

Chiropractic Legal Challenges to the Physical Therapy Scope of Practice: Anybody Else Taking the Ethical High Ground?

I find myself having to start off this editorial in a most unusual way: I believe I need to apologize in advance to all of you reading this editorial for producing what must be the longest editorial in the history of peer-reviewed literature. My only excuse is that this topic is near to my heart and that it is a complex issue that requires a few more pages to discuss.

Chiropractic: A Profession in Crisis

It has been well over a century since Dr. Daniel David Palmer in September of 1895 performed the first chiropractic adjustment on the thoracic spine of Harvey Lillard, the janitor of the Ryan Building in Davenport, IA, where Palmer had his magnetic healing practice, and thereby reportedly restored the man's hearing¹. Yet, even with such a considerable period since chiropractic's founding, even to an outsider like myself it is obvious that the chiropractic profession is at a crossroads when it comes to defining its place in the current health care environment. Some prominent chiropractors even go so far as to say that the profession is in crisis². They indicate that even after 112 years, the profession has not managed to define itself to society in a way that is consistent, coherent, or defensible. Even within the profession, there is lack of consensus about the proper role of chiropractic. Are chiropractors subluxation correctors, primary care physicians, neuromusculoskeletal specialists, wellness practitioners, or holistic health specialists^{2?}

Chiropractic initially earned—and to a large extent up to this day maintains—its unique place distinct from other healing systems as a result of three postulates originally proposed by Palmer²:

1. There is a fundamental and important relationship between the spine and health that is mediated through the nervous system.
2. Mechanical and functional disorders of the spine or subluxations can have a deleterious effect on health status.
3. Correction of the spinal disorders by way of adjustments may restore health.

These postulates are easily recognized in the consensus definition adopted by the Association of Chiropractic Colleges (ACC) that describes the chiropractic subluxation as a complex of functional and/or structural and/or pathological articular changes that compromise neural integrity and that may influence organ system function and general health³. However, even though these three postulates are still held to be true today by a sizable portion of the chiropractic profession², some more scientifically oriented factions within the profession increasingly question their relevance to modern-day chiropractic. Critiques range from pointing out the limited value of the ACC consensus statement when it comes to providing operational definitions for chiropractic research to a call for a sceptical evaluation of the subluxation construct in an attempt to separate dogma from science and even to a characterization of the subluxation construct as the Achilles heel of the profession⁴⁻⁶.

Chiropractors: Not Subluxation Correctors or Primary Care Physicians

Thus, this questioning of the profession's basic tenets that clarify and justify chiropractic's claim to be a unique health care system distinct from all other systems all but invalidates the role and—more importantly—the relevance of chi-

ropractors solely as correctors of the proposed ubiquitous but only potentially relevant subluxation. However, I would, as have some chiropractors², similarly have to question the proposed role of the chiropractor as a primary care physician. The majority of chiropractic patients (>95%) seek care for musculoskeletal, mainly spine-related pain complaints, not quite the range of ailments seen by true primary care physicians. Also, by no stretch of the imagination does chiropractic clinical training provide the broad diagnostic competency required of a primary care provider (see below). Finally, the limited set of therapies available within the chiropractic scope of practice is clearly poorly suited to providing primary care to the vast majority of health problems that present to a true primary care provider, problems that require interventions that are outside of this legally determined scope of chiropractic².

Chiropractors: Neuromusculoskeletal Specialists?

Not discounting the potential roles of chiropractors as wellness or holistic health practitioners but perhaps recognizing the limited societal support, perceived need, or popular understanding for such a role, Nelson et al² proposed that the most appropriate role for the chiropractor is that of a direct-access, conservative and minimalist, neuromusculoskeletal specialist fully integrated in the current health care system and contributing to the evidence-based health care movement. What is interesting at this point is to review the *Vision 2020* proposed by the American Physical Therapy Association (APTA) which holds that by 2020, physical therapy will be provided by doctors of physical therapy, who are recognized by consumers and other health care providers as the direct-access practitioners of choice for the evidence-based diagnosis, intervention, and prevention with regard to impairments, functional limitations, and disabilities related to movement, function, and health⁷.

Solely Economic Motives for Scope of Practice Challenges

These proposed roles for chiropractic and physical therapy rather obviously place the two professions in a position of direct economic competition within the health care market. This perceived economic threat explains the nationwide and seemingly organized attempt in the United States by the chiropractic profession to restrict the physical therapy scope of practice by removing spinal manipulation as one of the interventions available to therapists and their patients. In 1999, chiropractors implemented a well-organized national campaign with this aim in as many as 18 states⁸. In the period 1993–2004, at least 30 state chapters have had to defend the right of licensed physical therapists to practice manual therapy⁹. Similar attempts were launched and defeated in the Canadian provinces of Quebec and Manitoba^{10,11}.

In this light, it will likely also come as no surprise that in a report discussing potential scenarios for the future of chiropractic, physical therapists were identified as the most serious competition for chiropractors in the health care market¹². Meeker¹³ further underlined this threat that the chiropractic profession obviously perceives from physical therapists by warning his fellow chiropractors that they are in a race for “professional ownership of manipulation” by specifically mentioning the recent physical therapy research on developing diagnostic classifications and clinical prediction rules as an indication that chiropractors are falling behind in the scientific validation of the use of manipulation. As a sideline, it is particularly disappointing to me that this accomplished chiropractic researcher¹³ felt that “new knowledge is owned by those who produce it.” I would hope that new knowledge is in fact owned by society as a whole and used to provide better care to all patients, irrespective of their choice of health care provider.

Considering the above-perceived economic threat that physical therapists pose to chiropractors, the motives behind a bill recently discussed in committee in the Oregon legislature become clearer¹⁴. Oregon Senate Bill 357 intended to link the use of high-velocity low-amplitude (HVLA) manipulation to the legal authority to perform differential diagnosis. Equating HVLA to chiropractic spinal adjustment, it also suggested limiting the use of HVLA to practitioners who conformed to set educational criteria specifically mirroring the chiropractic curriculum, while at the same time providing a separate definition of manipulation and of mobilization¹⁴. Although clearly driven by economic motives, physical therapists cannot assume that lawmakers, who may not themselves be health care providers with specific and in-depth knowledge of these topics, will necessarily always see through this sort of rhetoric, which seems to rear its head every time the physical therapy scope of practice is challenged by the chiropractic profession.

