

# Chiropractic 2025: Divergent Futures



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# Chiropractic 2025: Divergent Futures

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## Abbreviations

<b>ACA</b>	American Chiropractic Association
<b>ACO</b>	Accountable Care Organization
<b>CAM</b>	Complementary and alternative medicine
<b>CCHH</b>	Community-Centered Health Home
<b>CHC</b>	Community health center
<b>DoD</b>	U.S. Department of Defense
<b>IAF</b>	Institute for Alternative Futures
<b>ICA</b>	International Chiropractors Association
<b>LBP</b>	Low back pain
<b>NIH</b>	National Institutes of Health
<b>PCMH</b>	Patient-Centered Medical Home
<b>PCORI</b>	Patient-Centered Outcomes Research Institute
<b>PPACA</b>	Patient Protection and Affordable Care Act
<b>VHA</b>	Veterans Health Administration, U.S. Department of Veterans Affairs
<b>WFC</b>	World Federation of Chiropractic

# Introduction

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Where will the chiropractic profession in the United States be 12 years from now? This *Chiropractic 2025: Divergent Futures* report by the Institute for Alternative Futures (IAF) presents scenarios that provide four different answers to that question. The 2025 scenarios reflect the opportunities and challenges for chiropractic in the U.S. given our assessment of developments within both the chiropractic field and the broader context of health, science, technology, and society. The scenarios invite deliberation about which futures are more likely and which are more preferred by chiropractors.

Viewed from 2013, the future of chiropractic remains fascinating and uncertain. Chiropractic as a uniquely American invention has persisted and grown worldwide despite organized suppression. In fact, chiropractic has become a global force. More and more countries, including Denmark and Switzerland, are granting legal recognition for the practice of chiropractic, and accept the profession as a member of government-sponsored health care delivery programs. There are now more schools of chiropractic located outside the United States than within it. Chiropractic has also become a recognized and accepted health profession at the World Health Organization. International educational standards are being adopted across various accreditation agencies. Regulatory bodies are working to remove the impediments to practitioner mobility between jurisdictions. Chiropractic research is advancing as well in the U.S. and in countries around the world.

The entrepreneurial spirit of chiropractors, fractures within the chiropractic community, and isolation from and oppression by organized medicine have all left chiropractors largely independent and separated from health care provider systems. As chiropractors were included in health insurance coverage in the 1980s, chiropractors enjoyed a brief period of relatively unrestricted, well-paid patient visits and many earned high incomes. However, a tightening of both reimbursement levels and allowable visits followed. With the rise of managed care in the 1990s—and later managed access to chiropractic services—chiropractors have seen their incomes, on average, fall further. Now, with the implementation of the Patient Protection and Affordable Care Act of 2010, “value” is being redefined and measured in new ways; primary care is shifting from largely solo and small group physician practices to multidisciplinary teams; and provider organizations are shifting from fee-for-service to bundled payments, risk sharing, or capitation. These are among the major changes in health care that chiropractic is facing.

Differences among chiropractors are also important. There is great diversity of practice styles and philosophies within the chiropractic profession. For this report, we will use an awkward but serviceable division of chiropractic into three communities (defined more specifically in Appendix 2): focused-scope, middle-scope, and broad-scope chiropractors. While there are differences within each of these, critical parts of chiropractic’s future will be shaped by how each community evolves and interacts with the other two.

About 10% of chiropractors (“broad-scope”) focus on primary care or specialties dealing with a range of conditions beyond the spine. Many in this latter group want to broaden their practice rights further to include prescribing rights. They have been trying for years to do so and in 2013, it appears they may win this battle in a few states.

At the other end of the spectrum, 10-15% of chiropractors (“focused-scope”) correct subluxations in the spine to free the body’s self-healing capacity. Some argue that they do not “treat conditions” but only fix problems with the spine

and nervous system. They are more fundamentalist in their philosophical positions than members of the middle-scope or broad-scope communities. Focused-scope chiropractors actively oppose broad-scope chiropractors' efforts to expand their practice rights as violating chiropractic identity and principles.

The core of the profession ("middle-scope"), about 75-80% of chiropractors, provides patients a portal of entry to care as spine and musculoskeletal health providers, though the practices of these chiropractors take many forms. However, DCs in all three communities share an appreciation for the innate ability of the body to heal, a commitment to conservative and less-invasive care, and the use of manual modalities (including spinal adjustments).

## Why Scenarios?

Scenarios provide a powerful way to bound the uncertainty of the future, as well as identify likely, challenging, and visionary pathways of how the chiropractic field may evolve under diverse conditions. Such scenarios extend the time horizon beyond the conventional 5 year planning horizon, and include the examination of trends and wild cards that are not usually considered in a strategic planning process. By exploring multiple scenarios, organizations and individuals are better positioned to develop a sense of where current trends may take them. They can then proactively respond to changes at the macro and micro levels, and find themselves better able to leverage opportunities and mitigate threats that might otherwise surprise them. Furthermore, people and organizations that work with scenarios that delve deeply into the future tend to develop more creative and useful options than those who develop plans based only on the past and present.

This is the third set of chiropractic scenarios developed by IAF since 1998, funded initially by NCMIC Group, Inc. and for this report by the NCMIC Foundation. Why do another round of chiropractic scenarios? We normally recommend that individuals and organizations update their scenarios every four to eight years, and then "future test" their strategies, plans, and actions against the different scenarios to assure robust initiatives, rather than prolong current or previous efforts based on outdated assumptions. Now is an especially opportune time to update the scenarios and account for the changes initiated by recent health care reforms.

Our previous two chiropractic scenario reports effectively anticipated much of what would occur, yet they missed a few things, such as the downturn in chiropractic student enrollments after 2000. In this third round of futuring, we integrate the current directions and dimensions of health care reform. We also look more closely at the spectrum of chiropractic philosophies and how each community may evolve and interact with the others and with the broader health care system. We also consider developments entirely outside the field such as the economy, political landscape, and social and cultural environment. We hope that new readers, as well as those who are familiar with our earlier reports, will find these 2025 scenarios useful and inspiring.

## Developing the Chiropractic 2025 Scenarios

To construct the Chiropractic 2025 Scenarios, we began with a review of our previous scenarios on chiropractic, *The Future of Chiropractic: Optimizing Health Gains* (1998) and *The Future of Chiropractic Revisited: 2005 to 2015* (2005); recent IAF reports, *Primary Care 2025* and *Health and Health Care 2032* and relevant research on chiropractic and related topics in peer-reviewed journals as well as less formal sources. Appendix 2 summarizes the research and background information that shaped the scenarios.

Next, we developed preliminary forecasts for key topics within chiropractic and for external forces shaping the field. We used these preliminary forecasts in interviews with chiropractic college deans and presidents, researchers, association leaders, network leaders, and chiropractors with successful and innovative practices, as well as chiropractors getting other health professional licenses. We also made special efforts to more thoroughly understand the different camps or schools within the field—for lack of a better set of terms: broad-scope, middle-scope, and

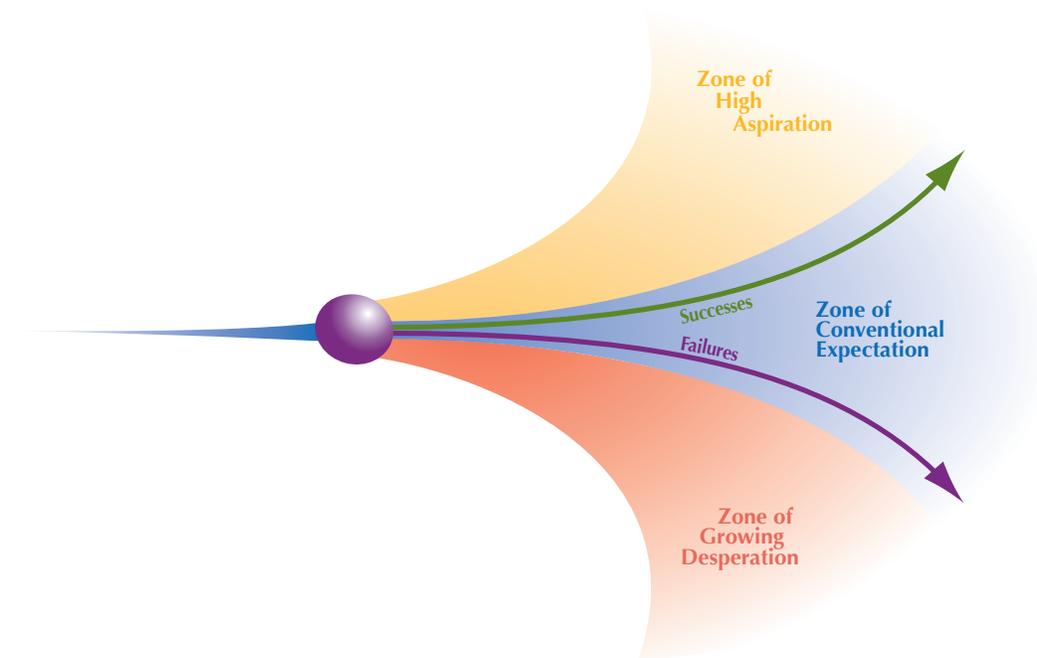
focused-scope. Beyond the chiropractic field, we also interviewed executives and leaders in health care delivery systems about the future roles of chiropractic in their systems. Appendix 1 lists those we interviewed.

As in IAF’s earlier chiropractic scenario efforts, we then used our “Aspirational Futures” approach to construct four scenarios that fall into three zones (see Figure 1 below):

A “zone of conventional expectation,” reflecting the extrapolation of known trends, the expectable future;

A “zone of growing desperation” which presents a set of plausible challenges that may emerge, a challenging future; and

A “zone of high aspiration” in which a critical mass of stakeholders pursues visionary strategies and achieves surprising success. (Two scenarios are developed in this zone in order to offer two alternative pathways to surprisingly successful or visionary futures.)



