Chiropractic in the United States: Trends and Issues

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FROM ITS ORIGINS AS AN UNCONVENTIONAL THERAPY in the late 19th century through decades of marginalization during the 20th century, chiropractic has acquired legitimacy and prominence (Meeker and Haldeman 2002). Signs of its success abound. They include a broadening of the laws and regulations affecting its licensure, scope of practice, and reimbursement; greater acceptance by both physicians and health plans; and a sustained demand for its services. Chiropractic's political base is strong, and it enjoys a high degree of patient satisfaction. Moreover, it is at the vanguard of complementary and alternative medicine (CAM), which receives ever greater proportions of health expenditures (Eisenberg et al. 1993, 1998) and which is being increasingly integrated into conventional medicine (Macy Foundation 2001).

Even so, chiropractic's future seems uncertain. Recent expansions of chiropractic colleges are swelling the ranks of practitioners while managed care is restricting payment for what chiropractors do and evidence-based medicine is demanding that what they do must have demonstrable value. At the same time, chiropractors are experiencing greater competition from acupuncturists and massage therapists, whose ranks also are growing. In response, the profession is expanding beyond its traditional forms of chiropractic treatment by reaching deeper into both

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alternative medicine and primary care, and practitioners are more aggressively marketing natural products and devices. In this article we analyze these crosscurrents and discuss their likely impact on the chiropractic profession and on its place in the U.S. health care system in the future.

Chiropractic in the Age of Evidence-Based Medicine

A challenge confronting all health care professionals is establishing the clinical effectiveness of the therapies that they employ. With support from the Health Resources and Services Administration, chiropractic has mounted a vigorous effort in this direction (Mootz, Coulter, and Hansen 1997). Unfortunately, this effort has not been universally endorsed within the profession, and indeed it has widened the schism that already exists between the "straights" and the "mixers" (Kaptchuk and Eisenberg 1998). Although both of these poles of the profession see chiropractic as encompassing a range of diseases and conditions, the "straights" attribute them to subluxations that interfere with the flow of "vital energy," and they rely on spinal manipulative therapy (SMT), also referred to as *adjustment*, to free the process. "Mixers," who are in the vast majority, view chiropractic as being more expansive, with subluxation being among the causes of disease and SMT being principal among many potential treatment options. Included among these options are other manual approaches (such as joint mobilization and soft tissue massage), physical modalities (such as diathermy and hydrotherapy), nutritional substances, homeopathic remedies and acupuncture, and others. More important, "mixers" are generally willing to examine their outcomes, whereas "straights" do not consider chiropractic a testable science but, rather, a belief system. Notwithstanding these differences, both branches of chiropractic draw their unique status from SMT. Therefore, establishing its effectiveness is the hallmark of validating chiropractic as it now exists.

Neuromusculoskeletal Disorders

A high percentage of chiropractic patients carry a neuromusculoskeletal (NMS) diagnosis, principally low back or neck pain,[1] two of the most prevalent disorders in America. Indeed, 80 percent of people are affected at some time, and 10 percent have chronic, recurring symptoms

(Shekelle, Markovich, and Louie 1995a). Annual costs exceed $65 billion. If chiropractic is to establish SMT as efficacious, it must find the evidence in this patient population.

There have been many attempts to define the absolute and relative value of chiropractic SMT for treating low back pain. In the early 1990s, reviews and metanalyses of more than 30 such trials concluded that SMT was safe and effective (Anderson et al. 1992; Assendelft et al. 1992; Kaptchuk and Eisenberg 1998; Koes et al. 1991; Manga et al. 1993), although these various studies did not use consistent definitions and end points (Deyo et al. 1998), and most were not rigorous (Furlan et al. 2001). Combining these published studies with an assessment of health insurance data, the RAND Corporation characterized SMT as offering "short-term benefit in some patients, particularly those with acute, uncomplicated low back pain" (Shekelle et al. 1992, 590), the subset of patients that most commonly experiences spontaneous recovery (Cherkin et al. 1998). This body of information also formed the basis for the historic "Clinical Practice Guideline for Low Back Pain," which was issued by the Agency for Health Care Policy and Research (AHCPR) in 1994. Echoing earlier conclusions, it stated that for patients without radiculopathy, spinal manipulation can be helpful in reducing pain and perhaps speeding recovery within the first month of symptoms (Bigos, Bowyer, and Braen 1994). However, for patients whose symptoms persisted beyond one month, the evidence was inconclusive. Although narrow in scope and not specific in citing chiropractic SMT, this statement by a federal agency was of enormous importance to chiropractic, further legitimizing a profession that had been struggling for recognition. The American Chiropractic Association's (ACA) Web site refers to it as "that government report that stated that chiropractic was better than other therapies" (ACA 2002), although the AHCPR guidelines left largely unanswered the question of comparative efficacy.