That notwithstanding, why is that we physical therapists believe that manipulation should remain part of our scope of practice?

Physical Therapy: History

The first argument that physical therapists can bring forward to support manipulation as one of the interventions included in our scope of practice revolves around history. Paris¹⁵ has provided a rather comprehensive review of the history of manual medicine. He described how in the English-speaking world, physical therapy generally developed out of medicine due to its need for rehabilitation aides who were trained by physicians in the application of manual manipulation. Therefore, medicine and physical therapy as its offshoot share a common history in manual therapy that predates the founding of the chiropractic profession. In addition, there is clear documentation that in the US, manual therapy has been an intervention used by therapists since the inception of the profession¹⁶. In fact, Paris¹⁷ located a total of 21 articles and book reviews on manipulation in physical therapy publications for the period 1921–1936 in the APTA library.

In the US, PT had a relatively late start with the founding of the American Women's Physical Therapeutic Association (AWPTA) in 1921¹⁸. When the US entered World War I, it did not, in contrast to its European allies, have a military with an established division of physical therapy. By command of the Surgeon General, the Battle Creek Normal School of Physical Education, Reed College, the New Haven Normal School of Gymnastics, the American School of Physical Education, the Boston School of Physical Education, and the Prose Normal School of Gymnastics, the latter three all in Boston, instituted physiotherapy "War Emergency Courses" to train women who could physically rehabilitate maimed soldiers returning from the battlefields overseas. As a result, 90% of World War I physical therapists came from schools of physical education; in fact, the physician then in charge of the Army Physiotherapy Division stipulated that all therapists have 4-year university degrees in physical education in addition to their physical therapy training¹⁹.

This high level of education among even the earliest physical therapists probably contributed to an early emphasis on research with the publication of the first edition of the *Physiotherapy Review* in March of 1921¹⁸. Early physical therapy education provided a sharp contrast indeed to the education of contemporary chiropractors: at the leading chiropractic school of the time, the Palmer School of Chiropractic, students completed an only 18-month course to obtain the doctor of chiropractic degree²⁰.

One argument heard in the conflict between the professions is that chiropractic predates the physical therapy profession. This is a misconception. Whereas we place the beginning of the physical therapy profession in the US with the founding of the AWPTA in 1921, in Great Britain and Australia the national physical therapy associations, i.e., the Society of Trained Masseuses and the Australasian Massage Association, were founded in 1894 and in 1906, respectively^{21,22}. In the Netherlands, such professional organization occurred even earlier when in 1889 physical therapists founded the world's first professional association, the Society for Practising Heilgymnastics in the Netherlands²³. Founding this professional association occurred with the establishment of a standardized entry-level competency examination²⁴. This precedes the founding of chiropractic by 6 years and chiropractic education by no less than 9 years, as Palmer did not take his first full-fledged student, the medical physician Dr. William A. Seeley, until 1898¹. Evidence of the continuous practice of physical therapy in the Netherlands and other European countries—albeit under names such as remedial gymnastics—dates back to the beginning of the 18th century²⁴. In this same issue, Terlouw²³ provides a description of the application of manual therapy interventions by these early physical therapists.

In all fairness, we have to admit that in those early days the manual therapy techniques used by physical therapists would hardly be called sophisticated by today's standards. But then again, neither were manual interventions in chiropractic. Palmer once broke a mirror in his treatment room after he saw a patient observing him during an adjustment; he was afraid that this simple observation would allow the patient to replicate the techniques to such an extent that he might set himself up as a competitor¹.

A final historical misconception relevant here is the assumption that physical therapists have always been in a referral relationship with physicians and that the movement for gaining direct-access practice rights is a relatively recent occurrence. In reality, direct access is not new to the physical therapy profession. For example, in the Netherlands, therapists started out as a direct-access providers only to give up this right to gain support from medical physicians in their drive for governmental and societal recognition of the profession^{23,25}. Nor was the association between medical physicians and the physical therapy profession always as amicable as one might assume from the development of the profession out of allied health professions such as nursing in Great Britain and from rehabilitation aides in the US, both with a role traditionally subservient to the medical profession. In many European countries, the greatest opposition to early physical therapy came from orthopaedic surgeons who feared infringement upon their fledgling scope of practice. This led to adversarial conditions not unlike those once experienced between chiropractic and medical physicians in North America²⁵.

Direct access also is not new to physical therapists in the US. By 1922, the military reduced physical therapy services as a result of government cutbacks forcing many therapists, the majority of whom had previously been employed by the military,

to find jobs in the private sector. This too led to conflicts with other manual medicine practitioners including nurses, osteopaths, and chiropractors all claiming to practice physical therapy. It was this early conflict with especially the chiropractic profession that caused therapists to align themselves more closely with medical physicians. As a result, therapists in 1930 voluntarily relinquished their right to see patients without physician referral¹⁹.

Physical Therapy: Education and Licensing Requirements

A second argument relevant to manipulation as part of the physical therapy scope of practice is related to physical therapist education and licensing requirements. Manual therapy training for physical therapists starts in the entry-level professional program with specific manual therapy and related foundational courses and continues with post-professional educational opportunities, such as continuing education seminars, clinical residency and fellowship training, specialist board certification, post-graduate academic and diploma programs, clinical mentorship, and manual therapy certification programs^{26,27}. Both at the national and international level, documents have been developed to standardize entry-level as well as post-professional curricular content^{9,28-31}.

Documents most relevant to the US educational situation are the *Normative Model for Physical Therapist Professional Education*²⁹, which stipulates manipulation as an intervention required in the curriculum of professional physical therapy programs, and the *Evaluative Criteria for the Accreditation of Education Programs for the Preparation of Physical Therapists*³⁰, which require the instruction of manual therapy techniques including thrust and non-thrust manipulation in the curriculum of any accredited US physical therapy school. The *Manipulation Education Manual for Physical Therapist Professional Degree Programs*⁹ provides additional specific information on curricular content and learning objectives for manual therapy content in entry-level physical therapy programs.