**Figure 1.** IAF’s “Aspirational Futures” Approach

This approach to scenarios invites the application of two different lenses to the future. An objective lens defines the probability space in which the future will unfold, and helps assess the possibility in terms of plausibility and likelihood for the range of imagined outcomes. A subjective lens articulates the shared hopes and fears that we often project—consciously or unconsciously—onto the future. Neither lens is sufficient without the other. When a group uses only one of these lenses, the future becomes either an intellectual exercise that loses inspiration, or a playful fantasy devoid of import. However, by applying these two lenses jointly, people can identify meaningful images of surprising success that illuminate strategic insights and invite concerted action. These images can motivate and guide individual, organizational, and societal change. Given these lenses, along with our research and interviews, we have developed an expectable (Scenario 1), a challenging (Scenario 2), and two visionary or surprisingly successful futures (Scenarios 3 and 4).

## How to Use the Chiropractic 2025 Scenarios

The purpose of using scenarios is to prompt the examination of future challenges and opportunities that will impact an organization or a field. For chiropractic, these scenarios can help individuals, leaders, and organizations within the field take advantage of future or emerging opportunities, prepare for or prevent new challenges, and improve the overall status and position of chiropractic. Stepping inside each scenario and exploring the implications for today's prevailing assumptions, strategies, and goals is critical for this process. To aid in this process, IAF has provided instructions for how to conduct your own scenario workshop. These are available on IAF's website at [www.altfutures.org/chiropracticfutures](http://www.altfutures.org/chiropracticfutures).

The next section presents the scenarios, as well as a matrix that allows for comparison of key factors across the four futures. Each scenario begins with a vignette about life in that future, followed by the complete scenario narrative. As you read the scenarios, approach them with an open mind and a willingness to challenge your own assumptions about the future. As you read and think about the scenarios consider several questions: What would my life and chiropractic practice be like in that future? What are the scenarios' implications for health, health care, and chiropractic? What would you do in that scenario that you do not do today? If you doubt the scenario's plausibility, ask yourself what would need to change in order to make it plausible? Which scenario do you think is most likely, and which is most preferable? What can you do to make the "preferred future" more likely? What chiropractors think, feel, and actually do in answering these questions as they use these scenarios is extremely important. It is your future to understand and to create.

Then, as we have in our previous chiropractic scenario reports, IAF offers our recommendations for the profession.

# Chiropractic 2025 Scenarios

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## Scenario Overview

### Scenario 1: Marginal Gains, Marginalized Field

As health care reorganizes, the historical isolation of chiropractors hinders most DCs in joining integrated care provider organizations. The majority remains in solo and small group practices and face major challenges in building or maintaining an adequate patient base. Research to develop and demonstrate evidence-informed practice grows. This gets DCs more favorable attention, yet networks often use the data to limit fees and the number of visits. Five states assign broader practice rights to DCs. Focused-scope oriented colleges join leading academic medical centers in exploring quantum biology to explain healing and subluxation. However, four chiropractic colleges close. Low starting income for chiropractors in many settings, and limited career prospects for most DCs coupled with high student debt, hamper the growth of the profession over the decade leading to 2025.

### Scenario 2: Hard Times & Civil War

Another recession hits in 2015. The economy improves in subsequent years, but the market for chiropractors does not rebound. Millions of patients enroll in high-deductible catastrophic care plans, and stressed families struggle to support their health. Only clear and compelling value can sustain chiropractic practices. Yet the scarce base of comparative effectiveness research for chiropractic hurts DCs. The variability in quality and outcomes among solo and small practice practitioners also causes DCs to be overlooked by ACOs and PCMHs. Instead, chiropractors are on a “hamster wheel” of many, ever-shorter visits and lowering their expenses enough to make a living. Most visible to the public is the noisy civil war between the broad-scope chiropractors seeking expanded practice rights and the vehement opposition of focused-scope chiropractors in every state where expanded rights are sought. Ten chiropractic colleges close and many chiropractors are driven from the field.

### Scenario 3: Integration & Spine Health Leadership

The U.S. achieves near universal health care coverage. Patients play an assertive role in getting the care they want, stimulating and using digital health coaches and alternative or conventional approaches according to their individual needs and wants. Providers use predictive models and simulations to help their patients achieve the best health possible. Chiropractic enters mainstream medicine as the spinal health expert in the health care system. Many join

PCMH and other integrated care teams and become critical partners in addressing back pain and spinal health. “Big data” on patient care provides additional compelling evidence from chiropractic outcomes. Other chiropractors find that growing public acceptance means that they can sustain their independent or group practice and in many cases thrive. Ten states pass legislation broadening practice rights for chiropractors.

#### Scenario 4: Vitalism & Value

Research supporting chiropractic and integrative health care grows, including the exploration and development of contemporary vitalism. Popular awareness of self-healing and interest in modalities that support it grow as well. Many chiropractors succeed as the leading providers for spine health in integrated systems. Many other chiropractors do well among patients enrolled in high-deductible catastrophic care health plans, who rely primarily on out-of-pocket expenses and self-care approaches with the help of sophisticated digital health coaches and local market transparency. Chiropractors also join efforts to shape community conditions that promote health and wellbeing. However, outcomes research, the movement to capitated care, and transparency in prices that chiropractors and others charge, keep the chiropractic profession from growing faster.

## Scenario 1: Marginal Gains, Marginalized Field

### *Imagine:*

Should she go on to become a chiropractor? Alice Hughes is a third year college student, and she took the summer months this year to figure it out. She asked her campus pre-health adviser if the school maintained any relationships with local chiropractors. They did not, but the advisor recommended that she shadow a physical therapist, nurse practitioner, or physician assistant, and gave her a list of local providers who were open to student shadowers. He noted that these other careers offered similar opportunities for hands-on care and one-on-one relationships between

### Scenario Highlights

- The multiple identities in the chiropractic field of 2013 persist to 2025. While health care reform leads to major changes, no community inside the chiropractic field significantly changes its position.
- Income among DCs continues to vary widely. Most remain in solo and small group practices, trying to hold their own in the face of low-cost wholesale providers of chiropractic care, constraints imposed by insurance networks, and the systemic reorganization of health care delivery.
- One out of every six chiropractors becomes involved in a Patient-Centered Medical Home (PCMH) or Accountable Care Organization (ACO), and chiropractic becomes more accepted among other providers and by the public.
- The challenging job outlook for the majority of current and prospective chiropractors hampers the growth of the profession over the decade leading to 2025.

providers and patients. Moreover, he said, she would have much better career prospects with any of those than with a doctor of chiropractic degree. Alice used the list to set up full-day shadowing experiences with each type of provider. However, she decided first to shadow a chiropractor, Dr. Morrison, to whom Alice's mother had taken her after a sports injury. When the day came, Alice met Dr. Morrison at her office in the small group practice where she saw patients four days a week. On Wednesdays, Dr. Morrison practiced as part of a local primary care medical home (PCMH) team. In between patient visits that Alice got to observe, Dr. Morrison talked to her about the daily realities of making a living in chiropractic, especially as a woman chiropractor and young mother. A good number of chiropractors, like her, had been invited to practice at least part-time in integrated care systems after studies had confirmed the cost-effectiveness of DC-initiated care as compared to MD-initiated care. Some chiropractors were able to work full-time and served as spinal health experts on primary care teams or provided screening and triage for patients with neuromusculoskeletal problems. Most of these had become employees of the PCMH/ACO systems. These chiropractors made a good income and enjoyed benefits like paid maternity leave and vacation. New chiropractors needed to get experience before they could compete for PCMH jobs. This usually meant becoming an associate with an existing practice or in one of those low-cost wholesale provider networks that had many in the profession up in arms. Either way it meant accepting a relatively low income for a few years. Dr. Morrison noted that in some communities new DCs could build successful solo or small group practices. Regardless, having a strong entrepreneurial spirit was essential. As for herself, Dr. Morrison confessed, she wished she had reached out sooner to the primary care team that she had wanted to join originally; then perhaps she could have beaten out the physical therapist that the medical director picked for the full time position there.

## *Scenario Narrative*

With the implementation of health care reform, access to care grew and dramatically raised the demand for primary care after 2014. ACOs were taking over much of the care, and by 2020 most patients were receiving primary care services from teams of health care providers in integrated systems, largely on a capitated basis.

As health care reorganized over the years from 2014 to 2020, the number of opportunities to participate on primary care teams grew. The growth in demand offered an aperture for chiropractors and physical therapists to take on back pain, one of the top five conditions in organized primary care. In the past, providers referred patients or used conventional medical treatment to address it. Yet the patient, the payor, and the physician were often left dissatisfied with the outcomes.

Many chiropractors thus aggressively focused on joining Patient-Centered Medical Home (PCMH) teams as spinal health experts. In fact, by 2015, the majority of the chiropractic community had come together to position themselves as spinal health care providers. Although the spine-focus felt limiting to some, most DCs supported the effort to build chiropractors' identity as spine health leaders; as did many of the chiropractic colleges and other organizations such as the American Chiropractic Association (ACA) and the World Federation of Chiropractic (WFC).

However, the pathway into primary care teams required much more than the “right” identity; DCs were competing individually with other chiropractors as well as doctors of physical therapy (DPTs) for these slots. By 2020, some DCs successfully joined PCMHs – if they demonstrated good outcome measures from their own practices and were already known and respected by the integrated care provider organizations, particularly by their medical directors. The demand for chiropractors, however, only took off after the first ones on such teams demonstrated improved outcomes, including increased patient satisfaction and lower cost.

