Derives a treatment plan based upon a thorough history, physical examination, and appropriate diagnostic tests.
- Adheres to the principle "above all else, do no harm" in formulating and applying a treatment plan.
- Uses a treatment approach that logically progresses from less interventional (conservative) to more interventional (surgical) when applicable.
- Uses a treatment approach that considers cost-to-benefit and chooses the least costly, most effective therapeutic approach when applicable.
- Uses a comprehensive treatment approach that responds to the etiologic factors as well as resultant pathology when applicable.

Goal: Demonstrate the ability to communicate effectively and function in a multi-disciplinary setting. **Communicate in oral and written form with patients, colleagues, payers and the public.**

Objectives - Skills

- Teaches effectively to ensure patient and family understand rationale for management plan, expected outcomes, and potential problems.
- Utilizes effective methods to modify behavior and enhance compliance.
- Involves patient and family in coordinating decisions.
- Patiently reinforces learning for patients and family.
- Creates and sustains therapeutic relationships with patients.
- Demonstrates attentiveness, active listening, and good interviewing skills.
- Obtains essential data for decision analysis.
- Provides the opportunity for participants to request, provide, and receive information.

- Asks questions and provides information using language that is understandable.
- Effectively facilitates conflict resolution.
- Is collegial in interpersonal relationships with colleagues.
- Discusses pertinent aspects of patient's condition with consultant.
- Demonstrates caring and respectful behavior when interacting with patients.
- Recognizes and responds appropriately to nonverbal communication.
- Negotiates a mutually agreed upon treatment plan.
- Communicates with clerical staff and nursing staff in a manner that fosters mutual respect and facilitates an effectively run practice.
- Communicates with colleagues and other professionals on the health care team in a manner that fosters mutual respect and facilitates the effective handling of patient care issues.
- Effectively communicates by telephonic and electronic means.

- Learns and applies strategies for dealing with individuals who present significant communication challenges such as domination, anger, confusion, or an ethno-cultural background different than one's own.

Goal: Demonstrate the ability to communicate effectively and function in a multidisciplinary setting. **Is able to partner with health care managers and health care providers to assess, coordinate and improve health care.**

Objectives - Knowledge

- Understands the areas of expertise or other health care providers.
- Knows efficient methods to coordinate care among disciplines.

Objectives - Skills

- Distinguishes when it is appropriate to refer to other health care providers.
- Communicates and collaborates effectively with other members of the health care team.
- Refers efficiently for consultations, diagnostic tests, procedures, and therapeutic intervention.
- Facilitates team approach to develop and implement a preventative/therapeutic plan.
- Recognizes team members' areas of expertise and shows respect for the opinions and roles of individual team members, both physicians and non-physicians.
- Participates in the team's task by contributing one's own expertise, eliciting information, and providing feedback.

Goal: Demonstrate the ability to communicate effectively and function in a multidisciplinary setting. **Maintains appropriate medical records.**

Objectives - Knowledge

- Understands medical record components to include face sheet, history and physical, admit note, progress note, operative note, operative report, and discharge summary.
- Understands appropriate documentation for reporting adverse occurrences.

- Understands advanced directives and power of attorney issues.

Objectives - Skills

- Completes medical record components (see didactic indicators) in appropriate format and detail.
- Completes medical record components in a timely fashion.
- Updates the medical problem list and medication list at each visit.

Goal: Has the capacity to manage individuals and populations in a variety of socioeconomic and health care settings. **Advocates for quality patient care and assists patients in dealing with system complexities.**

Objectives - Knowledge

- Understands the interactions and roles of all players in healthcare delivery.
- Understands mechanisms for addressing resource and care delivery issues.

Objectives - Skills

- Places a priority on quality patient care above all else.
- Assists patients in addressing resource and health care delivery issues.

Goal: Has the capacity to manage a podiatric practice in a multitude of health care delivery settings. **Demonstrate familiarity with utilization management and quality improvement.**

Objectives - Knowledge

- Knows the process of cost-benefit analysis.
- Understand the use of comparative data to measure variation in practice and thus identify best practices.
- Understands the methodology of quality improvement and utilization management.
- Know how to measure patient satisfaction.
- Know the methods used to develop practice guidelines and critical pathways and how physicians use them in the management of disease.
- Know the respective roles of the regulatory agencies involved in maintaining quality of medical care, including JCAHO, NCQA, HCFA and state health care councils.
- Knows the methodology of outcomes measurement.

Goal: Has the capacity to manage a podiatric practice in a multitude of health care delivery settings. **Understands health care reimbursement.**

Objectives - Knowledge

- Knows the basic systems of payment, including indemnity plans, managed indemnity plans, and capitation.

- Knows the principal types of payers and their methodologies for healthcare reimbursement, including Medicare, Medicaid, B+/BS, worker's compensation, insurance companies (both for-profit and not-for-profit).
- Knowledge of diagnostic (ICD) and procedural (CPT) codes.

Objectives - Skills

- Utilizes diagnostic and procedural codes effectively.

Goal: Has the capacity to manage a podiatric practice in a multitude of health care delivery settings. **Understands medical-legal considerations involving health care delivery.**

Objectives - Knowledge

- Knows how to inform patients and obtain voluntary consent for a plan of medical care and specific diagnostic and therapeutic interventions.
- Understands the legal basis of the physician-patient relationship.
- Understands the concepts of standards of care.
- Understands how to identify the appropriate alternate decision maker when a patient lacks satisfactory decision-making abilities.
- Understands medical malpractice issues, including available carriers, types of coverage, how to respond to a claim of malpractice, limits of coverage, insurance tails, and national database.

Goal: Has the capacity to manage a podiatric practice in a multitude of health care delivery settings. **Demonstrate understanding of common business practices.**

Objectives - Knowledge

- Understands components and process of establishing an employee handbook.
- Understands components and process of creating a business plan.
- Know how the forms of medical practice differ from one another, including solo practice, group practice, preferred provider organizations, independent practice associations, or HMOs.
- Knows the basic business skills important to effective patient care, including accounting, personnel management, insurance billing, evaluating contracts, reading financial statements and using basic spreadsheet and databases.
- Understands legal and financial issues pertaining to employment contracts, practice associations and partnerships, purchasing a practice and establishing a practice.

Objectives - Skills

- Utilizes legal and business professional resources for all pertinent practice decisions.

Goal: Be professionally inquisitive, lifelong learners and teachers utilizing research, scholarly activity and information technologies to enhance professional knowledge and clinical practice. **Reads, interprets, critically examines, and presents medical and scientific literature.**

Objectives - Knowledge

- Understands the designs most commonly used in medical research.
- Understands the basic concepts underlying inferential statistics.

Objectives - Skills

- Applies research design and statistical techniques to the critical analysis of research.
- Regularly reviews, either individually or in group journal club participation, the scientific literature to enhance professional knowledge and patient care.

Goal: Be professionally inquisitive, lifelong learners and teachers utilizing research, scholarly activity and information technologies to enhance professional knowledge and clinical practice.
Designs, collects, interprets data and presents the findings in a formal study related to podiatric medicine and surgery.

Objectives - Knowledge

- Understands designs most commonly used in medical research proposals e.g., abstract, protocol, objectives, review in literature, methods, recruitment and resources, funding and references.
- Understands the basic concepts underlying inferential statistics.
- Understands basic institutional review board (IRB) policies and regulations with special emphasis on protection of human subjects, informed consent of human subjects and issues of confidentiality.
- Understands the various regulatory agencies associated with medical research and development, including:
 - National Institute of Health (NIH).
 - Department of Health and Human Services (DHHS).
 - Office for the Protection of Research Risks (OPRR).
 - Office of Research Compliance and Assurance (ORCA).
- Understands designs most commonly used in medical research proposals, e.g., abstract, protocol, objectives, review in literature, methods, recruitment and resources, funding and references.
- Understands the basic concepts underlying inferential statistics.
- Understands basic institutional review board (IRB) policies and regulations with special emphasis on protection of human subjects, informed consent of human subjects, and issues of confidentiality.
- Understands principles for consideration in balancing legally allowable and ethical issues that may arise in medical research involving human subjects.
References:
 - The Nuremberg Code.
 - The Declaration of Helsinki.
 - The Belmont Report.
- Understands medical associations relative to ethical issues in medical research involving human subjects, including:
 - Public Responsibility in Medicine and Research (PRIM+R).
 - Applied Research Ethics National Association (ARENA).

Objectives - Skills

- Completes a formal study in the form of either clinical study, basic science study, or outcome study.
- Prepares a study in publishable form.

Goal: Be professionally inquisitive, lifelong learners and teachers utilizing research, scholarly activity and information technologies to enhance professional knowledge and clinical practice.

Demonstrates information technology (IT) skills in learning, teaching, and clinical practice.

Objectives - Knowledge

- Know what databases and information sources are available that report results on diagnosis, treatment effectiveness, prognosis, and prevention.
- Can efficiently search and locate relevant information from computer-based sources.
- Understands the essential aspects of file organization, information storage, and the basic issues related to computer and copyright law.

Objectives - Skills

- Demonstrates basic keyboarding and Internet access skills.
- Uses word processing, spreadsheet, database, desktop publishing, and desktop presentation packages and adapts these tools for medical use.
- Identifies, evaluates, selects, and appropriately uses electronic sources of medical information.
- Identifies, evaluates, selects, and appropriately uses computer-based resources for patient education.
- Makes informed decisions regarding the purchase and use of computer equipment and software, including patient-care related services.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **hematology**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal hematologic values, including:
 - hemoglobin.
 - hematocrit.
 - CBC.
 - differential.
 - platelet count.
 - reticulocyte count.
 - Westergren sedimentation rate.
 - CD4/CD8.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for each hematology test.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **serology/immunology**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal serology/immunology values, including:
 - RPR.
 - VDRL.
 - HIV screen.
 - Mono screen.
 - serum pregnancy.
 - ANA.
 - rheumatoid factor.
 - blood group, Rh.
 - antibody screen.
 - direct Coombs.
 - Hepatitis A IgM (acute).
 - Hepatitis A IgG (immunity).
 - Hepatitis B Surface Antigen.
 - Hepatitis B Core Antibody.
 - Hepatitis B Surface Antibody.
 - Hepatitis C Antibody.
 - Rubella.
 - Rubeola.
 - Varicella.
 - CMV.
 - H. pylori.
 - Mumps.
 - Toxoplasma.
 - Lyme.
 - Cryoglobulins.
 - HLA B27.
 - C reactive protein.
 - serum complement.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for each serology/immunology test.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation or repeat/serial analysis.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **blood chemistries**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal blood chemistry values, including:
 - sodium.
 - potassium.
 - chloride.
 - carbon dioxide.
 - magnesium.
 - creatinine.
 - BUN.
 - blood glucose (random and fasting).
 - hemoglobin A1C.
 - fructosamine.
 - calcium.
 - phosphorous.
 - uric acid.
 - total bilirubin.
 - serum protein electrophoresis.
 - ferritin.
 - iron.
 - total iron binding capacity.
 - hemoglobin electrophoresis.
 - T4 / FTI.
 - TSH.
 - alkaline phosphatase.
 - AST (SGOT).
 - ALT (SGPT).
 - albumin.
 - PSA.
 - acid phosphatase.
 - creatine kinase (CK or CPK).
 - CKMB - cardiac.
 - amylase.

- cholesterol.
- HDL.
- LDL.
- triglycerides.
- acetone.
- vitamin B12.
- folate.
- ACTH challenge.
- cortisol.
- other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for blood chemistry tests.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **toxicology/drug screens.**

Objectives - Knowledge

- Understands normal and abnormal toxicology and drug screen findings and values, including:
 - vancomycin.
 - gentamicin.
 - theophylline.
 - phenytoin.
 - carbamazepine.
 - digoxin.
 - lithium.
 - valproic acid.
 - acetaminophen.
 - salicylate.
 - lead.
 - alcohol.
 - anabolic steroids.
 - barbiturates.
 - narcotics.
 - sedative-hypnotics.
 - cocaine.
 - other illicit drugs.
- Understands the rationale for ordering the tests listed in the section above.

- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands the correct technique for venipuncture and specimen storage and processing.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **coagulation studies.**

Objectives - Knowledge

- Understands normal and abnormal coagulation study values, including:
 - prothrombin time.
 - INR.
 - activated PTT.
 - bleeding time.
 - fibrinogen.
 - fibrin split products.
- Understands the rationale for ordering the tests listed above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands the correct technique for venipuncture and specimen storage and processing.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **blood gases.**

Objectives - Knowledge

- Understands normal and abnormal blood gas values, including:
 - arterial P O₂.
 - arterial pH.
 - arterial P CO₂.
 - bicarbonate.
- Understands the rationale for ordering the tests listed above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands appropriate method for collection and processing of arterial blood gases.

Objectives - Skills

- Appropriately procures arterial blood gas specimen.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **microbiology.**

Objectives - Knowledge

- Understands the technique for performing:
 - gram stain.
 - KOH prep.
 - aerobic cultures.
 - anaerobic cultures.
 - fungal cultures.
 - acid-fast (mycobacterial) cultures.
 - GC cultures.
 - other.
- Can correctly interpret the results of the test listed in section above.
- Understands the correct technique for obtaining specimens and specimen storage and processing, including:
 - arthrocentesis.
 - tissue biopsy (nails, soft tissue, bone).
 - swabs or aspirants.
 - blood cultures.
 - stool cultures.
 - CSF cultures.
 - urine cultures.
 - sputum cultures.
- Understands the rationale for selecting specimen procurement methods listed in section above.
- Understands laboratory processing of the specimens, including:

- the identification of organisms.
- the determination of organism sensitivities by Kirby-Bauer disc diffusion.
- the determination of organism sensitivities to antimicrobials by minimal inhibitory concentrations.
- the determination of organism sensitivities to antimicrobials by minimal bacteriocidal concentrations.
- serum bacteriocidal levels.
- Differentiates normal flora from pathogenic microbes.
- Understands the common pathogens associated with specific infectious disease states (e.g., postoperative, diabetic fetid foot, etc.).
- Identifies antimicrobial resistance, based upon sensitivity results.
- Understands the rationale for ordering HIV screening.

Objectives - Skills

- Appropriately performs and reads a gram stain and a KOH prep.
- Obtains specimens using appropriate techniques, as listed in the section above.
- Choice of specimen collection method is appropriate for the patient's type and location of suspected infection.
- Correctly interprets the results of cultures and sensitivities.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **synovial fluid analysis**.

Objectives - Knowledge

- Understands the correct technique for arthrocentesis.
- Understands the correct technique for specimen storage and processing.
- Understands the various tests that can be performed on synovial fluid, including:
 - volume.
 - general appearance.
 - viscosity.
 - cells / WBCs / neutrophils.
 - crystals.
 - Mucin clot.
 - Fibrin clot.
 - pH.
 - gram stain.
 - culture and sensitivity.
 - glucose.
 - protein.
- Understands normal and abnormal values for the tests listed in section above.
- Understands the rationale for selecting the tests listed in the section above.

Objectives - Skills

- Utilizes the correct technique for performing an arthrocentesis.
- Recognizes (correctly interprets) the normal or abnormal test values for each test in section above.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **urinalysis**.

Objectives - Knowledge

- Understands normal and abnormal urinalysis findings and values, including:
 - appearance/odor.
 - dipstick analysis.
 - microscopic analysis.
 - urine pregnancy.
 - urine microalbumin.
 - 24-hour creatinine clearance.
 - 24-hour uric acid.
 - myoglobins.
- Understands the rationale for ordering the tests listed in the section above.
- Correctly interprets the normal and abnormal test findings/values for each test listed in the section above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands appropriate methods for collection of specimens.

Objectives - Skills

- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Objectives - Attitudes

- Accepts criticism constructively.
- Acts as a patient advocate, involving the patient/family in the decision-making process.
- Communicates effectively with the patient/family, recognizing their concern for safety, comfort, and medical necessity.
- Provides high quality, comprehensive care in an ethical manner.
- Demonstrates moral and ethical conduct.
- Respects and adapts to cultural differences.
- Establishes trust and rapport with patients and peers.

- Demonstrates primary concern for patient's welfare and well-being.
- Functions appropriately in a multidisciplinary setting, using good communication skills.
- Demonstrates responsible, reliable, punctual, cooperative behavior, and maintains records in a timely manner.