Following the AHCPR's guideline, several smaller studies appeared to support the superiority of SMT for low back pain (see, e.g., Giles and Muller 1999; Smith and Stano 1997), but a series of large, overlapping trials for the treatment of acute and subacute low back pain showed very similar outcomes with either SMT or massage as used by chiropractors, spinal manipulation as performed by osteopaths, physical or massage therapy administered by physiotherapists or massage therapists, standard medical care provided by either primary care physicians or orthopedic surgeons, or self-care by patients aided by instructional booklets or back

school (Andersson et al. 1999; Carey et al. 1995; Cherkin et al. 1998; Furlan et al. 2002; Hsieh et al. 2002; Koes et al. 1992; Skagren et al. 1997). After surveying this experience, Shekelle concluded that SMT "is somewhat effective symptomatic therapy for some patients with acute low back pain" and that it is "as effective" as other forms of therapy under these particular circumstances (1998, 1074). Similarly, two comprehensive reviews found "moderate evidence" of short-term efficacy of SMT in the treatment of acute low back pain but no evidence that it was more effective than other physiotherapeutic applications (such as massage) or drug therapies (with analgesics or nonsteroidal anti-inflammatory drugs) (Bronfort 1999; van Tulder, Koes, and Boulter 1997).

The use of SMT to relieve chronic back pain is particularly important because of both the broad claims of efficacy made by the chiropractic profession and the large number of patients with chronic back pain who seek chiropractic care. Although this disorder accounts for only 25 percent of the patients with back pain, it leads to 90 percent of the costs (Palmieri and Smoyak 2002). Many randomized and nonrandom clinical trials have been conducted to test various treatment options (see the reviews by Bronfort 1999; van Tulder, Koes, and Boulter 1997). Unfortunately, most of these trials have not been of high quality, and those of lower quality have tended to yield positive conclusions more often than those of better quality (Furlan et al. 2001). The strongest evidence favors exercise therapy, back schools, and behavioral therapy (Deyo and Weinstein 2001; van Tulder 2001), whereas the evidence favoring manipulation is only "moderate," and it is more persuasive for passive manipulation than for chiropractic SMT (Bronfort 1999; van Tulder, Koes, and Boulter 1997). These conclusions are consistent with the AHCPR's 1994 guideline, which characterized the evidence for SMT in chronic low back pain as "inconclusive," and the Veterans Administration's (VA) 1999 guideline, which stated that the use of SMT for chronic back pain is probably safe but that its efficacy is still being researched (U.S. Dept. of Veterans Affairs 1999). While these guidelines do not preclude the possibility that SMT has value in certain subgroups of patients, they offer only weak support for what is a mainstay of practice in chiropractic.

Conclusions very similar to those reached for back pain have been reached for the use of SMT in the treatment of chronic cervical pain, where issues of safety also exist (Aker et al. 1996; Bronfort, Evans, Nelson, et al. 2001; Hurwitz et al. 1996; Jordan et al. 1998; Shekelle 1998; Shekelle and Coulter 1997). A recent randomized clinical trial also

found no difference between SMT and passive mobilization as performed by chiropractors (Hurwitz, Morgenstern, Harber, Kominsky, Yu, et al. 2002). Although massage and SMT have not been definitively compared, massage is emerging as particularly promising for patients with these disorders (Cherkin et al. 2001; Deyo and Weinstein 2001; Gross, Aker, and Quartly 1996; Hoving et al. 2002; Koes et al. 1992).

Often obscured within these various analyses of back and neck pain is the reality that even when efficacy has been demonstrated statistically, it has tended to be of marginal value clinically and often is dependent on the specific time points of observation (see, e.g., Cherkin et al. 1998; Koes et al. 1992). SMT also presents problems of consistency, some of which are due to variation among chiropractors in both the number and the kind of SMT treatments that are used (Shekelle, Markovich, and Louie 1995b). Indeed, it is not clear how many or which of the more than 50 kinds of SMT should be used or whether the results with SMT differ when performed by chiropractors or by other providers. Inconsistency also is introduced by differences in the strength of the clinicians who perform high-thrust SMT and differences in the body habitus of the patients receiving it.

A lack of firm support also surrounds chiropractic treatment in other disorders, such as fibromyalgia and headaches, which together account for 10 to 20 percent of patient visits. For example, while some have claimed that SMT is efficacious for fibromyalgia (Blunt, Rajwani, and Guerriero 1997), this conclusion lacks firm support (Kaptchuk and Eisenberg 1998), and there is no evidence that SMT is superior to massage (Field et al. 2002). Similarly, a recent review of clinical trials of SMT in patients with tension, cervicogenic, and migraine headaches found "moderate evidence" of a short-term effect, but these results were not any greater than could be achieved with massage alone (Bronfort, Assendelft, et al. 2001), and massage also has been shown to decrease the frequency with which tension headaches occur (Quinn, Chandler, and Moraska 2002).

In commenting on such studies, the ACA called attention to the fact that chiropractic therapy is not limited to SMT but also employs nutrition, physical modalities, and other manual approaches (Pedigo 1999). Yet recent randomized trials of chiropractic treatment for acute and subacute low back pain have shown no added benefit of various physical or manual modalities over SMT alone (Hsieh et al. 2002; Hurwitz, Morgenstern, Harber, Kominsky, Belin, et al. 2002). Of even greater

significance, there is no compelling evidence to support the use of SMT in chronic pain syndromes, which represent a large portion of chiropractors' patients (Coulter et al. 2002; Hadler and Carey 1998). Thus, while randomized trials might have established once and for all that SMT is effective in the treatment of both acute and chronic low back and neck pain and that it is more effective in treating these disorders than other treatment approaches, the research to date has shown instead that SMT is effective in only a narrow subset of such patients and, in those circumstances, it is no more effective than other treatments.

