Redefine.

Health Education

Master Musculoskeletal Imaging Certification

Course Syllabus

I. Primary Instructor(s):

Dr. Lance M. Mabry, PT, DPT
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II. Financial Disclosures: The instructor receives financial distributions from Redefine Health Education for revenue generated by course purchases. There are no products or services mentioned or promoted during this course. No other financial disclosures.

III. Post Professional Learning Level: Beginner/Basic

IV. Statement of Non-Discrimination: This course is made available to all *physical therapist and physical therapist assistant* licensees on a non-discriminatory basis.

V. Verification of Attendance: For live webinars, participants register on our website and their identity is confirmed via roll call upon arrival to the Zoom meeting. For online self-study, participants must register and login with a unique email address/password in order to access and complete the learning content.

VI. Statement of Relevance to PT Practice:

Imaging competency is now a CAPTE requirement for entry-level DPT curriculum and is highlighted in every ABPTS description of specialty practice from pediatrics to cardiovascular & pulmonary to women's health.

VII. Course Description:

This 18-hour certification course (offered via live webinars and/or online self-study) is designed for physical therapists and other musculoskeletal care providers to enhance their foundational knowledge in diagnostic imaging modalities for individuals with musculoskeletal complaints. Throughout this course, participants will be equipped with:

- knowledge in fundamental imaging science
- body-region specific indications for various types of imaging
- clinical reasoning in interpretation of imaging results
- communication skills for relaying imaging orders to radiologists and relaying imaging results to patients

At the conclusion of this certification, participants will be competent in incorporating musculoskeletal imaging in their clinical practice.

VIII. **Method of Instruction:** The course is broken down into 2-hour modules, which participants can complete via online self-study or live interactive webinar. The same content, with the same objectives and assessments, are offered in both delivery formats. Participants are encouraged to engage with the primary instructor during live webinars and at any other time during/after the courses via email or phone call.

IX. **Differential Diagnosis content:** This course contains 16 hours of differential diagnosis content.

X. **Course Schedule**

NOTE: the content and time allocated to each section is the same for both on-demand and live webinars. We determined the # of contact hours with the video run time and/or live webinar time allotment. For online self-study participants, there is an open forum where participants can engage in discussion with the instructor if they have questions or commentary.

Module #	Module Title	# contact hours
1	Introduction to MSK Imaging	2
2	MSK Imaging of the Cervical Spine	2
3	MSK Imaging of the Thoracolumbar Spine	2
4	MSK Imaging of the Shoulder	2
5	MSK Imaging of the Elbow, Wrist & Hand	2
6	MSK Imaging of the Hip & Pelvis	2
7	MSK Imaging of the Knee	2
8	MSK Imaging of the Foot & Ankle	2
9	Clinical Response to Imaging Findings	2
TOTAL HOURS		**18 hours**

Live Course Schedule – the schedule structure of individual module is the as follows:

40 min: Radiographs
40 min: MRI, CT, Bone Scan
40 min: Case Reviews, Clinical Decision Making & Q&A

XI. TOTAL Course Contact Hours: 18 hours
(60 minutes of learning activities per contact hour)

XII. Materials/Resources: All participants will receive a pdf handout of the presentation slides to reference during and after the course.

XIII. Course Objectives: At the conclusion of the course, students must demonstrate a minimum of 70% proficiency in the course assessments to achieve a passing grade. The assessments will demonstrate that the student has met the following objectives:

Intro:

1. Understand the inherent statistical properties of various diagnostic imaging modalities.
2. Understand the risks, benefits, and limitations of various imaging modalities.
3. Understand how to orient yourself to directionality (superior/lateral/right/left/etc) in various imaging modalities.
4. Understand how to interpret/use proper clinical imaging terminology when discussing various imaging modalities
5. Identify structures by their radiodensity (air, fat, water/soft tissue, bone, metal) in radiographs or computed tomography scans.
6. Understand how factors (i.e. movement, distance, etc) affect resolution, quality, or interpretation of clinical imaging.
7. Apply search strategies for various imaging modalities.
8. Select the appropriate window when searching for bony pathology utilizing computed tomography.
9. Understand the properties of various magnetic resonance imaging weights and how that facilities optimal view of anatomy, soft tissue pathology, and bony pathology.
10. Understand which imaging modalities are best for emergent conditions.
11. Utilize a mnemonic to convey a clinical vignette to the radiologist when ordering radiologic test.