Competencies

Rotation: Podiatric Surgery

Objectives - Knowledge

Objectives - Skills

- Recognizes level of patient understanding of illness, the rationale for the management plan, expected outcomes, and potential economic and social problems.
- Seeks the appropriate alternative decision maker when a patient lacks satisfactory decision-making abilities.
- Knows how to proceed when a patient refuses a recommended intervention or requests ineffective or harmful treatment.
- Knows how to determine when a treatment has failed or succeeded and when to change.
- Applies principles of age-specific diagnostics and therapeutics.
- Is aware of how one's own cultural values, assumptions, and beliefs affect patient care and clinical decision-making.
- Demonstrates sensitivity and respect when interacting with individuals whose culture is different from our own.
- Exhibits a willingness and tendency to learn and apply culture-specific knowledge to the care of patients.
- Advocates for quality patient care and assists patients in dealing with system complexities.
- Facilitates cultural sensitization for office/clinic staff.
- Understands all cultural systems are sources of beliefs about health, recognition of symptoms, communication about symptoms, and treatment.
- Uses the assistance of family members, translators/interpreters, and other community resources and advocacy groups.
- Conducts history, physical examination, and diagnostic and therapeutic interventions in a culturally sensitive manner.
- Provides health care services aimed at preventing health problems or maintaining health.
- Applies basic and clinically supportive sciences which are appropriate to their discipline.
- Analyzes the sociocultural dimension of one's own practice site and the implications for practice management.
- Incorporates the principles and practices of health maintenance into each patient encounter where appropriate.
- Obtains data about the community in which one works pertaining to the population/community's demographics, culture, and epidemiology of major health problems.
- Applies clinical decision analysis including identifying alternative actions and possible outcomes, developing a decision tree, and assigning probabilities to outcomes.

- Demonstrates awareness of sociocultural risk factors and interventions that can be used to modify these risk factors.
- Demonstrates awareness of cultural problems having high mortality and morbidity rates.
- Demonstrates awareness of cultural problems relating to the nation's health promotion and disease prevention objectives.
- Recognizes the role of continuing medical education in the maintenance of competency.
- Chooses continuing medical education activities based on personal needs and deficiencies.
- Fulfills hospital, state, and certifying board continuing medical education requirements.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **problem-focused history.**

Objectives - Knowledge

- Understands the logical organization of a problem-focused history to include:
 - chief complaint.
 - history of chief complaint (history of present illness).
 - past medical history including:
 - illnesses.
 - medications.
 - allergies.
 - past surgical history.
 - hospitalizations.
 - social history.
 - family history.
 - review of systems.
- Understands the details to be asked in obtaining a history of chief complaint (NLDOCATS), past medical history, social history, family history, and review of systems.

Objectives - Skills

- Obtains a problem-focused history using logical organization.
- Obtains a problem-focused history in appropriate period of time.
- Obtains a problem-focused history in adequate detail.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **neurologic examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of a problem-focused neurologic examination:
 - sensory evaluation, including; gross epicritic sensations (light touch, sharp/dull, vibratory, and hot/cold), Semmes-Weinstein monofilament testing, and two-point discrimination testing.
 - reflex evaluation, including: patellar and Achilles reflexes, pathologic reflexes (Babinski, Chaddock, Oppenheim, and Gordon tests), and primitive reflexes.
 - specific muscle testing.
 - evaluation of coordination (stance and gait), including tests of cerebellar function (see also musculoskeletal examination).
 - other clinical tests.
 - nerve palpation and percussion (Tinel's, Valleix's).
- Understands the normal and abnormal findings for each of the neurologic exam components.
- Understands the rationale for performing each of the neurologic exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of a problem-focused neurologic examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the neurologic exam components when performed upon a patient.
- Utilizes appropriate neurologic exam components indicated by patient's chief complaint.
- Performs the problem-focused neurologic exam in an appropriate period of time.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **vascular examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of a problem-focused vascular examination:
 - palpation of abdominal aorta, femoral, popliteal, and pedal (posterior tibial and dorsalis pedis) pulses.
 - auscultation of the arterial tree from abdominal aorta to popliteal artery.
 - observation of capillary (subpapillary venous plexus) filling time and venous filling time.
 - observation for pallor on elevation/dependent rubor.
 - observation for secondary skin changes of vascular disease, including temperature, turgor, color, hair distribution, texture, and the presence of ischemic, vasculitic, or varicose ulcers.
 - observation for varicosities.
 - examination for superficial and deep venous thrombophlebitis, including:
 - Homan's test.
 - palpation of inguinal and popliteal lymph nodes.

- observation of lymphangitis and cellulitis.
 - observation of level/distribution, severity, and density of peripheral edema.
- Understands the normal and abnormal findings for each of the vascular exam components.
- Understands the rationale for performing each of the vascular exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of a problem-focused vascular examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the vascular exam components when performed upon a patient.
- Utilizes appropriate vascular exam components indicated by patient's chief complaint.
- Performs the problem-focused vascular exam in an appropriate period of time.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **dermatologic examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of a problem-focused dermatologic examination:
 - observation of skin tone, color, texture, moisture, temperature, turgor, and integrity.
 - observation of hair distribution.
 - observation of nail shape, color, thickness, orientation, and integrity.
 - observation of characteristics (qualitative and quantitative) of potential neoplastic skin changes.
 - observation of characteristics (qualitative and quantitative) of potential ulcerative skin changes.
 - observation of qualities and characteristics of potential infectious (viral, bacterial, fungal) skin changes.
 - observation of qualities and characteristics of skin changes associated with metabolic/systemic diseases.
 - observation of qualities and characteristics of skin changes associated with trauma.
 - observation of qualities and characteristics of primary skin disorders.
- Understands the normal and abnormal findings for each of the dermatologic exam components.
- Understands the rationale for performing each of the dermatologic exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of a problem-focused dermatologic examination.

- Recognizes (correctly interprets) the normal or abnormal findings of each of the dermatologic exam components when performed upon a patient.
- Utilizes appropriate dermatologic exam components indicated by patient's chief complaint.
- Performs the problem-focused dermatologic exam in an appropriate period of time.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Perform and interpret the findings of a thorough problem-focused history and physical exam, including: **musculoskeletal examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of a problem-focused musculoskeletal examination:
 - Qualitative and/or quantitative evaluation of positional/structural alignment, including:
 - spine.
 - limb length.
 - pelvis.
 - hip.
 - femur.
 - knee.
 - tibia.
 - ankle.
 - hindfoot.
 - midfoot.
 - resting calcaneal stance position.
 - forefoot to rearfoot alignment.
 - forefoot - rays, MTPJs, toes.
 - Qualitative determination of range, axis, and quality of motion of the following joints:
 - hip.
 - knee.
 - ankle.
 - subtalar.
 - midtarsal (long and oblique axis).
 - first ray.
 - fifth ray.
 - metatarsophalangeal.
 - interphalangeal.
 - Quantitative measurement of range of motion of the following joints:
 - hip.
 - knee.
 - ankle.
 - subtalar.
 - first ray.
 - fifth ray.
 - metatarsophalangeal.

- Understands characteristics of normal and abnormal gait, including alignment, coordination, cadence, compensation, and phasic muscle activity.
- Understands characteristics of and differentiates abnormal gait patterns including, but not limited to:
 - Trendelenberg gait.
 - steppage gait / dropfoot.
 - scissors gait (bilateral spastic paresis).
 - spastic hemiparesis/other spastic gait forms.
 - sensory ataxia.
 - cerebellar ataxia.
 - Parkinsonism.
 - other gait forms.
- Palpation of musculoskeletal structures, including specific bone, tendon, and joint landmarks.
- Special tests including:
 - heel raise test.
 - Coleman block or book test.
 - Simmond's test.
 - Hubscher maneuver.
 - provocation tests for intermetatarsal neuroma (Mulder's sign).
 - Kelikian push-up test.
 - dynamic tests of strength (heel walking, toe walking).
 - evaluation of hip derangement:
 - hip dislocatability tests.
 - Ortollani's sign.
 - Anchor sign.
 - Barlow's sign.
 - Galeazzi's sign.
 - telescoping.
 - straight leg raise test.
 - Braggard's test.
 - Faber (Patrick) test.
 - femoral stretch test (Ely test).
 - Adams test
 - Trendelenberg test.
 - Ober test.
 - Thomas test.
 - LaSeagues test.
 - modified LaSeagues test.
 - FLIP test (seated LaSeagues).
 - Neri's bowing.
 - Bowstring sign.
 - Kempfi's test.
 - Piriformis stretch.
 - Nachlas prone test.
 - Yeoman's test.
 - Gaenslen's test.
- evaluation of internal knee derangement:
 - collateral stress test (varus/valgus).
 - Lachman stress test (anterior).

- patellar tracking test/Q angle.
- McMurray test.
- Apley's test.
- Clark's test.
- femoral grinding test.
- evaluation of ankle derangement:
 - cotton test.
 - squeeze test.
 - talar tilt test.
 - anterior drawer test.
 - Silverskiold test.

- Understands the normal and abnormal findings for each of the musculoskeletal exam components.
- Understands the rationale for performing each of the musculoskeletal exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of a problem-focused musculoskeletal examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the musculoskeletal exam components when performed upon a patient.
- Utilizes appropriate musculoskeletal exam components indicated by patient's chief complaint.
- Performs the problem-focused musculoskeletal exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **plain radiography.**

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.
- Understands the correct technique for both weight-bearing and non-weight-bearing plain radiographic views, including:
 - the infant foot:
 - AP view.
 - lateral view.
 - oblique view(s).
 - club foot - Kite method.
 - the foot:
 - AP view.
 - oblique view:
 - medial oblique view.
 - lateral oblique view.
 - lateral view.
 - phalangeal view.
 - oblique phalangeal view.
 - lateral phalangeal view.
 - axial calcaneal view.
 - lateral calcaneal view.

- Harris and Beath projection.
 - specialized subtalar joint views (trauma):
 - Isherwood.
 - Broden's.
 - axial sesamoid view.
 - axial forefoot view.
- the ankle:
 - AP view.
 - AP mortise view.
 - oblique view (45').
 - lateral view.
- the leg:
 - AP view.
 - oblique view.
 - lateral view.
- the knee:
 - AP view.
 - oblique view.
 - lateral view.
- the knee - intercondylar fossa:
 - PA axial.
- patella and patellofemoral joint:
 - PA view.
 - lateral.
 - tangential - Merchant method.
 - tangential - inferosuperior projection.
 - oblique.
- the femur:
 - AP view.
 - lateral.
- the hip:
 - AP - pelvis.
 - AP - hip.
 - unilateral frog leg.
 - axiolateral view.
 - the pediatric hip:
 - AP view.
 - lateral (bilateral frog-leg position).
- the pelvis:
 - AP view.
 - AP bilateral frog leg.
 - AP axial view.
 - anterior oblique view.
- the sacroiliac joints:
 - AP pelvis view.
 - oblique view.
- the sacrum and coccyx:
 - AP axial sacrum.
 - AP axial coccyx.
 - lateral sacrum.
 - lateral coccyx.

- the scoliosis and spinal fusion series:
 - PA or AP view.
 - erect lateral view.
 - R and L bending views.
 - lateral - hyperextension and flexion views.
- the spine:
 - lumbar spine:
 - AP or PA view.
 - oblique view.
 - lateral view.
 - AP axial view.
 - thoracic spine:
 - AP view.
 - lateral view.
 - oblique view.
 - cervical spine:
 - AP view.
 - AP/open mouth view.
 - lateral.
 - oblique (anterior and posterior).
 - swimmer's lateral view.
 - lateral view (flexion and extension).
 - AP "chewing" view.
 - AP dens view.
 - PA dens view.
- scanogram/limb length measurement views.
- Understands normal and abnormal findings that may present on plain radiographic views.
- Understands the rationale for ordering plain radiographic views.

Objectives - Skills

- Utilizes the correct technique for performing each of the plain radiographic views.
- Reads plain radiographic films in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each plain radiographic view.
- Selects appropriate plain film views as indicated by patient's chief complaint.
- Selection of plain film views fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when plain film findings indicate further history, physical exam, diagnostic studies, or consultation.
- Performs the exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **radiographic contrast studies.**

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.

- Understands the pharmacology of various available radiographic contrast materials.
- Understands the contraindications of and co-morbidity factors for various available radiographic contrast materials.
- Understands the correct technique for radiographic contrast studies, including:
 - arthrography.
 - tenography.
 - sinography.
 - bursography.
 - contrast-enhanced CT.
 - contrast-enhanced MRI.
- Understands normal and abnormal findings that may present on radiographic contrast studies.
- Understands the rationale for ordering radiographic contrast studies.

Objectives - Skills

- Utilizes the correct technique for performing each of the radiographic contrast studies.
- Reads radiographic contrast study films in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each radiographic contrast study.
- Selects appropriate radiographic contrast study indicated by patient's chief complaint.
- Selection of radiographic contrast study fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when radiographic contrast study findings indicate further history, physical exam, diagnostic studies, or consultation.
- Performs the exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **stress radiography.**

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.
- Understands the correct technique for stress radiography, including:
 - manual ankle anterior drawer technique.
 - manual ankle varus/valgus stress technique.
 - stress ankle plantarflexion and dorsiflexion technique.
 - Lisfranc's joint stress technique.
 - mechanical stress devices (Telos) and techniques.
 - ankle syndesmotomic stress technique.
 - other lower extremity stress techniques.
- Understands normal and abnormal findings that may present on stress radiography tests.
- Understands the rationale for ordering stress radiography tests.

Objectives - Skills

- Utilizes the correct technique for performing each of the stress radiography studies.
- Reads stress radiograph films in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each stress radiography study.
- Selects appropriate stress radiography test indicated by patient's chief complaint.
- Selection of stress radiography tests fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when stress radiography test findings indicate further history, physical exam, diagnostic studies, or consultation.
- Performs the exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **fluoroscopy**.

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.
- Understands the correct technique for fluoroscopy, including:
 - static.
 - dynamic (real time).
- Understands normal and abnormal findings that may present on fluoroscopy.
- Understands the rationale for performing fluoroscopy.

Objectives - Skills

- Utilizes the correct technique for performing fluoroscopy.
- Reads/evaluates dynamic and static fluoroscopic images in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on fluoroscopy.
- Selection of fluoroscopy is indicated by patient's chief complaint.
- Selection of fluoroscopy fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when fluoroscopy findings indicate further history, physical exam, diagnostic studies, or consultation.
- Performs the exam in an appropriate period of time.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **nuclear medicine imaging**.

Objectives - Knowledge

- Understands the general technical aspects of nuclear medicine imaging studies, including:
 - Technetium 99 bone scan (three-phase/four-phase).
 - HMPAO scan (Ceretek).
 - Gallium scan.
 - Indium WBC scan.

- Understands normal and abnormal findings that may present on the nuclear medicine imaging.
- Understands the rationale for ordering nuclear medicine imaging.

Objectives - Skills

- Reads nuclear medicine imaging in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on the nuclear medicine imaging.
- Selects appropriate nuclear medicine imaging as indicated by patient's chief complaint.
- Selection of nuclear medicine imaging fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when nuclear medicine imaging findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **MRI**.

Objectives - Knowledge

- Understands the general technical aspects of MR imaging studies, including:
 - pulse sequences and their effects on image.
 - contrast techniques.
 - slice thickness.
 - contraindications.
 - available vs. appropriate planes of imaging.
- Understands normal and abnormal findings that may present on MR imaging, including normal sectional anatomy.
- Understands the rationale for ordering MR imaging.

Objectives - Skills

- Reads MRI imaging studies in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on MR imaging.
- Selection of MR imaging is indicated by patient's chief complaint.
- Selection of MR imaging fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when MR imaging findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **CT**.

Objectives - Knowledge

- Understands the general technical aspects of CT imaging studies, including:
 - slice thickness.
 - available vs. appropriate planes of imaging.

- three-dimensional CT reconstruction.
- Understands normal and abnormal findings that may present on CT imaging, including normal sectional anatomy.
- Understands the rationale for ordering CT imaging.

Objectives - Skills

- Reads CT scan in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on CT imaging.
- Selection of CT imaging is indicated by patient's chief complaint.
- Selection of CT imaging fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when CT imaging findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **diagnostic ultrasound.**

Objectives - Knowledge

- Understands the general technical aspects of diagnostic ultrasound studies, including:
 - duplex ultrasound (DVT).
 - soft tissue ultrasound (tendon pathology, foreign body).
- Understands normal and abnormal findings that may present on diagnostic ultrasound.
- Understands the rationale for ordering diagnostic ultrasound.