Costs

Cost is another issue. Studies of chiropractic care for low back pain indicate that because of the large number of repeat visits, chiropractic treatment tends to cost more than all other types of therapy except that provided by orthopedic surgeons (Carey et al. 1995; Cherkin et al. 1998; Meade et al. 1990; Shekelle, Markovich, and Louie 1995a; Skagren et al. 1997). When pharmaceutical expenses are included, the gap narrows (Smith and Stano 1997), but this does not take into consideration any added expenditures for nutritional supplements or devices that are dispensed by chiropractors (Barrett 1996), nor does it consider the practice of continuing SMT during asymptomatic periods in order to "maintain health." The lowest costs are achieved when patients undertake self-care guided by an instructional booklet (Cherkin et al. 1998). Nonetheless, many patients prefer manual treatment, and the form that is most similar to chiropractic SMT in terms of both symptom control and cost is that provided by massage therapists (Cherkin et al. 1998, 2001; Ernst 1999; Preyde 2000), who currently outnumber chiropractors by more than three to one and who are growing in both numbers and market share at more than five times their rate (American Massage Therapy Association 2002; Cooper, Laud, and Dietrich 1998). Thus, the chiropractic profession continues to be challenged by outcomes, costs, and competition in the treatment of NMS syndromes, the most common disorders for which patients seek their care.

Viscerosomatic Disorders

From surveys of patients and practitioners, disorders outside the NMS system, referred to as *viscerosomatic conditions*, account for 8 to

10 percent of chiropractic encounters,[1] although some chiropractors have few such encounters and others have many more (Jackson 2001). Confusion on the overall frequency of such visits exists because administrative data indicate that viscerosomatic disorders account for only 1 to 2 percent of visits. However, such data are skewed by the narrow range of diagnoses that most third-party payers reimburse and by the tendency of chiropractors to assign a NMS diagnosis (e.g., subluxation) to conditions that others might see as having a viscerosomatic etiology.

SMT is the principal therapeutic tool for viscerosomatic disorders, although the majority of chiropractors also prescribe herbs, glandular extracts, and food supplements for some of their patients (Stultz 2001). The effectiveness of SMT has been claimed for a variety of these disorders, including diabetes (Murphy 1994), chronic pelvic pain (Hawk and Long 1997), menstrual irregularities (Kokjohn et al. 1992; Walsh and Polus 1999), and others (Grod, Sikorski, and Keating 2001). Despite these claims, there have been relatively few definitive studies, and there is little to support the effectiveness of SMT in any viscerosomatic condition (Kaptchuk and Eisenberg 1998). In the specific case of hypertension, which some chiropractors treat with SMT and for which some success has been reported (e.g., Nansel et al. 1991; Yates et al. 1988), a pilot study failed to demonstrate that SMT was of any value (Plaugher et al. 2002), and a carefully conducted randomized clinical trial showed no benefit of SMT over nutritional counseling alone (Goertz et al. 2002).

Pediatric Disorders

Negative conclusions also emerge from studies of childhood disorders, an arena of care that the ACA views as appropriate because "poor posture and physical injury, including birth trauma, may be common primary causes of illness and can have a direct and significant impact not only on spinal mechanics, but on other bodily functions" (ACA 2000, 13). Approximately 5 percent of infants and children have been treated with chiropractic therapy, and children and adolescents comprise 10 to 15 percent of chiropractic visits (Jackson 2001; Lee, Li, and Kemper 2000; National Board of Chiropractic Examiners 1993; Spigelblatt 1995). The profession has recently advocated SMT for children with attention deficit/hyperactive disorder (ADHD). Yet there is no convincing evidence that SMT has objective value in a wide variety of childhood conditions, ranging from otitis to enuresis (Spigelblatt

1995; Turow 1997). Indeed, for some disorders, there is convincing evidence that SMT does not help. For example, despite positive reports of the effectiveness of SMT in the treatment of asthma (e.g., Graham and Pistolese 1997), two randomized trials showed no objective benefit (Balon et al. 1998; Bronfort, Evans, Kubic, et al. 2001). Of added concern in the pediatric age group is the opposition of some chiropractors to childhood immunizations (Colley and Haas 1994).

The "Chiropractic Encounter"

A prominent theme throughout the studies of chiropractic management is the finding that regardless of the objective clinical response, patients consistently express more satisfaction with chiropractic care than with other forms of treatment (Coulter, Hayes, and Danielson 1994; Goertz et al. 1997; Posner and Glew 2002; Sawyer and Kassak 1993). They also return more often to chiropractors when their symptoms recur (Koes et al. 1992; Landmark Healthcare 1997). This phenomenon does not appear to be related to manipulation per se (see, e.g., Balon et al. 1998; Cherkin et al. 1998). Rather, it seems to stem from the entire "chiropractic encounter," which includes sensitivity to patients as individuals, effective communication, and a holistic approach to health and disease (Coulehan 1985; Kelner, Oswald, and Coulter 1980). Touch, empathy, and the transmission of positive expectations are critical elements (Hertzman-Miller et al. 2002). Patients perceive these characteristics as comforting, if not curative, particularly during exacerbations of chronic back pain where, even without objective responses, motivation and coping skills are important (Hadler and Carey 1998; Nyiendo et al. 2001), and clinical responses relate to patients' expectations (Kalauokalani et al. 2001). Indeed, the fact that patients who choose to see chiropractors share chiropractors' belief system appears to contribute to the outcomes (Coulter et al. 2002). Reorienting the assessment of chiropractic to these realities—which are reminiscent of the placebo effect (Beecher 1955; Brown 1998, Kaptchuk 2002)—is symbolic of the difficulty in determining the "evidence" that is relevant in evaluating chiropractic's clinical effectiveness.

