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Physical Therapist Practice and the Role of Diagnostic Imaging

The rise in healthcare costs is of major concern to all governments and healthcare systems. In 2009, the United States spent an estimated 17.1% of its gross domestic product (GDP) on health expenditures, an expense that is projected to increase to 19.6% of GDP by 2019.¹⁴ Physical therapists in the United States practice within a very complex system that includes both the government and private healthcare sectors. The government sector includes the

Medicare, Medicaid and State Children's Health Insurance programs, the military systems, and public employee health benefit systems.⁴⁸ The private sector includes self-insured employers that may or may not contract with health insurance and managed care plans, large employers that purchase health insurance from commercial companies, and individual and small-group insurance markets.⁴⁸ This complex system has resulted in the high-

est cost healthcare system in the world,²⁴ and great pressure is on our legislators to bring these rising costs under control through healthcare reform.

The Burden of Current Referral for Imaging

While there are many aspects of healthcare under review, the use of diagnostic imaging is currently in the policy spotlight due to a dramatic increase in

the use of these services. As the use of diagnostic imaging has increased, the costs associated with imaging have also grown.³³ Factors such as physician self-referral, an incomplete evidence basis for the use of imaging, a patient's desire for imaging, a physician's concern over liability risk, and even the manner in which medical students are educated may lead to overutilization.^{1,33,34} Recently, the Medicare Payment Advisory Committee (MedPAC) found that between 2002 and 2007, imaging services increased 45% per beneficiary, whereas evaluation and management services increased less than 15%.⁴¹ MedPAC warns that such overuse threatens the long-term sustainability of the Medicare program.⁴¹

Although the evidence regarding the inappropriate use of imaging has primarily been cited from Medicare, it is not limited to the Medicare program. Lehnert and Bree³⁷ found that 26% of hospital-based outpatient imaging did not meet appropriateness criteria developed by a radiology benefit management program. Assessing the worker's compensation system of California, Swedlow et al⁶⁷ found that the use of imaging services was inappropriate in 38% of cases. In a review of a national employer-based health plan between 1999 and 2003, Gazelle et al²⁷ found imaging to be ordered 1.2 to 3.2 times more among practitioners who self-referred.

The concern over the inappropriate

● **SYNOPSIS:** For healthcare providers involved in the management of patients with musculoskeletal disorders, the ability to order diagnostic imaging is a beneficial adjunct to screening for medical referral and differential diagnosis. A trial of conservative treatment, such as physical therapy, is often recommended prior to the use of imaging in many treatment guidelines for the management of musculoskeletal conditions. In the United States, physical therapists are becoming more autonomous and can practice some degree of direct access in 48 states and Washington, DC. Referral for imaging privileges could increase the effectiveness and efficiency of healthcare delivery, particularly in combination with direct access management. This clinical commentary proposes that, given the

American Physical Therapy Association's goal to have physical therapists as primary care musculoskeletal specialists of choice, it would be beneficial for physical therapists to have imaging privileges in their practice. The purpose of this commentary is 3-fold: (1) to make a case for the use of imaging privileges by physical therapists, using a historical perspective; (2) to discuss the barriers preventing physical therapists from having this privilege; and (3) to offer suggestions on strategies and guidelines to facilitate the appropriate inclusion of referral for imaging privileges in physical therapist practice. *J Orthop Sports Phys Ther* 2011;41(11):829-837. doi:10.2519/jospt.2011.3556

● **KEY WORDS:** diagnosis, direct access, MRI, radiology, x-ray

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use of imaging by medical practitioners has prompted a conversation between the American Physical Therapy Association (APTA) and the American College of Radiology (ACR) about common interests. The 2 groups have joined together as members of the Alliance for Integrity in Medicare coalition to look at the problems in self-referral for “designated health services” such as advanced diagnostic imaging services, anatomic pathology services, physical therapy, and radiation therapy.¹ We acknowledge that the addition of another provider with referral for imaging privileges may appear counterintuitive in light of the problem of overutilization; however, the addition of physical therapists as providers with this privilege may add to the efficiency of the health system.^{11,25,29,36} For example, the referral of a patient from a physical therapist to another provider requesting a referral for imaging may represent a delay in treatment and increased cost to the healthcare system if the referral could have been made by the physical therapist. This increased responsibility comes with a need to ensure that physical therapists with referral for imaging privileges add value to the healthcare system. As such, our use of imaging must be judicious and evidence based.