Unfortunately for young graduates starting out, PCMH teams required 3-5 years of experience. By 2020, most chiropractic colleges had students train in the college's chiropractic clinics; with chiropractic practices in the community; in hospitals, the Veterans Health Administration (VHA) or the Department of Defense (DoD); or in community health centers. This helped the chiropractic profession overall, as all the other health professions in those settings became more familiar with chiropractors and comfortable with referring patients to them. However, most graduates had to start out practicing among low-cost wholesale providers of subluxation—charging less than \$30 for an adjustment, or joining as associates with existing practices that competed with the low-cost providers.

In the years leading up to 2025, primary care teams increasingly included physicians, nurse practitioners, nurses, pharmacists, mental health providers, and a DC or DPT or both if a large share of the PCMH team's patients were affected by back-related conditions. Traditional managed care systems and community health centers offered chiropractic care as well. ACOs, hospital systems, and medical groups building PCMH teams reached out and bought successful chiropractic practices to integrate into their teams and care pathways. Large integrated practice systems—particularly the VHA and the DoD—also hired chiropractors as employees or fully integrated contractors, who unlike their independent chiropractor colleagues were reimbursed for preventive screenings. By 2025, approximately 10,000 chiropractors practiced in primary care teams, ACOs, or other integrated systems like the VHA and DoD. However, that was only half the number of DPTs practicing as the back and spine provider in those settings. In fact, in most communities DPTs remained better integrated into health care systems than DCs, given that physicians were more accustomed to referring their patients to DPTs.

Throughout the decade, the majority of chiropractors continued to be independent providers. By 2025, more than three-quarters of all chiropractors practiced in solo or small group practices. To better prepare their students for the solo practice market, chiropractic colleges developed internships for their students in partnership with DCs in communities where DCs could still build successful solo practices. Some of the independent practitioners earned the field visibility for their care for top athletes, performers, and television personalities. Large corporations developed on-campus health clinics or gyms that included chiropractors. Leading high-tech companies like Google, Microsoft, Cisco, and Cerner added cachet to chiropractors' claims of lower-cost conservative care that keeps employees on the job or helps them return to work more quickly.

Demand for chiropractic care was growing due to new research that used electronic health record data to develop the evidence base for various types of care. Groups such as the Patient-Centered Outcomes Research Institute (PCORI), the Cochrane Collaboration, and PatientsLikeMe provided new research approaches that chiropractors used to show the profession's value proposition. Chiropractic colleges helped practitioners develop patient registries and outcomes data. By the mid-2010s, chiropractic care was confirmed to be the treatment of choice for low back pain, neck pain, some kinds of headaches, some extremity conditions, and various whiplash-associated disorders. Moreover, studies confirmed that chiropractic's conservative approach to patient care and management could be far more cost-effective than conventional medical management.

However, over the years leading up to 2025 most solo and small group practices joined networks that managed access to chiropractors for health insurers. On the one hand, networks made it easier for patients to access chiropractors. On the other hand, these networks routinely reduced the fees chiropractors received and kept the number of visits per patient low. The guidelines used to set these limits became more sophisticated each year as research identified what types of patients would benefit most from various treatments and how co-morbidities affected the number of treatments needed. Furthermore, additional evidence indicated that a wide range of other conditions could be handled cost-effectively by DCs as well, including infant colic, vertigo/loss of equilibrium, and spinal stenosis/neurogenic claudication. Some chiropractors generated outcome measures on their practices that successfully confirmed the benefit of chiropractic care for selected non-musculoskeletal conditions and convinced insurers to increase the conditions covered. Yet more frequently, insurers argued either that the studies had been conducted on too small a patient group or had not been replicated often enough to warrant changes to insurance coverage. Thus, chiropractors were disadvantaged relative to others, including physical therapists, and had to struggle to overturn insurance decisions that limited what they would be covered to provide. In addition, health insurers often followed Medicare and Medicaid in reducing or only providing small increases in fees in the decade between 2015 and 2025.

Many chiropractors around the U.S. had for years wanted either to do full primary care or to have pharmaceutical prescribing rights to use in their specialty area or to better meet patient needs in rural areas. In 2010, an estimated 2,500 chiropractors around the country functioned as primary care providers absent pharmaceutical prescription rights, many in rural areas. Chiropractic specialists, particularly in pediatrics, functional (nutritional) medicine, and neurology, routinely treated conditions beyond the musculoskeletal focus. Many in this group also included oriental medicine and/or acupuncture in the care and management of human ailments beyond the musculoskeletal.

Major fights between local medical societies and chiropractors seeking expanded rights, joined by the International Chiropractors Association (ICA), were common. By 2015, however, the first state, New Mexico, changed its laws. Three other western states followed in granting DC prescribing rights by 2020. Arkansas subsequently changed its laws as well. Thus, by 2025, there were five states in which DCs had gained broader practice rights, after additional training and certification (diagnosing and treating non-neuromusculoskeletal conditions, pharmaceutical prescribing,

and injection or IV delivery when relevant). Some chiropractors were able to take these courses in a few months or part-time over a year. Others went back to schools to get a corresponding master's degree offered by National University of Health Sciences and the University of Western States. These schools also adjusted their curriculum and clinical training so that with five years in school rather than four, students could graduate with a Doctor of Chiropractic Medicine (DCM) degree. By 2025, approximately 1,500 chiropractors across the five states were practicing more broadly. Focused-scope practitioners still scorned prescribing in 2025, fearing that the profession might go the way of osteopathy—with its unique ideas and perspective subsumed within the mass of medicine rather than preserving the field's unique understanding of health and healing. However, many broad-scope DCs were in fact using their new training to take their patients off prescription medicines in favor of diet, adjustments, and oriental medicines.

While the broad-scope segment of the chiropractic community celebrated its successes, the focused-scope community lost ground over the years. Medicare changes shifted the coding away from chiropractic's unique subluxation codes to more general physical medicine codes. Networks of low-cost wholesale providers of subluxation also made it harder yet to profit from subluxation-based solo practices. By 2025, this subluxation-based wing of the profession had shrunk to represent about 5% of chiropractors, who still attracted patients who believed in the vitalism that empowers healing and health and were willing and able to pay out-of-pocket for it.

In the decade leading to 2025, most colleges expanded their support for research to develop and demonstrate evidence-informed practice. The colleges also incorporated relevant findings on chiropractic effectiveness, comparative effectiveness with other modalities, as well as more basic biology, including the role manipulation plays in affecting gene expression. Focused-scope oriented colleges recognized that quantum biology seemed to offer an explanation for healing that was consistent with subluxation, and joined leading academic medical centers in exploring this new biological paradigm.

However, prospective students had to consider the low starting income for chiropractors in many settings, limited career prospects for most DCs coupled with high student debt loads, and the major challenges of building an adequate patient base in order to succeed in independent chiropractic practice. Enrollments in chiropractic colleges fell from 10,000 to 9,000 by 2016. Many potential students were choosing to pursue other health professions, particularly as physical therapists, nurse practitioners, and physician assistants. Colleges did reduce costs slightly by developing a "common core" curriculum that included a set of shared online courses and by making more creative and effective use of face-to-face classroom time. Some courses were even designed to be massive open online courses with large-scale participation and open access via the Internet. This probably helped the enrollments to stabilize at 8,000 by 2018. Yet for some of the smaller colleges the damage had already been done. Four closed by 2020.

In 2025, chiropractic leaders acknowledge that the historical isolation of chiropractors, along with challenges with research and outcomes measures, have kept the profession from growing while health care reorganized. At the margins, the field still holds promise. One out of six chiropractors is practicing in an integrated care setting, creating greater visibility for the profession. The broad-scope chiropractors believe that the continued demonstration of good outcomes from their cautious use of pharmaceuticals along with manipulation means that their model will spread to more states. Focused-scope chiropractors believe that the new understanding of healing and health from a deeper understanding of biology will lead patients back to adjustments for subluxation. All chiropractors, however, appreciate that their profession is more widely accepted by other health care providers and insurers as well as by the public, even if the field is no longer growing.

## Scenario 2: Hard Times & Civil War

### Scenario Highlights

- The period from 2013 to 2025 becomes difficult for most of American health care. Millions of people enroll in high-deductible catastrophic care plans, and everybody is trying to pay as little as necessary. Only clear and compelling value can sustain chiropractic practices, but the scarce evidence base for chiropractic hurts DCs.
- For the public, the most visible part of the chiropractic field is the civil war waged by focused-scope chiropractors against the broad-scope chiropractors' efforts to expand practice rights.
- The variability in quality and outcomes among solo and small practice practitioners causes DCs to be overlooked by ACOs and PCMHs. Once these ACO systems are set and standardized, it becomes too difficult to create change. A low-quality/low-cost chiropractic industry grows and provides care that sometimes harms people in highly publicized cases. Only some DCs are lucky enough to practice in the right communities or on integrated teams.
- The bleak outlook for the profession and the unpromising return on investment lead prospective chiropractic students to opt for other career pathways that provide them with greater financial stability. Many chiropractors are driven from the field.