Closely following the medical education model, the APTA has also established an accreditation process for fellowships and residencies in the various specialization areas within the profession including orthopaedic manual physical therapy with—among other requirements—clinical residencies requiring a minimum of 1,500 hours and fellowships requiring a minimum of 1,000 hours of post-graduate instruction³².

The entry-level educational requirements with regard to manual therapy as discussed above are of course also reflected in physical therapy licensing requirements. Licensing as a physical therapist in all states in the US requires passing the national physical therapy examination, which includes competency testing in the content area of manual therapy diagnosis and intervention³³.

Physical Therapy: Concept and Technique Development and Description

Although we willingly acknowledge the contribution made by chiropractors to the development of theory and techniques in manual medicine, the role that physical therapists have played in concept and technique development and description with regard to manual medicine is extensive and undeniable. Hallmark contributions by Kaltenborn^{34,35}, Maitland^{36,37}, Grieve³⁸, and Paris³⁹ were followed by contributions to the field by McKenzie^{40,41}, Mulligan⁴², and Butler⁴³. We also should not forget original contributions from European therapists not always accessible to English-language-only speakers⁴⁴⁻⁴⁷.

Pettman⁴⁸ recently contributed a text on highly specific spinal manipulative techniques, developed by and unique to the physical therapy profession, and he actively teaches these techniques to therapists all across North America. Many of the physical therapy contributions to the field of manual medicine have crossed professional boundaries with a great number of chiropractors using manual diagnostic tests and tests clusters and manipulative techniques and systems originally developed and validated by physical therapists.

Physical Therapy: Research

Another aspect of the contribution by physical therapists to manual medicine has been the contribution made by therapists to the research foundation for manual diagnostic tests and manipulative interventions. Johnson and Rogers⁴⁹ rightfully noted that in two landmark publications supporting the use of manipulation in patients with low-back pain^{50,51}, clinical trials of spinal manipulation performed by physical therapists formed the major source of evidence. Although chiropractic has made an admirable attempt since then to carry out and disseminate worthwhile relevant research, noted chiropractic authors continue

to lament the dearth of funding and the volume of research produced as well as the lack of formal training opportunities at chiropractic colleges for chiropractors interested in scientific research^{4,13}.

Perhaps the fact that physical therapists are not held back by the need to support by way of research basic tenets originated in the 19th century that still form the basis for chiropractic's claim to being a unique health care system distinct from other systems, has allowed them to produce clinically relevant research⁵²⁻⁵⁶—the relevance of which is acknowledged within chiropractic¹³—that uses as its outcome measures reliable, valid, and responsive patient functional outcome measures rather than indicators of the presence or absence of subluxation with questionable reliability and absence of data on validity?

Semantics: Lessons in Obfuscation

Another strategy frequently used in chiropractic challenges to the physical therapy scope of practice and seemingly motivated by the desire to obfuscate involves semantics. Despite criticism of the basic tenets of chiropractic, chiropractic authors acknowledge that a sizable portion of the profession still holds to the original three postulates proposed by Palmer². This implies that semantic arguments come in two versions, one discussing the subluxation construct and one the adjustment as two of the basic principles of chiropractic.

The more insidious of these semantic arguments concerns the continued expansion of the definition of the subluxation that plays such a central role in one of the basic postulates of chiropractic. We need only compare the original rather simplistic bone-out-of-place hypothesis proposed and supported by Drs. Daniel David and Bartlett Joshua Palmer⁵⁷ to the all-encompassing subluxation classification adopted by the American Chiropractic Association (ACA; Table 1)⁵⁸. We should realize that the subluxation construct started having legal and financial ramifications for the chiropractic profession when it was included in

TABLE 1. American Chiropractic Association classification of subluxation (modified from Gatterman⁵⁸)

Static Intersegmental Subluxations
1. Flexion malposition
2. Extension malposition
3. Lateral flexion malposition
4. Rotation malposition
5. Anterolisthesis (spondylolisthesis)
6. Retrolisthesis
7. Lateral listhesis
8. Altered interosseus spacing (decreased or increased)
9. Osseous foraminal encroachments
Dynamic Intersegmental Subluxations
1. Hypomobility (fixation subluxation)
2. Hypermobility (loosened vertebral motion segment)
3. Aberrant motion
Sectional Subluxation
1. Scoliosis and/or alterations of curves secondary to muscular imbalance
2. Scoliosis and/or alterations of curves secondary to structural asymmetries
3. Decompensation of adaptational curves
4. Abnormalities of motion
Paravertebral Subluxations
1. Costovertebral and costotransverse disrelationships
2. Sacroiliac subluxations

the wording of various statutes governing chiropractic practice⁴, including chiropractic state practice acts and insurance reimbursement requirements. In effect, the subluxation construct was and remains to this day central to the legal definition of chiropractic, its scope of practice, and reimbursement for chiropractic services, no matter how many factions within the profession decry defining the profession based on this outdated 19th-century construct.

So what options were open to the chiropractic profession in its ongoing attempt to keep somewhat up-to-date with current research evidence and in its desire to secure its societal role and scope of practice other than to continuously redefine and expand this basic tenet of the profession? When we review the ACA definition of subluxation, we see how the ACA apparently found the physical therapy definition of joint dysfunction⁵⁹ so appealing that it was “borrowed” to describe the category of dynamic intersegmental subluxations. More importantly, we have to wonder how state legislators and insurance carriers feel about having both the legal scope of chiropractic practice and the indications for reimbursement for chiropractic services expanded without ever having been consulted. One is tempted to conclude that over the years, chiropractic has attempted to usurp the physical therapy scope of practice rather than the other way around.

As noted above, a second frequently used semantic argument concerns the definition of the main component of the third original chiropractic postulate, the spinal adjustment. We discussed above how the traditional chiropractic terminology is replaced or supplemented by one more common to physical therapy, osteopathy, and medical literature. For example, adjustment is equated to (HVLA) manipulation, perhaps in an attempt to more easily justify chiropractic intervention using research findings not relevant to the underlying chiropractic postulates but solely favourable to manipulation. Note also how the fact that these postulates assign primacy to the spinal column and its articulations has not kept the chiropractic profession from also adding manipulative techniques for extremity joints to its therapeutic armamentarium. But getting back to my original point, the most common strategy with regard to the definition of the chiropractic adjustment seems to include an attempt at distinction between mobilization and manipulation, the latter to be reserved for chiropractors and the former to be used by physical therapists.