Cervical:

1. Identify common static musculoskeletal imaging modalities utilized in the cervical spine.
2. Determine the necessary radiographic views to request based on symptomatic distribution or mechanism of injury within the cervical spine.

3. Identify when stress view radiography is necessary within the cervical spine.
4. Identify normal cervical anatomy on radiographs, computed tomography, and magnetic resonance imaging
5. Identify the most common imaging planes for cervical cross-sectional imaging
6. Utilize evidence-based guidelines to screen for imaging necessity for various conditions.
7. Understand signs, symptoms, or red flags suggestive of imaging necessity.
8. Identify common pathologies with their proper clinical imaging terminology.
9. Understand indications and contraindications for clinical imaging based on the American College of Radiology Appropriateness Criteria.

TL Spine:

1. Identify common static musculoskeletal imaging modalities utilized in the thoracolumbar spine.
2. Understand common radiographic views within the thoracolumbar spine.
3. Identify when stress view radiography is necessary within the lumbar spine.
4. Identify normal thoracolumbar anatomy on radiographs and magnetic resonance imaging
5. Identify the most common imaging planes for thoracolumbar magnetic resonance imaging
6. Utilize evidence-based guidelines to screen for imaging necessity for various conditions.
7. Understand signs, symptoms, or red flags suggestive of imaging necessity.
8. Identify common pathologies with their proper clinical imaging terminology.
9. Understand indications and contraindications for clinical imaging based on the American College of Radiology Appropriateness Criteria.

Shoulder

1. Identity common static musculoskeletal imaging modalities utilized in the shoulder.
2. Determine the necessary radiographic views to request based on symptomatic distribution or mechanism of injury within the shoulder.
3. Identify normal shoulder anatomy on various imaging modalities.
4. Understand the obliquity of planes within multi-planar imaging of the shoulder.
5. Utilize evidence-based guidelines to screen for imaging necessity for various conditions.
6. Understand signs, symptoms, or red flags suggestive of imaging necessity.
7. Identify common pathologies with their proper clinical imaging terminology.
8. Understand indications and contraindications for clinical imaging based on the American College of Radiology Appropriateness Criteria.

Elbow Wrist & Hand

1. Identity common static musculoskeletal imaging modalities utilized in the elbow, wrist and hand.

2. Determine the necessary radiographic views to request based on symptomatic distribution or mechanism of injury within the elbow and wrist.
3. Identify normal anatomy on various imaging modalities.
4. Understand orientation challenges likely to manifest within elbow computed tomography.
5. Utilize evidence-based guidelines to screen for imaging necessity for various conditions.
6. Understand signs, symptoms, or red flags suggestive of imaging necessity.
7. Identify common pathologies with their proper clinical imaging terminology.
8. Understand indications and contraindications for clinical imaging based on the American College of Radiology Appropriateness Criteria.

Knee

1. Identify common static musculoskeletal imaging modalities utilized in the knee.
2. Determine the necessary radiographic views to request based on symptomatic distribution or mechanism of injury
3. Utilize proper clinical imaging terminology in relation to radiographic views.
4. Identify normal knee anatomy on radiographs and magnetic resonance imaging
5. Identify the most common imaging planes for knee magnetic resonance imaging
6. Utilize evidence-based guidelines to screen for imaging necessity for various conditions.
7. Understand signs, symptoms, or red flags suggestive of imaging necessity.
8. Identify common pathologies with their proper clinical imaging terminology.
9. Understand indications and contraindications for clinical imaging based on the American College of Radiology Appropriateness Criteria.