### *Imagine:*

Drs. Lee and Wayne have had their shared chiropractic practice for eight years. After working as associates for four years each, they had spent two years establishing their joint practice, and had done reasonably well in their third year. Each had his own patients, some insured and some paying cash. Both belonged to chiropractic networks. While they did not like the fee discounts or the practice restrictions, they appreciated the flow of patients that came to them by this route. On the last Thursday of each month, they met at noon for lunch before seeing patients at 2 PM. Typically, they reviewed cases, considered any learning or research they had encountered, and discussed office management questions. However, this Thursday was different. It would be their last as a joint practice. Demand had dropped off as another recession hit in 2015. Another round of Medicare cuts in fee-for-service payments and the growth of low-cost subluxation-only chiropractic franchises with \$30 adjustments made it harder to make a living. The supply and demand for chiropractic services in their community used to be well balanced, but now a growing number of chiropractors were setting up shop there even while demand dropped. Some of their DC colleagues joined ACOs and PCMH teams that were growing in their communities, and one chiropractor even had her practice acquired by an ACO. But neither Dr. Lee nor Dr. Wayne had reached out to the decision-makers in these integrated care organizations, nor had they established an electronic health record system in their practice that would have allowed them to track and report their patients' health outcomes. In the absence of hard data, they had to rely on the local consumer rating groups where patients posted provider ratings online, which some chiropractors manipulated by soliciting positive ratings from friends and relatives. While Drs. Lee and Wayne were proud of the care they gave patients, more and more of their patients had been going longer between visits. Others only came in for emergencies like severe and/or episodic back or neck pain. At the same time, networks kept fees and the number of visits low. Under these conditions, they simply could not maintain their practice. At their last Thursday lunch, Drs. Lee and Wayne compared notes on their plans for what was next. Dr. Wayne had decided to ramp up his efforts and pursue the expanded practice rights the state allowed for chiropractors. Dr. Lee had seen the demise of their practice coming and had chosen another path – to become a physician's assistant. He had already begun his studies online and would spend part of the next year at PA school in-person.

## Scenario Narrative

The Great Recession of 2008-2009 had already hit chiropractors harder than it had most health care providers. Then in 2015, another recession had the economy on the ropes again. The economic downturns caused many people to lose their jobs, homes, and hopes. Psychological and behavioral health got worse as depression and substance abuse became ever more entangled, feeding off each other. Stressed families struggled to support their health. Instead of wellness and prevention, many patients skipped visits and opted for over-the-counter pain relievers, online services, minute clinics, and phony pain cures. Heart disease, cancers, diabetes, and low back pain all became more prevalent, with incidence rates increasing for youth as well as for elders.

Although the economy slowly turned back to a period of economic growth in the years leading up to 2021, the Federal Government's ongoing debt and deficit reduction repeatedly forced sacrifices in long-term health. The cumulative effect of spending cuts made during the recession in federal programs, particularly defense, Medicare and Medicaid, lowered the demand for chiropractic in many settings. As the gap between the "haves" and the "have-nots" grew ever wider, spending for chiropractic services declined and more chiropractic practices found themselves on the brink of bankruptcy.

Leaders in chiropractic care had claimed in 2015 that the public's interest in conservative, natural modalities was growing stronger, especially given the high cost of drugs and surgery. Moreover, they claimed private health insurance companies were bound by Section 2706 of the Patient Protection and Affordable Care Act (PPACA) to provide equal access and payment to all those licensed to provide physical medicine services. This required insurance plans that covered services of a medical doctor to cover the same services when offered by another licensed provider, such as a chiropractor. It seemed a promising time for chiropractic.

But the promise proved false. The PPACA failed to provide good coverage for the 32 million uninsured people forecast to gain health insurance coverage by 2020. The most popular offerings in the health insurance exchanges were high-deductible catastrophic care plans, which left millions of Americans paying out of pocket anyway. By 2020, 75 million Americans were uninsured, while the great majority of Americans were underinsured. Everybody was trying to pay as little as necessary, while fees and the cost of care continued to grow outside the integrated systems used by the well-insured.

Although the economy improved in the years leading up to 2021, the market for chiropractors did not rebound. Given the economic and health care challenges, there had been little improvement in coverage or payment for chiropractic care over the years. The two largest government insurance plans were exempt from Section 2706 of PPACA. Medicare continued to pay chiropractors only for subluxation adjustments—and with periodic fee cuts—but not for other clinical services like nutrition and tobacco counseling. As for Medicaid, states were chipping away at benefits for most services and by 2025, few chiropractors saw Medicaid patients.

Most chiropractors during this period tried to join Accountable Care Organizations (ACOs) and Patient-Centered Medical Homes (PCMH), which became the norm for quality primary care among those who could afford insurance. Chiropractic leaders worked to position DCs as spine and musculoskeletal health providers on the PCMH team. This was successful in many places, where DCs could establish relationships with medical directors in medical groups and ACOs that would house the PCMH teams. More frequently, however, PCMH teams used the physical therapists already employed by the ACO to address spinal health. By 2025, PCMH teams included 4,000 DCs (9% of the field) and 8,000 physical therapists.

Of course, not all news was bad and those who could afford the best care saw great breakthroughs. Remarkable advances in science offered new treatments that could decisively address many illnesses. For example, advances in quantum biology combined with an information infrastructure that supported increasingly personalized treatments. Yet the high cost of these technologies kept markets small and allowed only those with means to receive the great benefits of 21st century science.

One surprising breakthrough for chiropractic care was the MyMobilizer. A group of disgruntled, unemployed, and disillusioned young chiropractors had teamed up with some bioengineering students in 2018 and developed an exoskeleton device that promised to help elders maintain mobility late in life. The device could sense spinal problems and provide appropriate adjustments. While this was not (yet) a cost-competitive alternative to the care of a trained chiropractor, wealthy consumers bought these devices instead of having to go to the chiropractor's office each time they sought an adjustment. Chiropractors were divided over whether this chiropractic device was a threat to DCs or a helpful advertisement for the importance of a healthy back.

Any positive press for chiropractic was welcomed in the early 2020s to counter public misconceptions and targeted misinformation against chiropractors from competing providers. Outcomes studies that had been mandated by the PPACA became a highly politicized game in the years leading to 2021. Chiropractors found themselves disadvantaged in the game of “my study is better than your study.” After decades of research, by 2010 there had in fact been some studies that supported the cost-effectiveness of chiropractic for back and neck pain, and even a few other conditions. Chiropractors fought to include the new indications in chiropractic guidelines. However, providers and insurers continued to ignore this evidence amidst the plethora of comparative effectiveness studies conducted between 2010 and 2020 by well-funded competitors using years' worth of data from electronic health records (EHRs). An overwhelming number of these outcomes studies steered patients toward physicians and drugs. DCs were no match for them as the chiropractic field had been losing the comparative effectiveness game for most of its history. Only about half of practicing chiropractors adopted EHR systems. Furthermore, few of these systems were interoperable or provided DCs with the capacity to generate outcomes measures and cost effectiveness data. Where chiropractors did develop positive findings, the studies were often looked down upon as too small, foreign-based, not objective enough, or not adequately scientific.

What drew most attention to the chiropractic field was the “civil war”—an impassioned and vitriolic feud between broad-scope chiropractors wanting pharmaceutical prescribing rights and focused-scope chiropractors wanting to protect the core chiropractic identity. The feud was decades-old but intensified in the 2010s. Caught in the crossfire, middle-scope providers were unable to focus attention on the profession's common agenda. Broad-scope practitioners were working in 20 states to get expanded rights in the hope of growing their practices and income. The focused-scope community, particularly the ICA and Life University, fought these efforts at every opportunity, joining with state medical societies to stop the expansions. The acrimony was often the greatest—or in some states the only—public visibility for the field. By 2025 chiropractic practice rights expanded in only three states, but the damage to the profession's public perception was felt in most of the states where battles had been fought. At the national level, the American Chiropractic Association folded by 2018 as membership declined and the recessions wiped out the Association's reserves. The International Chiropractors Association struggled with a similar fate as it continued to oppose broad-scope activism.

In the marketplace, chiropractors remained largely in solo or small group practices. Four to five% of the U.S. population was still using chiropractic services in 2024, down from 7% in 2010. This small segment felt highly satisfied with DCs and loyally supported them. However, beyond these patients, for most of the public a lack of trust had become the defining view of people who had never even been to a chiropractor. Given years' worth of intra-

and cross-disciplinary quarrels that left the public confused as to what to believe, the profession had lost its public credibility. DCs and their patients had to contend with a growing low-quality/low-cost chiropractic industry segment that provided care that sometimes harmed people in highly publicized cases. While some chiropractic patients were able to discern good care from bad, most people, paying out-of-pocket, preferred to skip the risk game and go straight to an allopathic provider.

Not surprisingly, many of the solo and small group practice DCs became highly dissatisfied with their incomes in the 2020s. Increasingly those who got patients felt that they were on a “hamster wheel” of many, ever-shorter visits just to maintain their income while lowering their expenses enough to make a living on \$30-40 per visit. Although some were doing quite well by competing openly on costs, those unable to survive as solo practitioners joined multidisciplinary clinics. Some, although few, relied on their better-earning spouses employed outside chiropractic so they could stay in the field. Although the frequent visit schedules worked for some patients, those who did have insurance with chiropractic coverage increasingly went to DCs who were members of major insurance networks. These chiropractic management networks set guidelines for DC care that typically limited the number of visits and paid the chiropractor less each year. Although chiropractors were reluctant to participate, most did not opt out in fear of not being able to get new patients otherwise. Besides, with an oversupply of chiropractors, insurers had waiting lists of DCs who would gladly join their panels and accept the network’s conditions. In many states, chiropractors who tried to go it alone did not have successful practices and found their clients leaving for PCMH teams that included physical therapists.

In education, chiropractic colleges increasingly found themselves in an enormous pressure cooker over the 12 years leading to 2025. Interest among prospective students continued to wane as they considered the cost of chiropractic education in relation to their anticipated entry-level and long-term income. What they saw was not enticing. The entry-level incomes for chiropractors were declining. There were some established successful suburban practices where DCs continually earned about \$200,000 a year. However, those grew rarer and it became harder to establish new successful practices. Opportunities for chiropractors did grow in the DoD, the VHA, PCMHs, and ACOs. However, by 2025 only 5,700 or 13% of chiropractors were involved in those settings and the opportunity to join them was virtually nonexistent for new graduates from chiropractic colleges.