Porter⁵⁴ suggests that value in healthcare may be defined as health outcomes achieved per dollar spent. There is preliminary evidence to suggest that physical therapists with imaging privileges can add value to the health systems in which they practice. A study conducted in the United Kingdom compared the ability of specialist-trained physical therapists to triage patients with those of postfellowship orthopaedic surgeons.¹⁹ Outcomes included a variety of generic and disease-specific health-related quality-of-life measures reflecting the population of patients seen in an outpatient clinic. In addition, patient satisfaction and health resource use were also captured. The study found 2 significant differences: (1) patients tended to be more satisfied under the care of a physical therapist, and

(2) costs were lower when patients were managed by a physical therapist, due to a reduction in the use of imaging services. No significant differences were found between the management strategies using any measure of health outcome.¹⁹ Another study, though not a formal economic evaluation, showed lower healthcare resource use when assessing physical therapists who had imaging privileges.³⁵ In the review of the role of physical therapists in the emergency room, Lebec and Jogodka³⁶ identify the potential for physical therapists to decrease imaging as their recommendations for imaging were frequently sought with respect to noncritical musculoskeletal conditions. More research is needed regarding the cost effectiveness of physical therapists operating in this direct-access role with imaging privileges.

Physical Therapist Use of Imaging Privileges

It is the intent of APTA to have “physical therapists who are doctors of physical therapy, recognized by consumers and other health care professionals as practitioners of choice to whom consumers have direct access for the diagnosis of, interventions for, and prevention of impairments, functional limitations, and disabilities related to movement, function, and health.”⁵⁵ APTA also urges physical therapists to “avail themselves of new technologies...to provide direct care.” The Guide to Physical Therapist Practice⁷ describes how physical therapists should “identify possible problems that require consultation with or referral to another provider.” The APTA Vision Statement⁵ and the Guide to Physical Therapist Practice⁷ suggest that physical therapists should have all the tools necessary to adequately assess patients with primary musculoskeletal conditions. This includes referral to other providers and referral for tests and measures that are not directly provided by physical therapists. Therefore, the ability to order appropriate diagnostic imaging would be advantageous to the ability of physical

therapists to become direct-access providers of choice for musculoskeletal conditions. However, this desire to become providers of choice for musculoskeletal conditions, as expressed by the profession, should not result in a decline in the quality of patient care. Neither can it be associated with a loss of efficiency to the health system. Accordingly, it is incumbent upon us to ensure that the delivery of such services by physical therapists does not come at the cost of reduced clinical efficacy or efficiency.

Diagnostic Imaging in Government Sector Physical Therapy Practice

The ability of physical therapists to refer for diagnostic imaging is not a new idea. In the United States military, physical therapists practice as direct-access providers and have had the privilege of ordering diagnostic imaging since 1972.^{11,29} At that time, in the midst of an overwhelmed healthcare system, it was recognized that military physical therapists were capable of acting as physician extenders to manage patients with nonsurgical, musculoskeletal disorders in a timely fashion. In the nearly 40 years since, physical therapists in the military system have been recognized as providers of choice for nonsurgical musculoskeletal conditions and are considered an invaluable asset to the military healthcare team. Their privileges have expanded beyond the typical scope of physical therapy practice to efficiently perform musculoskeletal evaluations in a direct-access, physician-extender role, including (1) referring patients for appropriate diagnostic imaging tests, (2) prescribing certain analgesic, nonsteroidal anti-inflammatory, and muscle relaxant medications, (3) restricting patients to their living quarters for up to 72 hours, (4) restricting work and training for up to 30 days, and (5) referring patients to all medical specialty clinics.²⁹

Having military physical therapists serve in physician-extender roles has been shown to be an effective method of reducing the number of extraneous im-

ages ordered, while maintaining high levels of diagnostic accuracy⁴³ and without compromising patient safety. Furthermore, physical therapists have been found to be as diagnostically accurate as orthopaedic surgeons and more diagnostically accurate than nonorthopaedic providers.⁴³ James and Stewart³⁵ studied physical therapists in this physician-extender role in a population of 2117 patients with low back pain. The authors found that patients under the management of physical therapists had no difference in outcomes, a greater than 50% reduction in radiographic examinations, and higher levels of patient satisfaction. In addition to these findings, patient access to care improved and job satisfaction of orthopaedic surgeons and physical therapists increased.⁴³

