







web-based tools.		Time	Explanation
Topic Area	Presenter	(120 mins)	
Introduction	Jim Elliott	5	An overview of the sessions. Solicitation/preparation for questions from participants
State Civilian examples	Scott Rezac, Aaron Keil, Connie Kittleson	15 each (45)	Pragmatic examples of clinical referral for imaging in civilian practice across different states, institutions, and practice settings
Military Example	Daniel Watson	15	How should the PT respond to results from imaging studies
Radiology	Amma Maurer	20	What do Radiologists think about all of this? What kind of communication do radiologists prefer in completing the referral and after the interpretation, especially if the referral to another provider is suggested.
Discussion, Q and A	Panel/Committee	35	Questions from participants, based on those submitted on entry / during session
APTA			CSM



diagnostic in	naging pr	ivileges.	
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- therapists privileges to order imaging. 7. Prepare effectively to answer common questions and concerns over granting therapists
- 6. Develop a plan to secure administrative and/or PT Board support for granting physical

- Provide a vision for enhanced physical inerapy derivery by understanding the integration of imaging into practice.
 Cite appropriate research that supports granting physical therapists privileges to order imaging studies directly.
 Describe the impact diagnostic imaging can have on clinical decision making when ordered appropriately.

• DW - None to report

• AK -• CK – • AM -• SR -

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- SESSION OBJECTIVES:
 Appreciate the results of nearly two years of documented clinical cases where a licensed physical therapist, acting in accordance with their state practice act, referred for their patient for appropriate, guideline-supported, imaging tests.
 Communicate with radiologists and other providers in referring for imaging and following-up as indicated from the radiology report.
 Provide a vision for enhanced physical therapy delivery by understanding the integration of imaging into practice.

- CS

CSM















What Does This Mean?

- "With Great Power Comes Great Responsibility"
 - Stan "The Man" Lee1922-2018



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What Does This Mean?

- Increase in Autonomous Practice
 - Decreased wait times
 - Pathology specific imaging





What Does This Mean?

- Increase in Autonomous Practice
- Increase in Liability
- Increase in Responsibility
 - Need to increase our knowledge base
 - Need to increase interdisciplinary communication
 - Responsibility for adverse findings and
 - appropriate management of the same

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Scenario #1

• 16 year old male athlete with primary complaint of focal left hip pain one week ago

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- Reerred to Physical Therapy for sport specific rehab
- Suspected avulsion fracture
- · Referred for x-rays which where negative

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Scenario #1 Clinical suspicion remained extremely high, so what to do?

• Make a phone call...

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Scenario #1

- Clinical suspicion remained extremely high, so what to do?
- Make a phone call...
- MRI confirmed suspected pathology

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Scenario #1

- Clinical suspicion remained extremely high, so what to do?
- Make a phone call...
- MRI confirmed suspected pathology
- Contacted his orthopod for consultation to determine plan of care going forward

CSM

CSN

Scenario #2 • 31 year old female s/p MVC involving multiple vehicles at 70 mph





























1/23/19













1/23/19





















Ordering of Diagnostic Imaging by Physical Therapists: A 5-Year Retrospective Practice Analysis

> **PTJ** (A Keil, B Baranyi, S Mehta, A Maurer)

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	UTILIZATION OF DIAGNOSTIC I (Per new DA patient evaluatio		
	Radiographs	8.5_ %	
teracitión. Al l'éfite reserved.	Advanced Imaging	<u>4.0</u> %	
oto Annican Physical Theory	Total Imaging Utilization	<u>12.5</u> %	
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Take home message:

- · Linking DA and Imaging just makes sense
- Achieving imaging privileges can be done
- PTs have shown proper use
- · Insurance will pay

It's best for the patient

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Wisconsin Update

- From 2005-2009 PTs in Wisconsin ordered xrays.
- In 2009, legislation passed that did not allow radiological technologists to accept a referral from a PT.
- In 2016, new legislation passed securing in statute both the ability for some PTs to order xrays and the ability for those referrals to be accepted.
- In August 2017, rules passed clarifying which PTs in Wisconsin are allowed to order xrays.

