PRESIDENT'S MESSAGE

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CRISIS AND OPPORTUNITY: ALARM IN THE FACE OF IMPENDING PHYSICIAN AND NURSING SHORTAGES – PHYSICAL THERAPISTS TO THE RESCUE!

Cherished Members of the Mighty Imaging SIG!

The word 'crisis' is increasingly common in the daily American vernacular. We react to it with Pavlovian angst, and it is strikingly easy to provoke the desired reaction of our collective cortisol rush. Naturally, we physical therapists must thoughtfully and scientifically navigate our agitated states to determine the validity of any sensationalistic claim. It turns out that 'crisis' has inspired quotes and maxims for every mood, from the inspirational, to the provocative, the palliative, and the irreverent.

First and foremost, I love the clarity and resonance of our dear Albert Einstein's:

"In the midst of every crisis, lies great opportunity."

But what about the instructive words of JFK?

"The Chinese use two brush strokes to write the word' crisis.' One brush stroke stands for danger: the other for opportunity. In a crisis, be aware of the danger--but recognize the opportunity."

Or Rahm Emanuel's pragmatic tone peppered with a soupcon of the Machiavellian:

"You never want a serious crisis to go to waste. And what I mean by that is an opportunity to do things that you think you could not do before."

And a cheeky quote that you can use as your Monday morning mantra from former US Secretary of State Henry Kissinger:

"There cannot be a crisis next week. My schedule is already full."

Germane to the Imaging SIG quarterly newsletter contribution, I decided to devote some due diligence to the 5-alarm fire of critical Physician and Nursing shortages. After all, we are part of the multidisciplinary care team of an ideally healthy medical system, even if our collective role is sometimes misunderstood and mischaracterized.

Sound the Alarm!

The Association of American Colleges (AAMC, 2019)[1] reported that 35% of survey respondents said they or someone close to them had difficulty finding a physician in the past 1-2 years, a 10-point increase since the question was asked in 2015. This statistic is consistent with recent data published in 2021 by the AAMC, warning of mounting shortfalls in primary and specialty care. According to the AAMC, the United States could see "an estimated shortage of between 37,800 and 124,000 physicians by 2034." Key findings of their study underscore demographics of population growth and aging, bringing a primary driver of demand from 2019 to 2034. This shortage is further strained by a large portion of the physician workforce nearing traditional retirement age. The AAMC cautions, "If marginalized minority populations, people living in rural communities, and people without health insurance had the same health care use patterns as populations with fewer barriers to access, up to an additional 180,400 physicians would be needed now."

Compounding the bottlenecks to healthcare delivery and a strained medical system, the American Association of Colleges of Nursing has sounded the alarm on nursing shortages.[2] Staffing shortages increase errors, decrease patient satisfaction, and increase morbidity and mortality rates.[2] Indeed, these inefficiencies have been reported to contribute to error, delays in evaluation and treatment, and ultimately morbidity and mortality.

Physician and Nursing Shortages Affect Health Equity

Crisis-level shortages threaten the fulfillment of health equity (the state in which everyone has a fair and just opportunity to attain their highest level of health) or optimal public health in underserved and rural outreach. Relevant to physical therapists, shortages of services continue to exacerbate the ongoing chronic pain and opioid crises. Chronic musculoskeletal pain and disability is, as we all know, a well-established societal and financial burden endemic to our ongoing healthcare crisis.[3] To compensate for these shortfalls, Zhang et al.[5] suggest expanding the deployment of mid-level healthcare providers, including nurse practitioners and physician assistants, to mitigate the anticipated acute shortages. Indeed, we have witnessed the expansion of physician's assistant (PA) and nurse practitioner (NP) masters programs to relieve a severely stressed healthcare delivery system, but this does not bode well for musculoskeletal care, as NP and PA programs are not required to provide any basic radiology education.[4] Furthermore, these physician extender program curricula are nonstandard and vary widely. Conversely, Physical Therapists furnish incontestable, specific expertise in musculoskeletal management and have been used for decades as orthopedic and musculoskeletal diagnostic extenders. Moreover, Horn and Fritz[7] report that "delayed and late physical therapy consultation is associated with increased costs and overall healthcare utilization, particularly of healthcare services with conflicting evidence for effectiveness."

SHORTAGES AND MUSCULOSKELETAL CARE

Presently, primary care physicians are relied on to manage the majority of musculoskeletal decisions, including diagnostic imaging referrals. [5] Yet, to complicate matters further, our dear friends Mabry and colleagues[8] in the recently peer-reviewed seminal work, *Physical Therapists Are Routinely Performing the Requisite Skills to Directly Refer for Musculoskeletal Imaging: An Observational Study,* report worrying data:

"Multiple studies have shown insufficient entry-level musculoskeletal education [6-8] may lead physicians to lack both

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confidence [9,10] and competency [11-13] in managing musculoskeletal conditions."

Mabry et al[8] warn that in response to physician shortages, the delegation of musculoskeletal deliberations to physician assistants or nurse practitioners has not improved appropriate utilization. Indeed, Hughes, Jiang, and Duszak[17] have reported to JAMA both overutilization and inappropriate utilization of imaging studies by NPs and PAs, who happen to be approved providers of imaging referral by the Center of Medicare Services (CMS). Ironically, NPs and PAs do not have musculoskeletal imaging training mandated by their education,[4] in sharp contrast to current DPT educational requirements.