Objectives - Skills

- Reads static and/or dynamic ultrasound study in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on diagnostic ultrasound.
- Selection of diagnostic ultrasound is indicated by patient's chief complaint.
- Selection of diagnostic ultrasound fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when diagnostic ultrasound findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: medical imaging, including: **vascular imaging.**

Objectives - Knowledge

- Understands the pharmacology of various available radiographic contrast materials.
- Understands the contraindications of and co-morbidity factors for various available radiographic contrast materials.

- Understands the correct technique for vascular imaging studies, including:
 - contrast arteriography.
 - contrast venography.
 - MRI angiography.
 - digital subtraction angiography.
- Understands normal and abnormal findings that may present on the vascular imaging studies.
- Understands the rationale for ordering the vascular imaging studies.

Objectives - Skills

- Reads vascular imaging studies in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each vascular imaging study.
- Selects appropriate vascular imaging study indicated by patient's chief complaint and clinical presentation.
- Selection of vascular imaging study fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when vascular imaging study findings indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **hematology.**

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal hematologic values, including:
 - hemoglobin.
 - hematocrit.
 - CBC.
 - differential.
 - platelet count.
 - reticulocyte count.
 - Westergren sedimentation rate.
 - CD4/CD8.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for each hematology test.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **serology/immunology**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal serology/immunology values, including:
 - RPR.
 - VDRL.
 - HIV screen.
 - Mono screen.
 - serum pregnancy.
 - ANA.
 - rheumatoid factor.
 - blood group, Rh.
 - antibody screen.
 - direct Coombs.
 - Hepatitis A IgM (acute).
 - Hepatitis A IgG (immunity).
 - Hepatitis B Surface Antigen.
 - Hepatitis B Core Antibody.
 - Hepatitis B Surface Antibody.
 - Hepatitis C Antibody.
 - Rubella.
 - Rubeola.
 - Varicella.
 - CMV.
 - H. pylori.
 - Mumps.
 - Toxoplasma.
 - Lyme.
 - Cryoglobulins.
 - HLA B27.
 - C reactive protein.
 - serum complement.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for each serology/immunology test.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.

- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation or repeat/serial analysis.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **blood chemistries**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal blood chemistry values, including:
 - sodium.
 - potassium.
 - chloride.
 - carbon dioxide.
 - magnesium.
 - creatinine.
 - BUN.
 - blood glucose (random and fasting).
 - hemoglobin A1C.
 - fructosamine.
 - calcium.
 - phosphorous.
 - uric acid.
 - total bilirubin.
 - serum protein electrophoresis.
 - ferritin.
 - iron.
 - total iron binding capacity.
 - hemoglobin electrophoresis.
 - T4 / FTI.
 - TSH.
 - alkaline phosphatase.
 - AST (SGOT).
 - ALT (SGPT).
 - albumin.
 - PSA.
 - acid phosphatase.
 - creatine kinase (CK or CPK).
 - CKMB - cardiac.
 - amylase.
 - cholesterol.
 - HDL.
 - LDL.
 - triglycerides.
 - acetone.
 - vitamin B12.
 - folate.
 - ACTH challenge.

- cortisol.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for blood chemistry tests.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **toxicology/drug screens.**

Objectives - Knowledge

- Understands normal and abnormal toxicology and drug screen findings and values, including:
 - vancomycin.
 - gentamicin.
 - theophylline.
 - phenytoin.
 - carbamazepine.
 - digoxin.
 - lithium.
 - valproic acid.
 - acetaminophen.
 - salicylate.
 - lead.
 - alcohol.
 - anabolic steroids.
 - barbiturates.
 - narcotics.
 - sedative-hypnotics.
 - cocaine.
 - other illicit drugs.
- Understands the rationale for ordering the tests listed in the section above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands the correct technique for venipuncture and specimen storage and processing.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **coagulation studies.**

Objectives - Knowledge

- Understands normal and abnormal coagulation study values, including:
 - prothrombin time.
 - INR.
 - activated PTT.
 - bleeding time.
 - fibrinogen.
 - fibrin split products.
- Understands the rationale for ordering the tests listed above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands the correct technique for venipuncture and specimen storage and processing.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **blood gases.**

Objectives - Knowledge

- Understands normal and abnormal blood gas values, including:
 - arterial P O₂.
 - arterial pH.
 - arterial P CO₂.
 - bicarbonate.
- Understands the rationale for ordering the tests listed above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.

- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands appropriate method for collection and processing of arterial blood gases.

Objectives - Skills

- Appropriately procures arterial blood gas specimen.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **microbiology.**

Objectives - Knowledge

- Understands the technique for performing:
 - gram stain.
 - KOH prep.
 - aerobic cultures.
 - anaerobic cultures.
 - fungal cultures.
 - acid-fast (mycobacterial) cultures.
 - GC cultures.
 - other.
- Can correctly interpret the results of the test listed in section above.
- Understands the correct technique for obtaining specimens and specimen storage and processing, including:
 - arthrocentesis.
 - tissue biopsy (nails, soft tissue, bone).
 - swabs or aspirants.
 - blood cultures.
 - stool cultures.
 - CSF cultures.
 - urine cultures.
 - sputum cultures.
- Understands the rationale for selecting specimen procurement methods listed in section above.
- Understands laboratory processing of the specimens, including:
 - the identification of organisms.
 - the determination of organism sensitivities by Kirby-Bauer disc diffusion.
 - the determination of organism sensitivities to antimicrobials by minimal inhibitory concentrations.
 - the determination of organism sensitivities to antimicrobials by minimal bacteriocidal concentrations.
 - serum bacteriocidal levels.

- Differentiates normal flora from pathogenic microbes.
- Understands the common pathogens associated with specific infectious disease states (e.g., postoperative, diabetic fetid foot, etc.).
- Identifies antimicrobial resistance, based upon sensitivity results.
- Understands the rationale for ordering HIV screening.

Objectives - Skills

- Appropriately performs and reads a gram stain and a KOH prep.
- Obtains specimens using appropriate techniques, as listed in the section above.
- Choice of specimen collection method is appropriate for the patient's type and location of suspected infection.
- Correctly interprets the results of cultures and sensitivities.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **synovial fluid analysis**.

Objectives - Knowledge

- Understands the correct technique for arthrocentesis.
- Understands the correct technique for specimen storage and processing.
- Understands the various tests that can be performed on synovial fluid, including:
 - volume.
 - general appearance.
 - viscosity.
 - cells / WBCs / neutrophils.
 - crystals.
 - Mucin clot.
 - Fibrin clot.
 - pH.
 - gram stain.
 - culture and sensitivity.
 - glucose.
 - protein.
- Understands normal and abnormal values for the tests listed in section above.
- Understands the rationale for selecting the tests listed in the section above.

Objectives - Skills

- Utilizes the correct technique for performing an arthrocentesis.
- Recognizes (correctly interprets) the normal or abnormal test values for each test in section above.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: laboratory tests, including: **urinalysis**.

Objectives - Knowledge

- Understands normal and abnormal urinalysis findings and values, including:
 - appearance/odor.
 - dipstick analysis.
 - microscopic analysis.
 - urine pregnancy.
 - urine microalbumin.
 - 24-hour creatinine clearance.
 - 24-hour uric acid.
 - myoglobins.
- Understands the rationale for ordering the tests listed in the section above.
- Correctly interprets the normal and abnormal test findings/values for each test listed in the section above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands appropriate methods for collection of specimens.

Objectives - Skills

- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: pathology, including: **anatomic and cellular pathology**.

Objectives - Knowledge

- Understands the correct technique and protocols for procuring pathology specimens, including:
 - excisional biopsy.
 - incisional biopsy.
 - punch biopsy.
 - shave biopsy.
 - needle aspiration.
 - surgical excision.
- Understands the rationale for selecting each of the procurement methods listed in the section above.
- Understands the correct technique, protocol, and rationale for utilizing a frozen section during a surgical case.

- Understands the correct technique and protocols for processing of pathology specimens for gross and microscopic evaluation, including: preparation of specimens, standard staining techniques, and special staining techniques.
- Understands the gross features, clinical and laboratory, of various pathologic entities.
- Understands the microscopic features of various pathologic entities.
- Understands the clinical, gross pathologic, and microscopic features that differentiate benign from malignant lesions.

Objectives - Skills

- Performs the correct technique for procuring pathology specimens, including each of the techniques listed in the knowledge indicator.
- Recognizes (correctly interprets) the normal or abnormal gross features of the specimen.
- Recognizes (correctly interprets) the normal or abnormal microscopic features of the specimen.
- Utilizes appropriate specimen procurement method (including frozen section) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **electrodiagnostic studies.**

Objectives - Knowledge

- Understands the general principles of electrodiagnostic testing including:
 - nerve conduction studies - sensory and motor.
 - electromyogram:
 - static.
 - dynamic.
- Understands the general technical aspects of performing electrodiagnostic tests listed in the section above.
- Understands normal and abnormal findings that may present on electrodiagnostic testing listed in the section above.
- Understands the rationale for ordering the electrodiagnostic tests listed in the section above.

Objectives - Skills

- Recognizes when electrodiagnostic test results indicate further history, physical exam, diagnostic studies, or consultation.
- Selection of electrodiagnostic test fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Selects appropriate electrodiagnostic test as indicated by patient's chief complaint.

Recognizes (correctly interprets) the normal or abnormal findings on each test listed in the section above.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **non-invasive vascular studies.**

Objectives - Knowledge

- Understands the general principles of noninvasive vascular testing including:
 - arterial doppler:
 - Ankle Brachial Pressure Index.
 - Modified Exercise Test of Carter.
 - transcutaneous oximetry.
 - thermography.
 - photoplethysmography:
 - digital blood pressure.
 - volume plethysmography.
 - digital Doppler.
 - elevation/dependency testing.
 - five-minute reactive hyperemia test.
 - crossed hand thermal perception test.
 - palpation of normal and abnormal pulses.
 - venous duplex study.
 - subpapillary venous plexus filling time (SPVPFT).
 - Perthes test.
 - Trendelenburg's maneuver.
 - other.
- Understands the correct technique for performing noninvasive vascular tests listed in the section above.
- Understands normal and abnormal findings that may present on noninvasive vascular tests listed in the section above.
- Understands the rationale for ordering the noninvasive vascular tests listed in the section above.

Objectives - Skills

- Recognizes (correctly interprets) the normal or abnormal findings on each test listed in the section above.
- Selects appropriate noninvasive vascular test as indicated by patient's chief complaint and clinical findings.
- Selection of noninvasive vascular test fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when noninvasive vascular test results indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **computerized gait/force plate studies.**

Objectives - Knowledge

- Understands the general principles of computerized gait and force plate testing.
- Understands the correct technique for performing computerized gait and force plate studies.
- Understands normal and abnormal findings that may present on computerized gait and force plate studies.
- Understands the rationale for ordering the computerized gait and force plate studies.

Objectives - Skills

- Performs or orders computerized gait and force plate studies.
- Recognizes (correctly interprets) the normal or abnormal findings.
- Selection of computerized gait and force plate study fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when computerized gait and force plate test results indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **bone mineral densitometry - radiographic/ultrasonographic.**

Objectives - Knowledge

- Understands the general principles that may present on bone mineral densitometry and ultrasonographic testing.
- Understands normal and abnormal findings that may present on bone mineral densitometry and ultrasonographic studies.
- Understands the rationale for ordering bone mineral densitometry and ultrasonographic studies.

Objectives - Skills

- Recognizes and correctly interprets the normal and abnormal findings.
- Selection of bone mineral densitometry and ultrasonographic testing fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when bone mineral densitometry and ultrasonographic testing results indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Perform (and/or order) and interpret appropriate diagnostic studies, including: other diagnostic studies, including: **compartment pressure studies.**

Objectives - Knowledge

- Understands the general principles of compartment pressure studies.
- Understands the technique of performing compartment pressure studies, including the use of various devices.
- Understands normal and abnormal findings that may present on compartment pressure studies.
- Understands the rationale for ordering compartment pressure studies.

Objectives - Skills

- Utilizes appropriate technique in obtaining a compartment pressure.
- Recognizes (correctly interprets) the normal or abnormal findings.
- Selection of compartment pressure studies fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when compartment pressure study results indicate further history, physical exam, diagnostic studies, consultation, or surgical intervention.
- Performs the test in an appropriate period of time.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. **Formulate an appropriate diagnosis and/or differential diagnosis.**

Objectives - Knowledge

- Understands the history, physical exam, and diagnostic study findings consistent with diagnosis of lower extremity abnormalities, including diagnoses in the following ICD-9 subsections:
 - Infectious and Parasitic Diseases of the Musculoskeletal System (001-139).
 - Neoplasms (140-239).
 - Endocrine, Nutritional, and Metabolic diseases and Immunity Disorders (240-279).
 - Mental Disorders (290-319).
 - Diseases of the Nervous system and Sense Organs.
 - Diseases of the Circulatory System (390-459).
 - Diseases of the Genitourinary System (680-686).
 - Diseases of the Skin and Subcutaneous Tissue (680-709).
 - Diseases of the Musculoskeletal System and Connective Tissue (710-739).
 - Congenital Anomalies (740-759).
 - Certain Conditions originating in the Perinatal Period (760-779).
 - Symptoms, Signs, and Ill-defined Conditions (780-799).
 - Injury and Poisoning (800-999).
- Understands the etiology and contributing factors for each of the lower extremity diagnoses listed in the Orthopedic ICD-9 Codes Manual.
- Understands the possible course and individual/public health implications for each of the diagnoses listed in the section above.
- Understands the management alternatives and urgency of management for each of the diagnoses listed in the section above.
- Utilizes the concept of formulating a differential diagnosis.
- Can logically justify the diagnosis and contributing factors.

Objectives - Skills

- Based upon history, physical exam, and appropriate diagnostic studies, can recognize and correctly diagnose patients with any of the diagnoses listed in the section above.

- Appropriately charts most likely diagnosis, other possible diagnoses and contributing factors.
- Reassesses and revises differential diagnosis as indicated during the course of patient evaluation and management.

Goal: appropriate non-surgical management when indicated, including: palliation of: **keratotic lesions.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this treatment.
- Understands etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition.
- Understands the risks and benefits of performing the treatment.
- Understands the risks and benefits of not performing the treatment.
- Understands the advantages/disadvantages of the treatment versus other potentially applicable treatment.
- Understands the instrument and material needs for performance of the treatment.
- Understands the regional anatomy.
- Understands the technique involved with this treatment.
- Understands the appropriate procedure for disposal of biomedical waste.
- Understands universal precautions.

Objectives - Skills

- Utilizes proper positioning.
- Utilizes scalpel appropriately, when indicated.
- Utilizes appropriate measures for self-protection (gloves), when indicated.
- Treats iatrogenic lesions appropriately, when indicated.
- Utilizes appropriate procedure for disposal of biomedical waste.

Goal: palliation of: toenails: **manual or electric.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this treatment.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition.
- Understands the risks and benefits of performing the treatment.
- Understands the risks and benefits of not performing the treatment.
- Understands the advantages/disadvantages of the treatment versus other potentially applicable treatment.
- Understands the instrument and material needs for performance of the treatment.
- Understands the regional anatomy.
- Understands the technique involved with this treatment.
- Understands the appropriate procedure for disposal of biomedical waste.
- Understands measures for protection against inhalation of airborne particles.

Objectives - Skills

- Utilizes proper positioning.
- Utilizes nail nippers appropriately, when indicated.
- Utilizes electric grinder appropriately.
- Utilizes appropriate measures for self-protection (mask, gloves), when indicated.
- Treats iatrogenic lesions appropriately, when indicated.
- Utilizes appropriate procedure for disposal of biomedical waste.

Goal: appropriate non-surgical management when indicated, including: manipulation/mobilization of: **foot/ankle joint to increase range of motion/reduce associated pain.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this technique.
- Understands imaging study normals/abnormals that would indicate/contraindicate this technique.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands the risks and benefits of performing the procedure.
- Understands the risks and benefits of not performing the procedure.
- Understands the advantages/disadvantages of the procedure versus other potentially applicable procedures.
- Understands the regional anatomy.
- Understands the biomechanics of the joint in question, including axis of motion and normal range of motion.
- Understands anesthesia and/or sedation techniques required by the procedure (see pertinent sections elsewhere in this document).
- Understands technique of joint mobilization/manipulation.
- Understands follow-up care requirements.

Objectives - Skills

- Assess range of motion pre/post-procedure.
- Secures proper patient positioning.
- Uses appropriate magnitude and direction of force to achieve improved range of motion.