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Wisconsin Update

- In Fall of 2018, we surveyed the membership of the Wisconsin chapter (1721 PTs) regarding their practice related to ordering xrays.
- We encouraged all members to respond even if they did not order xrays.
- 484 physical therapists responded (28%)

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<u>CSM</u>

Researchers/Authors

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Carrie Schwoerer, PT Physical Therapist University of Wisconsin Hospital & Clinics Elana Gordon, PT, DPT UW Health and Unity Point Health-Meriter Orthopedic Physical Therapy Resident

Amy Reiter Executive Director Wisconsin Physical Therapy Association

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Percentag nee	ge of patients still eding xray?
When asked "What percentage xray, but have not already had o	of your patients presented in your clinic needing an one taken?", the answers were as follows:
 81-100% 61-80% 41-60% 21-40% 1-20% 0% 	% (4.17%) (0%) (12.50%) (4.17%) (79.17%) (0%)
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Who orders when there is still a need?

When asked "When you determine that a patient needs an xray, but has not already had one, how often are you the provider who signs the imaging order

- Only 13.04% indicated "Never"
- 30.43% indicated "Most of the Time"

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When asked to indicate how often respondents ordered images for various body regions, no clear predominance was seen except for that a significant # indicated that they never order images of the head.

C-spine, T-spine, L-spine, Pelvis/Sacrum, Upper Extremity, and Lower Extremity were all apprixmately equally represented in responses.

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Difficulties Related to Insurance Reimbursement?

- Employer doesn't like it because they say its not covered. Don't really give us a chance to try it though.
 I am not always sure whether it will be covered and in many cases am hesitant to incur a bill for the patient for a test that would be covered if ordered by a different provider.
 Our facility just assumes it will not be covered and has PTs request the order from the PCP or referring provider.

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Additional Comments?

- I don't believe PTs are trained to properly read xrays. I don't feel a clinician should order a test they cannot interpret.
- Educational materials for how facilities can alter policies to allow PTs to
 order xrays would be beneficial (similar to hose provided for direct access efforts).





Disclosures

- The views expressed are those of the author and do not reflect the official policy or position of the United States Air Force, Department of Defense or the United States Government
- I do not have any financial disclosures.

PTs in the US Military: A 30 Second History

- First PT deployed to an active combat zone
 MAJ Barbara Gray, 1966 in Vietnam
- · Have been deployed to active combat zones since
- 1970s: gained the ability to order diagnostic imaging studies
- Currently: US Military PTs are deployed across the globe

 Primary goal: Rehabilitation of service members who are capable of returning to duty

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CSM Contained

Direct Access: Link to Diagnostic Imaging

- Risk Determination for Patients With Direct Access to Physical Therapy in Military Health Care Facilities – Moore et al, JOSPT 2005
- Retrospective analysis: 25 Military Health Care Locations
- 40 month time period: 50,799 new direct access evaluations with 95 $\ensuremath{\mathsf{PTs}}$
- No reported adverse events, credentialing/license modifications or litigation cases

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Diagnostic Accuracy: Advanced Imaging

- Clinical Diagnostic Accuracy and Magnetic Resonance Imaging of Patients Referred by Physical Therapists, Orthopaedic Surgeons, and Nonorthopaedic Providers

 Moore et al, JOSPT 2005
- Retrospective analysis: 560 MRIs obtained at West Point
- Agreement between clinical diagnosis and MRI findings
 - PTs: 74.5% (108/145)
 - Orthopaedic Surgeons: 80.8% (139/172)
- Non-orthopaedic providers: 35.4% (86/243)
- No difference between PT and Ortho (p > 0.05)

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	PTs: Diagnostic Imaging in the US Military
•	Have the ability to obtain diagnostic imaging privileges
	 Radiographs
	– CT
	- MRI/MRI-A
	– DEXA
	Training requirements
/ wootator wing	 Upon entry: usually have the ability to order with supervision by a senior PT
toole watconstyled through	 Post-training course (~16 hours) and period of supervision: eligible to obtain full privileges Responsibilities
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Ame	rikan Physical Theory Association.

Case #1: Direct Access Cervical Pain

- 21 year old male cadet
- Multiple sets, high rep overhead shoulder presses
 - Denied trauma
 - Developed acute pain 36 hours later while sleeping
- Chief complaint: posterior neck pain
- Full but painful cervical active motion
- Normal neurological exam
- Ecchymosis, exquisitely tender to same

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Case #1: Direct Access Cervical Pain

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FIGURE 2. Anterior to posterior cervical radiograph.