The questions are: What do we do now in the face of this challenge? What can we POSSIBLY offer as Physical Therapists?... after all, we're ONLY…er… Doctors of Physical Therapy... You know, the doctorate-level graduate trained health care professionals who perform countless musculoskeletal exams and manage innumerable orthopedic patients, musculoskeletal, neuromusculoskeletal, cardiopulmonary, wound management concerns…you know…stuff which physical therapists are expertly versed in (my profoundest apologies for the thinly veiled sarcasm).

PHYSICAL THERAPISTS TO THE RESCUE!

The Case for Physical Therapist-Directed Imaging Referral

Fear not, America, evidence-based Physical Therapists are ready, willing, and eager to serve with enthusiasm and vigor! To my humble colleagues, who may be a little tentative, you may have to suspend your disbelief for a moment because the ever-mounting evidence is clear and supports our deepening involvement in patient management and imaging referral. In the face of physician, nursing shortages, and health equity disparities, deploying the underleveraged role of the primary care Physical Therapist may relieve a system bottlenecked and burdened by significant inefficiencies. Strong precedent reveals that a solution lies right under our collective olfactory foramina.

Yes, We Have the Skills to Refer for Imaging, and We've Demonstrated It

In response to inform a critical appraisal of physical therapist-directed imaging referral, a recent peer-reviewed publication by Mabry et al confirms that **physical therapists are routinely practicing skills necessary to refer patients for musculoskeletal imaging**. In effect, substantial precedent demonstrates that imaging referral is within the scope of physical therapist practice. Both military and civilian physical therapists have been credentialed for diagnostic imaging referrals for decades within all United States Department of Defense branches. Imaging privileges are also granted to physical therapists within the U.S. Public Health Service and the Veteran's Administration. De facto, Physical Therapists in the military have practiced as direct access providers with imaging privileges since 1972.[14,15]

Additionally, physical therapists are credentialed for imaging referral in an increasing number of large healthcare systems, including Kaiser Permanente, University of Wisconsin Hospital and Clinics, MedStar Georgetown University Hospital (DC/VA), and St Luke's University Health Network (NJ/PA). In the case of sonographic imaging, physical therapists in the United States are recognized by the Medical and Scientific Advisory Council (MASAC) to practice musculoskeletal ultrasound imaging in the realm of hemophilia care as a part of multidisciplinary care with hematologists/oncologists for differential screening/diagnosis of hemarthrosis, muscle hematoma, hemophilic arthropathy, and other musculoskeletal conditions endemic to the bleeding disorders community.

Background and History: We are already practicing Primary Care Physical Therapy

Passionate advocate Dr. James Dauber PT, DSc, RMSK explained in a rigorous, extensive correspondence that:

> *"The practice of direct access is 66 years old.[16]Present in the US military since the Vietnam War.[14,15]A chart review of over 2,000 patients found that physical therapists commonly receive nonspecific referral "diagnoses" (i.e., low back pain, knee arthralgia, etc.) from physicians. Generalist physicians most commonly observe these in patients with spinal disorders.[17]Significantly, since referrals to physical therapists most frequently come from generalist physicians such as family practice and internal medicine physicians, and spinal conditions constitute the largest group of diagnoses seen by outpatient physical therapists, the need for physical therapists to establish a diagnosis may be required more commonly than formally recognized by third-party payers and even many State Practice Acts.[17]Almost half of US medical schools do not require formal training in musculoskeletal medicine.[12]At the time of internship, less than 20% (1 in 5) of medical school graduates have the minimum knowledge to establish musculoskeletal competency in primary care, and residents and experienced physicians in various settings demonstrated less-than-adequate expertise in musculoskeletal medicine.[18]Experienced physical therapists show higher levels of knowledge in managing musculoskeletal conditions than family practice, internal medicine, and pediatric physicians.[19]Physical therapists' clinical diagnostic accuracy has shown to be consistent with orthopedic surgeons, superior to family practice, internal medicine, pediatric physicians, physician assistants, and nurse practitioners.[20]Patients initially seen by physical therapists vs. orthopedic physicians had no statistical or clinical differences in their outcomes but had higher patient satisfaction and experienced lower costs when seen by physical therapists.[21]A review of 50,000 new first-contact patient visits performed by physical therapists over 40 months found no reported adverse events, no revocation or modification of licenses or credentials due to disciplinary action, and no litigation cases filed."[22]*

Concerning Inappropriate Utilization and Over Utilization

Inappropriate or over-utilization of imaging and health services are hot-button concerns that confront our advocacy, but evidence shows that it simply does not apply to our profession. There is an understandably heightened concern with a widely reported inappropriate use of diagnostic imaging. Improper imaging use includes overutilization, which increases cost, and ***underutilization***, which threatens appropriate clinical deliberation and referrals, ultimately delaying care. These concerns must be addressed with the best available evidence. Not to disparage our new 'partners in care,' but the increased use of masters-educated physician's assistants and nurse practitioners for imaging referral has been shown to contribute to overutilization and inappropriate imaging referral.[23]

In contrast, **Physical Therapists continue to demonstrate cost savings, decreased inappropriate imaging referrals, and strong adherence to ACR (American College of Radiology) guidelines.**[24] I must mention that **any attempts to conflate NP and PA utilization data with Physical Therapists would be drawing misleading false equivalents.** Our job as evidence-based practitioners is to stop this deceptive narrative should our well-intentioned stakeholding partners swallow poorly informed mischaracterizations and platitudes.

Furthermore, compared to primary care physicians, Physical Therapists continue demonstrating their musculoskeletal management competency. Mabry reports that "Physical Therapists who directly refer for imaging are **more** compliant with evidence-based imaging guidelines than their primary care counterparts, thereby reducing diagnostic imaging utilization. [16,24-34] Physical therapists have similarly demonstrated greater diagnostic accuracy in their imaging referrals than non-physicians and have done so without harming patients.[20,22,27,29] **This may explain, in part, why insurance companies have consistently reimbursed for imaging when directly referred by physical therapists**."