Given the difficulties of the field, many students and even young chiropractors opted for other career paths. Popular alternatives included studying to become a nurse practitioner or physician assistant. Some chiropractors even encouraged their children to become physical therapists instead. Total chiropractic enrollment was just under 10,000 back in 2012. By 2020, it had dropped to under 7,000. In 2025, only 5,000 students were enrolled in schools of chiropractic. The dramatic change hit the smallest colleges the most, particularly those that were freestanding without other student programs with which to share overhead. By 2025, only eight chiropractic colleges remained.

## Scenario 3: Integration & Spine Health Leadership

### *Imagine:*

Henry Walton Jones, a 50-year-old office worker, has been a member of ACME Primary Care (part of the ACME HMO) for years, though he has been an infrequent visitor. In recent months, however, he has been experiencing acute low back pain. Concerned, he finally went to see his local ACME primary care team about it. At the clinic, after completing his intake survey and answering a few more questions, the nurse referred him to Dr. John Ravenwood for an exam. Dr. Ravenwood is the chiropractor on his primary care team. Henry had noticed chiropractors' offices in the community for years but had never visited one. After a comprehensive examination, Dr. Ravenwood gave him an adjustment and counseled Henry on stretching techniques, exercises to do at his desk,

and dietary changes for weight loss. He also prescribed a series of additional visits for adjustments. At the end of the visit, Henry asked Dr. Ravenwood about his role in ACME Primary Care. Why was there a chiropractor on his primary care team? Dr. Ravenwood explained that there has been growing evidence that back- and spine-related conditions are the primary issues behind at least 5%—and in some settings up to 20%—of primary care demand; and chiropractic care has been shown to be more effective and less costly than medical or surgical treatments for most spine-related conditions. To top it off, chiropractic care has higher patient satisfaction ratings. Taken together, these findings inspired ACME to add chiropractors to their primary care clinics and to integrate them into their care teams. Dr. Ravenwood was chosen because he had several years of successful practice. He had gotten to know the ACME medical director when they both volunteered at a local free health care clinic. When ACME was looking to add a chiropractor, the medical director turned to Dr. Ravenwood. Demand from patients like Henry has meant that most ACME Primary Care teams now include a full-time chiropractor or physical therapist.

### Scenario Highlights

- Chiropractic enters mainstream medicine as the spinal health experts in the health care system, with “big data” paving the way through compelling evidence from outcomes research.
- DCs and DPTs no longer compete with one another for patients. The two professions partner on integrated health care teams in screening and triaging neuromusculoskeletal complaints, and educating the public about prevention of chronic pain.
- Many chiropractors join integrated teams and become critical partners in addressing back pain and spinal health.
- Other chiropractors find that growing public acceptance means that they can sustain their independent or group practice and in many cases thrive.

### Scenario Narrative

Over the 12 years to 2025, health care in the United States was reshaped by a series of policy and delivery system changes that focused on value and cost-effectiveness. The health insurance exchanges mandated by the 2010 PPACA proved to be effective, expanding the range of available insurance options for individuals and families. By 2018, the U.S. achieved near-universal health care coverage. By 2020, many employers had backed away from providing health care insurance

benefits. However, most employers did offer support systems and rewards for healthy behaviors that improved work performance and overall health and subsequently reduced medical care demands.

By the mid-2010s, policymakers, providers, and the public came to fully support the “Triple Aim”—i.e., enhancing patients' experience of care, reducing per capita health care costs, and improving population health—as the goal and

focus of health care providers. The Patient-Centered Medical Home (PCMH) became the default delivery form and standard of quality for primary care. Care emphasized coordination, patient focus, and the anticipation of patient needs. Care also shifted from largely solo and small group physicians to primary care teams that were part of larger integrated systems operating with capitated payment and other forms of risk sharing. Payers rewarded providers for prevention and personalization, and for achieving optimal health outcomes while reducing costs.

In the years leading up to 2020, “big data” applications combined advanced analytics with individual patient data, community health records, and aggregated population health metrics to facilitate health improvement at the level of the individual. Providers increasingly used predictive models and simulations that assessed risks and potential health gains for each beneficiary in an insurance plan. These simulations were informed by whole genome sequencing, the cost of which had dropped below \$100 by 2020, and clouds of data from inexpensive biomonitoring devices and microfluidic devices, which enabled nearly continuous testing of blood for circulating proteins. Analysis of this data led to an explosion in the understanding of genotype/phenotype relationships and of epigenetic factors, allowing the generation of personalized approaches to prevent chronic disease or at least to slow its progression. The recognition that the so-called “silent” regions of DNA were in fact part of the complex control mechanisms during human development eventually led to earlier interventions that prevented the need for acute treatments.

In this context, outcomes research became the most important factor in the decade leading to 2025 in policies and plans for determining coverage and for deciding which providers would take leading roles on the PCMH teams. Most chiropractic colleges expanded their research capabilities to support, develop, and demonstrate evidence-informed practice, including working with practitioners and insurance networks in developing patient registries and outcomes data. Research from the chiropractic community outside the U.S. also contributed to the growing evidence of chiropractic’s therapeutic and cost effectiveness. Major insurance companies analyzed their data on millions of patients and reconfirmed that for back and spine problems, going directly to a chiropractor (rather than an MD) produced better outcomes and higher patient satisfaction at lower costs. Then in the early 2020s, the field cheered when news broke of research confirming previous studies that had found that spinal manipulation did indeed affect gene expression (via chaperone molecules that assist protein folding, which can be sensitive to stress).

Chiropractors had the pieces to successfully define their profession in a way that supported their participation in the value-based delivery system: new research confirming the value of chiropractic care, rising demand for care, a growing shortage of primary care providers, and the high incidence of spine-related conditions. Much of the chiropractic field and its major organizations united behind the chiropractor’s role as spinal health expert in the health care system. Thousands of chiropractors reached out to organized health care to develop professional relationships with medical directors, health care administrators, and clinic managers. DCs also sought the support of loyal chiropractic patients to demand that provider systems and PCMH teams include chiropractors.

As the nation rapidly reorganized health care delivery, chiropractors joined integrated care teams where they came to “own” spinal health for most plans. By 2020, primary care teams usually included an MD, NP, PA, DC, DPT, a behavioral health provider, a medical assistant, and a community health worker. By 2025, a considerable 21,000 DCs, or 31% of the field, were practicing in integrated care systems, particularly in their PCMH teams. This includes 750 chiropractors practicing in VHA hospitals and DoD facilities in 2025.

DCs’ success in integrated systems related to pathways that identified the chiropractor as the appropriate provider for most neuromusculoskeletal issues. As it had become cost-prohibitive to send all routine cases to physicians, ACOs and other large providers developed care pathways for major conditions, including diabetes, cardio issues, musculoskeletal issues (in particular low back pain), and obesity. These pathways specified the appropriate provider, the right treatments, and their sequence.

DCs and DPTs screened and triaged neuromusculoskeletal complaints, while NPs and PAs screened and triaged internal disorders. They used the pathways to determine the treatment course for patients. When needed, they sent patients with more complex conditions to the MDs and DOs on the team. In this role, chiropractors screened for serious spine pathology such as cancer, infection, fracture, or inflammatory joint disease, and examined patients to determine whether there was any neurological deficit and if the deficit was an emergency. Subsequently, the DC typically used their delivery system's pathways to develop a treatment plan based on evidence-based treatment methods that included education, exercise, manual therapy, acupuncture, nonsteroidal anti-inflammatory drugs, and any other treatment approach that had been shown to be of benefit. The DC or DPT as primary spine care clinician also identified depression and referred patients to psychologists, psychiatrists, and social workers as needed.

DPTs and DCs thus gained more respect because of their effective diagnostic capabilities. Furthermore, given the growing demand for care, DCs and DPTs no longer had to compete with one another for patients. In fact, the American Physical Therapy Association and American Chiropractic Association started to work together to educate the public about prevention of chronic pain and the important role that DPTs and DCs were playing in the new system of health care. Nevertheless, most MDs continued to be more familiar with referring to physical therapists for rehab and other conditions, and ACOs or hospitals in many cases owned physical therapy practices.

Patients became assertive in their research for self-care and for choosing providers. In the years leading to 2025, what had started decades before on sites like PatientsLikeMe.com grew into a large-scale public engagement with personalized medicine and health care. Low-cost personal biomonitoring tools built each patient's health profile in detail, linking that to their electronic health record. Patients played an increasingly assertive role in getting the care they wanted and in using innovative, alternative, or conventional approaches according to their individual needs and wants. A large segment of the population kept patient diaries, experimented with different treatment combinations, and shared the results with other patients and with their health care provider systems so that all could benefit.

While chiropractic had historically been outside of mainstream science and health care, the field increased its research efforts in the mid-2010s. By 2017, use of electronic health records (EHRs) among DCs in their office practices had grown to 80%, and groups such as the Patient-Centered Outcomes Research Institute (PCORI), the Cochrane Collaboration, and PatientsLikeMe provided new research approaches that chiropractors—regardless of philosophical orientation or leaning—utilized to show the profession's value proposition.

With zettabytes of data from personal health records, virtually all integrated care systems by 2020 were providing their patients with personal avatars (digital health coaches) to recognize and leverage the extent to which their health was shaped by social, psychological, and behavioral factors. Community health workers also used digital health coaches to meet patients' needs in their homes – effectively lowering per capita demand for in-office visits. Chiropractors, like other health care providers, took advantage of health care technologies that were becoming increasingly important to their new patients and the primary care teams. By 2020, chiropractors were personalizing their treatments for patients based on the patient's genetic data, while providing the still-appreciated human guidance and care that people, particularly geriatric patients, sought as they were getting acclimated to personal biomonitoring devices. And DCs and DPTs continued to be sought out for the value of their manual therapy. By 2025, nine% of adults in the U.S. or 24 million people were seen by the 68,000 practicing DCs.