Case #2: Direct Access Lower Leg Pain

- 23 year old male
- Stepped off a curb running and felt acute "pop" in the left calf 2 hours prior
- Denied change in running distance
 Full but painful ankle and knee ROM
- Mildly antalgic gait

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Exquisitely tender at midshaft of left fibula > gastrocnemius muscle belly



FIGURE 4. Runner.





Case #3: Direct Access Trauma

29 yo male MRAP gunner IED blast with < 1 min LOC

- Vehicle rollover

Med Evac'd to Forward Operating Base - Normal Head/ Neck CT

Normal neurocognitive exam
 Primary complaint of LBP

Returned to primary base

- Instructions: see PT in 2 days





Case #3: Direct Access Trauma

• PT eval:

- Main complaint of LBP
- Denied:
 - Lower extremity numbness/tingling
 - Changes in bowel/bladder
 - Previous history of low back pain
- Physical exam
 - Very guarded ROM with increase in local sx in all directions
 - Palpable step deformity of the low lumbar spine

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CSM Combined

Case #3: Direct Access Trauma



FIGURE 7. Coned view of the lumbar spine. Note: Grade I Spondylolisthesis.

Case #3: Direct Access Trauma

- Primary Concern
 - Acute versus Chronic injury
 - Management
 - Acute: Immobilization and medical evacuation to US
 - Chronic: Trial of treatment
- Consult: Neurosurgeon and Radiologist

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Case #4: Acute Hip and Groin Pain

- 19 yo female cadet
- Acute posterior upper thigh pain while running sprints
- Diagnosed with a hamstring strain
- Treated twice with dry needling, manual therapy, modalitiesVisit 3: different PT
 - Mildly antalgic gait

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Case #5: Direct Access Acute Wrist Pain

- 18 yo female cadet
- Acute wrist pain in the snuffbox following burpees
- Full but painful wrist extension, snuffbox tenderness
- Beighton score: 8/8 (deferred right thumb)
- On differential list: scaphoid fracture





No edema noted within the scaphoid on T-2 weighted images.





FIGURE 14. Wrist CT. Note: Lucency noted within the distal trapezoid.

PTs: Diagnostic Imaging in the US Military Keys to success:

- Owning your patient

 - How do you handle results?
- Power and responsibility
- Asking for help
- Spending time with radiologists
- Investing in a fracture management course/book
- Staying humble

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Referral for Imaging:
Autonomy and AccountabilityPresenter: Amma N. Maurer, MDMethar GeorgeowThe radiologist's perspective

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January 23, 2019

Referral for Imaging: Autonomy and Accountability

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The radiologist's perspective

Presenter: Amma N. Maurer, MD

MedStar Georgetown University Hospital

According to the American College of Radiology(ACR) Practice Parameter for Communication of Diagnostic Imaging Findings...

Sherry CS, Adams MJ, Berlin L. ACR Practice parameter for communication of diagnostic imaging findings. Available at <u>https://www.acr.org/-</u> /media/ACR/Files/Practice-Parameters/communicationdiag.odf?la=en. American college of Radiology. Accessed December 18, 2018

• 'Effective communication is a critical component of diagnostic imaging'

• 'There is a reciprocal duty of information exchange'

Sherry CS, Adams MJ, Berlin L. ACR Practice parameter for communication of diagnostic imaging findings. *Available at <u>https://www.acr.org/-</u> /media/ACR/Files/Practice-Parameters/communicationdiag.odf?la=en*. American college of Radiology. Accessed December 18, 2018

Outline

- What to order?
- How to order?
- Communication of results.
- Cases.

What to order?

 The ACR Appropriateness Criteria are evidence based for the determination of appopriate imaging

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American College of Radiology. ACR Appropriateness criteria. Available at https://www.acr.org/Clinical-Resources/ACR-Appropriateness-Criteria Accessed December 18, 2018.





How to order?