In complete agreement, Marshall University's Dr. Dauber elaborates further in his correspondence:

> *"Use of physical therapists as musculoskeletal screeners resulted in decreased use of radiology, decreased patient wait times, and improved utilization of specialty physician services.[3]. Physical therapists as primary contact providers with imaging privileges have reduced utilization of diagnostic imaging by 50%, resulting in a lowered cost per episode and reduced patient exposure to unnecessary ionizing radiation.[36] Physical therapists have demonstrated lower imaging referral rates than orthopedic surgeons while demonstrating equal outcomes and higher patient satisfaction rates.[21] Physical therapists have demonstrated image referral rates as low as 1.2%, compared to 35.6% for physicians in the same facility.[37] A review of imaging orders by physical therapists at two large medical centers demonstrated 91-94% appropriateness when compared to the American College of Radiology Appropriateness Criteria guidelines. In comparison, orthopedists and pain management physicians demonstrated 70% appropriateness, and family practice, internal medicine, and emergency medicine demonstrated 50-55% appropriateness.[24] Another study showed that when radiologists and orthopedic surgeons reviewed MRIs ordered by physical therapists, they were found to be 100% appropriate.[20]"*

Here are your **bullet points with some recapitulation:**

- *Using physical therapists as musculoskeletal screeners decreased radiology use, reduced patient wait times, and improved the utilization of specialty physician services.[35]*
- *Physical therapists as primary contact providers with imaging privileges have reduced utilization of diagnostic imaging by 50%, resulting in a lowered cost per episode and reduced patient exposure to unnecessary ionizing radiation.[36]*
- *Physical therapists have demonstrated lower imaging referral rates than orthopedic surgeons while demonstrating equal outcomes and higher patient satisfaction rates.[21]*
- *Physical therapists have demonstrated imaging referral rates as low as 1.2%, compared to 35.6% for physicians in the same facility.[14] A review of imaging orders by physical therapists at two large medical centers demonstrated 91-94% appropriateness when compared to the American College of Radiology Appropriateness Criteria guidelines.[24,37]*
- *In comparison, orthopedists and pain management physicians demonstrated 70% appropriateness, and family practice, internal medicine, and emergency medicine demonstrated 50-55% appropriateness.[24]*
- *When reviewed by both radiologists and orthopedic surgeons, MRIs ordered by physical therapists were found to be 100% appropriate.[20]*
- *Peer-reviewed published research has demonstrated the practice of imaging by physical therapists to be safe. One study of 50,000 patients seen by physical therapists in a direct access setting (which included imaging privileges) resulted in no reported adverse events, no license or credential revocations or modifications, and no litigation cases filed.[22]*
- *Numerous peer-reviewed published studies have demonstrated that when physical therapists order diagnostic imaging, the appropriateness of those orders is excellent, particularly when compared to appropriateness criteria published by the American College of Radiology. One recent study found the appropriateness of physical therapist imaging referrals to far exceed family practice, internal medicine, and pain management physicians.[24]*
- *Numerous peer-reviewed published studies have demonstrated that physical therapists who refer for imaging substantially reduce utilization rates over other medical professions, including physicians, thereby lowering the cost of care.[38-47]*
- *Physical therapists demonstrate the appropriate use of diagnostic imaging.[17]*
- *Physical therapists in the physician-extender role in the military have demonstrated equivalent patient outcomes to other physician-extenders in the military system and a greater than 50% reduction in radiographic examinations.[12]*
- *Physical therapists are more diagnostically accurate than non-orthopedic providers in evaluating musculoskeletal conditions, thus more appropriate for direct access to physical therapist services for musculoskeletal disorders and the need for the ability to refer for imaging.[16]*

And you thought I was going to stop… But why stop there?

Real-World Imaging Implications of Physical Therapy Musculoskeletal Management

If you have not checked out physical therapist extraordinaire Dr. Tim Flynn's recorded lecture from CSM 2023 in San Diego, I would implore you to check out *PP-13778 – Active or Passive: My Impact is Massive* (https://apta.confex.com/apta/csm2023/meetingapp.cgi/Session/13778). I spoke with Dr. Flynn, PT, PhD, OCS, FAAOMPT, FAPTA, and he explained the real-world implications of physical therapist management of patients with musculoskeletal pain. In the real world of musculoskeletal practice, there is a significant added benefit to Physical Therapist patient care. There is substantial agreement and evidence that early Physical Therapist participation in the care and management of patients with spinal pain markedly lowers healthcare costs, more specifically in imaging-referral, opioid prescription, and orthopedic referral, underscoring that Physical Therapists practice conservative cost-reducing strategies that leverage their physical examination and treatment.[38-47] Assuaging concerns about primary care access to physical therapy intervention and management, Mintken and colleagues show the results of retrospective data

analysis during a 10-year data collection period.[48] In the study, 12,976 patients accessed physical therapy without a referral at the University of Colorado at Boulder, which instituted a direct access musculoskeletal injury clinic in 2000. There were no reported unidentified cases of serious medical pathology or adverse events, and none of the physical therapists had their credentials or licenses modified or revoked for disciplinary action.

But what about billing? Ah, yes… billing.