Chiropractors are not alone in their holistic approach to patients. This philosophy is shared by acupuncturists, naturopaths, osteopathic physicians, midwives, and others (Cooper and McKee 2002). Nor are touch and

empathy unique to holistic medicine. They are intrinsic to other manual disciplines, including physical and massage therapy, which elicit similar levels of satisfaction (Koes et al. 1992). Allopathic medicine, too, has had a long tradition of "lavishly dispensing time, sympathy and understanding" (Peabody 1927, 882). Indeed the bond so formed has been the basis for physicians' power and stature as a profession (Starr 1982). In recent years, patients have complained that visits with their physicians are brief, impersonal, and unsatisfying (Murphy et al. 2001). But if chiropractic's major outcomes are comfort, reassurance, and empowerment in the course of what are usually self-limited conditions, society must determine whether the expenditures that are necessary to achieve such goals are warranted (Cherkin et al. 1998).

Practice Guidelines

In an effort to bring a uniform standard to chiropractic, members of the profession met in the early 1990s under the sponsorship of the ACA, the Association of Chiropractic Colleges (ACC), the Federation of Chiropractic Licensing Boards (FCLB), and other organizations and, in collaboration with the AHCPR, drafted guidelines for diagnosis and therapy, emphasizing safety and efficacy. Officially entitled *Guidelines for Chiropractic Quality Assurance and Practice Parameters*, these are generally referred to as the "Mercy Center Guidelines" (Haldeman, Chapman-Smith, and Petersen 1993). They have been endorsed by the ACC and the FCLB, which have encouraged their use by state licensing boards, but they have been vigorously rejected by the International Chiropractic Association, the World Chiropractic Alliance, and several local and state chiropractic organizations, based principally on the assertion that few "straight" chiropractors were involved in establishing them (World Chiropractic Alliance 2002). In response, the straights have developed their own guidelines, known as the "Wyndham Guidelines." Despite this, an independent review recently validated the process and recommended that the Mercy Guidelines be applied, with the proviso that new scientific data should be considered, as the Guidelines themselves recommend (Cates et al. 2001). The controversy that these various guidelines has caused is indicative of the challenges that the profession faces in presenting a credible face to the public.

The Intersection of Chiropractic, Politics, and Managed Care

Politics and Practices

Public support for chiropractic is important, for it is in the public arena that chiropractic made many of its greatest strides (Mootz 1996). For example, it was a public process that led to the creation of the AHCPR guideline in 1994, which played a critical role in legitimizing SMT and therefore chiropractic treatment for low back pain. Similarly, it was a public process in 1987 that, after 13 years of litigation, brought a judgment (*Wilk v. AMA*) against the American Medical Association (AMA) for unreasonable restraint of trade and conspiracy in violation of the Sherman Anti-Trust Act, a judgment that removed the medical profession's de facto boycott of chiropractic (Wolinsky and Brune 1994). Chiropractic remains active in the legal and legislative arenas at both the federal and state levels.

Between 1998 and 2001, approximately 50 state legislative acts annually addressed chiropractic (Federation of Chiropractic Licensing Boards 1999; Health Policy Tracking Service 2001). Most focused on expanding scope of practice, patient access, or mandated reimbursement, and more than 80 percent became law. As a result of these and previous efforts, all states cover chiropractic under worker's compensation, and 12 specifically mandate that private plans cover chiropractic, although some of these mandates are quite limited (Health Policy Tracking Service 2001). In addition, a number of states have passed "any willing provider" laws, some of which include chiropractic, but because of ERISA exemptions, they, too, are limited (Cooper, Henderson, and Dietrich 1998). Paradoxically, the states have not been as forthcoming with their own Medicaid plans, only 30 of which include a chiropractic benefit. Chiropractic's state legislative agenda includes not only expanding its own latitude but also limiting the ability of others (such as MDs and physical therapists) to use spinal manipulation in their practices. To restrict such activities, the chiropractic profession has lobbied for state regulations that would require amounts of training that exceed those currently undertaken by most other disciplines.

In 1972, chiropractors obtained Medicare coverage that was limited to the "manual manipulation of the spine to correct a subluxation." In an effort to maximize their access to Medicare patients, the

chiropractic profession filed suit against the Health Care Financing Administration (*ACA v. Thompson*, 2001), alleging that physician gatekeepers in Medicare+Choice plans have not referred patients for SMT exclusively to chiropractors, as the ACA contends that the law requires. However, their objectives are far greater. The goal of chiropractic, as framed in the Medicare Chiropractic Improvement Act of 2001 (HR 2284), is to expand Medicare coverage to "all physician services furnished by doctors of chiropractic within the scope of their license," a goal that has been pursued repeatedly in the past. If eventually enacted, this bill would spread its effects beyond the 20 percent of chiropractic patients who are Medicare beneficiaries, by encouraging the expansion of coverage in private plans, many of which limit coverage to NMS disorders and, like Medicare, do not reimburse chiropractors for x-rays. This bill also would end Medicare's current policy of reimbursing MDs, DOs, and others who bill for "chiropractic-like services," a goal at the state level as well. A partial victory was obtained in a January 2002 ruling by the U.S. Department of Health and Human Services, which specifically excluded physical therapists from Medicare reimbursement for spinal manipulation to correct a subluxation.