We can use the proposed definitions of OR SB 357 as an example. This proposed bill equated HVLA spinal manipulation with chiropractic spinal adjustment and defined both as an impulse adjusting or thrusting by the practitioner's hands of a nature such that the patient cannot prevent the motion. Spinal manipulation or adjustment was further defined as commencing at the point where mobilization ends and the motion encounters the elastic barrier of resistance and ending at the limit of anatomical integrity. The suggested definition for mobilization was that of a movement applied singularly or repetitively within or at the physiological range of joint motion, without imparting a thrust or impulse, with the goal of restoring joint mobility¹⁴. In contrast, the APTA holds mobilization and manipulation to be synonymous and to include both thrust and non-thrust manual techniques aimed at soft tissue structures and joints⁶⁰.

Recognizing that both definitions are obviously political constructs with rather distinctly different objectives, we should note that the chiropractic definitions depend heavily on the distinction between the physiological and anatomical limit of motion with, in between—although not included in these terms here—the proposed parapsychological space, where HVLA manipulation according to chiropractic theory is said to occur. One would like to think that the whole goal of providing a definition is to clearly delineate where mobilization ends and manipulation begins. However, even chiropractors admit that this parapsychological space upon which the whole definition hinges has never been measured⁶¹. In fact, there is discussion within the chiropractic profession on the whole concept of parapsychological space⁶¹. So the definition of the basic and, in fact, defining chiropractic intervention as found in many state practice acts is based on a never measured construct. In addition, the above definition of manipulation could be interpreted easily to exclude oscillatory manipulations such as those developed by physical therapists Maitland³⁶ and Paris³⁹ from the physical therapy scope of practice.

Physical Therapy and Chiropractic: Distinct Central Concepts

However, even with similar definitions of constructs shared by the respective professions and irrespective of who borrowed concepts and definitions from whom, we have to keep in mind the profound differences with regard to the unifying theory or central concept in both professions. As indicated in the descriptions of the chiropractic scope of practice in most US states, the central concept of chiropractic is still legally and in everyday clinical practice of the majority of chiropractors represented best by the three postulates proposed by its founder in the late 19th century. In contrast, Hislop⁶² described the central concept underlying physical therapy practice as the pathokinesiology or movement dysfunction framework. This central concept unique to physical therapy is clearly described in the current APTA mission statement⁶³. Butler⁶⁴ recently expanded upon this central concept by including neurobiological aspects related to pain science, while at the same time re-emphasizing the psychosocial factors already included in the original pathokinesiology concept.

So definitions of the object of manipulation may at times be similar or even the same between the professions. Think of how chiropractic uses a definition for dynamic intersegmental subluxations that is exactly the same as the physical therapy definition of joint dysfunction. In addition, some of the techniques used in the two professions are per force similar if not the same. After all, restrictions imposed by anatomy result in a limited number of ways in which one can move a joint by way of manipulation, thus leading to parallel development of manipulative techniques. The similarity in techniques is further affected by the impact that physical therapy contributions to manual medicine have had on chiropractic and probably vice versa. But even with all these similarities, who could ever mistake a physical therapy manipulation for a chiropractic manipulation, as the theoretical foundations for both professions and thus the reasons for manipulation are so obviously different?

Physical Therapy and Chiropractic: Comparative Safety Records

The proposed Oregon bill¹⁴ also linked the right to manipulate to the legal authority to perform differential diagnosis. Obviously implicit in this condition is the assumption that differential diagnosis will enhance patient safety. This leads us to compare both the safety record and diagnostic acumen of chiropractors and physical therapists.

In a review of the literature over the period 1934–1999, Terrett⁶⁵ found reports of 255 cases of vertebrobasilar complications following cervical spine manipulation; in 106 cases, a chiropractor was implicated and in another 40 cases the literature mentioned chiropractic treatment as the cause. In the chiropractic group, 14 patients died. In contrast, in only 9 cases did physical therapists provide the manipulative intervention in cases where such complications occurred with complete recovery or residual neurological deficit only in this group. DiFabio⁶⁶ found 177 cases of injury due to cervical manipulation in a literature review over the period 1925–1997. Physical therapists were involved in less than 2% of the cases, and none of these cases resulted in deaths, whereas chiropractors were involved in 70% of all cases. The Virginia Board of Medicine²⁶ reported that in 1996 the main liability insurance company for the APTA members reported not being able to find a single claim related to manipulation or HVLA, whereas a smaller physical therapy liability insurer reported two claims related to cervical manipulation in 1993 and one in 1997, one at that time concluded without the need to make a payment to the claimant. A case law review of manipulation done for the Canadian Physiotherapy Association in 1997 found that of the 35 reported civil and criminal cases involving spinal manipulation across North America since 1986, none had involved a licensed physical therapist¹⁰.

Now we have to recognize that in the biomedical literature, especially in Europe where the definition of what constitutes chiropractic is less clear than in North America, there is an over-attribution of adverse incidents to chiropractic⁶⁷. In fact, taking this over-attribution into consideration adjusted the percentage of chiropractic involvement in adverse effects after cervical spine manipulation as reported by DiFabio⁶⁶ to 60%. Terrett⁶⁵ made the argument that the higher incidence of adverse effects related to chiropractic manipulation merely reflects the fact that chiropractors perform more cervical manipulative therapy in the US (94%) than any other type of health care provider. Although an interesting and at first glance perhaps even plausible argument, there is another possible explanation for these numbers indicating decreased patient safety while under chiropractic as compared to physical therapy care.

Chiropractors: Truly Capable of Differential Diagnosis?

In 1984, Caplan⁶⁸ noted that in the area of diagnosis, chiropractic training is somewhat weak, mainly because in the absence of the opportunity for hospital-based training, most chiropractic students obtain their diagnostic training in relatively small clinics, where the number of patients seen and the diversity of disorders observed is limited. Caplan⁶⁸ pointed out that consequently the clinical instruction received by chiropractic interns tended to be more based on book learning than on real-life clinical exposure.