Goal: appropriate non-surgical management when indicated, including: manipulation/mobilization of: **congenital foot deformity.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this technique.
- Understands imaging study normals/abnormals that would indicate/contraindicate this technique.

- Understands the etiologic characteristics. (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands the risks and benefits of performing the procedure.
- Understands the risks and benefits of not performing the procedure.
- Understands the advantages/disadvantages of the procedure versus other potentially applicable procedures.
- Understands the appropriate age range for application of this technique.
- Understands the regional anatomy.
- Understands technique of joint mobilization for congenital deformities and contractures, including:
 - talipes equinovarus.
 - talipes calcaneovalgus.
 - congenial metatarsus adductus.
 - equinus.
 - other.
- Understands appropriate sequence of mobilizing a complex congenital deformity.
- Understands follow-up care requirements.

Objectives - Skills

- Effectively presents the procedure, alternatives, risks and after-care requirements to the patient's parents/legal guardians.
- Can teach the technique to parents for home treatments.
- Secures proper patient positioning.
- Uses appropriate magnitude and direction of force to achieve reduction of the deformity component.
- Uses appropriate counterpressure maneuvers to prevent associated joint subluxation.

Goal: appropriate non-surgical management when indicated, including: closed management of fractures and dislocations: **closed management of pedal fractures and dislocations.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this procedure.
- Understands and recognizes the need for assessment of potential concurrent injuries that may be associated with the fracture/dislocation.
- Understands the etiologic characteristics, mechanogenesis, and classification of the fracture/dislocation.
- Understands the potential complications and sequelae of the injury and treatment.
- Understands the relative stability of the condition following reduction, based on bone and soft tissue injury.
- Understands imaging study that would indicate/contraindicate this procedure.
- Understands real time fluoroscopic imaging, technique, risks and alternatives for closed reduction of fractures and dislocations.
- Understands the advantages/disadvantages, risks and benefits of closed reduction versus open reduction or no reduction.
- Understands the regional anatomy.

- Understands the strategic manipulation to gain reduction.
- Understands the likely anatomic impairments to closed reduction.
- Understands pertinent instrumentation (finger-trap, traction devices, padding, bolsters, etc.).
- Understands immediate perireduction care requirements.
- Selection of the procedure is appropriate for the patient.
- Can justify the chosen technical pathway to completion of the procedure (appropriate manipulation of anatomic segments involved/procedural steps, selection/application of splints, casts or percutaneous fixation).

Objectives - Skills

- Can effectively present the procedure, alternatives, risks and perireduction recovery process to the patient.
- Secures proper patient positioning.
- Utilizes anesthesia, sedation, and/or muscular relaxation appropriately, when indicated.
- Demonstrates appropriate reduction methodology.
- Recognizes perireduction variations and adapts accordingly.
- Recognizes appropriate endpoint for determination of reduction failure.
- Demonstrates appropriate use of instrumentation and related appliances. Demonstrates appropriate use of imaging to direct and confirm reduction and fixation (if required).
- Handles and applies fixation devices appropriately, if indicated.
- Applies appropriate bandage, splint and/or cast.
- Selects appropriate weight bearing status and assistive devices.
- Procedural steps are followed appropriately.
- Procedure is performed in appropriate period of time.

Goal: appropriate non-surgical management when indicated, including: closed management of fractures and dislocations: **closed management of ankle fracture/dislocation.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this procedure.
- Understands and recognizes the need for assessment of potential concurrent injuries that may be associated with the fracture/dislocation.
- Understands the etiologic characteristics, mechanogenesis, and classification of the fracture/dislocation.
- Understands the potential complications and sequelae of the injury and treatment.
- Understands the relative stability of the condition following reduction, based on bone and soft tissue injury.
- Understands imaging study that would indicate/contraindicate this procedure.
- Understands real time fluoroscopic imaging, technique, risks and alternatives for closed reduction of fractures and dislocations.
- Understands the advantages/disadvantages, risks and benefits of closed reduction versus open reduction or no reduction.
- Understands the regional anatomy.

- Understands the strategic manipulation to gain reduction.
- Understands the likely anatomic impairments to closed reduction.
- Understands pertinent instrumentation (traction devices, padding, bolsters, etc.).
- Understands immediate perireduction care requirements.
- Selection of the procedure is appropriate for the patient.
- Can justify the chosen technical pathway to completion of the procedure (appropriate manipulation of anatomic segments involved/procedural steps, selection/application of splints, casts).

Objectives - Skills

- Can effectively present the procedure, alternatives, risks and perireduction recovery process to the patient.
- Secures proper patient positioning.
- Utilizes anesthesia, sedation, and/or muscular relaxation appropriately, when indicated.
- Demonstrates appropriate reduction methodology.
- Recognizes perireduction variations and adapts accordingly.
- Recognizes appropriate endpoint for determination of reduction failure.
- Demonstrates appropriate use of instrumentation and related appliances.
- Demonstrates appropriate use of imaging to direct and confirm reduction.
- Applies appropriate bandage, splint and/or cast.
- Selects appropriate weight bearing status and assistive devices.
- Procedural steps are followed appropriately.
- Procedure is performed in appropriate period of time.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **cast management**.

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate cast management for conditions including:
 - concurrent with closed management of a fracture or dislocation.
 - congenital foot deformities.
 - tendon injuries.
 - musculoskeletal overuse syndromes.
 - neuromuscular disorders.
 - foot ulcers.
 - Charcot arthropathy.
 - delayed/nonunion.
 - postoperative surgical care.
 - others.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate cast management for the conditions listed in the section above.
- Understands the risks and benefits of utilizing cast management for the conditions listed in the first section above.
- Understands the variety of cast immobilization devices/techniques that are available including:

- long leg cast.
 - short leg cast.
 - compression dressing.
 - posterior splint.
 - prefabricated walking cast.
 - unna boot.
 - total contact cast.
 - other.
- Understands the advantages/disadvantages of each of the devices/techniques listed in section above.
 - Understands the potential risks/complications of each of the devices/techniques listed in section above.
 - Selection of type of immobilization is appropriate for the patient's condition.
 - Understands the material needs for the application of each of the devices/techniques listed.
 - Understands the regional anatomy and appropriate anatomic positioning necessary for application of each of the devices/techniques listed above.
 - Understands procedural steps used in the application of each of the devices/techniques listed above.
 - Understands and selects the appropriate period of immobilization for each of the conditions listed.
 - Understands and selects the appropriate weight-bearing status for cast management for each of the conditions listed.
 - Can justify the type of immobilization, weight-bearing status, and duration of immobilization that was selected.
 - Understands the indications, contraindications, and physiology of adjunctive therapies, including:
 - electromagnetic bone stimulation.
 - ultrasonic bone stimulation.
 - assistive devices.
 - other.
 - Understands the appropriate techniques for removal and disposal of the various devices listed.

Objectives - Skills

- Effectively presents potential risks and monitoring instructions to the patient.
- Secures proper patient positioning.
- Appropriately pads/avoids neurovascular compression.
- Utilizes appropriate technique in applying the various devices/techniques listed in knowledge indicators.
- Procedure is performed in appropriate period of time.
- Orders adjunctive therapies listed in knowledge indicators when appropriate.
- Utilizes appropriate technique for removal and disposal of the various devices listed in knowledge indicators section.
- Assures patient can manage weightbearing status with selected assistive device.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **tape immobilization, including:**

Objectives - Knowledge

- Understands indications and contraindications to the use of tape immobilization including:
 - low Dye.
 - high Dye.
 - ankle taping.
 - plantar rest strap.
 - posterior rest/Achilles strap.
- Understands the materials utilized in tape immobilization types listed.
- Understands the application techniques utilized in tape immobilization types listed.
- Selection of tape immobilization fits the overall management of the patient in terms of management sequence, indication/contraindication and cost-effectiveness.

Objectives - Skills

- Can appropriately apply the tape immobilization types listed in knowledge indicators section.
- Applies tape immobilization in an appropriate amount of time

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **orthotic, brace, prosthetic, and custom shoe management.**

Objectives - Knowledge

- Understands foot deformities or conditions amenable to the use of orthotics/braces/prosthetics, including:
 - functional foot orthoses.
 - accommodative foot orthoses and insoles.
 - ankle/foot orthoses.
 - drop foot braces and shoe/brace combinations.
 - patellar bearing brace.
 - night splints for plantar fasciitis or Achilles tendonitis.
 - night/day splints for pediatric torsional/pedal deformities.
 - foot prostheses.
 - lower limb prostheses.
- Understands the impact of concurrent medical conditions that affect the prescribing of orthotics/braces/prosthetics, including but not limited to:
 - the neuropathic foot.
 - the partially-amputated foot.
 - the brain-injured patient.
 - the pediatric congenital or acquired disorder.
- Understands how to write a proper orthotic prescription for foot orthoses.
- Understands standard terminology for foot orthoses.
- Understands the materials utilized in the manufacture of orthotics/braces/prosthetics listed.
- Understands the techniques utilized in the manufacture of the devices listed.

- Understands casting technique utilized in the manufacture of orthotics/braces/prosthetics listed.
- Understands technique utilized for the fit, measurement, and modification of orthotics/braces/prosthetics listed.
- Understands the design features, costs, advantages and disadvantages, indications and contraindications of orthotics/braces/prosthetics listed.
- Understands the proper shoe gear to use with foot orthoses.
- Understands various techniques and equipment to modify foot orthoses.
- Understands the design features, costs, advantages and disadvantages - including indications and contraindications - of extra-depth and custom-molded shoes.
- Possesses awareness of resources for referring, prescribing or obtaining extra-depth and custom-made shoes.
- Understands the indications, contraindications, and prescribing procedures for shoe modifications including:
 - rocker soles.
 - metatarsal bars.
 - limb length corrections.
 - Velcro closures.
 - heel stabilizers.
 - flares.

Objectives - Skills

- Casts patient to obtain appropriate negative cast for: custom-made soles and insoles, functional foot orthoses, accommodative foot orthoses.
- Can fabricate the following devices: custom-made shoes and insoles, functional foot orthoses, accommodative foot orthoses, night splints for plantar fasciitis or Achilles tendonitis, foot prostheses.
- Can select appropriate orthotic material for patient complaints or deformity.
- Can properly write prescription for devices listed in section.
- Can properly dispense and instruct patients in the proper use of custom-made shoes and insoles; functional and accommodative foot orthoses; splints for plantar fasciitis, Achilles tendonitis, pediatric torsional or pedal deformities; foot prostheses.
- Properly ascertain correct fit and adjust as necessary the devices listed in knowledge indicators section.
- Can prescribe or recommend and/or adjust appropriate shoe for use with devices listed in knowledge indicators section.
- Can communicate with prosthetist/orthotist to suggest appropriate modifications of ankle/foot orthoses.
- Can determine appropriate shoe size using a Brannock device and/or foot and shoe tracings.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **footwear and padding.**

Objectives - Knowledge

- Understands techniques of determining appropriate footwear fit, including application of the Brannock device and use of foot and shoe tracings.

- Understands the design features and potential functional implications of the various components of over-the-counter footwear including:
 - last type.
 - lacing configuration.
 - instep type.
 - heel counter stability.
 - midsole and outersole construction.
- Understands normal and abnormal wear patterns of footwear.
- Understands the indications for use of various pads including: long arch pads, heel lifts, metatarsal pads, dancer pads, pontoon pads, Cobra pads, Budin splint, buttress pads, crest pads, moldable silicone pads and splints, accommodative pads.
- Understands the correct techniques for creating various pads including those listed above.

Objectives - Skills

- Can fabricate various pads, including: long arch pads, heel lifts, metatarsal pads, dancer pads, pontoon pads, Cobra pads, Budin splint, buttress pads, crest pads, moldable silicone pads and splints, accommodative pads.
- Can position over-the-counter and customized padding appropriately.
- Prescribes appropriate shoe gear based on patient foot type and orthotic use
- Provides appropriate advice to patients regarding non-prescription footwear styles, desirable components, fitting, and size.
- Can determine appropriate shoe size using a Brannock device.
- Can determine if a patient's shoe fits appropriately using foot and shoe tracings.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **injections and aspirations.**

Objectives - Knowledge

- Understands the indications and contraindications for injection and/or aspiration.
- Understands the history and physical examination normals/abnormals that would indicate injection and/or aspiration.
- Understands pharmacology of medications used for diagnostic and/or therapeutic injection/aspiration.
- Understands the technique of performing injection and/or aspiration including the following:
 - injection of trigger points.
 - injection of nerve lesions, including Morton's neuroma.
 - injection of musculoskeletal disorders, including plantar fasciitis.
 - aspiration/injection of pedal or ankle joints.
 - aspiration/injection of bursae and tendon sheaths.
 - aspiration/injection of cystic lesions and soft tissue masses.
 - aspiration/injection of hematoma.
 - needle biopsy.
- Understands the rationale for performing the techniques listed.
- Understands potential complications of injection and proper management.

Objectives - Skills

- Utilizes appropriate technique while performing techniques listed in knowledge indicators section.
- Selection of injection and/or aspiration fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Monitors the patient during the injection.
- Diagnoses and manages adverse reactions to the injection/aspiration.
- Recognizes when aspiration results indicate further history, physical exam, diagnostic studies, consultation, or surgical intervention.
- Performs the injection/aspiration in an appropriate period of time.
- Utilizes universal precautions while performing aspiration/injections listed in knowledge indicators section.

Goal: Formulate and implement an appropriate plan of management, including: appropriate non-surgical management when indicated, including: **physical therapy**.

Objectives - Knowledge

- Understands appropriate assessment/evaluation of the patient re: history and physical range of motion palpation.
- Understands functional anatomy.
- Understands treatment principles of physical therapy including: pain reduction modalities, increasing range of motion, stretching/strengthening programs.
- Understands indications/contraindications of physical therapy.
- Understands indications for referral to physical therapy.
 - Musculoskeletal or neurogenic pain resulting from injury, inflammation or immobilization.
 - Musculoskeletal disorders including: muscle sprains/strains, tendinitis, joint stiffness, laxity, inflammation, bursitis/fasciitis, arthritis.
 - Impaired range of motion, strength and/or function following surgery, illness or disuse.
 - Impaired movement, coordination and function following CVA, spinal cord injury or neurological or progressive neurological disorder.
- Understands contraindications for referral to physical therapy.
 - The patient's inability to cooperate due to mental impairment.
 - Inability to cooperate/participate with therapy due to medical condition (COPD, DVT).
 - Recognition of less than optimal rehabilitation due to length of time since onset (RSD, longstanding joint contractures).
- Understands principles and indications of specific modalities.
 - Heat treatments: moist heat packs, parafin baths, ultrasound, hydrotherapy.
 - Cold treatments: cold/ice packs, ice massage, hydrotherapy.
 - Electrical stimulation: galvanic/continuous DC (iontophoresis).
 - Mechanical traction.
 - Massage: superficial/deep.
 - Joint and soft tissue mobilization.
 - Exercise.
 - Functional re-training.

Objectives - Skills

- Should be able to write a referral for appropriate physical therapy for the patient and the patient's condition.
- Should be able to evaluate the patient periodically for progress and be able to modify the treatment plan as needed.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **NSAIDs**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands drug mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **antibiotics**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **antifungals**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **narcotic analgesics.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **muscle relaxants.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.

- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **medications for neuropathy.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **sedative/hypnotics.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **peripheral vascular agents.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.

- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **anticoagulants**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **antihyperuricemic/uricosuric agents**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **tetanus toxoid/immune globulin**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **laxatives/cathartics.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **fluid and electrolyte agents.**

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **corticosteroids**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **antirheumatic medications**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Knowledge drug interactions.
- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: appropriate non-surgical management when indicated, including: pharmacologic management, including the use of: **topicals**.

Objectives - Knowledge

- Understands indications and usage.
- Understands contraindications.
- Understands mechanism of action.
- Understands drug interactions.

- Understands dosage and administration.
- Understands adverse reactions and their management.
- Understands cost.
- Understands alternatives.

Objectives - Skills

- Writes an appropriate prescription/order for medication.
- Monitors patient appropriately.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **debridement of superficial ulcer or wound.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate this procedure.
- Understands imaging study normals/abnormals that would indicate/contraindicate this procedure.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate this procedure.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition.
- Understands the risks and benefits of performing the procedure.
- Understands the risks and benefits of not performing the procedure.
- Understands the advantages/disadvantages of the procedure versus other potentially applicable procedures.
- Understands the instrument and material needs for performance of the procedure.
- Understands the regional anatomy.
- Understands peri-procedure and associated care requirements.