In the years leading to 2025, broad-scope chiropractors won expanded practice rights in 10 states despite heavy opposition by the ICA and focused-scope chiropractors. In those states roughly 10% of DCs got the online or in-person pharmacology training that was required for the expanding practice rights. By 2025, just over 3,000

chiropractors held prescribing rights and evolved effective therapeutic approaches that used pharmaceuticals in more conservative ways than their allopathic counterparts did. These broad-scope DCs also stepped up their use of EHRs to generate outcomes and show the efficacy of their practices. Overall, these advances for broad-scope chiropractors were not as visible or as profound as chiropractic's success in positioning DCs as spine health leaders and integrating them into PCMH teams and ACOs.

Looking back, chiropractors could agree that "big data," large investments in chiropractic research, and relationship building with ACOs, hospitals, medical groups, and PCMH team leaders had made the greatest difference to the future of the chiropractic profession. In 2025, while almost one-third of DCs are successfully integrated into health care systems, the remaining two-thirds are still largely self-employed in solo or group practices. Yet they have higher esteem, collaborate more effectively with MDs and other providers, and get more referrals from health care providers outside ACOs.

## Scenario 4: Vitalism & Value

### *Imagine:*

A wife, mom, and writer, Jane works part-time for a small advertising agency while her husband Peter works at a local hotel. Together they earn \$60,000, near the average income for families in 2025. As they cannot afford the \$16,000 for full health care insurance, they opt instead for a consumer-directed, high-deductible plan (CDHP)

that leaves them to manage their own care within the deductible.

Jane follows health news and trends and knows that there is much the family can do both to stay healthy and to treat themselves for many conditions. Having witnessed her friends' complications from medication and surgery, she follows the advances on nutrition, lifestyle, health promotion, energy health, and self-healing. Her family's health plan comes with a highly effective digital health coach that summarizes relevant medical and health knowledge. The coach's recommendations reflect Jane's preference for conservative care that supports self-healing, pointing her toward self-care options, such as exercise or meditation, or if necessary toward in-person patient visits or treatments. The digital health coach also links to local resources such as Angie's List, Jill's List, and PatientsLikeMe; professional associations; and other tools for evaluating providers and their costs. For example, Peter has recurring low back pain from an old lifting injury. He follows the exercises the digital health coach provides, but several times a year the coach will recommend that he get an adjustment. In their region, chiropractors, physical therapists, naturopathic physicians, and osteopaths are available to provide this service. However, chiropractors routinely get the highest marks for quality, and are competitive on their fees. Peter has come to prefer one local chiropractor in particular. Given the family's financial constraints, however, if this chiropractor's fee grows too high then Peter will turn to the digital health coach to interpret the local market for other well-rated chiropractors with lower costs, including those who work for discount adjustment providers.

### Scenario Highlights

- Many chiropractors and others engage in research supporting chiropractic and integrative health care, including the exploration and development of contemporary vitalism.
- Health care reform continues and the market bifurcates essentially around payment. Forty% of the population obtains full health insurance and receives care primarily through ACOs using risk sharing and capitation. Another 40% of the population enrolls in high-deductible catastrophic care health plans, and relies primarily on out-of-pocket expenses and self-care approaches with the help of sophisticated digital health coaches and local market transparency. Chiropractors succeed among both groups of patients.
- Chiropractors join other providers and systems in supporting population health, going beyond clinical care to shape community conditions that promote health and wellbeing.
- Outcomes research on all providers, along with the movement to capitated care and information on the prices local chiropractors and others charge, limit the number and costs of visits for most chiropractors and somewhat slow the growth of the chiropractic profession.

### Scenario Narrative

In 2025, leaders across all domains of health care, including chiropractic, have learned to unleash the innate human potential for health. They are creating healthy environments, empowering patients, collaborating actively with other licensed complementary, alternative, and integrative health care disciplines, and integrating health information from "big data" applications based on national, community, and individual health records.

Vitalism has made a major comeback as "contemporary vitalism," paralleling the rise in scientific research on prayer, intention, and consciousness in healing, as well as the investigation of energy

medicine, chi, vital force, *vis medicatrix naturae*, and other traditionally vitalist concepts. Chiropractors are among the leaders in this research and no longer struggle with hostility among the DC communities or from most other health professions because of chiropractic's philosophical but unsupported positions.

Furthermore, in 2025, about 14,000 DCs, or 21% of the field, are practicing in integrated care settings, while the rest are working in solo or in small, multidisciplinary groups. Primary care teams now include an MD or DO, PA or NP, and a DC or DPT, among others. Clinical care pathways that specify the most effective providers and sequence for therapy for specific conditions are widely used in ACOs and their PCMH teams. Chiropractors and physical therapists routinely screen and triage spine and extremity disorders, respectively, and then are usually the lead provider of care for patients with these concerns. PAs and NPs do the same for internal disorders. Chiropractic care is now respected in primary care teams and by consumers buying care directly for its value in supporting the body's natural healing capacities and resilience, as well as for its therapeutic and cost effectiveness for the treatment of spine-related and neuromusculoskeletal conditions.

Several factors led to these major changes in the field. Generational changes among chiropractors, particularly in the focused-scope community, brought in new leaders who wanted to move their community forward rather than fighting the same old fights. Many consumers were becoming frustrated with allopathic medicine's tendencies to ignore and at times undermine the body's natural healing processes or to treat symptoms without treating the underlying causes. In this context, pursuing the science of healing and self-healing, including the role of health promotion practices, provided a common thread to chiropractors of all camps. It strengthened the field as a whole, given that following an adjustment—regardless of a chiropractor's practice philosophy—patients frequently report a heightened state of perceptual awareness and wellbeing that often included improvements in one's perception of the environment and the ability to respond to it.

Already since the late 2000s, Life University's Octagon annual conference series had been reconnecting chiropractic with the larger field of vitalism, recognizing that most healing traditions and disciplines, such as oriental medicine, Ayurveda, and naturopathic medicine, have similar concepts and assumptions. Chiropractic colleges also recognized that quantum biology offered an explanation for healing that was consistent with subluxation and joined leading academic centers in exploring this new biological paradigm while also integrating threads of vitalism research into their work in establishing chiropractic outcomes.

In fact, throughout the 2010s, chiropractors joined with researchers from several communities, particularly naturopathic medicine, oriental medicine, and other healing traditions with vitalist roots, as well as researchers on quantum biology, epigenetics, systems theory, and gene expression to develop rigorous, groundbreaking scientific hypotheses and research studies on chiropractic and integrative health care. The American Chiropractic Association (ACA) and International Chiropractors Association (ICA)—chiropractic organizations that had traditionally been at odds with each other—found common ground in promoting this research. Given the availability of low-cost personal biomonitoring tools to measure body energy flows, key biomarkers, and vital signs, subluxation was getting more clearly defined in terms and models accessible to research scientists. This research also clearly defined the role of the spine and nervous system in the body's internal and intracellular communication systems, energy transfer, and molecular operation.

News broke of research in 2015 confirming that chiropractic care could indeed support genetic mechanisms by influencing physiological processes that affect DNA repair and oxidative stress. By 2020, the research had advanced a "whole systems" theory that incorporated the emerging area of the biology of healing in modern investigation and teaching without losing the "heart" of the field. This blossoming of chiropractic research with support from the chiropractic community, as well as the National Center for Complementary and Alternative Medicine and other

institutions in complementary and alternative medicine, gave the field a surprising sense of shared identity. This identity was not inconsistent with or disruptive of the spine-health lead provider identity that was growing in the core of the profession.

In parallel to the advances in chiropractic research, major parts of the PPACA were implemented by 2016, including the move to ACOs, the use of health insurance exchanges, and mandates for coverage. Support for the PPACA and its execution, however, varied by state and costs continued to rise. This led to a Medicare reform enacted in 2017, capping annual national spending and accelerating the movement to ACOs and capitated care. Private insurers and the health exchanges followed suit, putting a nationwide squeeze on any health care services that could not show a high rate of health return on dollars spent. Yet full coverage health insurance remained expensive for most individuals and families. By 2018, large numbers of people were opting for high-deductible catastrophic health care plans and paying out-of-pocket for doctor bills and other expenses. By 2020, 40% of the population were enrolled in integrated health care systems (ACOs and managed care), and another 40% were relying largely on self-care in conjunction with their consumer-directed health plans (CDHPs).

Over the years leading to 2025, integrated care plans and most of the better CDHPs provided their members with up-to-date digital health coaches that for millions of Americans became trusted partners and knowledge navigators in care, health, wellbeing, and prevention. Digital health coaches incorporated the person's electronic medical records, genetic profile, personal biomonitoring data, as well as the individual's health conditions, budget, location, and preferences for type of health care practice into the digital coach's analysis and recommendations for providers, health promotion activities, nutrition, and other products. Health wisdom expanded as people "crowdsourced" their health care experience through social networks. They compared their care with providers and protocols with those of others. These comparisons led some consumers to switch providers.

Patients could also link their profiles to their social health networks and accrue "points" for achieving their self-care goals. These points could be used to get special deals on visits to providers that included a network of chiropractors, osteopaths, acupuncturists, naturopathic physicians, and physical therapists who made agreements with the social health networks. MyHealthAlternatives in particular provided a social health network and the first-ever digital health coach specializing in alternative care. Members were able to use their personal biomonitoring tools to easily collect specific biomarker data that allowed research on chiropractic's more subtle effects on their energy and healing. In fact, the growing use of MyHealthAlternatives and its research helped increase the range and integration of CAM disciplines and approaches among ACOs and for self-care patients.