In a 2005 article, Wyatt et al⁶⁹ noted that at the time only one chiropractic college in fact required a baccalaureate degree as an admission requirement. They also reported that only seven US states required a baccalaureate degree prior to granting a chiropractic license with another seven having this requirement under consideration. Relevant to note is that few states required that this undergraduate degree be acquired before entering chiropractic school⁶⁹. The contrast with the competitive admission process with the requirement of an undergraduate degree for all US physical therapy schools is stark indeed and may perhaps be explained by the fact that most chiropractic schools to this day are tuition-driven private institutions⁶⁹. Even chiropractic authors⁶⁹ decry the effect an over-dependence on tuition income, resulting low admission standards, and insufficient sanctions for inadequate academic performance have in many chiropractic institutions. How can we expect this to reflect on differential diagnostic acumen of chiropractic students and graduates?

Wyatt et al⁶⁹ also noted that the chiropractic internship, where most chiropractors are first exposed to real-life patient diagnosis and management responsibilities, is a 1-year experience prior to graduation. As part of their graduation requirements, chiropractic students do a regulated but rather limited number of manipulations, complete histories and physical examinations, radiology studies, and complete patient work-ups, but they frequently end up doing these on family and friends, who may even be paid by the interns to seek care at the chiropractic intern clinic⁶⁹. Although a number of chiropractic schools now offer externships, where chiropractic students spend a number of weeks working in a hospital setting with medical and osteopathic physicians in specialty areas such as radiology, orthopaedics, sports medicine, rheumatology, family medicine, and neurosurgery, Wyatt et al⁶⁹ noted that even in such an externship the contrast in the small number and variety of patient encounters when compared to a medical or osteopathic internship are disconcerting. As a solution to the problems identified in current chiropractic education, these authors called for increase in admission requirements to chiropractic college, an increased emphasis on evidence-based practice in chiropractic curricula, a more decisive approach to unsatisfactory academic achievement of poorly qualified students, mandatory post-graduation internships, and residencies with hospital or interdisciplinary training to expose students to a larger and more varied population. Similar to the situation described by Caplan⁶⁸ 20 years earlier, they stressed that textbook learning needs to be replaced by first-hand on-the-job exposure.

Combining the information above with the critical evaluation discussed earlier indicating the inability of the chiropractor to adequately function in a potential primary care role may make one wonder about the actual differential diagnostic abilities of the chiropractor, even if legal authority for this is documented in the various US state practice acts. Add to this the dogmatic belief that a large number of chiropractors still have in the original postulates of chiropractic and even chiropractic authors⁴ see the potential for:

- Evaluations and interventions that fail to address patient functional outcomes but instead focus on the absence or presence of the presumed mediator of health and disease, i.e., the elusive subluxation
- Excessive treatment with the aim of correcting a clinical condition that may not be relevant after all, i.e., again the elusive and perhaps irrelevant subluxation
- Inflicting unnecessary hazards to the patient, e.g., unnecessary radiographic studies, to find these subluxations
- Delay of appropriate care as a result of failure to diagnose due to an emphasis on the detection of subluxation or failure to seek other forms of health care

Although I certainly do not discount the link between higher numbers of manipulations performed and the higher incidence of adverse effects with chiropractic, I do have to wonder if an over-reliance on the adjustment as the main therapeutic intervention combined with limited differential diagnostic skills does not play a role here as well.

Physical Therapy: Safe and Effective in a Direct-Access Role

Of course, even this seemingly legitimate doubt cast on the differential diagnostic abilities of chiropractors does nothing to establish the physical therapist as a safe provider of manipulative interventions. Although in some parts of the world, physical therapists are allowed to order and interpret imaging and lab tests, I will be the first to admit that such advanced practice is the exception and not the rule. Generally, the legal scope of practice of the physical therapist does not allow for a comprehensive differential diagnosis.

Nevertheless, physical therapists do diagnose, albeit by assigning diagnostic labels that identify the impact of a condition on function at the level of the system (especially the movement system) and at the level of the whole person⁶⁰. Using the four dimensions of the health state defined in the *International Classification of Functioning, Disability and Health* (Table 2)⁷⁰ to

TABLE 2. Definitions of the dimensions of the health state⁷⁰

Dimensions of health state	Definitions
Pathology/pathophysiology	An ongoing pathological state characterized by a specific cluster of signs and symptoms and recognized by clinician and/or patient as abnormal
Impairment	Any loss or abnormality of body structure or of a physiological or psychological function.
Activity	The nature and extent of functioning at the level of the person. Activities may be limited in nature, duration, or quality.
Participation	The nature and extent of a person's involvement in life situations in relation to impairments, activities, health conditions, and contextual factors. Participation may be restricted in nature, duration, or quality.

guide the approach to patient management, physical therapy clinical practice involves mainly prevention, diagnosis, and management of impairments and limitations in activities. In addition, the *Guide to Physical Therapist Practice*⁶⁰ also describes the role of PT with regard to health, wellness, and fitness promotion activities. In contrast, it is the role of the medical physician to identify and diagnose pathology and pathophysiology.

However, due to the often-complex interaction of all four dimensions of the health state and also to establish indication and prognosis for physical therapy management, entry-level education provides the therapist with an in-depth knowledge of relevant pathology and pathophysiology^{29,30}. Knowledge of this topic is also required for the therapist to recognize signs and symptoms during the examination that are inconsistent with a referral diagnosis, that may indicate the presence of a previously undiagnosed condition or disease, or that pose a contra-indication to (sole) physical therapy management. The therapist performs this role—especially necessary in the ever more prevalent direct-access environment—by way of a systems-based screening approach and continuous re-evaluation of signs and symptoms and response to seemingly appropriate PT intervention⁶⁰.

The many clinical practice areas contained within the profession of physical therapy and the real-life exposure—unlike the situation described above for the chiropractic profession—of physical therapy students and clinicians to varied patient populations during clinical internships and work in private practice, hospitals, rehabilitation, and wellness settings most certainly would seem to position the therapist to safely establish when contra-indications to physical therapy management in general and more specifically manipulative interventions might exist⁷¹.