Billing Concerns

The short answer, as was foreshadowed before, is that radiology centers are getting reimbursed for physical therapist imaging referrals. Imaging and advanced imaging mostly requires pre-authorization from payers. The requests get reviewed and are authorized. As Mabry et al[8] report the preponderance of supportive evidence indicating safe and appropriate use of imaging referral by Physical Therapists without harm to patients may, in part, explain why insurance companies consistently reimburse for Physical Therapist directed imaging regardless of the requirement of pre-authorization requirements for advanced imaging referral.[5]

Had enough proof already? Still want more, eh? I get it. Our appetite for more information and validation is insatiable.

Education and Imaging Referral Privilege: NPs, PAs, and Clinical Psychologists are Recognized Providers of Imaging Referral by CMS, but Physical Therapists are NOT!

The exclusion of Physical Therapists as providers of imaging referral is a breathtaking oversight. Unlike our NP, PA, and clinical psychologist counterparts, the DPT alone is mandated through the Commission on Accreditation in Physical Therapy Education (CAPTE Standard 7A) to include imaging as a required element of the DPT curriculum. More specifically, CAPTE, which is our national physical therapy education credentialing body, states:

> *"**The physical therapist professional curriculum includes content and learning experiences** in the biological, physical, behavioral, and movement sciences necessary **for entry-level practice**. Topics covered include anatomy, physiology, genetics, exercise science, biomechanics, kinesiology, neuroscience, **pathology**, pharmacology, **diagnostic imaging**, histology, nutrition, and psychosocial **aspects of health and disability.**[49]"*

Moreover, consistent with CAPTE's mandate for diagnostic imaging education within physical therapy programs, APTA's Academy of Orthopaedic Physical Therapy has published the *Imaging Education Manual for Doctor of Physical Therapy Professional Degree Programs*.

Physical therapists also show a robust appetite for continuing education course offerings in radiology. Mabry et al.[8] report, "Musculoskeletal imaging continuing education or certification programs are also abundant, with 32% of physical therapists reporting participation in imaging education in this capacity."

I know the argument, "*But there is no uniformity of radiology curricula in Physical Therapy*." Well, hold on a minute, are you giving a pass for NP and PA masters programs who are accorded imaging privileges without mandated radiology coursework in musculoskeletal conditions,[4] if at all? So, before we shoot our own halluces off our beloved feet, let's be reasonable, and acknowledge our expertise.

But who will stand by us, you ask? We are NOT alone.

INSTITUTIONAL SUPPORT

The American Physical Therapy Association (APTA): The Physical Therapy profession's national governing body, the APTA, has concluded that the use of imaging is within the scope of practice of a licensed physical therapist. The APTA's official policy is explained in its House of Delegates' position statement HOD P06-12-10-09 concerning 'Diagnosis by Physical Therapists.' It states, *"When indicated, Physical Therapists order appropriate tests, including but not limited to **imaging** and other studies, that are performed and interpreted by other health professions. Physical Therapists may also perform or interpret selected imaging or other studies."*

U.S. Department of Defense, U.S. Public Health Service, and the Department of Veterans Affairs: Imaging referral by physical therapists is practiced in the federal systems' military branches.

Kaiser Permanente, University of Wisconsin Hospital and Clinics, St Luke's University Health Network,[37] MedStar Georgetown University Hospital[24]

The Federation of State Boards of Physical Therapy: The FSBPT has published its Model Practice Act which states that the practice of physical therapy means determining a diagnosis and plan of intervention and **referring** patients/clients "*to other healthcare providers and facilities for services and **testing** to inform the physical therapist plan of care.*"

American Academy of Orthopedic Manual Physical Therapists: It is the Position of the AAOMPT that ultrasound imaging is within the scope of physical therapist practice.

The National Hemophilia Foundation's (NHF) Medical and Scientific Advisory Council (MASAC): MASAC recognizes Physical Therapists as providers of MSKUS for the detection of hemarthrosis and hematoma, joint health monitoring and differential musculoskeletal diagnosis in hemophilia and bleeding disorders care. Created in 1954 to issue recommendations and advisories on treatment, research, and other general health concerns for the bleeding disorders community, MASAC comprises physicians (21 hematologist/oncologists), scientists, and other medical professionals with a wide range of expertise on bleeding disorders, blood safety and infectious disease, representatives from government agencies, and people with bleeding disorders. It also comprises the chairs of NHF's nursing, social work, and physical therapy working groups.

Over the years, MASAC has issued over 400 communications covering various medical issues, from prevention and treatment to infectious disease complications and women with bleeding disorders. Each year, MASAC establishes standard treatment guidelines. These are often referred to by international experts, medical schools, pharmacists, emergency room personnel, insurance companies, etc. **The NHF's Physical Therapy Working Group is the custodian of MSKUS guidelines in Hemophilia.**[50]

The International Prophylaxis Study Group (ISPG): Recognizes Physical Therapists as appropriate providers of MSKUS to acquire and interpret images in hemophilia care.[51]

Alliance for Physician Certification and Advancement (APCA) and the Point-of-Care Ultrasound Certification Academy (POCUS): Physical therapists are recognized providers of musculoskeletal ultrasonography by the Inteleos Foundation family of certification alliances: the Alliance for Physician Certification and Accreditation (APCA), the American Registry of Diagnostic Medical Sonographers (ARDMS), and the Point-of-

Care Ultrasound Certification Academy (POCUS). Pertinently, physical therapists are eligible for the gold standard physician's board certification of the APCA-conferred RMSK distinction, which many physical therapists have achieved, as well as the POCUS certifications in MSKUS.

The American Institute of Ultrasound in Medicine (AIUM): The AIUM recognizes physical therapists as licensed medical providers of Musculoskeletal ultrasound. The AIUM, the home of the *Journal of Ultrasound in Medicine,* is a multidisciplinary association dedicated to advancing the use of ultrasound in medicine through professional and public education, research, development of guidelines, and accreditation.