Hip & Pelvis

1. Identify common static musculoskeletal imaging modalities utilized in the hip/pelvis.
2. Determine the necessary radiographic views to request based on symptomatic distribution or mechanism of injury.
3. Utilize proper clinical imaging terminology in relation to radiographic views.
4. Identify normal anatomy on various imaging modalities.
5. Identify the most common imaging planes for multiplanar hip imaging.
6. Utilize evidence-based guidelines to screen for imaging necessity for various conditions.
7. Understand signs, symptoms, or red flags suggestive of imaging necessity.
8. Identify common pathologies with their proper clinical imaging terminology.
9. Understand indications and contraindications for clinical imaging based on the American College of Radiology Appropriateness Criteria.

Foot & Ankle:

1. Identify common static musculoskeletal imaging modalities utilized in the foot/ankle

2. Utilize proper clinical imaging terminology in relation to radiographic views.
3. Identify normal anatomy on various imaging modalities.
4. Identify the most common imaging planes for multiplanar foot/ankle imaging.
5. Utilize evidence-based guidelines to screen for imaging necessity for various conditions.
6. Understand signs, symptoms, or red flags suggestive of imaging necessity.
7. Identify common pathologies with their proper clinical imaging terminology.
8. Understand indications and contraindications for clinical imaging based on the American College of Radiology Appropriateness Criteria.

Clinical Response to Imaging Findings

1. Understand how communication factors can impact interpretation of clinical imaging.
2. Apply the SBAR mnemonic to communicate with a provider.
3. Apply the AGOLDMED mnemonic for imaging referral.
4. Understand how communication of imaging results can trigger a nociceptive response.
5. Understand the responsibilities related to the clinical response and follow-up to imaging results.
6. Understand how to engage appropriate interprofessional clinicians for emergent findings or those that may be out of your jurisdictional or personal scope of practice.

XIV. Competency Demonstration: At the conclusion of the certification, students must demonstrate a minimum of 70% proficiency in the course assessments to achieve a passing grade. The assessments will demonstrate that the student has met the aforementioned objectives.

Assessment	Description	Points
Online quiz (offered at the end of each 2-hour module)	Participants must achieve a passing grade of 70% or better on a 10-question quiz in order to pass the course and be awarded a CE course certificate.	10 points x 8 quizzes
CR Final Assignment	Students must submit a reflection assignment for one of the prompts below which is graded pass/fail based on scoring rubric criteria: Submit a written or video reflection with a response to one of the following prompts:	10 points

	1. Request an image (as clinically appropriate) for a patient either directly to a radiologist or through an intermediary provider using AGOLDMED, SBAR, or SBAR+AGOLDMED. Reflect: what did you learn, how did you grow, how did this influence your practice? 2. Educate a patient on their imaging results. Reflect on how the experience went: How did it feel for you? How did the patient receive it? Successes/failures with specific wording? How did it influence future appointments/outcomes with the patient. 3. Reach out to a radiologist with a question about an image or an interpretation. Reflect on how the call/interaction went. What did you learn? How did this influence your care or future practice patterns? Could you see yourself doing this again? 4. If none of the previous tasks are reasonable given your practice setting/etc, write a reflection on how you will integrate this course of instruction into your current work setting.	
Possible Points	----------	90
Min. Passing Grade	----------	63/90

We do not release quiz questions/answers to prospective students. Employers or accrediting bodies can request this information by emailing info@redefinehealthed.com

XV. Course Evaluation:

Participants complete a course evaluation at the end of each 2-hr module. Please click the following link to access our evaluation forms:

Live Webinar: https://forms.gle/PXmjoq6dttjfcC5E9
Online Self-Study: https://forms.gle/9ZoW2aDkUYVRpzPw9

XVI. Complete Reference List:

https://docs.google.com/document/d/1jLo8SQlLRotDtSE89tSPmfygzg0ChlSt/edit?usp=sharing&ouid=104429963933001498033&rtpof=true&sd=true