Given the increase in responsibilities of military physical therapists, it would be reasonable to assume that the risk of negligent care would increase; however, on the contrary, it has remained extraordinarily low. In a retrospective study conducted over a 40-month period in a military facility, Moore et al⁴⁴ collected data on more than 50 000 new patients seen in direct-access military physical therapy clinics. Over this period, there were no reported adverse events resulting from physical therapists' management. Additionally, none of the physical therapists had their credentials or state licenses modified or revoked for disciplinary action, nor were there any litigation cases filed against the United States government involving physical therapists.⁴⁴

Boissonnault et al¹² assert that the military's long track record of physical therapists in the physician-extender role dispels concerns among decision makers who may believe that physical therapists seek to operate in an untested practice model. Other agencies within the government sector have come to the same conclusion. Physical therapists in the Public Health Service, Indian Health Service, the Veterans Administration Health System,²¹ and the Bureau of Prisons now have imaging privileges.

Diagnostic Imaging in Private Health Sector Physical Therapy Practice

Although less common, physical therapists are increasingly granted imaging privileges in the private health sector. The nonprofit managed-care organization, Kaiser Permanente Northern California, has provided imaging privileges for their physical therapists.⁷⁰ In addition, the University of Wisconsin Hospital and Clinics¹² have extended this privilege to physical therapists by allowing the ordering of plain film radiography. Despite the numerous credentialed physical therapists ordering imaging, we were unable to identify any documented case of litigation or a suspended or revoked license resulting from physical therapists ordering imaging for their patients. Consistent with the findings of military physical therapists, there is preliminary evidence for an equally effective and potentially less expensive alternative to the current use of imaging for musculoskeletal conditions in the private sector.

This trend of increasing physical therapists' roles with respect to imaging is not isolated to the United States. In Canada, the province of Ontario recently updated their Physiotherapy Act. Bill 179, the Regulated Health Professions Statute Law Amendment Act, was passed by government in December 2009 (Regulated Health Professions Statute Law Amendment Act, 2009, SO 2009, c 26, s 22, enacted December 15, 2009). The Council of the College of Physiotherapists developed a policy framework to guide the ordering of radiographs by physiotherapists and submitted this framework to the government. The framework includes an amended scope of practice that clarifies the ability of physiotherapists to diagnose and amendments that will ultimately permit physiotherapists to order radiographs and laboratory tests. The final approval of this framework will be proclaimed in 2012.¹⁸ In support of the framework, physiotherapists in Ontario were able to demonstrate a reduction in wait times for patients awaiting hip and knee replacements. This was achieved by

effectively triaging patients and offering conservative management options.⁵⁵

Evidence of Competency Within Musculoskeletal Medicine and Evidence-Driven Imaging

There has been promising evidence that highlights the physical therapist's use of imaging in limited practice environments.^{26,28,38,42,47,49,50,56,57} Though it is important to add more evidence to support physical therapists' use of imaging, a more fundamental issue is whether physical therapists can be educated and demonstrate competencies in performing such duties.

Military healthcare guidelines require all providers to be credentialed by a credentialing committee before privileges to practice in respective healthcare facilities are awarded. To be credentialed as physician extenders, military physical therapists must complete specialized postgraduate training in direct-access physical therapy, which typically includes completion of a 2-week course on advanced competencies for medical screening, diagnostic imaging, and pharmacology.^{11,29,44} After the completion of specialized training and before practicing as a physician extender, physical therapists must practice under the supervision of both physical therapists and physician preceptors for a 6-month period. Military physical therapists are then evaluated annually by the credentialing committee to ensure that they are meeting the competencies required to practice as an autonomous physician extender. In the study by Moore et al,⁴⁴ 84 of 95 (88%) physical therapists had completed postgraduate specialty training in diagnostic imaging.