Objectives - Skills

- Selects appropriate instrument(s) (tissue nipper, scalpel, rongeur, curette).
- Uses instrumentation appropriately.
- Removes tissue appropriately, based on tissue type, quality, and depth.
- Obtains microbiology and/or pathology specimens, as indicated.
- Applies appropriate wound care agent. Applies appropriate wound cover.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **excision or destruction of skin lesion (including skin biopsy and laser procedures).**

Objectives - Knowledge

- Understands normal/abnormal dermatologic anatomy and histology.
- Understands normal/abnormal clinical exam that would indicate/contraindicate appropriate procedure.
- Understands etiology and pathology of lesion.

- Understands surgical excision techniques including punch biopsy, incisional biopsy, excisional biopsy, and wide excision techniques.
- Understands surgical lesion destruction techniques including lasers, electrocautery, cryotherapy.
- Understands the risks, benefits, potential complications, and alternatives to procedure.
- Understands postoperative care requirements.
- Understands adjunctive medical therapies for care of malignant skin lesions.
- Understands instrument and material needs for the procedure.

Objectives - Skills

- Can perform appropriate local anesthetic block.
- Can perform appropriate skin incision as indicated (i.e., wide excision, punch biopsy, incisional and excisional biopsy techniques).
- Can perform anatomic dissection appropriate to this anatomic area.
- Can perform suture repair of deep tissue as indicated.
- Can apply laser, electrocautery, or cryotherapy for destruction of skin lesion - as indicated.
- Can apply appropriate bandage.
- Can initiate proper care for postoperative complications
- Can interpret histologic/pathology report when indicated.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **nail avulsion (partial or complete).**

Objectives - Knowledge

- Understands the regional anatomy.
- Understands normal/abnormal clinical exam.
- Understands etiologies and pathomechanics of nail deformities and associated soft tissue infections (paronychia).
- Understands the risks, benefits, potential complications and alternatives of the procedure.
- Understands the postoperative care requirements.
- Understands the instrument needs for the performance of the procedure.

Objectives - Skills

- Can perform appropriate local anesthetic digital block.
- Can dissect, split, and avulse part of the nail plate (partial nail avulsion).
- Can dissect and avulse the nail plate (total nail avulsion).
- Can apply appropriate bandage.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **matrixectomy (partial or complete, by any means).**

Objectives - Knowledge

- Understands the regional anatomy.
- Understands normal/abnormal clinical exam that would indicate/contraindicate procedure.
- Understands etiologies and pathomechanics of nail and associated soft tissue deformities.
- Understands the risks, benefits, potential complications and alternatives of the procedure.
- Understands postoperative care requirements.
- Understands instrument and chemical needs for the performance of the procedure.
- Understands the properties of chemicals if used in performance of the procedure.
- Understands the properties of laser physics if used in performance of the procedure.

Objectives - Skills

- Can perform appropriate local anesthetic digital block.
- Can dissect, split, and avulse part of the nail plate (partial matrixectomy).
- Can dissect, avulse the nail plate (total matrixectomy).
- Can apply chemical agents of laser to nail matrix for permanent correction.
- Can apply appropriate bandage.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **removal of hardware.**

Objectives - Knowledge

- Understands the regional anatomy.
- Understands clinical exam normals/abnormals that would indicate/contraindicate procedure.
- Understands imaging studies to aid in diagnosis.
- Understands risks, benefits, potential complications and alternative to procedure.
- Understands postoperative care requirements.
- Understands instrument and material needs for the performance of the procedure (including fluoroscopy).

Objectives - Skills

- Can perform appropriate local anesthetic block, if indicated.
- Can perform appropriate skin incision.
- Can perform anatomic dissection appropriate to the anatomic area.
- Can identify and remove the hardware.
- Can perform suture repair of deep tissues as indicated.
- Can perform suture repair of skin appropriately.
- Can apply appropriate bandage.
- Can select and prescribe proper antibiotics as indicated.

Goal: Formulate and implement an appropriate plan of management, including: appropriate medical/surgical management when indicated, including: **repair of simple laceration (no neurovascular, tendon, or bone/joint involvement).**

Objectives - Knowledge

- Understands the regional anatomy.
- Understands normal/abnormal clinical exam that would indicate/contraindicate the procedure.
- Understands the principles of wound repair.
- Understands the risks, benefits, potential complications and alternatives to procedure.
- Understands postoperative care requirements.
- Understands suture repair techniques.
- Understands instrument and material needs for the performance of the procedure.

Objectives - Skills

- Can perform appropriate local anesthetic block.
- Can perform suture repair of the laceration.
- Can apply appropriate bandage.
- Can initiate proper care of postoperative complications.

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **digital surgery**.

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following digital procedures including:
 - partial ostectomy/exostectomy.
 - phalangectomy.
 - arthroplasty (IPJ).
 - implant.
 - diaphysectomy.
 - phalangeal osteotomy.
 - fusion (IPJ).
 - amputation.
 - management of osseous tumor/neoplasm.
 - management of bone/joint infection.
 - open management of digital fracture/dislocation.
 - revision/repair of poor surgical outcome.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc) of the condition/deformity.
- Understands the risks and benefits of performing the procedures listed in section above.
- Understands the risks and benefits of not performing the procedures listed in section above.

- Understands the advantages/disadvantages of the procedures listed in section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in section above.
- Understands the regional anatomy.
- Understands appropriate incisional approach(s).
- Understands procedural steps.
- Understands tissue-specific handling and repair techniques (skin, nerve, bone, tendon, ligament, capsule, cartilage, muscle).
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent fixation materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent graft materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application (autograft, allograft, xenograft, and synthetic graft for bone, tendon, etc.).
- Understands postoperative care requirements.
- Selection of the procedure listed in section above is appropriate for the patient.

Objectives - Skills

- Selects the appropriate procedure(s).
- Justifies the chosen technical pathway to completion of the procedure.
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.
- Secures proper patient positioning.
- Utilizes hemostasis appropriately when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately when indicated.
- Uses manual instrumentation appropriately.
- Uses power instrumentation appropriately.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Recognizes perioperative variations and adapts accordingly.
- Follows procedural steps correctly.
- Procedure is performed in appropriate period of time.

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **first ray surgery.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following first ray procedures including:

- hallux valgus surgery.
 - bunionectomy (partial ostectomy/Silver procedure).
 - bunionectomy with capsulotendon balancing procedure.
 - bunionectomy with phalangeal osteotomy.
 - bunionectomy with distal first metatarsal osteotomy.
 - bunionectomy with first metatarsal base/shaft osteotomy.
 - bunionectomy with first metatarsocuneiform fusion.
 - metatarsophalangeal joint fusion.
 - metatarsophalangeal joint implant.
 - metatarsophalangeal joint arthroplasty.
 - hallux limitus surgery, including:
 - cheilectomy.
 - joint salvage with capsulotendon balancing procedure.
 - joint salvage with phalangeal osteotomy (e.g., Kessel-Bonney, enclavement).
 - joint salvage with distal first metatarsal osteotomy.
 - joint salvage with first metatarsal base/shaft osteotomy.
 - joint salvage with first metatarsocuneiform fusion.
 - metatarsophalangeal joint fusion.
 - metatarsophalangeal joint implant.
 - metatarsophalangeal joint arthroplasty.
 - other first ray surgery, including:
 - tendon transfer/lengthening/capsulotendon balancing procedure.
 - osteotomy (e.g., dorsiflexory).
 - metatarsocuneiform fusion (other than for hallux abductovalgus or hallux limitus).
 - amputation
 - management of first ray osseous tumor/neoplasm.
 - management of first ray bone/joint infection.
 - open management of first ray fracture/dislocation.
 - corticotomy with callus distraction.
 - revision/repair of poor surgical outcome (e.g., nonunion, hallux varus).
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
 - Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in first section above.
 - Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
 - Understands the risks and benefits of performing the procedures listed in first section above.
 - Understands the risks and benefits of not performing the procedures listed in first section above.
 - Understands the advantages/disadvantages of the procedures listed in first section above versus other potentially applicable procedures.
 - Understands immediate perioperative care requirements.
 - Understands the instrument and material needs for performance of the procedures listed in first section above.
 - Understands the regional anatomy.
 - Understands appropriate incisional approach(es).
 - Understands procedural steps.

- Understands the axis guide concept to create uniplanar, biplanar versus triplanar correction
- Understands tissue-specific handling and repair techniques (skin, nerve, bone, tendon, ligament, capsule, cartilage, muscle).
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent fixation materials and techniques, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent graft materials, including physical characteristics, advantages/disadvantages, indications/ contraindications, and application (autograft, allograft, xenograft, and synthetic graft for bone, tendon, etc).
- Understands postoperative care requirements.
- Selection of the procedure listed in first section above is appropriate for the patient.

Objectives - Skills

- Secures proper patient positioning.
- Utilizes hemostasis appropriately, when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Uses manual instrumentation appropriately.
- Uses power instrumentation appropriately.
- Uses special instrumentation appropriately, when indicated.
- Handles and applies fixation devices appropriately.
- Handles and applies bioimplants appropriately, when indicated
- Handles and applies graft materials appropriately.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately, when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Procedural steps are followed correctly.
- Procedure is performed in appropriate period of time.
- Recognizes preoperative, intraoperative and postoperative variations/complications and adapts accordingly.
- Justifies the chosen technical pathway to completion of the procedure.
- Selects the appropriate procedure(s).
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **other soft tissue foot surgery.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following soft tissue foot procedures including:
 - excision of ossicle/sesamoid.
 - excision of neuroma.
 - removal of deep foreign body (excluding hardware).
 - plantar fasciotomy/plantar fasciectomy.
 - lesser MTPJ capsulotendon balancing.
 - tendon repair, lengthening, or transfer involving the forefoot.
 - open management of dislocation (MTP or tarsometatarsal).
 - incision and drainage with wide debridement of soft tissue infection.
 - excision of soft tissue tumor/mass of the foot (without reconstructive surgery)
 - external neurolysis/decompression (including tarsal tunnel)
 - plastic surgery techniques of the forefoot (including skin graft, skin plasty, skin flaps, syndactylization, desyndactylization, and debulking procedures).
 - microscopic nerve/vascular repair of the forefoot.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in first section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity, including the predisposing factors and the microbial pathogens associated with soft tissue infections (including deep space infections).
- Understands proper adjunctive medical care of puncture wounds, including antibiotics and tetanus prophylaxis.
- Understands proper adjunctive medical care of infections, including antibiotics.
- Understands pathology associated with benign or malignant masses.
- Understands adjunctive medical therapies for care of malignant masses.
- Understands the risks and benefits of performing the procedures listed in first section above.
- Understands the risks and benefits of not performing the procedures listed in first section above.
- Understands the advantages/disadvantages of the procedures listed in first section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in first section above.
- Understands the regional and/or microscopic anatomy.
- Understands appropriate incisional approach(es).
- Understands procedural steps.
- Understands tissue-specific handling and repair techniques (skin, nerve, tendon, ligament, capsule, muscle).
- Understands the principles of tendon transfer.
- Understands the principles of skin grafting, skin plasty, skin flaps, etc.
- Understands suture repair techniques for primary repair, lengthening, and/or transfer of tendon(s) of the forefoot.
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.

- Understands pertinent soft tissue graft materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application (autograft, allograft, xenograft).
- Understands postoperative care requirements.
- Selection of the procedure listed in first section above is appropriate for the patient.

Objectives - Skills

- Secures proper patient positioning.
- Utilizes hemostasis appropriately, when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Uses manual instrumentation appropriately.
- Uses special instrumentation appropriately, when indicated.
- Performs appropriate tendon repair/lengthening or transfer, as indicated.
- Evaluates dislocation with fluoroscopic imaging under anesthesia.
- Reduces dislocation and applies percutaneous fixation.
- Recognizes and debrides all purulent material and necrotic soft tissue from the surgical site by sharp and/or blunt means.
- Plans return to surgery with repeat debridement and delayed primary closure with quantitative cultures when appropriate.
- Interprets histology/pathology report and initiates proper medical consultation for evaluation of malignant masses.
- Performs suture repair of skin utilizing appropriate plastic surgery techniques for skin plasty, skin flaps, syndactylization, desyndactylization, and debulking procedures.
- Isolates affected nerve(s) or vessel(s) and repairs them appropriately using microscopic techniques.
- Handles and applies soft tissue bioimplants appropriately, when indicated.
- Handles and applies soft tissue graft materials appropriately.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately, when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Procedural steps are followed correctly.
- Procedure is performed in appropriate period of time.
- Recognizes preoperative, intraoperative and postoperative variations/complications and adapts accordingly.
- Selects the appropriate procedure(s).
- Justifies the chosen technical pathway to completion of the procedure.
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **other osseous foot surgery (distal to the tarsometatarsal joints, except where specifically indicated).**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following other osseous foot surgery procedures, including:
 - partial osteotomy (distal to and including the talus). lesser MTPJ arthroplasty.
 - bunionectomy of the fifth metatarsal without osteotomy.
 - metatarsal head resection (single or multiple).
 - lesser MTPJ implant.
 - central metatarsal osteotomy.
 - bunionectomy of the fifth metatarsal with osteotomy.
 - open management of lesser metatarsal fractures.
 - harvesting of bone graft distal to the ankle.
 - amputation (e.g., lesser ray, TMA)
 - management of bone/joint infection distal to the tarsometatarsal joints (with or without bone graft).
 - management of bone tumor/neoplasm distal to the tarsometatarsal joints (with or without bone graft).
 - open management of tarsometatarsal joint fracture/dislocation.
 - multiple osteotomy management of metatarsus adductus.
 - tarsometatarsal fusion (partial or complete).
 - corticotomy with callus distraction of lesser metatarsal.
 - revision/repair of poor surgical outcome in the forefoot.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in first section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands pathology associated with benign or malignant masses.
- Understands adjunctive medical therapies for care of malignant masses.
- Understands the risks and benefits of performing the procedures listed in first section above.
- Understands the risks and benefits of not performing the procedures listed in first section above.
- Understands the advantages/disadvantages of the procedures listed in first section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in first section above.
- Understands the regional anatomy.
- Understands appropriate incisional approach(es).
- Understands procedural steps.
- Understands the axis guide concept to create uniplanar, biplanar versus triplanar correction
- Understands tissue-specific handling and repair techniques (skin, nerve, bone, tendon, ligament, capsule, cartilage, muscle).
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.

- Understands pertinent fixation materials and techniques, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent graft materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application (autograft, allograft, xenograft, and synthetic graft for bone, tendon, etc.).
- Understands postoperative care requirements.
- Selection of the procedure listed in first section above is appropriate for the patient.

Objectives - Skills

- Secures proper patient positioning.
- Utilizes hemostasis appropriately, when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Uses manual instrumentation appropriately.
- Uses power instrumentation appropriately.
- Uses special instrumentation appropriately, when indicated.
- Handles and applies fixation devices appropriately.
- Handles and applies bioimplants appropriately, when indicated.
- Handles and applies graft materials appropriately.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately, when indicated.
- Performs wound closure appropriately.
- Applies appropriate bandage, splint and/or cast.
- Procedural steps are followed correctly.
- Procedure is performed in appropriate period of time.
- Recognizes preoperative, intraoperative and postoperative variations/complications and adapts accordingly.
- Selects the appropriate procedure(s).
- Justifies the chosen technical pathway to completion of the procedure.
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.

Goal: Formulate and implement an appropriate plan of management, including: appropriate surgical management when indicated, including: **reconstructive rearfoot and ankle surgery.**

Objectives - Knowledge

- Understands history and physical examination normals/abnormals that would indicate/contraindicate the following reconstructive rearfoot and ankle surgery procedures, including:
 - elective soft tissue procedures, including:
 - plastic surgery techniques involving the midfoot, rearfoot, or ankle.