Physical Therapist Involvement in MSKUS Research: The first published accounts of physical therapist-administered use of diagnostic ultrasound began in the 1980s. Physical therapists have continued to add high-quality peer-reviewed publications to the body of scientific literature, including submissions to the American Journal of Ultrasound in Medicine, Haemophilia, JOSPT, British Journal of Sports Medicine, Research Practice in Thrombosis and Haemostasis, and Blood, to name a few.

REFLECTIONS AND THANKS

When I embarked on the Imaging SIG's presidential ride, I realized that the precedent, the evidence, and our narrative were compelling, and all we needed now was to strategically implement a plan to fulfill the promise of physical therapist imaging referral for the sake of expedient health care and for the good of the community we serve. We can make a difference in a time of need and *crisis* for urban and rural communities. The achievement would, in an efficient manner, improve health equity while realizing and leveraging the full potential of our profession.

I will now admit that you are reading the bones of a formal legislative guide for our advocacy. I have to thank my marvelous colleague, Dr. James Dauber, for his continued ardent and passionate contribution to this newsletter and all matters relating to advocacy. Huge thanks to Drs. Aaron Keil, Lance Mabry, and Kory Zimney who also provided crucial contributions. And Kudos to Dr. Tim Flynn for additional perspectives and evidence to inform our path forward. I cherish the insights from James, Aaron, Lance, Kory, and Tim and sincerely appreciate the generosity of their time. James, Aaron, and I continue working on this guide and are progressing steadily. The manual will be replete with an exhaustive citation/reference list but with less editorial flourishes.

We have embarked on a decidedly arduous journey, and juggling work-life, only to throw in the extra ball of advocacy is challenging. But I believe in scratching patiently away at a task… like an archeologist… or Andy Dufresne in Shawshank Redemption using a puny little hammer and his wits to exact his freedom. A clumsy analogy, I admit, but I know our mission is the right one, and every effort counts!

Let us not waste this '*opportunity*' and do not let any misinformed stakeholder squander and snuff out our vital contribution to a healthcare system that dearly needs our help.

We have the evidence. It is our duty to represent our beloved profession for the sake of public health and the fight for our professional relevance.

At times, we may even be confronted by the stubbornness of belligerent stakeholders, the views which may be coming from an entirely earnest place; however, we must still faithfully represent and express our perspectives as full participants in the healthcare arena and to educate our colleagues to the current/modern realities of our profession.

I will leave you with a final quote to bookend this entry. I think it applies well to the defense and advocacy of our profession.

"The challenge of leadership is to be strong, but not rude; be kind, but not weak; be bold, but not bully; be thoughtful, but not lazy; be humble, but not timid; be proud, but not arrogant."

—Jim Rohn, Author

Kindest regards and best wishes,
Bruno Steiner, PT, DPT, LMT, RMSK
Doctor of Physical Therapy

ONGOING LEGISLATIVE AND STATE BOARD RULING EFFORTS

We are all cheering on our passionate advocates in Iowa, who may have passed imaging privileges for Physical Therapists by the time of this newsletter's issue. The resultant law would include MRI, CT scan, and radiography. From this newsletter's writing, legislative lead and Iowa APTA Chapter President, Dr. Kory Zimney reported that the bill is now on the governor's desk and waiting to be signed. Dr. Zimney mounted an excellently prepared evidence-based approach with collegiality and steadfast rebuttals.

I had a delightful exchange with Kentucky's dynamic advocates for imaging referrals. Physical Therapists Charles Workman, MSPT, MBA; Avery Shroyer, PT, DPT, Legislative Committee Chair; and Case Saxion, PT, DPT, have taken on the task of eliciting a favorable ruling from their state board, and we all wish them well for the sake of the profession and the great state of Kentucky. These exchanges of ideas, perspectives, and experiences benefit everyone. Just a reminder, our great former president of the mighty I-SIG, Dr. Charles Hazle, PT, PhD, hails from Kentucky and teaches at the University of Kentucky.

Next up, speaking of perspectives and excellent conversations, Kentucky's Imaging Task Force member, retired Army Captain Dr. Case Saxion, shared some referral protocols she believes should be adopted in the civilian Physical Therapy world.

Advocacy Pearls from Kentucky's Dr. Case Saxion

Dr. Saxion revealed that when she made referrals for Orthopedic consultation in her military service, she was obligated to write a prescription for any referral. She was stunned that civilian physical therapists do not do this. I admitted that I had never even considered this. Still, I realized that there is a unique opportunity in writing an official prescription whenever we refer to primary care or orthopedics. There is soft advocacy and power in prescriptive referral.

Much to our discredit, physical therapists squander opportunities to educate our multidisciplinary colleagues about our evaluative skills and educational level. I would ask you to consider the value of sending a prescription with your findings, impressions, name, and TITLE. Yes. When I sign the little prescription paper, I can add the following:

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Doctor of Physical Therapy
Registered Diagnostic Musculoskeletal Sonographer
Washington Center for Bleeding Disorders, Seattle WA

All at once, the prescription carries gravitas and quickly provides our educational credentials. Imagine how many of these prescriptions nationwide would educate our health professional colleagues. I have already been doing this with my emails, but Dr. Saxion's concept would be nuanced and quite compelling. I think I will adopt her clinician referral process to improve interdisciplinary communication, and you may want to follow suit. Believe it or not, *That's* advocacy.