Private health sector models, such as Kaiser Permanente Northern California and the University of Wisconsin Hospital and Clinics, have developed specific competencies for physical therapists with imaging privileges. Kaiser Permanente Northern California included educational courses focusing on differential diagnosis of musculoskeletal versus non-musculoskeletal conditions, acute mus-

culoskeletal injuries of peripheral joints, and radiological review of plain films and magnetic resonance imaging (MRI) for physical therapists.⁴⁶ Boissonnault et al¹² described a direct-access physical therapy model at the University of Wisconsin Hospital and Clinics that included the ability to refer for imaging. Physical therapist qualification included successful completion of direct-access/diagnostic imaging training that emphasized “red flag” recognition and any 1 or more of the following 5 requirements: (1) APTA American Board of Physical Therapy Specialties current certification in a relevant practice area (Orthopaedic Certified Specialist for therapists practicing in an orthopaedic setting); (2) completion of an APTA-credentialed residency or fellowship program in a relevant practice area; (3) an advanced academic degree with a clinical emphasis; (4) advanced clinical practice training (based on quality, emphasis, and extent of practice experience or a certain number of continuing education units); and (5) advanced/expert clinical practice level per the institution’s professional advancement and recognition program.

Likewise, entry-level Doctor of Physical Therapy (DPT) programs, as well as transitional DPT programs, have incorporated diagnostic imaging into their curricula. The Commission on Accreditation of Physical Therapy Education (CAPTE), which uses the Normative Model of Physical Therapist Education⁶ as a primary resource to assess and evaluate criteria for DPT programs, is the accrediting body for physical therapy education. Their latest set of evaluative criteria¹⁷ reference the result from 2 separate studies of DPT programs indicating that programs converting to the DPT are making important, substantial changes. Among them are increased content in areas such as diagnostic imaging (to include the strengths and weaknesses of various imaging modalities), pharmacology, advanced practice skills (manual therapy, pediatrics, and geriatrics), basic sciences (histology and pathology), busi-

ness practices, and health promotion.

The diagnostic imaging courses focus on understanding the technology of various imaging techniques and the indications for their use. The objective of these courses is to determine the appropriate use of imaging modalities. This is consistent with recommendations for United States medical school curricula.³¹ Physical therapy education should follow the recommendations for physician training in imaging, with an emphasis on when to request for imaging, how to identify the appropriate imaging modality, and how to consult a radiologist.³⁴ The importance of effective communication with radiological professionals (radiologists and technicians), as well as other physicians, regarding the need for imaging, rather than concentrating on interpretation, is highlighted. Performing or interpreting images for a definitive diagnostic purpose has never been the objective of these courses. Although there is clear evidence that musculoskeletal imaging content is being taught in our physical therapy education programs throughout the country, there is no written standard that specifies the expected depth and breadth of imaging education.

In addition to the use of clinical expertise for the management of musculoskeletal conditions, physical therapists are instructed in the use of clinical decision rules (CDRs) as part of an evidence-based evaluation.^{9,22,30,32,45,59,65,68} The intent of this education is to reduce the uncertainty inherent in clinical practice by defining how to use examination findings to make decisions about which course of action to take with specific patients.⁷¹ For instance, during the typical patient examination performed by physical therapists, historical information, and baseline physical examination findings are obtained, which include ambulatory ability, motion and functional limitations, palpation and clinical diagnostic tests (orthopaedic special tests). These thorough examination findings are used in clinical decision making when considering the need for imaging, and the use of CDRs is a natu-

ral extension of this examination process. The Ottawa Ankle Rules^{13,63} tell us that if a patient presents with an acute ankle injury, is unable to weight bear at the time of injury or during examination (4 steps), or has bone tenderness at the posterior edge or tip of either malleolus, then ordering radiographs is appropriate. The Ottawa Ankle Rules have a reported sensitivity of 1.0.⁶⁴ However, if neither of these criteria is present, there may not be a need to order imaging. Springer⁵⁹ demonstrated that physical therapists using these rules in a direct-access setting have results comparable to those of orthopaedic surgeons and that the application of these rules has reduced the necessity for foot and ankle radiographs by 46% and 79%, respectively.⁵⁹

There are a number of other available CDRs to aid the clinician in decision making.^{22,52,53,58,60-62,64,66} CDRs not only help in decision making but prevent needless imaging, reduce or eliminate radiation exposure, and keep healthcare costs down. One of the original protocols was the Brand protocol, which was developed in 1982 and specifically designed to curb excessive utilization of radiography, without compromising quality of care or increasing risk for poor outcomes. It has been determined that the Brand protocol saved approximately 14% of the cost of unnecessary plain-film radiographs in the United States, with an estimated 16% to 19% of films of the lower extremity being negative and unnecessary.¹³

In addition to the use of CDRs, the American College of Radiology (ACR) has published guidelines and technical standards, including appropriateness criteria, to assist clinicians in the appropriate use of radiography.² The guidelines, which are extensive in nature, include all imaging modalities (general radiology³), as well as categorical information (ie, radiography of the extremities for both adults and children⁴).