- tendon transfer involving the midfoot, rearfoot, ankle, or leg.
 - tendon lengthening involving the midfoot, hindfoot, ankle, or leg.
 - soft tissue repair of complex congenital foot/ankle deformity (e.g., clubfoot, vertical talus).
 - delayed repair of ligamentous structures.
 - ligament or tendon
 - augmentation/supplementation/restoration.
 - open synovectomy of the hindfoot or ankle.
- elective osseous procedures, including:
 - operative arthroscopy.
 - detachment/reattachment of the Achilles with partial ostectomy.
 - subtalar arthroeresis.
 - midfoot, hindfoot, or ankle fusion.
 - midfoot, hindfoot, or tibial osteotomy.
 - coalition resection.
 - open management of talar dome lesion (with or without osteotomy)
 - ankle arthrotomy with removal of loose body or other osteochondral debridement.
 - ankle implant.
 - corticotomy or osteotomy with callus distraction correction of complex deformity of the midfoot, rearfoot, ankle, or tibia.
- nonelective soft tissue procedures, including:
 - repair of acute tendon injury.
 - repair of acute ligament injury.
 - microscopic nerve/vascular repair of the midfoot, hindfoot, or ankle.
 - excision of soft tissue tumor/mass of the foot (with reconstructive surgery).
 - excision of soft tissue tumor/mass of the ankle (with or without reconstructive surgery).
 - open repair of dislocation (proximal to tarsometatarsal joints).
- nonelective osseous procedures, including:
 - open repair of adult midfoot fracture.
 - open repair of adult hindfoot fracture.
 - open repair of adult ankle fracture.
 - open repair of pediatric hindfoot/ankle fractures.
 - management of bone tumor/neoplasm (with or without bone graft).
 - management of bone/joint infection (with or without bone graft).
 - amputation proximal to tarsometatarsal joints.
- Understands diagnostic tests and/or imaging study normals/abnormals that would indicate/contraindicate the procedures listed in section above.
- Understands laboratory/other test normals/abnormals that would indicate/contraindicate the procedures listed in first section above.
- Understands the etiologic characteristics (pathomechanics/pathophysiology/epidemiology/etc.) of the condition/deformity.
- Understands pathology associated with benign or malignant masses.
- Understands gross and histological pathology.
- Understands adjunctive medical therapies for care of malignant masses.

- Understands the risks and benefits of performing the procedures listed in first section above.
- Understands the risks and benefits of not performing the procedures listed in first section above.
- Understands the advantages/disadvantages of the procedures listed in first section above versus other potentially applicable procedures.
- Understands immediate perioperative care requirements.
- Understands the instrument and material needs for performance of the procedures listed in first section above.
- Understands the regional anatomy.
- Understands appropriate incisional approach(es).
- Understands procedural steps.
- Understands appropriate reconstructive techniques.
- Understands the axis guide concept to create uniplanar, biplanar versus triplanar correction
- Understands tissue-specific handling and repair techniques (skin, nerve, bone, tendon, ligament, capsule, cartilage, muscle).
- Understands pertinent instrumentation, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent fixation materials and techniques, including physical characteristics, advantages/disadvantages, indications/contraindications, and application.
- Understands pertinent graft materials, including physical characteristics, advantages/disadvantages, indications/contraindications, and application (autograft, allograft, xenograft, and synthetic graft for bone, tendon, etc.).
- Understands postoperative care requirements.
- Selection of the procedure listed in first section above is appropriate for the patient.

Objectives - Skills

- Secures proper patient positioning.
- Utilizes hemostasis appropriately, when indicated.
- Performs skin incision appropriately.
- Performs appropriate anatomic dissection.
- Demonstrates appropriate tissue-specific handling techniques.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Performs open reduction of fracture/dislocation.
- Performs appropriate fixation to maintain reduction (k-wire, external fixator, etc.) if needed.
- Uses manual instrumentation appropriately.
- Uses power instrumentation appropriately.
- Uses special instrumentation appropriately, when indicated.
- Handles and applies fixation devices appropriately.
- Handles and applies bioimplants appropriately, when indicated
- Handles and applies graft materials appropriately.
- Procures specimen for microbiology/pathology appropriately, when indicated.
- Utilizes wound irrigation appropriately.
- Demonstrates appropriate tissue-specific repair techniques.
- Applies wound drainage system appropriately, when indicated.
- Performs wound closure appropriately.

- Applies appropriate bandage, splint and/or cast.
- Procedural steps are followed correctly.
- Procedure is performed in appropriate period of time.
- Recognizes preoperative, intraoperative and postoperative variations/complications and adapts accordingly.
- Selects the appropriate procedure(s).
- Justifies the chosen technical pathway to completion of the procedure.
- Presents the procedure, alternatives, risks, and postoperative recovery process to the patient.

Goal: Formulate and implement an appropriate plan of management, including: appropriate anesthesia management when indicated, including: **local anesthesia.**

Objectives - Knowledge

- Understands history and physical at examination that would contribute to the selection of the appropriate local anesthetic with or without epinephrine.
- Understands laboratory values that would contribute to the assessment and selection of appropriate local anesthetics, with or without epinephrine.
- Understands pharmacology of local anesthetics and epinephrine.
- Understands advantages/disadvantages of use of local anesthetics versus other forms of anesthesia.
- Understands various techniques for performing sensory and/or motor blocks and nerve blocks used in the lower extremity.
- Understands universal precautions and needle precautions.
- Understands appropriate injection techniques used in administering the local anesthetic.
- Understands allergies and adverse reactions to local anesthetics, epinephrine and preservatives.
- Understands the management of allergies and adverse reactions to local anesthetics, epinephrine and preservatives.

Objectives - Skills

- Performs an appropriate preanesthetic evaluation.
- Administers field blocks, digital blocks, Mayo blocks, and isolated nerve blocks of the lower extremities with proper technique.
- Utilizes proper technique while injecting the local anesthetic.
- Utilizes adjunctive topical agents, as needed.
- Utilizes universal precautions and appropriate needle precautions.
- Monitors for, recognizes, and manages adverse reactions to the local anesthetic.

Goal: Formulate and implement an appropriate plan of management, including: appropriate anesthesia management when indicated, including: **general, spinal, epidural, regional, and conscious sedation anesthesia.**

Objectives - Knowledge

- Understands the components, techniques, and normals/abnormals of the history and physical examination pertinent to the preanesthetic assessment.

- Understands the laboratory tests pertinent to the preanesthetic assessment, and their normals/abnormals.
- Understands ASA Physical Status classification system and the impact of medical comorbidities on preanesthetic assessment and management.
- Understands the stages and planes of ether anesthesia as described by Guedel in 1937.
- Understands the advantages/disadvantages of general, spinal, epidural, regional, and conscious sedation anesthesia versus other potentially applicable forms of anesthesia.
- Understands the pharmacology of preanesthesia medications (barbituates, benzodiazepines, narcotics, anticholinergics).
- Understands the pharmacology of neuromuscular blocking agents (depolarizing and nondepolarizing).
- Understands the pharmacology of the intravenous induction and maintenance agents.
- Understands the pharmacology of inhalational medications.
- Understands the pharmacology of the various reversal agents.
- Understands anesthetic complications and their management.
- Understands pertinent regional anatomy, including the airway.
- Understands the technical aspects of maintaining an airway.
- Understands the technical aspects of intubation.
- Understands the technical aspects of introducing an LMA.
- Understands the technical aspects of obtaining IV access.
- Understands the technical aspects of inserting an oropharyngeal or nasopharyngeal airway.
- Understands the technical aspects of performing a Bier block.
- Understands the technical aspects of administration of spinal anesthesia.
- Understands the technical aspects of perianesthesia monitoring of a patient.

Objectives - Skills

- Performs preanesthetic evaluation, including history and physical examination.
- Orders and interprets appropriate preoperative diagnostic tests.
- Assigns correct ASA status.
- Secures and positions patient properly.
- Places and secures intravenous line.
- Administers agents for conscious sedation.
- Monitors patient during the surgical procedure.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Formulate and implement an appropriate plan of management, including: **appropriate consultation and/or referrals.**

Objectives - Knowledge

- Recognizes when consultation with another podiatric or medical specialist is necessary for either diagnosis or management.
- Recognizes when referral to another podiatric or medical specialist is necessary for either diagnosis or management.

- Understands appropriate written and verbal communication methods in obtaining consultation or referral.
- Interprets consultation report and/or recommendations appropriately.
- Selection of consultation and/or referral fits the overall management of the patient in terms of evaluation or management sequence, timeliness, and cost-effectiveness.
- Recognizes when consultation results indicate further history, physical exam, diagnostic studies, therapeutic intervention or further consultation.

Objectives - Skills

- Utilizes effective written/oral communication skills when requesting consultation or referral.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. Formulate and implement an appropriate plan of management, including: **appropriate lower extremity health promotion and education.**

Objectives - Knowledge

- Understands the indications for lower extremity health promotion and education, including:
 - lower extremity disease prevention related to concurrent medical disease states, including but not limited to diabetes mellitus.
 - lower extremity disease prevention related to substance abuse, including tobacco and alcohol.
 - factors associated with surgical and nonsurgical treatment plans.
 - etiology and progression of pediatric deformities.
- Understands pertinent aspects of patient education related to specific surgical and nonsurgical treatment plans.
- Understands the natural history of diseases affecting the lower extremity, including etiologic and contributory factors and associated preventive measures.
- Understands the methodologies for communicating health promotion, education and home care via verbal, written, or other media.

Goal: Prevent, diagnose, and manage diseases, disorders, and injuries of the pediatric and adult lower extremity by nonsurgical (educational, medical, physical, biomechanical) and surgical means. **Assess the treatment plan and revise it as necessary.**

Objectives - Knowledge

- Understands appropriate follow-up management as indicated by patient's condition, including:
 - understands appropriate intervals for follow-up evaluation.
 - understands and recognizes the indications for additional evaluation or diagnostic measures.
 - understands and recognizes the indications for additional therapeutic measures.
 - understands appropriate post-procedure management.

- understands appropriate rehabilitative care.
- understands and recognizes when a therapeutic endpoint has been achieved.
- recognizes sequelae.
- determines long-term prognosis.
- assesses and quantifies current level of disability.
- Understands appropriate documentation.

Objectives - Skills

- Appropriately documents patient progress.
- Generates/revises treatment plan based on diagnostic and therapeutic results.

Goal: Assess and manage the patient's general medical status. Perform and interpret the findings of a comprehensive medical history and physical examination (including preoperative history and physical examination), including: **comprehensive medical history.**

Objectives - Knowledge

- Understands the logical organization of a comprehensive history to include:
 - Chief complaint.
 - History of chief complaint (history of present illness).
 - Past medical history.
 - Illnesses.
 - Medications.
 - Allergies.
 - Past surgical history.
 - Hospitalizations.
 - Social history.
 - Family history.
 - Review of systems.
- Understands the details to be asked in obtaining a history of chief complaint (NLDOCATS), past medical history, social history, family history, and review of systems.

Objectives - Skills

- Obtains a comprehensive history in adequate detail.
- Obtains a comprehensive history in appropriate period of time.
- Obtains a comprehensive history using logical organization

Goal: Perform and interpret the findings of a comprehensive medical history and physical examination (including preoperative history and physical examination), including: comprehensive physical examination, including: **vital signs.**

Objectives - Knowledge

- Understands the correct technique for obtaining the following vital signs, including:
 - height.

- weight.
- blood pressure.
- temperature.
- pulse.
- respiratory rate.
- Understands the normal and abnormal findings for each of the vital signs listed above.
- Understands the rationale for obtaining each of the exam components listed above.

Objectives - Skills

- Utilizes the correct technique for obtaining each of the vital signs.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the components performed upon a patient.
- Obtains vital signs in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **head, eyes, ears, nose, and throat (HEENT).**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the HEENT:
 - inspection/observation of:
 - scalp - skin lines, fluctuant masses, organized masses.
 - skull - malformations, masses.
 - cheek - symmetry, edema, ulceration.
 - facies - shape, features, nature of muscular movement.
 - eyes - extraocular movement, convergence, visual fields, globe protrusion/recession.
 - eyelids - motion, secretion, edema.
 - sclera - color, vascular engorgement.
 - cornea - scars, abrasions.
 - iris - color, shape, deposits.
 - pupils - equality, shape, reaction to light, accommodation.
 - lens - clarity, shape.
 - nose - symmetry, profile.
 - lips - defects, color, ulceration.
 - gums - inflammation, color, hemorrhaging.
 - breath odor - acetone, fetor.
 - tongue - size, deviation, color, lesions, vascular engorgement.
 - oral cavity/oropharynx - color, size, edema, ulceration, uvula position, tonsil color, tonsil size, tonsil swelling.
 - jaw - range of motion.
 - ear - shape, color, masses.
 - palpation:
 - scalp - fluctuant masses, organized masses.
 - skull - masses.
 - cheek - swelling, ulceration.

- nose - swelling, masses, points of tenderness.
- lips - defects, ulceration.
- gums - masses.
- tongue - lesions.
- oral cavity/oropharynx- masses, ulceration.
- jaw - range of motion.
- ear - lesions.
- special tests:
 - ophthalmoscopic examination - color and clarity of media; vascular engorgement, hemorrhaging, vascular nicking, scarification of fundus; color, shape and size of optic disc; integrity of optic nerve.
 - otoscopic examination - swelling, redness, drainage.
 - nasal speculum examination - integrity, color, swelling, hemorrhaging.
 - cranial nerves.
- Understands the normal and abnormal findings for each of the exam components listed.
- Understands the rationale for performing each of the exam components listed.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the HEENT.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate HEENT exam components indicated by patient's chief complaint.
- Performs the HEENT exam in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **neck.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the neck:
 - inspection/observation of:
 - alignment.
 - range of motion.
 - observable masses.
 - symmetry.
 - jugular venous distention (JVD).
 - auscultation of:
 - carotid artery.
 - breath sounds.
 - palpation of:
 - carotid pulse
 - C spine - static and dynamic.
 - musculature.
 - thyroid gland.

- lymph nodes.
 - other masses.
- Understands the normal and abnormal findings for each of the exam components.
- Correctly interprets the normal or abnormal findings of each of the exam components when performed upon a patient.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the neck.
- Recognizes the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate neck exam components indicated by patient's chief complaint.
- Performs the neck exam in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: chest/breast.

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the chest:
 - inspection/observation of:
 - alignment and symmetry.
 - observable masses/deformities.
 - chest wall motion.
 - nipple characteristics including color, discharge, position, symmetry, size, edema, lesions.
 - Breast characteristics including symmetry, dilation of veins, observable masses, size and shape, dimpling, edema, lesions.
 - palpation of:
 - nipple including induration, tenderness, adhesions.
 - breast tissue including temperature, masses, induration, tenderness, consistency, adhesions.
 - thorax, including ribs, T spine, sternum, clavicle, scapula costal cartilages, axillary nodes.
 - percussion for:
 - level of diaphragm.
- Understands the normal and abnormal findings for each of the exam components.
- Correctly interprets the normal or abnormal findings of each of the exam components when performed upon a patient.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the chest.

- Recognizes the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate chest exam components indicated by patient's chief complaint
- Performs the chest exam in an appropriate period of time

Goal: comprehensive physical examination, including: physical examination, including: **heart.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the heart:
 - inspection/observation of:
 - apical impulse.
 - palpation of:
 - PMI.
 - auscultation of:
 - heart sounds - normal and abnormal.
 - murmurs and gallops.
 - rubs.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the correct method of grading heart murmurs and the distinguishing features between benign and pathologic murmurs.
- Correctly interprets the normal or abnormal findings of each of the exam components when performed upon a patient.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the heart.
- Recognizes the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate heart exam components indicated by patient's chief complaint.
- Performs the heart exam in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **lungs.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the lungs:
 - inspection/observation of:
 - chest wall excursion.
 - palpation of:
 - tactile fremitus.
 - percussion (direct and indirect) for:
 - hyporesonance.
 - hyperresonance.

- auscultation of:
 - breath sounds - normal and abnormal.
 - fremitus.
 - rubs.
- special tests:
 - match test.
- Understands the normal and abnormal findings for each of the exam components.
- Correctly interprets the normal or abnormal findings of each of the exam components when performed upon a patient.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the lungs.
- Recognizes the normal or abnormal findings of each of the exam components when performed upon a patient
- Utilizes appropriate lung exam components indicated by patient's chief complaint
- Performs the lung exam in an appropriate period of time

Goal: comprehensive physical examination, including: physical examination, including: **abdomen.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the abdomen:
 - inspection/observation:
 - scars, distension, engorged veins, pulsations, color, rashes, masses.
 - auscultation:
 - bruits, bowel sounds, friction rubs.
 - palpation:
 - normal landmarks, fluctuance, masses and protrusions, rigidity, pulsations, organomegaly, tenderness.
 - percussion:
 - fluctuance, tenderness, rebound tenderness, sounds.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the abdomen.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate abdomen exam components indicated by patient's chief complaint.
- Performs the abdominal examination in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **genitourinary.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the genitourinary system:
 - inspection/observation:
 - male and female - normal landmarks, lesions, masses, color, inflammation, symmetry, position, discharge.
 - palpation:
 - Male and female - normal landmarks, skin lesions, masses, hernias.
 - special tests:
 - vaginal examination with speculum - color, lesions, masses, smears.
 - smears, cultures.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the genitourinary system.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate genitourinary system exam components indicated by patient's chief complaint.
- Performs the genitourinary system examination in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **rectal.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of the rectal examination:
 - inspection/observation:
 - inflammation, sinuses, fistulas, bulges, lesions, masses.
 - palpation:
 - anus - sphincter size, tone, foreign body, laceration.
 - rectum - normal landmarks, masses, constrictions, tenderness.
 - special tests:
 - stool guaiac examination.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of the rectal examination.

- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate rectal exam components indicated by patient's chief complaint.
- Performs the rectal examination in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **upper extremities.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of examination of the upper and lower extremities:
 - inspection/observation:
 - size and symmetry, contour, masses, swelling, skin lesions.
 - range and quality of motion.
 - palpation:
 - normal landmarks, strength, range and quality of motion, including but not limited to tenosynovium, joint quality, tendon sheath, etc.
 - superficial and deep sensory parameters.
 - percussion:
 - reflexes - normal and abnormal/pathologic.
 - superficial and deep sensory parameters.
 - special tests:
 - cutaneous mapping, EMG/NCV, imaging studies, joint fluid analysis.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of examination of the upper and lower extremities.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate upper and lower extremity exam components indicated by patient's chief complaint.
- Performs the upper and lower extremity examination in an appropriate period of time.

Goal: comprehensive physical examination, including: physical examination, including: **neurologic examination.**

Objectives - Knowledge

- Understands the correct technique for performing the following components of the neurologic examination:
 - inspection/observation:
 - cranial nerves - all.

- spasticity, tremors, rigidity, flaccidity, fasciculation.
- equilibrium and coordination.
- gait (see musculoskeletal examination section).
- autonomic deficit: dyhidrosis, vasospasm, trophic changes, dermatographia.
- palpation/maneuver:
 - cranial nerves - VII, IX, XI, XII.
 - muscle strength, tone and bulk.
 - clonus.
 - superficial and deep sensory nerve parameters: sharp/dull, pain, temperature, vibration, proprioception.
 - range and quality of motion:
- percussion:
 - deep tendon reflexes.
- special tests:
 - pathologic reflexes - Adult: Babinski, Chaddock, Oppenheim, Gordon.
 - Pathologic reflexes - Pediatric: Babinski, Chaddock, Oppenheim, Gordon, parachute, startle, grasp, Moro.
 - Romberg.
 - testing of dysdiadochokinesia - alternating motion, rebound sign, etc.
 - testing of dyssynergia - finger to nose, heel to shin, etc.
 - sensory mapping/dermatome.
 - other.
- Understands the normal and abnormal findings for each of the exam components.
- Understands the rationale for performing each of the exam components.

Objectives - Skills

- Utilizes the correct technique for performing each of the components of the neurologic examination.
- Recognizes (correctly interprets) the normal or abnormal findings of each of the exam components when performed upon a patient.
- Utilizes appropriate neurologic exam components indicated by patient's chief complaint.
- Performs the neurologic examination in an appropriate period of time.

Goal: Assess and manage the patient's general medical status. **Formulate an appropriate differential diagnosis of the patient's general medical problem(s), which includes diagnoses in the following tabular ICD-9 subsections (Please refer to Index A for complete listing of appropriate diagnoses).**

Objectives - Knowledge

- Understands the history and physical exam findings that would contribute to the formation of a general medical differential diagnosis that includes diagnoses in the following tabular ICD-9 subsections. (Please refer to Index A.)
 - Infectious and Parasitic Diseases of the Musculoskeletal System (001-139)

- Neoplasms (140-239)
- Endocrine, Nutritional, and Metabolic Diseases and Immunity Disorders (240-279)
- Mental Disorders (290-319)
- Diseases of the Nervous System and Sense Organs (320-389)
- Diseases of the Circulatory System (390-459)
- Diseases of the Genitourinary System (680-686)
- Diseases of the Skin and Subcutaneous Tissue (687-709)
- Diseases of the Musculoskeletal System and Connective Tissue (710-739)
- Congenital Anomalies (740-759)
- Certain Conditions Originating in the Perinatal Period (760-779)
- Symptoms, Signs, and Ill-defined Conditions (780-799)
- Injury and Poisoning (800-999)
- Understands the etiology and contributing factors for any of the diagnoses in Index A that may impact podiatric management.
- Understands the possible course and individual/public health implications for each of the diagnoses listed in Index A.
- Understands the urgency of management for each of the diagnoses listed in Index A.

Objectives - Skills

- Charts most likely diagnosis appropriately as well as other possible diagnoses.
- Reassesses and revises differential diagnosis as indicated during the course of patient evaluation and management.

Goal: Assess and manage the patient's general medical status. Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: **EKG**.

Objectives - Knowledge

- Understands the general principles of EKG testing, including:
 - rhythm strip evaluation.
 - Holter monitoring.
 - event monitoring.
- Understands normal and abnormal findings that may present on the cardiac studies listed.
- Understands the rationale for ordering cardiac studies.

Objectives - Skills

- Recognizes (correctly interprets) the normal or abnormal findings.
- Selection of EKG/cardiac testing fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when EKG/cardiac testing results indicate further history, physical exam, diagnostic studies or consultation.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **plain radiography**.

Objectives - Knowledge

- Understands the general principles of radiation physics and safety.
- Understands the correct technique for plain radiographic views, including:
 - PA and lateral chest xray.
 - skull.
 - upper extremity.
 - KUB.
 - pelvis.
 - mammography.
 - other radiographic contrast studies.
- Understands normal and abnormal findings that may present on plain radiographic views.
- Understands the rationale for ordering the plain radiographic views.
- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when plain film findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Objectives - Skills

- Reads plain radiographic films in a logical, orderly, and sequential method.
- Recognizes (correctly interprets) the normal or abnormal findings on each view.
- Selects appropriate plain film views as indicated by patient's chief complaint.
- Selection of plain film views fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **nuclear medicine imaging.**

Objectives - Knowledge

- Understands the rationale for ordering the following nuclear medicine imaging studies:
 - total body Technetium 99 bone scan, including Ceretec.
 - gallium scan.
 - indium WBC scan.
 - V/Q scan.
 - PET scan (positron emission tomography).
 - SPECT scan (single photon emission computed tomography).
 - thallium perfusion scan.
 - other.
- Understands normal and abnormal findings that may present on nuclear medicine imaging studies.
- Correctly interprets the normal or abnormal findings on the nuclear medicine imaging.
- Understands normal and abnormal findings referred to in a medical imaging report.

- Recognizes when nuclear medicine imaging findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Objectives - Skills

- Recognizes the normal or abnormal findings on the nuclear medicine imaging.
- Selects appropriate nuclear medicine imaging as indicated by patient's medical signs and symptoms.
- Selection of nuclear medicine imaging fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **MRI**.

Objectives - Knowledge

- Understands the rationale for ordering MR imaging for non-lower extremity abnormalities, including but not limited to: brain, abdomen, heart and spine.
- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when MR findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Objectives - Skills

- Selection of lumbar spine MR fits the overall management of the patient in terms of appropriateness, evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **CT**.

Objectives - Knowledge

- Understands the rationale for ordering CT imaging for non-lower extremity abnormalities, including but not limited to: head, abdomen, heart and spine.
- Understands normal and abnormal findings referred to in a medical imaging report.
- Recognizes when CT findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: medical imaging, including: **diagnostic ultrasound**.

Objectives - Knowledge

- Understands the rationale for ordering non-lower extremity diagnostic ultrasound including but not limited to: abdominal, cardiac, and pelvic regions.
- Understands normal and abnormal findings referred to in a medical imaging report.

- Recognizes when diagnostic ultrasound findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Assess and manage the patient's general medical status. Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: **other diagnostic studies.**

Objectives - Knowledge

- Understands the rationale for ordering diagnostic tests, other than those listed, that may be utilized in the evaluation of the patient's general medical status, including but not limited to:
 - intake and output (I&Os).
 - EEG.
 - allergy/patch testing.
 - pathology.
 - pulmonary function tests.
 - diagnostic endoscopy.
 - gastrointestinal function tests.
 - cardiac function tests.
 - other.
- Understands normal and abnormal findings referred to in a report or result.
- Recognizes when findings or reports indicate further history, physical exam, diagnostic studies, or consultation.

Goal: Assess and manage the patient's general medical status. Formulate and implement an appropriate plan of management, when indicated, including: **appropriate therapeutic intervention.**

Objectives - Knowledge

- Understands the indications and contraindications for general therapeutic intervention including:
 - Perioperative medical/surgical management of patients with the following:
 - infectious disease.
 - neoplasms.
 - endocrine/nutritional/metabolic/immune disorders.
 - blood and blood forming organ disorders.
 - mental disorders.
 - nervous system/sense organ disorders.
 - cardiovascular disease.
 - respiratory disease.
 - digestive disorders.
 - genitourinary disorders.
 - pregnancy.
 - skin and subcutaneous tissue disorders.
 - concurrent musculoskeletal disorders.
 - polytrauma.
 - Inpatient and outpatient medical/surgical management, acute and subacute, of patients with the following:

- infectious disease.
 - neoplasms.
 - endocrine/nutritional/metabolic/immune disorders.
 - blood and blood forming organ disorders.
 - mental disorders.
 - nervous system/sense organ disorders.
 - cardiovascular disease.
 - respiratory disease.
 - digestive disorders.
 - genitourinary disorders.
 - pregnancy.
 - skin and subcutaneous tissue disorders.
 - concurrent musculoskeletal disorders.
 - polytrauma.
- Basic Life Support (BLS).
- Advanced Cardiac Life Support (ACLS).
- Advanced Trauma Life Support (ATLS).
- Understands the technical aspects of general therapeutic intervention for the entities listed.
- Understands the instrument and material needs for the therapeutic intervention.
- Understands the normal and abnormal interactions between therapeutic modalities.

Objectives - Skills

- Basic Life Support (BLS).
- Advanced Cardiac Life Support (ACLS).
- Advanced Trauma Life Support (ATLS).
- Establishes IV access.
- Performs core surgical skills.
- Orders appropriate perioperative medical care.
- Orders appropriate inpatient medical care.
- Orders appropriate ancillary therapeutic services, including but not limited to: physical and occupational therapy, wound care, chronic pain management, psychosocial services, assistive devices, other.

Goal: Assess and manage the patient's general medical status. Formulate and implement an appropriate plan of management, when indicated, including: **appropriate consultations and/or referrals.**

Objectives - Knowledge

- Recognizes when consultation with another medical specialist is necessary for either diagnosis or management.
- Recognizes when referral to a medical specialist is necessary for either diagnosis or management.
- Understands appropriate written and verbal communication methods in obtaining consultation or referral.
- Interprets consultation report and/or recommendations appropriately.

- Selection of consultation and/or referral fits the overall management of the patient in terms of evaluation or management sequence, timeliness, and cost-effectiveness.
- Recognizes when consultation results indicate further history, physical exam, diagnostic studies, therapeutic intervention or further consultation.

Objectives - Skills

- Utilizes effective written/oral communication skills when requesting consultation or referral.

Goal: Assess and manage the patient's general medical status. Formulate and implement an appropriate plan of management, when indicated, including: **appropriate general medical health promotion and education.**

Objectives - Knowledge

- Understands the indications for general medical health promotion and education, when appropriate, including:
 - disease prevention related to general medical disease states, including but not limited to diabetes mellitus.
 - disease prevention related to substance abuse, including tobacco, alcohol, and illegal substances.
- Understands the natural history of diseases, including etiologic and contributory factors and associated preventive measures.
- Understands the methodologies for communicating health promotion and education (verbal, written, other media).

Objectives - Skills

- Utilizes effective communication skills (verbal, written, other media) in general medical health promotion and education.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Abides by state and federal laws governing the practice of podiatric medicine and surgery.**

Objectives - Knowledge

- Understands DEA regulations.
- Understands Stark regulations.
- Understands individual state practice acts.
- Understands OSHA regulations.
- Understands Americans with Disabilities Act.
- Understands regulations and requirements in the operations of health care organizations in such areas as liability, trade restraint, conflict of interest, privileging, credentialing, certification practices, CME, confidentiality, discrimination, and unionism.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Practices and abides by the principles of informed consent.**

Objectives - Knowledge

- Understands what constitutes informed consent.
- Understands circumstances under which informed consent can or cannot be obtained.
- Understands issues of legal guardianship in relation to informed consent.

Objectives - Skills

- Obtains informed consent.
- Appropriately documents informed consent.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Understand and respects the ethical boundaries of interactions with patients, colleagues and employees.**

Objectives - Knowledge

- Knows how to access resources for ethical problems.
- Aware of parameters of informed consent.
- Understands the principles used to direct ethical decision-making in complex patient care circumstances, including those that may arise at the beginning and end of life.
- Knows how to proceed when a patient refuses a recommended intervention or requests ineffective or harmful treatment.
- Understands the ethical principles that underlie a physician's fiduciary relationship with a patient.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Demonstrates professional humanistic qualities.**

Objectives - Skills

- Demonstrates compassion, sensitivity, and respect in interactions with patients and families.
- Accepts responsibility.
- Demonstrates reliability and leadership.
- Is well organized, punctual, and efficient.
- Embraces self-learning and professional development skills.
- Is aware of one's own limitations of knowledge, experience, and skills.
- Accepts criticism, performs realistic self-assessments, and develops and implements a plan that addresses their personal learning needs.
- Personifies honesty and integrity through one's behaviors.
- Advocates for quality patient care.
- Assists patients in dealing with healthcare system complexities.
- Maintains a sustained commitment to service by accepting inconvenience to meet patients' needs.

- Volunteers one's skills and expertise to advance the welfare of patients and community.
- Behaves with high regard and respect for colleagues, other members of the health care team, and patients and their families.

Goal: Practice with professionalism, compassion, and concern, in a legal, ethical, and moral fashion. **Demonstrates ability to formulate a methodical and comprehensive treatment plan with appreciation of health care costs.**

Objectives - Knowledge

- Understands appropriate treatment modalities.
- Awareness of the costs of comparative therapies.
- Studies and understands evidence-based practice patterns.
- Studies and understands "best practices" and "preferred provider guidelines".
- Carries over the knowledge performance indicators required in the first section.
- Understands the relative costs of applied diagnostic and therapeutic interventions.

Objectives - Skills

- Uses an evidence-based approach to therapeutic intervention.
- Derives a treatment plan based upon a thorough history, physical examination, and appropriate diagnostic tests.
- Adheres to the principle "above all else, do no harm" in formulating and applying a treatment plan.
- Uses a treatment approach that logically progresses from less interventional (conservative) to more interventional (surgical) when applicable.
- Uses a treatment approach that considers cost-to-benefit and chooses the least costly, most effective therapeutic approach when applicable.
- Uses a comprehensive treatment approach that responds to the etiologic factors as well as resultant pathology when applicable.

Goal: Demonstrate the ability to communicate effectively and function in a multi-disciplinary setting. **Communicate in oral and written form with patients, colleagues, payers and the public.**

Objectives - Skills

- Teaches effectively to ensure patient and family understand rationale for management plan, expected outcomes, and potential problems.
- Utilizes effective methods to modify behavior and enhance compliance.
- Involves patient and family in coordinating decisions.
- Patiently reinforces learning for patients and family.
- Creates and sustains therapeutic relationships with patients.
- Demonstrates attentiveness, active listening, and good interviewing skills.
- Obtains essential data for decision analysis.
- Provides the opportunity for participants to request, provide, and receive information.
- Asks questions and provides information using language that is understandable.

- Learns and applies strategies for dealing with individuals who present significant communication challenges such as domination, anger, confusion, or an ethno-cultural background different than one's own.
- Effectively facilitates conflict resolution.
- Is collegial in interpersonal relationships with colleagues.
- Discusses pertinent aspects of patient's condition with consultant.
- Demonstrates caring and respectful behavior when interacting with patients.
- Recognizes and responds appropriately to nonverbal communication.
- Negotiates a mutually agreed upon treatment plan.
- Communicates with clerical staff and nursing staff in a manner that fosters mutual respect and facilitates an effectively run practice.
- Communicates with colleagues and other professionals on the health care team in a manner that fosters mutual respect and facilitates the effective handling of patient care issues.
- Effectively communicates by telephonic and electronic means.

Goal: Demonstrate the ability to communicate effectively and function in a multidisciplinary setting. **Is able to partner with health care managers and health care providers to assess, coordinate and improve health care.**

Objectives - Knowledge

- Understands the areas of expertise or other health care providers.
- Knows efficient methods to coordinate care among disciplines.