A third arena of political activity concerns the VA and the U.S. Department of Defense (DOD). In 2001, Congress directed the VA to establish a policy for chiropractic treatment of NMS disorders (Public Law 107–135) and it instructed the DOD to offer CHAMPUS beneficiaries direct access to a broad range of chiropractic services (HR 4205). Chiropractors also have sought, but without success, to expand their role in the VA by being designated as primary care providers (HR 2792), an effort that was strenuously opposed by the American Medical Association, the American Osteopathic Association, and the American Academy of Family Physicians (Green 2001, 2002).

Although chiropractic's various legislative and legal efforts have not always been successful, they have greatly expanded chiropractors' access to patients and to third-party reimbursement. Three-fourths of workers in employer-sponsored health plans now have some degree of chiropractic coverage (Jensen, Roychoudhury, and Cherkin 1998). In 1970, approximately 75 percent of chiropractors' revenue came directly from patients and 25 percent from insurance, but now these percentages have been reversed (ACA 1994; Jackson 2001). Yet only part of this success can be attributed to legislative and legal actions. The relationship between chiropractors and their patients also has been important. Many of the

plans that cover chiropractic do so not because of mandates but because of patient demand. Moreover, despite the emphasis on measuring effectiveness, only 8 percent of health plan executives report that clinical efficacy was an important determinant in providing chiropractic benefits (Landmark Healthcare 1999).

Managed Care

Most chiropractors now participate in some form of managed care (Jackson 2001). The use of capitation has decreased (ACA 1998; Jackson 2001), as it has for physicians. Most plans now impose dollar limits, deductibles, copayments, or limitations on the number of encounters per episode, and many have narrowed their reimbursement for x-rays (Jensen, Roychoudhury, and Cherkin 1998). These restrictions have proven to be powerful deterrents. For example, in the early 1990s, one-third of the patients seen through a large chiropractic network[1] had more than 15 treatments per episode and one-third had ten or fewer, but by 1997 the proportion making more than 15 visits had fallen to 20 percent, while the proportion making ten or fewer visits had risen to almost 70 percent. Managed care plans lacking such restrictions have experienced a ninefold greater use of chiropractic services, reflecting the proportionally greater sensitivity of chiropractic to cost sharing that was observed in the RAND Health Insurance Experiment (Shekelle, Rogers, and Newhouse 1996). These restrictions are being felt by chiropractors, a majority of whom believe that managed care has decreased the frequency of patient contact and that the quality of care has suffered (Jackson 2001). The impact of managed care is also revealed by lower reimbursement rates and lower fees collected in 2000 compared with those in 1998 (Chiropractic Economics 2000), circumstances that have motivated the profession to sue insurance plans over what they allege to be discriminatory reimbursement policies and to battle for state legislation that would loosen the grip of managed care. But chiropractic is now facing an even more difficult hurdle, as major employers drop chiropractic coverage altogether (Wills 2002).

Thus, chiropractors now find themselves in a new paradigm. Their long effort to gain access to reimbursement was waged largely during the fee-for-service era, during which chiropractors were paid principally out-of-pocket, but their victory carries with it the constraints of managed care and the expectations of patients that others will pay for the services

rendered, but employers are beginning to balk. Moreover, given the uncertainty about how many visits constitute an appropriate course of treatment, particularly when the efficacy of treatment in the majority of circumstances has not been established, the volume of care for which chiropractors will be reimbursed in the future may diminish further. The effects could be profound.

New Horizons

The Growth of Chiropractic and Its Competitors

Another of chiropractic's central issues is the growth of the number of practitioners. Chiropractic grew slowly through the 1970s and 1980s (Cooper and Stoflet 1996), but three events changed that. First was the judgment against the American Medical Association in 1987, which added legitimacy to chiropractic. Second was a growing interest in alternative medicine, which enhanced chiropractic's opportunities in the medical marketplace (Eisenberg et al. 1993, 1998). And third was an effort to shift the health care system away from specialization to patient-centered primary care (Council on Graduate Medical Education 1992), a paradigm that chiropractic also embraced. Chiropractic colleges moved quickly. With the addition of only one new institution, the number of chiropractors graduating each year expanded by 50 percent, reaching approximately 3,600 in 2000, and the number of practitioners grew to more than 60,000 (Cooper 2001; Cooper and Stoflet 1996).

Over the past few years, the interest of students in most health careers has declined, and accordingly, enrollment in chiropractic colleges has begun to fall as well. In addition, the new school in Colorado closed, and Life College, chiropractic's largest school, lost its accreditation. However, two new colleges are being established in Florida, bringing the total to 18. Unless the output of chiropractic colleges shrinks substantially more, there will be almost 100,000 practitioners in 2015, a level that is similar to the number of family physicians who will be practicing in that year. In per capita terms, this would represent a 50 percent increase in the number of chiropractors compared with 1990.

Chiropractic is not the only profession that is growing. A heightened interest in acupuncture has led to a sixfold increase in its training capacity. With 50 accredited programs now and many others awaiting accreditation, the ranks of practicing acupuncturists can be expected

to swell from their current number of 15,000 to as many as 30,000 by 2015 (Cooper 2001). The same is true for massage therapy. The American Massage Therapy Association's Council of Schools lists more than 350 institutions that are capable of training certified therapists, and 30 states now regulate these practitioners. Most programs require only 500 to 1,000 hours of training and are usually completed in six months of full-time attendance or 12 to 18 months of part-time attendance. Interest in this field has raised the number of massage therapists from approximately 75,000 in 1995 to more than 250,000 in 2002, and their market share of patients with neck, shoulder, and back pain exceeds 20 percent (American Massage Therapy Association 2002).