Part of the responsibility included with referral for imaging privileges is familiarity with the terminology and proper techniques used by radiologic

TABLE 1

PRACTICE ACT LANGUAGE REGARDING RADIOLOGY

Barriers to the Implementation of Imaging Referral Into Physical Therapy Practice

As with any shift of an existing paradigm, there will be opposition to change, which may come from both internal and external sources. Internally, physical therapists are governed by the profession's history with respect to practice patterns, as well as the state guidelines for scope of practice. Physical therapy education is evolving, as recognized by the recent Commission on Accreditation in Physical Therapy Education (CAPTE) report, and practice patterns are expected to change over time. Students in entry-level DPT programs and physical therapists entering transitional DPT programs, residencies, and fellowships are graduating with the expectation to practice in a more autonomous manner and to possess practice privileges and a scope of practice that are consistent with their education. These new professionals will be the change agents for a future practice pattern. Likewise, the vision of the profession is evolving.⁵ To embrace this vision, physical therapy professionals must commit to lifelong learning, support necessary changes, and remove barriers within the profession.

Many myths persist about how state practice acts or regulations prohibit physical therapists from engaging in radiology in any form, including referral for imaging. A review of all 50 states and the District of Columbia practice acts and rules was performed by the authors. Key word searches using the terms "roentgen rays," "radiology," and "imaging" were performed. The areas of the practice acts focused on were definitions, limitations, exceptions, scope of practice, and exemptions. There was no mention of radiology or the terms "roentgen rays" or "radium" in the statutes of 21 states plus the District of Columbia (TABLE 1). While 29 state practice acts include language in their definition or limitation of authority sections, the specific wording of the restriction can vary and appears to be focused on preventing physical thera-

Practice Act Language	States
Silent (no mention of radiology)	AZ, DC, GA, HI, IA, IN, MD, MA, MI, MN, MO, MT, NV, NM, ND, OR, PA, RI, SD, TN, VT, WY
"Does not include the use of roentgen rays and radioactive materials for diagnosis and therapeutic purposes"	AK, CA, CT, FL, KS, KY, LA, NE, NH, OH, OK, SC, TX, VA, WA, WV
"Use of roentgen rays and radioactive materials for therapeutic purposes"	CO
"Physical therapy does not include the use of roentgen rays and radium for any purpose"	MS, WI, NY
"Physical therapy does not include radiology"	AL, AS, DE, ID, IL
"And may not use roentgen rays or radium"	ME
"Nothing in P.L.... shall be construed to authorize the taking of radiological studies"	NJ
"Physical therapy does not include the application of roentgen rays or radioactive materials"	NC
"Nothing in this chapter shall be construed to authorize a physical therapist to prescribe medications or order laboratory or other medical tests"	SC
"Physical therapy' or 'physiotherapy' does not include: (iv) taking x-rays"	UT

technicians, including the type and number of views to request.^{20,40} Additionally, physical therapists must understand that the ability to request imaging does not transfer to the ability to interpret imaging. Physical therapists are not trained in this skill, and imaging requires interpretation by the appropriate professional (ie, radiologist).

Some authors have voiced the opinion that, while the "responsibility for interpreting diagnostic images rests primarily with the radiologist," the ability of physical therapists to assess "clinically important pathology may facilitate many aspects of clinical care."^{17,33} Physical therapists may be able to use radiologic studies for purposes other than diagnosis,³⁶ for instance, those related primarily to rehabilitation of the diagnosed pathology.²⁰ For example, McKinnis⁴⁰ suggests that physical therapists may use the image of the healing joint to determine treatment goals with regard to joint mobility or abnormal kinematics of the injured joint and adjacent joints.⁴⁰ The viewing of radiologic studies by the physi-

cal therapist could enable greater insight into the patient's pathology and possibly lead to the alteration of rehabilitation strategies.³⁵ In these cases, second-level imaging was appropriately requested by physical therapists following the review of plain films, which were correlated to the patient's clinical presentation, leading to improved patient outcomes.⁴²