Objectives - Skills

- Distinguishes when it is appropriate to refer to other health care providers.
- Communicates and collaborates effectively with other members of the health care team.
- Refers efficiently for consultations, diagnostic tests, procedures, and therapeutic intervention.
- Facilitates team approach to develop and implement a preventative/therapeutic plan.
- Recognizes team members' areas of expertise and shows respect for the opinions and roles of individual team members, both physicians and non-physicians.
- Participates in the team's task by contributing one's own expertise, eliciting information, and providing feedback.

Goal: Demonstrate the ability to communicate effectively and function in a multidisciplinary setting. **Maintains appropriate medical records.**

Objectives - Knowledge

- Understands medical record components to include face sheet, history and physical, admit note, progress note, operative note, operative report, and discharge summary.
- Understands appropriate documentation for reporting adverse occurrences.
- Understands advanced directives and power of attorney issues.

Objectives - Skills

- Completes medical record components (see didactic indicators) in appropriate format and detail.
- Completes medical record components in a timely fashion.
- Updates the medical problem list and medication list at each visit.

Goal: Has the capacity to manage individuals and populations in a variety of socioeconomic and health care settings. **Advocates for quality patient care and assists patients in dealing with system complexities.**

Objectives - Knowledge

- Understands the interactions and roles of all players in healthcare delivery.
- Understands mechanisms for addressing resource and care delivery issues.

Objectives - Skills

- Places a priority on quality patient care above all else.
- Assists patients in addressing resource and health care delivery issues.

Goal: Has the capacity to manage a podiatric practice in a multitude of health care delivery settings. **Demonstrate familiarity with utilization management and quality improvement.**

Objectives - Knowledge

- Knows the process of cost-benefit analysis.
- Understand the use of comparative data to measure variation in practice and thus identify best practices.
- Understands the methodology of quality improvement and utilization management.
- Know how to measure patient satisfaction.
- Know the methods used to develop practice guidelines and critical pathways and how physicians use them in the management of disease.
- Know the respective roles of the regulatory agencies involved in maintaining quality of medical care, including JCAHO, NCQA, HCFA and state health care councils.
- Knows the methodology of outcomes measurement.

Goal: Has the capacity to manage a podiatric practice in a multitude of health care delivery settings. **Understands health care reimbursement.**

Objectives - Knowledge

- Knows the basic systems of payment, including indemnity plans, managed indemnity plans, and capitation.
- Knows the principal types of payers and their methodologies for healthcare reimbursement, including Medicare, Medicaid, B+/BS, worker's compensation, insurance companies (both for-profit and not-for-profit).
- Knowledge of diagnostic (ICD) and procedural (CPT) codes.

Objectives - Skills

- Utilizes diagnostic and procedural codes effectively.

Goal: Has the capacity to manage a podiatric practice in a multitude of health care delivery settings. **Understands medical-legal considerations involving health care delivery.**

Objectives - Knowledge

- Knows how to inform patients and obtain voluntary consent for a plan of medical care and specific diagnostic and therapeutic interventions.
- Understands the legal basis of the physician-patient relationship.
- Understands the concepts of standards of care.
- Understands how to identify the appropriate alternate decision maker when a patient lacks satisfactory decision-making abilities.
- Understands medical malpractice issues, including available carriers, types of coverage, how to respond to a claim of malpractice, limits of coverage, insurance tails, and national database.

Goal: Has the capacity to manage a podiatric practice in a multitude of health care delivery settings. **Demonstrate understanding of common business practices.**

Objectives - Knowledge

- Understands components and process of establishing an employee handbook.
- Understands components and process of creating a business plan.
- Know how the forms of medical practice differ from one another, including solo practice, group practice, preferred provider organizations, independent practice associations, or HMOs.
- Knows the basic business skills important to effective patient care, including accounting, personnel management, insurance billing, evaluating contracts, reading financial statements and using basic spreadsheet and databases.
- Understands legal and financial issues pertaining to employment contracts, practice associations and partnerships, purchasing a practice and establishing a practice.

Objectives - Skills

- Utilizes legal and business professional resources for all pertinent practice decisions.

Goal: Be professionally inquisitive, lifelong learners and teachers utilizing research, scholarly activity and information technologies to enhance professional knowledge and clinical practice. **Reads, interprets, critically examines, and presents medical and scientific literature.**

Objectives - Knowledge

- Understands the designs most commonly used in medical research.
- Understands the basic concepts underlying inferential statistics.

Objectives - Skills

- Applies research design and statistical techniques to the critical analysis of research.
- Regularly reviews, either individually or in group journal club participation, the scientific literature to enhance professional knowledge and patient care.

Goal: Be professionally inquisitive, lifelong learners and teachers utilizing research, scholarly activity and information technologies to enhance professional knowledge and clinical practice.

Designs, collects, interprets data and presents the findings in a formal study related to podiatric medicine and surgery.

Objectives - Knowledge

- Understands designs most commonly used in medical research proposals e.g., abstract, protocol, objectives, review in literature, methods, recruitment and resources, funding and references.
- Understands the basic concepts underlying inferential statistics.
- Understands basic institutional review board (IRB) policies and regulations with special emphasis on protection of human subjects, informed consent of human subjects and issues of confidentiality.
- Understands the various regulatory agencies associated with medical research and development, including:
 - National Institute of Health (NIH).
 - Department of Health and Human Services (DHHS).
 - Office for the Protection of Research Risks (OPRR).
 - Office of Research Compliance and Assurance (ORCA).
- Understands designs most commonly used in medical research proposals, e.g., abstract, protocol, objectives, review in literature, methods, recruitment and resources, funding and references.
- Understands the basic concepts underlying inferential statistics.
- Understands basic institutional review board (IRB) policies and regulations with special emphasis on protection of human subjects, informed consent of human subjects, and issues of confidentiality.
- Understands principles for consideration in balancing legally allowable and ethical issues that may arise in medical research involving human subjects.
References:
 - The Nuremberg Code.
 - The Declaration of Helsinki.
 - The Belmont Report.
- Understands medical associations relative to ethical issues in medical research involving human subjects, including:
 - Public Responsibility in Medicine and Research (PRIM+R).
 - Applied Research Ethics National Association (ARENA).

Objectives - Skills

- Completes a formal study in the form of either clinical study, basic science study, or outcome study.
- Prepares a study in publishable form.

Goal: Be professionally inquisitive, lifelong learners and teachers utilizing research, scholarly activity and information technologies to enhance professional knowledge and clinical practice.
Demonstrates information technology (IT) skills in learning, teaching, and clinical practice.

Objectives - Knowledge

- Know what databases and information sources are available that report results on diagnosis, treatment effectiveness, prognosis, and prevention.
- Can efficiently search and locate relevant information from computer-based sources.
- Understands the essential aspects of file organization, information storage, and the basic issues related to computer and copyright law.

Objectives - Skills

- Demonstrates basic keyboarding and Internet access skills.
- Uses word processing, spreadsheet, database, desktop publishing, and desktop presentation packages and adapts these tools for medical use.
- Identifies, evaluates, selects, and appropriately uses electronic sources of medical information.
- Identifies, evaluates, selects, and appropriately uses computer-based resources for patient education.
- Makes informed decisions regarding the purchase and use of computer equipment and software, including patient-care related services.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **hematology**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal hematologic values, including:
 - hemoglobin.
 - hematocrit.
 - CBC.
 - differential.
 - platelet count.
 - reticulocyte count.
 - Westergren sedimentation rate.
 - CD4/CD8.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for each hematology test.

- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **serology/immunology**.

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal serology/immunology values, including:
 - RPR.
 - VDRL.
 - HIV screen.
 - Mono screen.
 - serum pregnancy.
 - ANA.
 - rheumatoid factor.
 - blood group, Rh.
 - antibody screen.
 - direct Coombs.
 - Hepatitis A IgM (acute).
 - Hepatitis A IgG (immunity).
 - Hepatitis B Surface Antigen.
 - Hepatitis B Core Antibody.
 - Hepatitis B Surface Antibody.
 - Hepatitis C Antibody.
 - Rubella.
 - Rubeola.
 - Varicella.
 - CMV.
 - H. pylori.
 - Mumps.
 - Toxoplasma.
 - Lyme.
 - Cryoglobulins.
 - HLA B27.
 - C reactive protein.
 - serum complement.
 - other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.

- Recognizes (correctly interprets) the normal or abnormal test values for each serology/immunology test.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation or repeat/serial analysis.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **blood chemistries.**

Objectives - Knowledge

- Understands the correct technique for venipuncture and specimen storage and processing.
- Understands normal and abnormal blood chemistry values, including:
 - sodium.
 - potassium.
 - chloride.
 - carbon dioxide.
 - magnesium.
 - creatinine.
 - BUN.
 - blood glucose (random and fasting).
 - hemoglobin A1C.
 - fructosamine.
 - calcium.
 - phosphorous.
 - uric acid.
 - total bilirubin.
 - serum protein electrophoresis.
 - ferritin.
 - iron.
 - total iron binding capacity.
 - hemoglobin electrophoresis.
 - T4 / FTI.
 - TSH.
 - alkaline phosphatase.
 - AST (SGOT).
 - ALT (SGPT).
 - albumin.
 - PSA.
 - acid phosphatase.
 - creatine kinase (CK or CPK).
 - CKMB - cardiac.
 - amylase.
 - cholesterol.
 - HDL.
 - LDL.
 - triglycerides.

- acetone.
- vitamin B12.
- folate.
- ACTH challenge.
- cortisol.
- other.
- Understands the rationale for ordering the tests listed above.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes (correctly interprets) the normal or abnormal test values for blood chemistry tests.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **toxicology/drug screens.**

Objectives - Knowledge

- Understands normal and abnormal toxicology and drug screen findings and values, including:
 - vancomycin.
 - gentamicin.
 - theophylline.
 - phenytoin.
 - carbamazepine.
 - digoxin.
 - lithium.
 - valproic acid.
 - acetaminophen.
 - salicylate.
 - lead.
 - alcohol.
 - anabolic steroids.
 - barbiturates.
 - narcotics.
 - sedative-hypnotics.
 - cocaine.
 - other illicit drugs.
- Understands the rationale for ordering the tests listed in the section above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

- Understands the correct technique for venipuncture and specimen storage and processing.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **coagulation studies.**

Objectives - Knowledge

- Understands normal and abnormal coagulation study values, including:
 - prothrombin time.
 - INR.
 - activated PTT.
 - bleeding time.
 - fibrinogen.
 - fibrin split products.
- Understands the rationale for ordering the tests listed above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands the correct technique for venipuncture and specimen storage and processing.

Objectives - Skills

- Utilizes the correct technique for performing venipuncture.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **blood gases.**

Objectives - Knowledge

- Understands normal and abnormal blood gas values, including:
 - arterial P O₂.
 - arterial pH.
 - arterial P CO₂.

- bicarbonate.
- Understands the rationale for ordering the tests listed above.
- Correctly interprets the normal and abnormal test findings/values for each test in the tests listed above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands appropriate method for collection and processing of arterial blood gases.

Objectives - Skills

- Appropriately procures arterial blood gas specimen.
- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **microbiology**.

Objectives - Knowledge

- Understands the technique for performing:
 - gram stain.
 - KOH prep.
 - aerobic cultures.
 - anaerobic cultures.
 - fungal cultures.
 - acid-fast (mycobacterial) cultures.
 - GC cultures.
 - other.
- Can correctly interpret the results of the test listed in section above.
- Understands the correct technique for obtaining specimens and specimen storage and processing, including:
 - arthrocentesis.
 - tissue biopsy (nails, soft tissue, bone).
 - swabs or aspirants.
 - blood cultures.
 - stool cultures.
 - CSF cultures.
 - urine cultures.
 - sputum cultures.
- Understands the rationale for selecting specimen procurement methods listed in section above.
- Understands laboratory processing of the specimens, including:
 - the identification of organisms.
 - the determination of organism sensitivities by Kirby-Bauer disc diffusion.

- the determination of organism sensitivities to antimicrobials by minimal inhibitory concentrations.
- the determination of organism sensitivities to antimicrobials by minimal bacteriocidal concentrations.
- serum bacteriocidal levels.
- Differentiates normal flora from pathogenic microbes.
- Understands the common pathogens associated with specific infectious disease states (e.g., postoperative, diabetic fetid foot, etc.).
- Identifies antimicrobial resistance, based upon sensitivity results.
- Understands the rationale for ordering HIV screening.

Objectives - Skills

- Appropriately performs and reads a gram stain and a KOH prep.
- Obtains specimens using appropriate techniques, as listed in the section above.
- Choice of specimen collection method is appropriate for the patient's type and location of suspected infection.
- Correctly interprets the results of cultures and sensitivities.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **synovial fluid analysis.**

Objectives - Knowledge

- Understands the correct technique for arthrocentesis.
- Understands the correct technique for specimen storage and processing.
- Understands the various tests that can be performed on synovial fluid, including:
 - volume.
 - general appearance.
 - viscosity.
 - cells / WBCs / neutrophils.
 - crystals.
 - Mucin clot.
 - Fibrin clot.
 - pH.
 - gram stain.
 - culture and sensitivity.
 - glucose.
 - protein.
- Understands normal and abnormal values for the tests listed in section above.
- Understands the rationale for selecting the tests listed in the section above.

Objectives - Skills

- Utilizes the correct technique for performing an arthrocentesis.

- Recognizes (correctly interprets) the normal or abnormal test values for each test in section above.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation.

Goal: Recognize the need for (and/or orders) additional diagnostic studies, when indicated, including: laboratory tests, including: **urinalysis**.

Objectives - Knowledge

- Understands normal and abnormal urinalysis findings and values, including:
 - appearance/odor.
 - dipstick analysis.
 - microscopic analysis.
 - urine pregnancy.
 - urine microalbumin.
 - 24-hour creatinine clearance.
 - 24-hour uric acid.
 - myoglobins.
- Understands the rationale for ordering the tests listed in the section above.
- Correctly interprets the normal and abnormal test findings/values for each test listed in the section above.
- Recognizes when test values indicate further history, physical exam, diagnostic studies, consultation, or repeat/serial analysis.
- Understands appropriate methods for collection of specimens.

Objectives - Skills

- Recognizes normal and abnormal test values for all tests ordered.
- Selects appropriate test(s) as indicated by patient's chief complaint and clinical findings.
- Selection of test(s) fits the overall management of the patient in terms of evaluation sequence, timeliness, and cost-effectiveness.

Objectives - Attitudes

- Accepts criticism constructively.
- Acts as a patient advocate, involving the patient/family in the decision-making process.
- Communicates effectively with the patient/family, recognizing their concern for safety, comfort, and medical necessity.
- Provides high quality, comprehensive care in an ethical manner.
- Demonstrates moral and ethical conduct.
- Respects and adapts to cultural differences.
- Establishes trust and rapport with patients and peers.
- Demonstrates primary concern for patient's welfare and well-being.

- Functions appropriately in a multidisciplinary setting, using good communication skills.
- Demonstrates responsible, reliable, punctual, cooperative behavior, and maintains records in a timely manner.

Competencies

Rotation: Medical Imaging

Objectives - Attitudes

- Accepts criticism constructively.
- Acts as a patient advocate, involving the patient/family in the decision-making process.
- Communicates effectively with the patient/family, recognizing their concern for safety, comfort, and medical necessity.
- Provides high quality, comprehensive care in an ethical manner.
- Demonstrates moral and ethical conduct.
- Respects and adapts to cultural differences.
- Establishes trust and rapport with patients and peers.
- Demonstrates primary concern for patient's welfare and well-being.
- Functions appropriately in a multidisciplinary setting, using good communication skills.
- Demonstrates responsible, reliable, punctual, cooperative behavior, and maintains records in a timely manner.

Competencies

Rotation: Surgery

Objectives - Attitudes

- Accepts criticism constructively.
- Acts as a patient advocate, involving the patient/family in the decision-making process.
- Communicates effectively with the patient/family, recognizing their concern for safety, comfort, and medical necessity.
- Provides high quality, comprehensive care in an ethical manner.
- Demonstrates moral and ethical conduct.
- Respects and adapts to cultural differences.
- Establishes trust and rapport with patients and peers.
- Demonstrates primary concern for patient's welfare and well-being.
- Functions appropriately in a multidisciplinary setting, using good communication skills.
- Demonstrates responsible, reliable, punctual, cooperative behavior, and maintains records in a timely manner.