Childs et al⁷² put this physical therapist diagnostic acumen to the test. They administered a written examination developed and validated to test knowledge necessary to manage patients with musculoskeletal conditions in a direct-access environment to physical therapy students and clinicians. This examination consisted of 25 open-ended questions based on commonly encountered musculoskeletal diagnoses in the primary care setting and included questions on orthopaedic emergencies that would warrant immediate referral. The fact that this tool had been previously administered to physician interns, medical students and residents, and a variety of medical specialists allowed it to be used as a reference standard for the physical therapy students and clinicians. Both the students and licensed therapists had higher scores than medical students, interns and residents, and all specialists except for orthopaedists, indicating that physical therapists can provide safe and effective care for musculoskeletal patients in a direct access environment. Of course, direct-access physical therapy is nothing new and various studies have shown that physical therapists can provide not only safe but also cost-effective care for patients with musculoskeletal conditions in this type of setting⁷³⁻⁷⁸.

One could note here that with the many clinical practice areas contained within the profession of physical therapy, we could not expect all physical therapy clinicians to be equally skilled at the application of manual therapy techniques. Although all therapists are required to have a basic skill set with regard to manual therapy diagnosis and interventions including thrust manipulation as outlined in the various educational documents discussed earlier^{9,29,30}, some therapists may have greater skill at manipulative interventions than do others who have not chosen this route of post-graduate specialization. However, as clearly noted in the *Evaluative Criteria for the Accreditation of Education Programs for the Preparation of Physical Therapists*³⁰, all therapists have acquired the skill and knowledge required for determining whether patients need further examination or consultation by a physical therapist or referral to another health care professional, including a physical therapy colleague more skilled at manipulation. In fact, established clinical practice standards require that a therapist refer the patient to another licensed physical therapist when a specific intervention is beyond his or her competence, even if these interventions are within his or her legal scope of practice^{26,79}.

Ethical versus Economic Motives

So where does this leave us? First, I can summarize the information above in that it is obvious that manual therapy interventions including thrust manipulation should remain within the physical therapy scope of practice because of the arguments made here in the areas of history, physical therapy education and licensing requirements, our profession's contribution to concept and technique development and description, research contributions to the field by physical therapists, clarification of obfuscating semantic issues, fundamental differences in the central concepts underlying physical therapy and chiropractic, the physical therapy safety record with regard to cervical manipulation, and the diagnostic skills demonstrated by physical therapists for safe and effective direct access clinical practice. Second, I believe I have made a convincing argument that the faction within the chiropractic profession that repeatedly attempts to limit the physical therapy scope of practice is not motivated by lofty ideals of patient safety but rather that this attempt is driven solely by economic motives.

Do not get me wrong: This is not a one-man crusade against the chiropractic profession. I respect the profession for its contributions to the field of manual medicine, and I have come to know many chiropractors as skilled and caring clinicians, educators, and researchers, for whom I have great personal and professional admiration. As did Johnson and Rogers⁴⁹ before me, I believe that spinal manipulation has historically been and should continue to be part of the professional practice of

practitioners as diverse as physical therapists, chiropractors, medical physicians, and osteopaths, and that this intervention should not become the exclusive domain of any of these professions.

However, as a physical therapist and member of my professional organization, I am bound by its *Code of Ethics*⁸⁰. The APTA *Code of Ethics* requires me to provide optimal care to my patients and also to protect the public from unethical acts. Recent physical therapist-produced research showing that manipulation is the most efficacious intervention for certain subgroups of patients⁵²⁻⁵⁶ indicates that to provide this optimal care, I have to defend my professional scope of practice and maintain manipulation as an intervention available to me and my colleagues and all our patients. Having exposed the motives of a faction within the chiropractic profession to limit the physical therapy scope of practice as an unethical action driven by economic motives, I again am ethically obliged to protect the public by fighting to defend the physical therapy scope of practice.

I believe that the physical therapy profession despite these continued and unwarranted attacks on our scope of practice has demonstrated that we are guided by ethical considerations and that we have acted in the best interest of the patient and society. I am not a chiropractor and as such I can only assume that chiropractors abide by a code of ethics not dissimilar to the physical therapy code of ethics. So perhaps it is time for someone else in addition to physical therapists to also take the ethical high ground, so that together we can put an end to this waste of personal, professional, and societal resources. Are there any chiropractors out there willing to join the only ethically defensible position and help end these skirmishes about scope of practice? Isn't it time we concentrated on matters more important, like caring for the patients who seek our help?