Transparency in local markets based on EHRs and people sharing their outcomes in treatment allowed local and national groups like Angie's List, Jill's List, and PatientsLikeMe to become more sophisticated in their scorekeeping and outcome measuring, with many listing prices for providers as well. By the early 2020s, outcomes research, including provider-based whole practice outcomes research, had become an imperative for individual chiropractors to join an ACO or PCMH, or compete locally with other chiropractors and other health care providers. Thus, the majority of the chiropractic community adopted electronic health record (EHR) systems in their offices and took part in registry development and outcomes research spawned by chiropractic colleges, the Integrative Chiropractic Outcomes Network, and other chiropractic organizations. They linked with funders and research organizations like the Patient-Centered Outcomes Research Institute (PCORI), the Cochrane Collaboration, and PatientsLikeMe, and drew on data from ACOs and digital health coaches. The findings reinforced earlier studies that had shown chiropractic care to be clinically effective for low back pain, neck pain, and spine issues. Ongoing research identified other conditions where chiropractic care was effective and protocols and digital health coach recommendations reflected this. Chiropractors as a whole also continued to have high patient satisfaction rates and

greater cost effectiveness than medical or surgical treatment. This helped stimulate business for DCs. However, most chiropractors were subject to flat or declining fees for visits dictated by Medicaid, Medicare, and insurance companies, slowing the growth of the profession by 2025.

Given the evidence for chiropractic and the recognition that spine issues were a major part of primary care, many chiropractors successfully joined primary care teams, hospitals, and ACOs as primary care providers for spine health over the decade leading to 2020. However, the increasing use of care pathways specifying optimal care, both within integrated health care systems and for consumers spending out of pocket, kept the number of visits limited for chiropractors and others. Some patients were willing to pay out of pocket for more chiropractic visits than protocols recommended. Others used upscale services offered by their chiropractor such as simulations for predicting musculoskeletal, spinal, or overall health. Other DCs also built successful practices as the go-to specialist for sports injuries, obesity, nutrition, as well as back, neck, and extremity pain among children and teens. In rural and underserved communities, broad-scope chiropractors tended to be the primary care provider of choice, particularly in the 10 states where they had won expanded rights (both pharmaceutical prescribing, and injection or IV delivery when relevant), under the condition that they get requisite clinical training in pharmacology. Their expanded pharmacopeia for prescribing also included herbal, homeopathic, and oriental medicines. While this development seemed to contradict the core values chiropractors had long held, many of these broad-scope DCs were in fact using their new training to take their patients off prescription medicines in favor of diet, adjustments, and oriental medicines to facilitate the body's own capacity for healing, health, and wellness. By 2025 there were just over 3,000 DCs (including some doctors of chiropractic medicine, or DCMs) using the expanded practice rights in the 10 states.

While the changes in health care and chiropractic were important, researchers, patients, and community leaders recognized that health care was a relatively small part of the health equation. To create and sustain health, wellness, and quality of life, they needed to address all the domains of health, including the social, economic, and environmental conditions in which children and adults would live, play, learn, work, and pray. Leaders began to draw on “big data” applications that aggregated data from national, community, and individual health records to target and design comprehensive and multifaceted policies, programs, and interventions. By 2025, many chiropractors had joined the movement in one role or another. The most impressive ones were found working in communities where the PCMH had evolved to the Community-Centered Health Home (CCHH). These leading edge DCs coordinated care for the individual, analyzed community conditions and health patterns, and worked with the communities to improve health and self-healing. They participated in or led initiatives such as the development of local parks and community gardens, the promotion of walking groups and after-school programs to address childhood obesity, or projects to prevent falls and accidents in the homes of seniors. As a result, in many communities chiropractors are recognized for their work in promoting community health.

In 2025, many more people know what only a few knew before—that the human being is a profoundly resilient organism with an innate drive for healthy growth. In fact, thanks to the support of effective providers, digital health coaches, healthy communities, and a growing body of knowledge on prevention, health promotion, self-healing, and self-care, approximately 30% of Americans, mostly on CDHP plans, have no long-term relationship with a primary care provider. Many primary care providers are left to wonder if it might not have been smarter to choose a more high-touch path like physical therapy or chiropractic.

## Comparative Scenario Matrix

This matrix allows side-by-side comparison of the scenarios across multiple dimensions, as well as exploration of each scenario by reviewing one column at a time.

	2025	2025	2025	2025
	<b>Scenario 1: Marginal Gains, Marginalized Field</b>	<b>Scenario 2: Hard Times &amp; Civil War</b>	<b>Scenario 3: Integration &amp; Spine Health Leadership</b>	<b>Scenario 4: Vitalism &amp; Value</b>
<b>U.S. Population</b> <i>311 million (2011)</i> <i>237,744,634</i> <i>people age 18</i> <i>and over</i> <i>73,847,285 people</i> <i>under 18</i>	346 million 268 million people 18+ 78 million people under 18			
<b>Practicing Chiropractors</b> <i>55,000 (2012)</i>	63,000	45,000	68,000	66,000
<b><i>Demand for Chiropractic Care</i></b>				
<b>% of US population in integrated/ capitated care systems</b> <i>20% (2012)</i>	40%	30%	85%	40% in integrated care 40% in consumer- directed care
<b>% using CAM within the last 12 months (18+)</b> <i>38% (2007</i> <i>National Health</i> <i>Interview Survey)</i>	40%	40%	55%	55%

	2025	2025	2025	2025
	<b>Scenario 1: Marginal Gains, Marginalized Field</b>	<b>Scenario 2: Hard Times &amp; Civil War</b>	<b>Scenario 3: Integration &amp; Spine Health Leadership</b>	<b>Scenario 4: Vitalism &amp; Value</b>
<b>% using chiropractic in the past 12 months (18+)</b> <i>7.6% (2004)</i>	7%	4%	9%	8%
<b>% of spinal manipulation done by non-chiropractors (e.g., physical therapists and osteopathic physicians)</b> <i>6% (1991)</i>	6%	30%	40%	25%
<b><i>Types of Chiropractic Practice</i></b>				
<b>Solo private practice</b> <i>69.6% (2012)</i>	44%	40%	25%	40%
<b>Group or partnership practice (including DCs, DC &amp; MDs, DCs &amp; other CAM)</b> <i>22.3% (2012)</i>	25%	35%	35%	30%
<b>Associate in chiropractic practice</b> <i>7.6% (2012)</i>	15%	8%	10%	10%

	2025	2025	2025	2025
	<b>Scenario 1: Marginal Gains, Marginalized Field</b>	<b>Scenario 2: Hard Times &amp; Civil War</b>	<b>Scenario 3: Integration &amp; Spine Health Leadership</b>	<b>Scenario 4: Vitalism &amp; Value</b>
<b>DCs practicing in integrated health systems, hospitals, community health centers, ACOs, PCMH, DoD and VHA (employed/contracted, full-time/part-time)</b>	16% 10,000 DCs	13% 5,700 DCs	31% 21,000 DCs	21% 14,000 DCs
<b>DCs practicing in the VHA</b>	230	180	350	300
<b>DCs practicing in the DoD</b>	200	150	300	250
<b>DCs with a successful cash only practice (focused-, middle-, and broad-scope) 20% (2012)</b>	20%	20%	15%	25%
<b>Broad-Scope DCs practicing with Prescription Rights: # of states allowing/ # of DCs prescribing None (2012)</b>	5 States / 1,500 DCs	3 States / 750 DCs	10 States / 3,100 DCs	10 States / 3,100 DCs

	2025	2025	2025	2025
	<b>Scenario 1: Marginal Gains, Marginalized Field</b>	<b>Scenario 2: Hard Times &amp; Civil War</b>	<b>Scenario 3: Integration &amp; Spine Health Leadership</b>	<b>Scenario 4: Vitalism &amp; Value</b>
<i>Chiropractic College Enrollment, Graduation, Retirements, and Supply of Chiropractors</i>				
<b>Chiropractic colleges or programs</b> <i>18 (2012)</i>	14	8	17	17
<b>Total chiropractic college enrollments</b> <i>10,000 (2010)</i>	8,000	5,000	12,000	12,000
<b>Graduates per year</b> <i>2,600 (2010)</i>	1,800	1,125	2,700	2,700
<b>DCs retiring or leaving practice in 2025</b> <i>(assumed to average 2.5% each year)</i>	1,581	2,120	1,723	1,723
<b>Net additional chiropractors in 2025</b>	219	(-995)	977	977

# IAF Recommendations

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This section of the report outlines IAF's recommendations for the chiropractic field given the learning that is prompted by the scenarios. We believe that across a range of futures, chiropractors can and should prosper as conservative, cost-effective providers of care for a range of conditions. But to do so, the field must anticipate, recognize, and overcome significant challenges likely to result from competition from various health care providers, conflict among chiropractors themselves, and inadequate integration into health care systems, particularly after health care reform.

IAF has observed changes in the chiropractic profession for almost 20 years. In preparing the recommendations below, we have reviewed our 1998 and 2005 reports, finding that most of the recommendations therein remain appropriate either as originally proposed or with minor adjustments to account for recent developments. However, in this report we have paid particular attention to the diversity that exists within the chiropractic field.

Rather than recommending a unified vision as we have in the past, we now recommend that each of the three major communities within the profession (focused-scope, middle-scope, and broad-scope) grow and develop authentically. The differences of opinion across these three communities on some issues are pronounced. Because of these differences, efforts to develop and pursue a unified vision have failed and are likely to fail in the foreseeable future. In addition, unity efforts may prevent each of these communities from making its unique contributions to the entire field. Acknowledging and accepting these differences would allow the field to spend less time and resources on self-competition and internal attacks, and more on activities and strategies that are likely to benefit chiropractors across all three communities.