All Things MSKUS & Diagnostic Ultrasound

Here's a bit of unexpected news for you in the MSKUS world. Physical Therapists have been working overtime to achieve their POCUS-MSKUS certification through Inteleos. Inteleos is the umbrella corporation housing the APCA (Alliance for Physician Certification and Advancement), which offers the RMSK physician's credential examination. It looks like 97 Physical Therapists have achieved certification for POCUS training. That does not include the current totals of RMSK credentialed Physical Therapists.

Although this is an impressive number, we encourage our POCUS-certified wave of professionals to step up to the physician's RMSK exam, which we are allowed to sit. Remember, the American Institute of Ultrasound in Medicine (AIUM) recognizes physical therapists as licensed medical providers of MSK ultrasound. Fair warning, I'm going to include the following call to action with every newsletter:

> WHO is next to subject themselves to the crucible of this physician credential of the RMSK? As I have parroted repeatedly, if you want to show that we rival the MSK diagnostic acumen of other diagnostic professions, this is a compelling way to do it. My dear Physical Therapist colleagues, we need to take advantage of this opportunity, and we need MORE body count to (i) study this excellent imaging modality, (ii) use it, (iv) study for the RMSK exam… and (v) pass it! Let's make MSKUS our own!

Recommended Reading from the Desk of our Research Chair, Dr. George Beneck, PT, PhD, KEMG

Germane to the increasing adoption of physical therapist-administered Diagnostic Ultrasound, the Imaging SIG Research Committee workgroup consisting of Robert Manske, Katherine Podoll, Alycia Markowski, Maureen Watkins, Lorna Hayward, and Murray Maitland recently published a paper in the International Journal of Sports Physical Therapy titled, "Physical Therapists Use of Diagnostic Ultrasound Imaging in Clinical Practice: A Review of Case Reports." This literature review summarizes 42 published case reports where the impact of ultrasound imaging findings led to marked differences in intervention strategies in 29 cases and resulted in referrals in 25 cases. Enjoy the read!

Ongoing Collaboration with the American Institute of Ultrasound in Medicine – from the Desk of I-SIG Vice President Brian Young, PT, DSc

The AIUM and the Imaging SIG will host several ultrasound imaging sessions this summer and fall. Our summer will focus on Pediatrics with 3 phenomenal MSKUS practitioners presenting a 3-part series entitled: ***Navigating the Ever-Changing Pediatric Joint.***

June 9th, 1 pm EST: Fred Loeffler, PT, DPT, LAT, ATC, CLT, will present on the knee.
June 6th, 1 pm EST: Tiffany Kaltenmark, PT, DPT, will present on the ankle.
August 30th, 1 pm EST: Stacie Akins, PT, MHS, will present on the elbow.

For fall 2023, we anticipate an exciting 2-3 session series in physical therapist-administered Cardiopulmonary Ultrasound Imaging led by Stephen Ramsey, PT, DPT, CCS.

Be on the lookout for AOPT messaging announcing these scheduled/yet-to-be-scheduled sessions.

The Imaging SIG continues to nurture an ever-deepening relationship with the American Institute of Ultrasound in Medicine, which recognizes physical therapist-administered MSKUS and actively seek MSKUS webinar content from us. Moreover, the AIUM recognizes physical therapists as licensed medical providers of MSK ultrasound. The webinars provide CMEs and are watched by physicians and sonographers alike. The grass-roots advocacy and credibility conferred to our profession with this continued effort cannot be underestimated. Much to AIUM's satisfaction, we have contributed remarkable professional content and will continue to nurture this crucial association.

REFERENCES

1. AAMC. The Complexities of Physician Supply and Demand: Projections From 2019 to 2034 [Press release]. June 11, 2021. Accessed May 31, 2023. www.aamc.org/news-insights/press-releases/aamc-report-reinforces-mounting-physician-shortage.
2. Haddad LM, Annamaraju P, Toney-Butler TJ. *Nursing Shortage*. StatPearls Publishing; 2023.
3. Lentz TA, Harman JS, Marlow NM, Beneciuk JM, Fillingim RB, George SZ. Factors associated with persistently high-cost health care utilization for musculoskeletal pain. *PloS One*. 2019;14(11):e0225125. doi:10.1371/journal.pone.0225125
4. RiChard JL, Liu BP, Casalino DD, Russell EJ, Horowitz JM. Radiology education of physician extenders: what role should radiologists play? *Acad Radiol*. May 2017;24(5):633-638. doi:10.1016/j.acra.2016.11.018
5. Mabry LM, Severin R, Gisselman AS, et al. Physical therapists are routinely performing the requisite skills to directly refer for musculoskeletal imaging: an observational study. *J ManManip Ther*. 2022:1-12. doi:10.1080/10669817.2022.2106729
6. Sabesan VJ, Schrotenboer A, Habeck J, et al. Musculoskeletal education in medical schools: a survey of allopathic and osteopathic medical students. *J Am Acad Orthop Surg Glob Res Rev*. 2018;2(6):e019. doi:10.5435/JAAOSGlobal-D-18-00019
7. Wang T, Xiong G, Lu L, Bernstein J, Ladd A. Musculoskeletal education in medical schools: a survey in california and review of literature. *Med Sci Educ*. 2021;31(1):131-136. doi:10.1007/s40670-020-01144-3
8. DiGiovanni BF, Sundem LT, Southgate RD, Lambert DR. Musculoskeletal medicine is underrepresented in the american medical school clinical curriculum. *Clin Orthop Relat Res*. 2016;474(4):901-907. doi:10.1007/s11999-015-4511-7