Peter A. Huijbregts, PT, MSc, MHSc, DPT, OCS, FAAOMPT, FCAMT

REFERENCES

1. Wiese G, Peterson D. Daniel David Palmer: "Old Dad Chiro," the founder of chiropractic. In: Peterson D, Wiese G, eds. *Chiropractic: An Illustrated History*. St. Louis, MO: Mosby-Year Book, Inc., 1995:56-89.
2. Nelson CF, Lawrence DJ, Triano JJ, et al. Chiropractic as spine care: A model for the profession. *Chiropractic & Osteopathy* 2005;13:9.
3. Association of Chiropractic Colleges. *Position Paper #1*. Bethesda, MD: ACC, July 1996.
4. Keating JC, Charlton KH, Grod JP, Perle SM, Sikorski D, Winterstein J. Subluxation: Dogma or science. *Chiropractic & Osteopathy* 2005;13:17.
5. Owens EF. Chiropractic subluxation assessment: What the research tells us. *J Can Chiropr Assoc* 2002;46:215-220.
6. Carter R. Subluxation: The silent killer. *J Can Chiropr Assoc* 2000;44:9-18.
7. Vision 2020 [Website]. Available at: http://www.apta.org/AM/Template.cfm?Section=Vision_20201&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=285&ContentID=32061. Accessed May 2, 2007.
8. Massey BF. Acceptance speech for the John McM. Mennell Service Award. *J Manual Manipulative Ther* 2006;14: E11-E13.
9. Manipulation Education Committee. *Manipulation Education Manual for Physical Therapist Professional Degree Programs*. Alexandria, VA: APTA, 2004.
10. Canadian Physiotherapy Association. *News Release: Quebec Court of Appeal Rules in Physiotherapist's Favour*. Toronto, ON: CPA, March 10, 2000.
11. Philippe Thomas vs. Quebec Order of Chiropractors. No. 500-10-000987-972. Court of Appeal. Montreal Registry, Province of Quebec, Canada. February 25, 2000.
12. Institute for Alternative Futures. *The Future of Chiropractic Revisited: 2005-2015*. Alexandria, VA: Institute for Alternative Futures, 2005.
13. Meeker W. Wake up: We're in a race for scientific ownership of manipulation. *FCER Advance* 2005;25(1): 1,13.
14. Oregon Senate Bill 357. 74th Oregon Legislative Assembly, Regular Session 2007.
15. Paris SV. A history of manipulative therapy through the ages and up to the current controversy in the United States. *J Manual Manipulative Ther* 2000;8:66-77.
16. Grunewald LR. A study of physiotherapy as a vocation. *Physiotherapy Review* 1928;8(4):37-49.
17. Paris SV. Thirty-Seventh McMillan Lecture: In the best interests of the patient. *Phys Ther* 2006;86:1541-1553.
18. Moffat M. Three-quarters of a century of healing the generations. *Phys Ther* 1996;76:1242-1252.
19. Linker B. Strength and science: Gender, physiotherapy, and medicine in early twentieth-century America. *J Women's Hist* 2005;17:105-132.
20. Wardwell WI. *Chiropractic: History and Evolution of a New Profession*. St. Louis, MO: Mosby Year Book, 1992.
21. Australian Physiotherapy Association. *The Australian Physiotherapy Association: Overview & History* [Website]. Available at: <http://apa.advsol.com.au/about/overview.cfm>. Accessed May 2, 2007.
22. Chartered Society of Physiotherapy. *History* [Website]. Available at: <http://www.csp.org.uk/director/about/thecsp/history.cfm>. Accessed May 2, 2007.
23. Terlouw TJA. Roots of physical medicine, physical therapy, and mechanotherapy in the Netherlands in the 19th century: A disputed area within the healthcare domain. *J Manual Manipulative Ther* 2007;15:E23-E41.
24. Terlouw THJA. *De Opkomst van het Heilgymnastisch Beroep in Nederland in de 19^e eeuw: Over Zeldzame Amfibieën in een Kikkerland*. [Dutch: The Rise of the Physical Therapy Profession in the Netherlands: On Rare Amphibians in a Country Full of Frogs]. Rotterdam, The Netherlands: Erasmus Publishing, 1991.

25. Terlouw THJA, Juch A. In het belang der lijdende mensheid [Dutch: In the interest of suffering humanity]. In: Terlouw THJA, Ed. *Geschiedenis van de Fysiotherapie Gezien door Andere Ogen*. [Dutch: History of Physical Therapy Seen through Other Eyes]. Amsterdam, The Netherlands: Aksant, 2004:109–172.
26. Virginia Board of Medicine. Study of spinal manipulation [Website]. 1999. Available at: <http://www.dhp.state.va.us/PhysicalTherapy/docs/Report%20on%20Spinal%20Manipulation.doc>. Accessed May 2, 2007.
27. CPA. *Position Statement on Manipulation*. Toronto, ON: Canadian Physiotherapy Association, July 2003.
28. Manual Therapy Steering Committee CPA. *CPA Entry-Level Manual Therapy Curriculum Guidelines*. Toronto, ON: CPA, Feb 2003.
29. APTA. *A Normative Model for Physical Therapist Professional Education: Version 2004*. Alexandria, VA: APTA, 2004.
30. CAPTE. *Evaluative Criteria for the Accreditation of Education Programs for the Preparation of Physical Therapists*. Alexandria, VA: APTA, 2006.
31. IFOMT. *Educational Standards*. International Federation of Orthopaedic Manipulative Therapists, November 2000. Available at: <http://www.ifomt.org/ifomt/about/standards>. Accessed May 2, 2007.
32. Clinical Residency and Fellowship Program Credentialing: Frequently Asked Questions [Website]. Available at: <http://www.apta.org/AM/Template.cfm?Section=Home&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=30116>. Accessed May 2, 2007.
33. FSBPT. *2007 NPTE Candidate Handbook*. Alexandria, VA: Federation of State Boards of Physical Therapy, 2007.
34. Kaltenborn FM, Evjenth O, Baldauf-Kaltenborn T, Vallowitz E. *The Spine: Basic Evaluation and Mobilization Techniques*, 2nd ed. Oslo, Norway: Olaf Norlis Bokhandel, 1993.
35. Kaltenborn FM. *Manual Mobilization of the Joints: The Extremities, Vol. 1*. 5th ed. Oslo, Norway: Olaf Norlis Bokhandel, 1999.
36. Maitland GD, Hengeveld E, Banks K, English K. *Maitland's Vertebral Manipulation*. 6th ed. Oxford, UK: Butterworth Heinemann, 2001.
37. Maitland GD. *Peripheral Manipulation*. 3rd ed. Boston, MA: Butterworth Heinemann, 1991.
38. Grieve G. *Common Vertebral Joint Problems*. 2nd ed. Oxford, UK: Churchill Livingstone, 1988.
39. Paris SV. *The Spinal Lesion*. Christchurch, New Zealand: Pegasus, 1965.
40. McKenzie RA. *The Lumbar Spine: Mechanical Diagnosis and Therapy*. Waikanae, New Zealand: Spinal Publications, 1981.
41. McKenzie RA. *The Cervical and Thoracic Spine: Mechanical Diagnosis and Therapy*. Waikanae, New Zealand: Spinal Publications, 1990.
42. Mulligan BR. *Manual Therapy: "NAGS", "SNAGS", "MWMS", etc.* Wellington, New Zealand: Plane View Services, 1989.
43. Butler DS. *Mobilisation of the Nervous System*. Melbourne, Australia: Churchill Livingstone, 1991.
44. El, A Van der. *Manuele Diagnostiek Wervelkolom*. [Dutch: Manual Diagnosis of the Spine]. Rotterdam, The Netherlands: Uitgeverij Manthel, 1992.
45. Van der El A, Lunacek P, Wagemaker A. *Manuele Therapie: Wervelkolom Behandeling*. [Dutch: Manual Therapy: Treatment of the Spine]. 2nd ed. Rotterdam, The Netherlands: Uitgeverij Manuwel, 1993.
46. Mink AJF, Veer HJ ter, Vorselaars JACT. *Extremiteten: Functie-Onderzoek en Manuele Therapie*. [Dutch: Extremities: Examination and Manual Therapy]. Houten, The Netherlands: Bohn Stafleu Van Loghum, 1990.
47. Winkel D, Aufdemkampe G, Matthijs O, Meijer OG, Phelps V. *Diagnosis and Treatment of the Spine*. Gaithersburg, MD: Aspen Publishers, 1996.
48. Pettman E. *Manipulative Thrust Techniques*. Abbotsford, BC: Aphema Publishing, 2006.
49. Johnson D, Rogers R. Letter to the editor: Spinal manipulation. *Phys Ther* 2000;80:820–823.
50. Bigos S, Bowyer O, Braen G, et al. *Acute Low Back Problems in Adults: Clinical Practice Guideline No. 14*. Rockville, MD: Agency for Health Care Policy and Research, Public Health Service, US Department of Health and Human Services, December 1994. AHCPR Publication No. 95–0642.
51. Shekelle PG, Adams AH, Chassin MR, et al. *The Appropriateness of Spinal Manipulation for Low-Back Pain: Project Overview and Literature Review*. Santa Monica, CA: RAND, 1991. RAND publication R-4025/1–CCR/FCER.
52. Flynn T, Fritz J, Whitman J, Wainner R, Magel J, Rendeiro D, et al. A clinical prediction rule for classifying patients with low back pain who demonstrate short-term improvement with spinal manipulation. *Spine* 2002;27:2835–43.
53. Childs JD, Fritz JM, Flynn TW, Irrgang JJ, Johnson KK, Majkowski GR, Delitto A. A clinical prediction rule to identify patients with low back pain most likely to benefit from spinal manipulation: A validation study. *Ann Intern Med* 2004;141:920–8.
54. Fritz JM, Childs JD, Flynn TW. Pragmatic application of a clinical prediction rule in primary care to identify patients with low back pain with a good prognosis following a brief spinal manipulation intervention. *BMC Family Practice* 2005;6:29.
55. Tseng YL, Wang WTJ, Chen WY, Hou TJ, Chen TC, Lieu FK. Predictors for the immediate responders to cervical manipulation in patients with neck pain. *Man Ther* 2006;11:306–315.
56. Cleland JA, Childs JD, Fritz JM, Whitman JM, Eberhart SL. Development of a clinical prediction rule for guiding treatment of a subgroup of patients with neck pain: Use of thoracic spine manipulation, exercise, and patient education. *Phys Ther* 2007;87:9–23.
57. Keating JC, Cleveland CS III, Menke M. *Chiropractic History: A Primer*. Davenport, IA: Association for the History of Chiropractic, 2004.
58. Gatterman MI. Principles of chiropractic. In: Gatterman MI, ed. *Chiropractic Management of Spine Related Disorders*. Philadelphia, PA: Lippincott, Williams & Wilkins, 1990.
59. Paris SV. Mobilization of the spine. *Phys Ther* 1979;59:988–995.
60. Guide to Physical Therapist Practice. 2nd ed. *Phys Ther* 2001;81:9–744.
61. Vernon H, Mrozek J. Commentary: A revised definition of manipulation. *J Manipulative Physiol Ther* 2004;28:68–72.
62. Hislop HJ. Tenth Mary McMillan Lecture: The not-so-impossible dream. *Phys Ther* 1975;55:1069–1080.
63. APTA Mission Statement [Website]. Available at: <http://www.apta.org/AM/Template.cfm?Section=Home&CONTENTID=32269&TEMPLATE=/CM/ContentDisplay.cfm>. Accessed May 3, 2007.
64. Butler DS. *The Sensitive Nervous System*. Adelaide, Australia: Noigroup Publications, 2000.
65. Terrett AGJ. *Current Concepts in Vertebrobasilar Complications Following Spinal Manipulation*. 2nd ed. Des Moines, IA: NCMIC Group Inc, 2001.
66. DiFabio RP. Manipulation of the cervical spine: Risks and benefits. *Phys Ther*. 1999;79:50–65.