In the past, growth in the number of chiropractors was absorbed by parallel growth in chiropractic's market share, which doubled during the 1980s to include almost 10 percent of the population, but the increases since then have been only modest (Coulter and Shekelle 1997; Eisenberg et al. 1998). Moreover, because of managed care restrictions, these increases have been more than balanced by reciprocal decreases in the number of visits per episode. At the same time, greater competition is coming from massage therapists and acupuncturists in the treatment of painful NMS syndromes, and there is both a rekindling of interest in manual therapy by DOs and an emerging interest by MDs, particularly those in physical medicine (Atchison, Newman, and Klim 1995). Professions generally cope with such pressures by expanding their traditional areas of activity or by encroaching on the jurisdictions of others (Abbott 1988). Lacking the ability to do the former, chiropractic is now emphasizing the latter by broadening its role in alternative medicine and establishing a stronger presence in primary care.

A Stronger Presence in Primary Care

Although most chiropractors consider themselves to be specialists in NMS conditions, many also view chiropractic as a form of primary care. For some, this means "primary contact" for NMS conditions, but for most it is seen in its larger context, including screening, prevention, health promotion, counseling, and coordination of care for a broad range of acute and chronic conditions (Coulter 1992; Gaumer, Walker, and Su 2001). Both interpretations are consistent with the ACA's designation of chiropractors as providers of "first contact" who serve as the portal of entry to the health care system (ACA 2000). These interpretations

also are consistent with the Council on Chiropractic Education's mandate that graduates should be equipped to serve as "gatekeepers" (CCE 1999b), a role that some states have recognized and that some health plans have implemented. Of even greater significance is the substantial interest of the chiropractors themselves in providing primary care services (Gaumer, Walker, and Su 2001) and the profession's substantial effort to encourage legislation that would guarantee such a role (Green 2001, 2002). Nevertheless, this role draws chiropractors away from their historic identification with maintaining health by treating vertebral subluxation, and it further divides the mixers from the straights.

Are chiropractors qualified to serve as primary care providers? By topic, chiropractic education resembles medical education (Coulter et al. 1998). But information from the Council on Chiropractic Education (1999a, b) and from a direct analysis of curricular time allotments as reported in each college's catalog reveals that less than 10 percent of the time in chiropractic colleges is devoted to subjects beyond the NMS system. It is not surprising, therefore, that chiropractors' knowledge base has been questioned, not only by chiropractic's critics (e.g., Barrett, Jarvis, and DuValle 2001), but also by MDs who refer patients with NMS conditions but not with viscerosomatic disorders (Jamison 1995) and by private insurers who restrict chiropractic coverage to NMS disorders and create other barriers to the ability of chiropractors to serve a primary care role (Gaumer, Koren, and Gemmen 2002). Nonetheless, an interdisciplinary panel composed mainly of chiropractors concluded that chiropractors could evaluate at least 90 percent of typical primary care, participate in the treatment of 60 percent, and provide primary management for 45 percent. Yet even this panel recognized that chiropractors' inability to prescribe pharmaceuticals or perform minor surgery was a limitation, and it cited the need for substantial involvement by physicians (Gaumer, Walker, and Su 2001).

In practice, some chiropractors already fulfill a primary care role. For example, prompted by consumer demand, Blue Cross/Blue Shield HMO of Illinois has allowed patients to choose chiropractors as their primary care providers (Jacob 1999). Eligible chiropractors are part of independent practice associations that also include physicians. Another venue for primary care is in smaller communities that lack sufficient numbers of other providers (Barnett et al. 1997; Hawk et al. 1996; Smith and Parry 1998; Stultz 2001). The demand in smaller communities could rise further if the shortages of physicians that are now developing

deepen further (Cooper 2002; Cooper et al. 2002). It was amid similar shortages in the 1960s that chiropractors obtained licensure in New York, Massachusetts, and elsewhere (Rutstein 1967), but fewer alternatives existed then. It is not clear whether chiropractors will be asked again to fill the demand for primary care or whether it will be absorbed by the large numbers of nurse practitioners and physician assistants who are also being trained and whose range of services more fully meets the needs of primary care than can be met by chiropractors (Cooper, Laud, and Dietrich 1998; Hooker and McCaig 2001; Mundinger et al. 2000).

A Broader Role in Alternative Medicine

While their role in primary care may be questioned, the role of chiropractors in alternative medicine is unequivocal. As practitioners of both manual techniques and nutritional therapy, they are major CAM providers (Eisenberg et al. 1998), and they continue to expand their repertoire of treatments and practices. Some of these modalities are specifically regulated by the states, and their use among chiropractors varies accordingly (ACA 1994, 1998; NBCE 1993, 2000).