It appears that these educational strategies are indeed positioning physical therapists as nonsurgical musculoskeletal experts of choice. In a recent study, physical therapists educated within these medical models were found to have higher levels of knowledge in managing musculoskeletal conditions than medical students, physician interns and residents, and all physician specialists except for orthopaedists.¹⁵ Indeed, an acknowledgement of the physical therapist's depth of knowledge with respect to musculoskeletal medicine is the growing number of health systems that are using specialist physical therapists in orthopaedic triage roles, including the emergency room.^{19,25,31,39,51}

pists from using radioactive materials for therapeutic or diagnostic purposes.¹⁰ Of the 29 practice acts that included our search terms, only 16 included the standard language of “The use of roentgen rays and radium for diagnostic and therapeutic purposes.” Another 12 have language that may be considered less restrictive, with terminology such as, “shall not include radiology” (AL, AS, DE, ID, IL), “not include use of roentgen rays for any purpose” (NY, MS, WI), includes restrictions for therapeutic purposes (CO), “excludes the taking of radiologic studies” (NJ), and “excludes the taking of X rays” (UT). One state (SC) has language that specifically restricts a physical therapist from “ordering lab or other medical tests.” Colorado includes, as grounds for disciplinary action, the ordering or performing, without clinical justification, any service, X ray, or treatment that is contrary to the recognized standards of the practice of physical therapy, as interpreted by the director.¹⁶ In 2005, the Wisconsin Physical Therapist Affiliated Credentialing Board ruled that the language limiting physical therapists from using roentgen rays or radium actually meant the “taking of x-rays.”⁶⁹ In many instances, practice acts contain language that is not consistent with present practice. For example, outdated terminology appears to exclude imaging studies, such as MRI, from the definition and restriction. Practice act language may no longer have the intent that was initially desired. One such example is the Colorado practice act, which limits the use of electricity for lifesaving purposes.¹⁶ This language is clearly in conflict with current cardiopulmonary resuscitation practice and training for automated external defibrillator usage, which is required by most facility policies and accrediting bodies.

Many state practice acts, as well as various APTA documents, including the Guide to Physical Therapist Practice,⁷ A Normative Model of Physical Therapist Professional Education,⁸ APTA House of Delegates (HOD) Policies, and the APTA Code of Ethics for the Physical Thera-

TABLE 2	REFERRAL PRACTICE ACT LANGUAGE
Practice Act Language	States
Duty to Refer: A physical therapist shall refer a patient to an appropriate healthcare practitioner if the physical therapist has reasonable cause to believe that symptoms or conditions are present that require services beyond the scope of the practice of physical therapy.	AK, AZ, CO, CT, DC, FL, GA, ID, IN, KS, LA, ME, MA, MN, NH, NJ, ND, NC, OH, OK, OR, RI, SC, TN, TX, VA, WA, WI, WY
Grounds for Disciplinary Action: Failed to refer a patient to the appropriate licensed healthcare practitioner when the services required by the patient are beyond the level of competence of the physical therapist or beyond the scope of physical therapy practice;	

pist, include language that requires a physical therapist to refer to a physician specialist or other healthcare provider.¹⁰ Twenty-nine states have specific language requiring a physical therapist to refer to another healthcare provider if it is determined that symptoms or a condition require services beyond the scope of physical therapy or if physical therapy may be contraindicated, as in the case of a fracture (TABLE 2). This can either be an affirmative statement, suggesting that it is a duty to refer as part of good clinical practice, or a statement that establishes grounds for disciplinary action. Because a physical therapist would not perform the imaging study, a referral to an imaging center, radiology department, or radiologist would fall under this component of physical therapy practice and align with the ACR’s goals of curbing self-referral practices. In a recent District of Columbia Board of Physical Therapy ruling, it was determined that “under section 17 DCMR §6710.13, the Board believes that a physical therapist may refer a patient for diagnostic imaging to a healthcare provider who is qualified to perform such testing, provided the other conditions as set forth in the regulation are met.” The Wisconsin Physical Therapist Affiliated Credentialing Board, in its 2005 opinion, stated that a “physical therapist is obligated to refer their patient to an appropriate healthcare professional who is qualified to perform the test and obtain the results

of the test.”⁶⁹ These rulings may pave the way for broader interpretation of the statutes that limit physical therapists’ use of radiology, radium, or roentgen rays, and lead to changes in physical therapy practice acts in the future.