67. Wenban AB. Inappropriate use of the title "chiropractor" and the term "chiropractic manipulation" in the peer-reviewed biomedical literature. *Chiropractic & Osteopathy* 2006;14:16.
68. Caplan RL. Chiropractic. In: Salmon WJ, ed. *Alternative Medicines: Popular and Policy Perspectives*. New York, NY: Tavistock Publications, 1984.
69. Wyatt LH, Perle SM, Murphy DR, Hyde TE. The necessary future of chiropractic education: A North American perspective. *Chiropractic & Osteopathy* 2005;13:10.
70. World Health Organization (WHO). *International Classification of Functioning, Disability and Health*. Geneva, Switzerland: WHO, 2001.
71. Huijbregts P. Manipulation, monkeys, and bunches of bananas. *J Manual Manipulative Ther* 2005;13:206–208.
72. 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.
73. Overman SS, Larson JW, Dickstein DA, Rockey PH. Physical therapy care for low back pain: Monitored program of first-contact nonphysician care. *Phys Ther* 1988;68:199–207.
74. Byles SE, Ling RS. Orthopaedic out-patients: A fresh approach. *Physiother* 1989;75:435–437.
75. Weale AE, Bannister GC. Who should see orthopaedic outpatients: Physiotherapists or surgeons? *Ann R Coll Surg Engl* 1995;77:71–73.
76. Mitchell JM, de Lissoyoy G. A comparison of resource use and cost in direct access versus physician referral episodes of physical therapy. *Phys Ther* 1997;77:10–18.
77. Daker-White G, Carr AJ, Harvey I, Woolhead G, Bannister G, Nelson I, et al. A randomised controlled trial: Shifting boundaries of doctors and physiotherapists in orthopaedic outpatient departments. *J Epidemiol Community Health* 1999;53:643–650.
78. Hattam P, Smeatham A. Evaluation of an orthopaedic screening service in primary care. *Clin Perform Qual Health Care* 1999;7:121–124.
79. CPTA. *Clinical Practice Standards for Physical Therapists*. Edmonton, AB: College of Physical Therapists of Alberta, 1998.
80. Code of Ethics [Website]. Available at: <http://www.apta.org/AM/Template.cfm?Section=Home&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=21760>. Accessed May 3, 2007.