- 'A request for imaging should include relevant clinical information, a working diagnosis, and/or pertinent clinical signs and symptoms'
- 'A specific question to be answered can be helpful'
- 'Whenever possible, previous reports should be available for review and comparison'

Sherry CS, Adams MJ, Berlin L. ACR Practice parameter for communication of diagnostic imaging findings. *Available at*.<u>https://www.acr.org/-</u> /media/ACR/Files/Practice-Parameters/communicationdiag.df?la=en. American college of Radiology. Accessed December 18, 2018

Communication of results

- Routinely occurs in the form of a finalized report (faxed or as part of the electronic medical record)
- This may be supplemented by a discussion (face-to-face or telephone), depending on the acuity of findings and also on the need for additional follow up
- Use of other methods of communication must involve a means of ensuring receipt

Sherry CS, Adams MJ, Berlin L. ACR Practice parameter for communication of diagnostic imaging findings. *Available at*.<u>https://www.acr.org/-</u> /media/ACR/Files/Practice-Parameters/communicationdiae.pdf?la=en. American college of Radiology. Accessed December 18, 2018

Communication of results

- 'Effective communication is a critical component of diagnostic imaging'
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Physical therapy – Radiology communication at Medstar Georgetown University Hospital

- Direct conversation
- Monthly joint conference
- Physical therapy residents and students spend time in the radiology department

 \rightarrow Facilitates mutual learning and improved patient care

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Case #1

- 64 F with left shoulder pain and weakness after a fall. No fracture on images at an outside institution.
- Referred for PT
- PT concerned about marked weakness with minimal improvement → MR of the shoulder ordered by physical therapist to evaluate the rotator cuff



- PT used results to send the patient to a shoulder orthopedic specialist.
- Pros and cons discussed with patient: subacromial injection with continued physical therapy, arthroscopic rotator cuff repair, reverse total shoulder arthroplasty.
- Patient opted for a subcromial injection which helped her maximize physical therapy. Expectations for improvement were also adjusted based on findings

Case #1 highlights

The ability to order the MRI:

- Helped address the physical therapists' concerns for a significant rotator cuff tear
- Expedited patient care as the patient already had the MR performed prior to seeing the shoulder specialist
- Allowed the patient's regimen and expectations of therapy to be appropriately adjusted

Case #2

- 16 M pitcher with posterior shoulder pain, referred for physical therapy after negative radiographs.
- · PT concerned about pain intensity
- Discussed concern for possible posterior labral tear with radiologist → MR arthrogram of the shoulder ordered

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Case #2 highlights

- Communication with radiology ensured that the appropriate study (MR arthrogram, rather than an MR) was ordered to answer the clinical question of labral tear
- Provision of appropriate history allowed the radiologist to scrutinize the area of concern (posterior shoulder) for subtle pathology

Case #3

- 30 F post arthroscopic excision of a large suprapatellar cyst
- Scheduled to begin PT 2.5 weeks later.
- However, presented to the ED at 5 days post op with knee pressure, swelling and limited range of motion.

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- Declined therapeutic arthrocentesis and discharged with pain management
- At outpatient followup 8 days post op, pt apprehensive about knee movement with knee stiffness.
- Taught home exercises as a bridge to PT which began as initially scheduled 2.5 weeks post op

Case # 3

- Severe pain with attempts at knee flexion during physical therapy
- PT concerned about minimal improvement → Discussed with Orthopedist, with MRI suggested

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- Patient underwent manipulation under anesthesia
- · Improved with subsequent physical therapy

Case # 3 highlights

 PT understanding of patient symptoms and concomitant understanding of the utility of imaging facilitated appropriate patient care.

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Case #4

- 51 M with severe COPD referred to physical therapy for low back pain
- Worsening symptoms
- PT thoroughly reviewed the patient's history, which included ED visits over the prior 1 ½ mo for shortness of breath, chest pain, right upper quadrant abdominal pain and low back pain, and treatments for respiratory failure/COPD exacerbations

• PT noted mild thoracic and lumbar compression fractures on a CTA chest report 1 ½ mo prior, with the lumbar compression fracture appearing similarly on abdominopelvic CT 1 mo prior



Case #4

- PT presented case at PT-Rad conference
- Discussed that, unlike MR, a determination of vertebral fracture acuity on CT imaging often cannot be made → patient sent to Orthopedics as there was clinical concern that the fractures might be contributing to the patient's symptoms

• Orthopedist ordered lumbar radiographs, revealing new lumbar compression fractures



Case #4

• Ultimately, patient treated with a lumbosacral corset and was started on bisphosphonate therapy as osteoporosis from steroid use was felt to be the etiology.

Case #4 highlights

- PT thoroughly reviewed the patient's record, including the body and impression of radiology reports.
- Communication between PT and radiology facilitated a discussion about the patient's imaging findings, symptoms, and best next step

Conclusion

- Ordering of imaging by physical therapy can positively impact patientcare
- Communication between physical therapy and radiology is critical for successful implementation

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