One natural avenue for chiropractic is massage therapy, which more than 85 percent of chiropractors now provide, either directly or through certified massage therapists who are included in their practices.[1] Acupuncture is a second area of potential growth. Although acupuncture treatments do not appear to be effective for patients with persistent low back pain (Cherkin et al. 2001), they may be useful in many other disorders that chiropractors commonly treat, such as fibromyalgia, headache, and some chronic musculoskeletal syndromes (National Institutes of Health 1997). These conditions account for more than two-thirds of the patients seen by acupuncturists (McKee, Cooper, and Mitchell 2001). To offer this competing service, chiropractors have obtained the licensed authority to administer acupuncture in 30 states, and three chiropractic colleges have recently broadened their offerings to include degrees in acupuncture. Approximately 20 percent of chiropractors already perform acupuncture and related techniques.[1]

Another avenue for growth is the use of natural products, such as herbals, botanicals, vitamins, minerals, antioxidants, food concentrates, and glandular extracts. While some of these products have proven efficacy, contrary evidence exists for others, but, for most, efficacy is

simply unknown (Jonas and Linde 2001). Forty-two states have given chiropractors the authority to dispense such products, and the percentage who do has grown from fewer than 75 percent in 1994 to more than 85 percent in 2001 (Stultz 2001). Similarly, about one-third of chiropractors dispense homeopathic products, which they are explicitly or tacitly permitted to do in 19 states but are expressly prohibited from doing in three (Cohen 1998). Physicians have generally criticized the use of these various products, but in recent years, some have integrated certain of them into their own practices (Jonas 1998). Nonetheless, the use of many, such as glandular extracts with no known biological activity, extends well beyond the comfort zone of even those physicians who embrace CAM, and all of these products are contrary to the philosophy of "straight" chiropractors, who adhere to SMT as their principal modality. However, patients accept and often demand these products, and together with a theoretical clinical potential and an incontrovertible economic potential, chiropractors have a strong motivation to supply them. Surveys show that the ability of chiropractors to maintain their incomes increasingly depends on the sale of nutritional products and other ancillary items, such as orthotic supports, weight management products, and magnets (Chiropractic Economics 2000; Jackson 2001; Stultz 2001).

While these commercial enterprises raise concerns, chiropractors are not alone in turning to such activities to build revenue. The sale of nonprescription skin products is now commonplace among dermatologists (Gold 1999), and small but growing numbers of physicians are selling not only nonprescription items but also prescription drugs, aided by a new breed of medication management companies (Borfitz 2001). Patients seem satisfied (Ogbogu et al. 2001), and compliance may be greater, but these activities have sparked controversy in the medical profession. As Epstein asked his fellow dermatologists, "Are we consultants or peddlers?" (1998, 508). The same issue confronts chiropractic.

Based principally on projected opportunities in CAM, the Bureau of Labor Statistics (2001) concluded that chiropractic has a significant growth potential. Nonetheless, it is fair to ask how much unfilled demand there is. The entry barriers to alternative medicine are low. Many licensed professionals and unlicensed healers fill the landscape, and herbals, botanicals, and other natural substances are becoming widely available. While chiropractors have sought to expand their role in acupuncture, the number of certified acupuncturists is also on a steep

growth curve, and while chiropractors have incorporated massage, the number of massage therapists is rapidly growing as well. In addition, some physicians have obtained training in acupuncture and other elements of CAM (Weil 2000), and education in CAM is finding its way into the medical curriculum (Macy Foundation 2001). Therefore, although it may be reasonable for chiropractors to build a greater presence in CAM, there is also uncertainty about the capacity of CAM to absorb a significant portion of the profession's growth. There also is a certain danger for chiropractors in moving too far from their core of special knowledge.

Chiropractic among Professions

A Difficult Past

Thus, at its zenith of acceptance, chiropractic confronts issues of supply, cost, and competition. It exists in an atmosphere in which a suspicion of science and a quest for empowerment are prevalent public sentiments, but also within a health care system in which evidence-based medicine and managed care are the rules. It is in this environment that the profession must define both the range of its clinical responsibilities and the dimensions of its clinical effectiveness.

Most professions have evolved by being at the cusp of an expanding base of knowledge, subordinating routine tasks to others as their own roles grow (Abbott 1988). Chiropractic has not followed this route (Nelson et al. 2000). Rather than advancing its unique expertise, its core technology of SMT for vertebral subluxation has been challenged by outcomes studies, and large numbers of its practitioners have strayed into other therapeutic venues. Indeed, rather than subordinating tasks to others, chiropractic's own jurisdiction has been encroached on by massage therapists, acupuncturists, and other clinical disciplines. Chiropractic has capitalized on patients' needs for empathy and motivation and often on their quest for alternatives to conventional medicine, and it has drawn strength from patients' high degree of satisfaction with chiropractic. The profession combines this asset with considerable political acumen. But it risks damaging its legitimacy in both the public and political arenas by false and exaggerated claims that emanate not only from individual practitioners but also from its major organizations (Grod, Sikorski, and Keating, 2001).

Historically, chiropractic has had a difficult relationship with medicine, but collegiality between chiropractors and physicians is growing. One in ten now practices as a member of a multidisciplinary group that includes physicians (Stultz 2001). Almost all chiropractors refer to physicians (Cherkin and Mootz 1997), and 80 percent report receiving referrals from physicians, accounting for one-fourth of their patients, double the level reported only seven years earlier (ACA 1994; Jackson 2001). In most cases, the care that chiropractors and physicians give divides the market, but in some, their care is complementary. For example, data from a large, closed-panel HMO revealed that 81 percent of patients with low back pain chose to receive care only from a physician and 13 percent only from a chiropractor, but 6 percent received care from both (D.C. Cherkin, personal communication 1998).