9. Abou-Raya A, Abou-Raya S. The inadequacies of musculoskeletal education. *Clin Rheumatol*. 2010;29(10):1121-6. doi:10.1007/s10067-010-1527-y
10. Al-Nammari SS, Pengas I, Asopa V, Jawad A, Rafferty M, Ramachandran M. The inadequacy of musculoskeletal knowledge in graduating medical students in the United Kingdom. *J Bone Joint Surg Am*. 2015;97(7):e36. doi:10.2106/jbjs.N.00488
11. Skelley NW, Tanaka MJ, Skelley LM, LaPorte DM. Medical student musculoskeletal education: an institutional survey. *J Bone Joint Surg Am*. 2012;94(19):e146(1-7). doi:10.2106/jbjs.K.01286
12. Freedman KB, Bernstein J. The adequacy of medical school education in musculoskeletal medicine. *J Bone Joint Surg Am*. 1998;80(10):1421-1427. doi:10.2106/00004623-199810000-00003
13. Weiss K, Curry E, Matzkin E. Assessment of medical school musculoskeletal education. *Am J Orthop (Belle Mead NJ)*. 2015;44(3):E64-67.
14. Greathouse DG, Schreck RC, Benson CJ. The United States Army physical therapy experience: evaluation and treatment of patients with neuromusculoskeletal disorders. *JOrthop Sports Phys Ther*. 4;19(5):261-266. doi:10.2519/jospt.1994.19.5.261
15. Benson CJ, Schreck RC, Underwood FB, Greathouse DG. The role of the Army physical therapists as nonphysician health care providers who prescribe certain medications: observations and experiences. *Phys Ther*. 1995:380+.
16. Boissonnault WG, Badke MB, Powers JM. Pursuit and implementation of hospital-based outpatient direct access to physical therapy services: an administrative case report. *Phys Ther*. 2010;90(1):100-109. doi:10.2522/ptj.20080244
17. Davenport TE, Watts HG, Kulig K, Resnik C. Current status and correlates of physicians' referral diagnoses for physical therapy. *J Orthop Sports Phys Ther*. 2005;35(9):572-579. doi:10.2519/jospt.2005.35.9.572
18. Freedman KB, Bernstein J. Educational deficiencies in musculoskeletal medicine. *J Bone Joint Surg Am*. 2002;84(4):604-608. doi:10.2106/00004623-200204000-00015
19. Childs JD, Whitman JM, Sizer PS, Pugia ML, Flynn TW, Delitto A. A description of physical therapists' knowledge in managing musculoskeletal conditions. *BMC Musculoskeletal Disorders*. 2005;6:32-32.
20. Moore JH, Goss DL, Baxter RE, et al. Clinical diagnostic accuracy and magnetic resonance imaging of patients referred by physical therapists, orthopaedic surgeons, and nonorthopaedic providers. *J Orthop Sports Phys Ther*. 2005;35(2):67-71. doi:10.2519/jospt.2005.35.2.67
21. Daker-White G, Carr AJ, Harvey I, et al. A randomised controlled trial. Shifting boundaries of doctors and physiotherapists in orthopaedic outpatient departments. *J Epidemiol Community Health*. 1999;53(10):643-650.
22. Moore JH, McMillian DJ, Rosenthal MD, Weishaar MD. Risk determination for patients with direct access to physical therapy in military health care facilities. *J Orthop Sports Phys Ther*. 2005;35(10):674-678. doi:10.2519/jospt.2005.35.10.674
23. Hughes DR, Jiang M, Duszak R, Jr. A comparison of diagnostic imaging ordering patterns between advanced practice clinicians and primary care physicians following office-based evaluation and management visits. *JAMA Intern Med*. 2015;175(1):101-107. doi:10.1001/jamainternmed.2014.6349
24. Keil AP, Baranyi B, Mehta S, Maurer A. Ordering of diagnostic imaging by physical therapists: a 5-year retrospective practice analysis. *Physl Ther*. 2019;99(8):1020-1026. doi:10.1093/ptj/pzz015
25. Jenkins HJ, Downie AS, Maher CG, Moloney NA, Magnussen JS, Hancock MJ. Imaging for low back pain: is clinical use consistent with guidelines? A systematic review and meta-analysis. *Spine J*. 2018;18(12):2266-2277. doi:10.1016/j.spinee.2018.05.004
26. Crowell MS, Dedekam EA, Johnson MR, Dembowski SC, Westrick RB, Goss DL. Diagnostic imaging in a direct-access sports physical therapy clinic: a 2-year retrospective practice analysis. *Int J Sports Phys Ther*. 2016;11(5):708-717.
27. De Carvalho D, Bussières A, French SD, et al. Knowledge of and adherence to radiographic guidelines for low back pain: a survey of chiropractors in Newfoundland and Labrador, Canada. *Chiropr Man Therap*. 2021;29(1):4. doi:10.1186/s12998-020-00361-2
28. Logan GS, Dawe RE, Aubrey-Bassler K, et al. Are general practitioners referring patients with low back pain for CTs appropriately according to the guidelines: a retrospective review of 3609 medical records in Newfoundland using routinely collected data. *BMC Fam Pract*. Nov 18 2020;21(1):236. doi:10.1186/s12875-020-01308-5
29. Mabry LM, Notestine JP, Moore JH, Bleakley CM, Taylor JB. Safety events and privilege utilization rates in advanced practice physical therapy compared to traditional primary care: an observational study. *Mil Med*. 2020;185(1-2):e290-e297. doi:10.1093/milmed/usz176
30. McGill T. Effectiveness of physical therapists serving as primary care musculoskeletal providers as compared to family practice providers in a deployed combat location: a retrospective medical chart review. *Mil Med*. 2013;178(10):1115-1120. doi:10.7205/milmed-d-13-00066
31. Mohammed HT, Yoon S, Hupel T, Payson LA. Unnecessary ordering of magnetic resonance imaging of the knee: A retrospective chart review of referrals to orthopedic surgeons. *PloS One*. 2020;15(11):e0241645. doi:10.1371/journal.pone.0241645
32. Parthipan S, Bowles C, de Luca K, Jenkins H. The association between guideline adherent radiographic imaging by chiropractic students and the diagnostic yield of clinically significant findings. *J Can Chiropr Assoc*. 2021;65(1):66-75.
33. Traeger AC, Machado GC, Bath S, et al. Appropriateness of imaging decisions for low back pain presenting to the emergency department: a retrospective chart review study. *Int J Qual Health Care*. 2021;33(3)doi:10.1093/intqhc/mzab103
34. Crowell MS, Mason JS, McGinniss JH. Musculoskeletal imaging for low back pain in direct access physical therapy compared to primary care: an observational study. *Int J Sports Phys Ther*. 2022;17(2):237-246. doi:10.26603/001c.31720