The use of imaging in physical therapy practice is a difficult issue that is complicated by the differences between actual statutory authority (practice act) and reimbursement policy (insurance company and/or third party payer policy). While reimbursement is an important aspect, practice patterns should not be driven exclusively by reimbursement, and one should look to the state practice act for authority for referral for imaging. It may be reasonable to expect that reimbursement will follow practice patterns. We can use the example of direct access to physical therapists to guide us here, as 48 states currently allow patients direct access to physical therapists.⁶ Initially, physical therapists were not reimbursed in this role; but reimbursement has increased over time, as direct access to physical therapy services has increased.⁶ If physical therapists can produce equal or improved outcomes at lower costs, we are confident that insurers would reimburse these services as well.

The Federation of State Boards of Physical Therapy (FSBPT) model practice act of 2006²³ should also be updated to include affirmative language regarding the use of imaging for physical therapists,

as opposed to simply recommending the exclusion of restrictive language in the definition of physical therapy section. The language of the state practice acts of other professions reflects a positive approach that we should also adopt in our state practice acts when relevant statutes come forward for sunset review or through separate legislative processes.

Though internal barriers are formidable, the greatest barriers to overcome may be resistance from external sources, such as other health professions, as well as regulatory barriers and internal institutional policies. Successes in this area have been small, but there is evidence that strong institutional barriers can be overcome. At the University of Wisconsin Hospital and Clinics concerns on the part of hospital administrators and physicians were eased by the implementation of qualification standards for physical therapists with imaging privileges.¹¹ Although state statutes did not require it, these qualification standards allowed for pilot testing approval and subsequent successful implementation of the program.

As previously acknowledged, a valid concern about adding another profession with privileges to order imaging is the potential for increasing the utilization of imaging, leading to further increase in healthcare costs and further unnecessary patient exposure to ionizing radiation.²¹ External opposition is likely to magnify these risks and argue that physical therapists are potentially endangering the public. Admittedly, there is a need for more research to fully address these concerns; however, promising current evidence suggests that adding trained physical therapists into the musculoskeletal triage role is cost effective compared to usual medical care and decreases the use of healthcare resources without compromising patient care.¹¹

Summary and Recommendations

The use of imaging in a physical therapist's examination toolbox allows for a more comprehensive and thorough evaluation of the patient, thereby supple-

menting the physical therapist's observational and manual skills with an objective visual measure. We believe that this is an important component of a profession that seeks to become the primary care provider of choice for the management of musculoskeletal conditions. We also feel strongly that studies on the use of imaging by physical therapists, the history of government and private sector use of physical therapists with imaging privileges, and case reports^{28,38,42,49} and peer-reviewed presentations at conference proceedings of physical therapists using this privilege serve to validate imaging training and support efforts to achieve this goal. Assuredly, strong debate on the role of a physical therapist with respect to imaging privileges will continue. As previously noted, there are regulatory barriers and internal institutional policies that may limit a physical therapist's ability to order imaging. Until there is a clear policy change that allows physical therapists to order imaging, one option that has proven successful is the implementation of a direct-access model that allows imaging privileges with requisite direct-access and diagnostic imaging training. This would be consistent with longstanding models developed in government and private health sectors. With respect to physical therapist governing bodies, there clearly is a need for imaging policy guidelines. Regarding physical therapists and the ability to refer for imaging, we recommend the following:

1. The House of Delegates (HOD) of the APTA amend present positions, such as Diagnosis by Physical Therapists HOD P06-08-06-07, with strong, direct, affirmative language stating that licensed physical therapists have the skill set necessary to appropriately refer a patient for imaging, as indicated through physical examination. This would be for referral only and not for interpretation of findings produced from a number of imaging modalities.
2. The Normative Model for Physical Therapist Professional Education and the Commission on Accreditation for

Physical Therapy Education include clinical criteria that specifically covers course of instruction for imaging by the physical therapist.

3. The FSBPT model practice be amended to be similar to the practice acts of other professions and use strong, affirmative language and work with state associations to modify state practice acts accordingly.
4. Health services researchers study the effectiveness of care and cost effectiveness of adding physical therapists with referral for imaging privileges to usual medical management.
5. All physical therapists should consider their role as educators and advocates for the profession. Patients, other healthcare providers, and political leaders should be educated on the depth and breadth of physical therapy professional education with respect to imaging. ●

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