Chiropractors also participate on the American Medical Association committee that oversees current procedure and terminology CPT coding, and a small number of hospitals include chiropractors on their staffs. None of this would have occurred 30 years ago. Yet, the relationship remains tenuous. While physicians refer patients with back pain, they generally do not refer viscerosomatic conditions, and indeed, chiropractic's persistence in treating such patients sustains a gulf between the two professions that mutual respect in back pain management might have bridged. This gulf may widen further if chiropractors adopt alternative practices that even some of their colleagues find to be of questionable value (Barrett, Jarvis, and DuValle 2001).

It is useful to remember that chiropractic's long relationship with medicine did not begin as a dialogue between coequals; it was an attack by organized medicine on chiropractic as an unscientific cult. It has mellowed more recently not as a result of medicine's acceptance of chiropractic's legitimacy but as a consequence of struggles in the public arena, such as with the Federal Trade Commission in the late 1970s, in *Wilk v. AMA* through most of the 1980s, and over the AHCPR's Practice Guideline in 1994. From chiropractic's perspective, the continuing tension is revealed by the ACA's statement that in pursuing its practices, it will continue to give "due regard to the nation's antitrust laws" (ACA 2003), a reminder of *Wilk*, and by its assertion in *ACA v.* Thompson that the medical community continues to place an "unwarranted stigma" on the profession. Chiropractic has won hard-fought battles, and they are not easily forgotten.

An Uncertain Future

Having entered the circle of acceptable clinical practice and having gained greater entrée to third-party reimbursement, chiropractic has been forced to face the challenge that there cannot be two standards, one for chiropractic and another for conventional medicine (Relman 1979). However, the promise that outcomes research would provide objective evidence of its effectiveness has been largely unfulfilled. Indeed, the results of this effort have been to discredit many of chiropractic's claims of efficacy, a reality that is now only slowly gaining recognition. This raises serious questions about the future role of SMT, even in chiropractic's traditional domain of NMS disease. Nonetheless, some chiropractors are attempting to elevate SMT to a new level by administering it under short-term general anesthesia (Palmieri and Smoyak 2002), but most are moving in the opposite direction by incorporating other manual techniques in combination with exercise and various physical modalities. However, if chiropractors follow this latter path, the profession runs the risk of simply becoming a particular form of physical therapy, distantly attached to an unproven concept of subluxation and energy flow (Nelson et al. 2000). And if it follows this path, how effectively can it compete with the more physiologically concordant concepts and practices of massage and physical therapists?

The current enthusiasm for CAM gives chiropractic a firm platform. Yet chiropractic's strengths in CAM are based more on the large numbers of chiropractors who embrace the naturopathic spectrum than on their ability to produce therapeutic results with SMT. Chiropractic's expansion into herbs, botanicals, glandulars, and homeopathic remedies, all of which contradict the philosophy of its founder, is not connected to the profession's unique knowledge of these modalities but to its ability to exploit them clinically and commercially. The same is true for both massage and acupuncture, which are building platforms of legitimacy quite apart from chiropractic but which chiropractors have come to secondarily. And to the extent that chiropractic's strengths in CAM are a function of its numbers, the rising numbers of competing CAM providers could soon negate this advantage.

Primary care seems no more promising. It periodically opens its door to chiropractors because treating the "whole person" resonates with chiropractic's philosophy and because chiropractors tend to locate in rural America, where access to primary care is poor. The United States is entering another period of physician shortages (Cooper et al. 2002), and

shortages worked to chiropractic's advantage in the past (Rutstein 1967). This time, however, the major shortages will involve specialists, not primary care physicians (Colwill and Cultice 2002; Cooper 2002). Even if unmet needs in primary care appear, they will more likely be filled by nurse practitioners and physician assistants (Cooper, Laud, and Dietrich 1998; Hooker and Berlin 2002). Moreover, any significant role by chiropractors in primary care is certain to be vigorously fought by organized medicine, as it was over the proposed VA legislation in 2001, not simply on issues of turf, but also on issues of training and proficiency (Green 2001, 2002). As Coulter stated a decade ago, if chiropractors wish to function in primary care, they "must find ways to ensure that they are competent to practice it" (1992, 100).

In previous decades, chiropractors did not want their profession to be considered as a form of medical practice (Silver 1980). Even now, many see themselves as practitioners of a distinct art. Having crossed the chasm into the reimbursed world of health care, they must now prove their quality, effectiveness, and value. The profession is buttressed by satisfied patients and sympathetic politicians and by the general longing for someone who will listen and be supportive. But as our aging nation struggles to define the health care system that it can afford, it is uncertain whether this will be enough.

ENDNOTE

1. Surveys from a variety of sources were used assess practice characteristics. They included the ACA in 1994, 1997, and 2000 (ACA 1994, 1998; Jackson 2001), Chiropractic Economics annually from 1998 through 2002 (Stultz 2001), the National Board of Chiropractic Examiners (1993, 2000), and Coulter et al. (2002). In addition, 500 credentialing reports submitted to a large national chiropractic network between 1993 and 1997 were analyzed. These were drawn from the approximately 11,000 members of the network, chosen randomly from each of five states (North Carolina, Florida, Connecticut, Minnesota, and Oregon) to ensure broad geographic representation. Information on practice patterns was also compiled from two closed-panel HMOs, located in Washington and Wisconsin.

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