35. James JJ, Stuart RB. Expanded role for the physical therapist. Screening musculoskeletal disorders. *Phys Ther*. 1975;55(2):121-131.
36. James JJ, Abshier JD. The primary evaluation of musculoskeletal disorders by the physical therapist. *Mil Med*. 1981;146(7):496-499.
37. Patrick KG, Kareha SM. The appropriateness and efficacy of diagnostic imaging orders recommended by physical therapists - St. Luke's University Health Network – Bethlehem, PA. Poster presentation 2021 Combined Sections Meeting of the American Physical Therapy Association. 2021;
38. Horn ME, Fritz JM. Timing of physical therapy consultation on 1-year healthcare utilization and costs in patients seeking care for neck pain: a retrospective cohort. *BMC Health Serv Res*. 2018;18(1):887. doi:10.1186/s12913-018-3699-0
39. Fritz JM, Childs JD, Wainner RS, Flynn TW. Primary care referral of patients with low back pain to physical therapy: impact on future health care utilization and costs. *Spine*. 2012;37(25):2114-2121. doi:10.1097/BRS.0b013e31825d32f5
40. Liu X, Hanney WJ, Masaracchio M, et al. Immediate Physical therapy initiation in patients with acute low back pain is associated with a reduction in downstream health care utilization and costs. *Phys Ther*. 2018;98(5):336-347. doi:10.1093/ptj/pzy023
41. Childs JD, Fritz JM, Wu SS, et al. Implications of early and guideline adherent physical therapy for low back pain on utilization and costs. *BMC Health Serv Res*. 2015;15:150. doi:10.1186/s12913-015-0830-3
42. Gellhorn AC, Chan L, Martin B, Friedly J. Management patterns in acute low back pain: the role of physical therapy. *Spine*. 2012;37(9):775-782. doi:10.1097/BRS.0b013e3181d79a09
43. Fritz JM, Brennan GP, Hunter SJ. Physical therapy or advanced imaging as first management strategy following a new consultation for low back pain in primary care: associations with future health care utilization and charges. *Health Serv Res*. 2015;50(6):1927-1940. doi:10.1111/1475-6773.12301
44. Frogner BK, Harwood K, Pines J; Andrilla CHA, Schwartz MR. Does unrestricted direct access to physical therapy reduce utilization and health spending? Health Care Cost Institute and National Academy for State Health Policy State Health Policy Grant Program Washington, DC: Health Care Cost Institute. January 2016.
45. Pugh A, Roper K, Magel J, et al. Dedicated emergency department physical therapy is associated with reduced imaging, opioid administration, and length of stay: A prospective observational study. *PloS One*. 2020;15(4):e0231476. doi:10.1371/journal.pone.0231476
46. Marrache M, Prasad N, Margalit A, et al. Initial presentation for acute low back pain: is early physical therapy associated with healthcare utilization and spending? A retrospective review of a National Database. *BMC Health Serv Res*. 2022;22(1):851. doi:10.1186/s12913-022-08255-0
47. Frogner BK, Harwood K, Andrilla CHA, Schwartz M, Pines JM. Physical therapy as the first point of care to treat low back pain: an instrumental variables approach to estimate impact on opioid prescription, health care utilization, and costs. *Health Serv Res*. 2018;53(6):4629-4646. doi:10.1111/1475-6773.12984
48. Mintken PE, Pascoe SC, Barsch AK, Cleland JA. Direct Access to Physical Therapy Services Is Safe in a University Student Health Center Setting. *J Allied Health*. 2015;44(3):164-168.
49. CAPTE. Commission on Accreditation in Physical Therapy Education. Standards and required elements for accreditation of physical therapist education programs. 2017. www.capteonline.org/globalassets/capte-docs/capte-pt-standards-required-elements.pdf. Accessed August 2, 2022.
50. Bailey C, Bakeer N. Practice guidelines for implementation and use of musculoskeletal ultrasound in the management of individuals with hemophilia and other bleeding disorders. National Hemophilia Foundation; 2020. 7-23-2020. Accessed 10-13-2021. www.hemophilia.org/sites/default/files/document/files/MSKUS-GUIDELINES-7-23-20.pdf
51. Bakeer N, Dover S, Babyn P, et al. Musculoskeletal ultrasound in hemophilia: Results and recommendations from a global survey and consensus meeting. *Res Pract Thromb Haemost*. 2021;5(5):e12531. doi:10.1002/rth2.12531