With these differences in mind, IAF offers the following recommendations for the chiropractic field as a whole, led by the middle-scope community. These are preceded by our recommendations for the focused-scope and broad-scope communities.

## Recommendations for Focused-Scope Chiropractors

- Shift communication about chiropractic's healing qualities from philosophical to a more scientific, evidence-based terms that will appeal to patients, other chiropractors and providers, and policymakers.
- Pursue research in the science of self-healing as it relates to chiropractic principles. Conduct this research in conjunction with other healing traditions that have deep vitalism roots, particularly naturopathy and oriental medicine. Whenever possible, link this research to related developments in quantum biology research, epigenetics, and other fields of biological and scientific inquiry.
- Use research on the science of (self-) healing as a platform for shared language and interests with middle- and broad-scope chiropractors. Frame this body of work, concepts, and terms in ways that take into account the interests, concerns, and priorities of other chiropractors and providers, thus promoting interest and collaboration across chiropractic and other health professions.
- Develop and maintain research on all focused-scope practices, both to further define the relationship of chiropractic care and self-healing, and to develop outcome measures for focused-scope providers.

## Recommendations for Broad-Scope Chiropractors

- Pursue expanded practice rights, but develop a conservative pharmacology practice that supports self-healing.
- Develop and maintain outcomes research on all practices. If the broad-scope community is to succeed in gaining and obtaining prescribing rights, it must frequently research and evaluate its own patient outcomes and cost-effectiveness. These data can then be compared to the results achieved by other providers with prescribing rights, as well as to outcomes from non-prescribing chiropractors.

## Recommendations for the Entire Chiropractic Community

### *1. Integrate chiropractic into health care systems, particularly into Accountable Care Organizations and Patient-Centered Medical Homes.*

Health care is poised to change its payment streams, shifting from fee-for-service options to integrated and capitated streams, particularly through Accountable Care Organizations (ACOs). Patient-Centered Medical Homes (PCMHs) are shifting primary care from solo-practice physicians to teams of providers. IAF's scenarios envision integrated care (capitated or risk-sharing and integrated across delivery sites and providers) comprising between 30 and 85% of health care in 2025, depending on the scenario. To date, chiropractic has remained largely isolated from delivery systems. However, chiropractic can and should make its way onto primary care teams and ACOs. Failing to do so will maintain the status quo of keeping the profession isolated. The role DCs could have as the spine health leaders on primary care teams is an important opportunity to pursue for this integration. This will require local, personal efforts by chiropractors to establish relationships with medical directors and others who will determine which providers will be on the primary care teams and in the hospitals.

In this integration, DCs will inevitably have to work—or contend—with physical therapists (PTs). PTs (and increasingly doctors of physical therapy or DPTs) can and do compete with chiropractors. They outnumber chiropractors 4 to 1 today, and the U.S. Bureau of Labor Statistics forecasts that the number of physical therapists will grow faster than chiropractors for the rest of this decade. PTs are also already better integrated into health systems. While scope of practice fights with PTs will persist, the competition should be on outcomes, given that both DCs and DPTs will be seeking similar patients and/or the spine health leader role within primary care teams.

Specific strategies for chiropractors to further ensure and solidify their integration include:

**Take full advantage of integration in the Veterans Health Administration (VHA) and Department of Defense (DoD).** Chiropractors have years of experience getting integrated into two major systems, namely the VHA and the DoD. The number of sites with chiropractors needs to be expanded, and chiropractors can actively advocate for this expansion while continuing to prove their worth through good outcomes. Research on DCs' outcomes in the VHA and DoD also needs to be actively communicated.

**Increase the prevalence of clinical training in chiropractic education.** Additional clinical experience for students before beginning their practice is essential. Chiropractic colleges should accelerate their efforts to provide students with clinical experience in hospitals, rehab, primary care, and other treatment settings. Community health centers are beginning to offer such opportunities, and these options should be increased and expanded further.

**Seek to practice with other types of health care providers in as many settings as possible.** This includes working in community health centers and providing pro bono care in free health care clinics and other settings.

## **2. Accelerate research.**

In recent years, there have been major advances in the infrastructure for chiropractic research and the level of research activity. Chiropractors are getting research funding from the National Center for Complementary and Alternative Medicine (NCCAM), other NIH institutes, and other government entities. Furthermore, several chiropractic colleges have expanded their commitment to and involvement in research. The NCMIC Foundation supporting and funding chiropractic research and individual post-doctoral degrees (as well as this and IAF's earlier scenario reports) has been significant. The significance of a solid research funding organization cannot be overstated. Chiropractic organizations, colleges, and individual chiropractic researchers and practitioners will all need to keep generating (or begin generating) research on the following:

- a) The therapeutic efficacy of chiropractic and how it compares to other types of treatments (including drugs),
- b) The cost-effectiveness and value of chiropractic treatment, and
- c) The outcomes of specific chiropractic practitioners and clinics (practitioner-generated outcomes data will parallel the outcomes information that delivery systems, consumers, insurers, and managed care networks will be gathering).

**Promote and facilitate data collection in chiropractic practices, and publish that data in peer reviewed journals.** Chiropractic practices and chiropractic colleges are creating registries from which outcomes data can be generated. Managed care networks are analyzing data from the health care systems with which they are associated (this data has shown the favorable outcomes and cost-effectiveness of chiropractic). Those developing the registries and the managed care networks must work to publish their results as rapidly as possible.

**Anticipate changes and additions to electronic health records (EHRs) for chiropractors.** Using EHRs remains a challenge for many chiropractors and other health professionals. They may be costly or cumbersome, or may seem to yield little net benefit. In some cases, the electronic records used by a chiropractor are not interoperable with systems used by other chiropractors or providers. However, in the years ahead local transparency of costs and results of health professionals and their treatments will require that DCs collect and publish outcomes data from their practices. The chiropractic community therefore needs to promote effective implementation, interoperability, and use of EHRs. This will allow chiropractors to be better prepared for future uses of electronic records, which will be designed to include patients' vital signs, biomonitors data, and ultimately their genetic codes. EHRs will also include information on the constellation of social determinants of health affecting the individual patient. Chiropractors' EHR systems will need to be developed in a way that both contributes to and uses this enhanced data collection.

**Develop the science of self-healing and vitalism.** Chiropractors must increase the research on why chiropractic adjustments yield cost-effective outcomes for their intended condition (e.g. low back pain), why they often have beneficial non-musculoskeletal effects, and how adjustments affect gene expression and self-healing. Chiropractors would do well to integrate this research with the vitalism theories and research of other complementary and alternative medicine (CAM) approaches including naturopathy, oriental medicine, other healing traditions with vitalist roots, and prayer, as well as quantum biology, epigenetics, and gene expression. Scientists who study Eastern healing, prayer, and traditional forms of shamanism that are observed in many cultures may help open areas of study that offer evidence for the vitalism described in chiropractic health and healing. Chiropractic research should include such areas as quantum biology, where a new scientific understanding may enter the mainstream and provide chiropractors with evidence that supports vitalism.

### ***3. Continue to strive for high standards of practice.***

In the years ahead, empowered consumers (especially if they are using their own money, paying-out-of-pocket) and managed care networks will both demand better information on their health care providers. They will look for providers who generate good outcomes for their patients and yield good value. The chiropractic profession should define and ensure high standards of practice that will keep existing patients satisfied with their care while attracting new patients to chiropractic. Higher standards will better position chiropractic as a profession, and will produce individual chiropractors that are more likely to be successful, whether they seek to integrate or to maintain independent practices.

**Support local reporting of outcomes.** The development of local and national reporting systems that indicate the results of health care providers in their patient care will be important in the years leading to 2025. For patients, these systems will ultimately comprise comparative reports on individual providers. The chiropractic profession and its various associations and organizations should support the development of such reporting on chiropractors and other health care professionals. Ultimately, this reporting will take into account patients' disease and risk sensitivities, along with other measures such as patient satisfaction, in rating the outcomes of health care providers. Angie's List, PatientsLikeMe, and other local or national groups will make these outcomes and costs transparent for patients, often in relation to patients' specific conditions. This reporting will allow patients, ACOs, PCMH teams, and chiropractors to better identify the best providers in the community, as well as those chiropractors who oversell services and technology.

**Provide more effective policing of false and misleading advertising.** The professional chiropractic organizations and state licensing boards should have strict standards against false and misleading advertising, communications, and marketing. Chiropractic state licensing boards and organizations should publicize those standards and enact effective consequences for chiropractors who violate them.

**Promote the use of best practices and agreed-upon guidelines.** The profession needs to have guidelines that define best practices, including treatment courses. The Council on Chiropractic Guidelines and Practice Parameters (CCGPP) has been working on this and on related care pathways. More widely used guidelines (generally disliked by chiropractors) are those developed and deployed by managed care networks. More than half of all chiropractors belong to these networks in 2013. Rather than rely on non-chiropractors to entirely define the guidelines, the chiropractic field should develop or co-develop guidelines that can be agreed upon and used by ACOs, PCMHs, and managed care networks. These should rapidly incorporate research showing additional indications where chiropractic care is effective.

**Better police the profession:** IAF believes that the marketplace, including local ratings of health care providers, will play a more important role in punishing chiropractors that over-treat or provide ineffective care. But the profession, particularly licensing boards and possibly state associations, must play a more active role in policing the profession.

### ***4. Anticipate and engage consumer-directed care plans and tools.***

**Engage with the development of self-care tools, particularly their decision-making rules.** Consumer-directed health plans are growing, as are the tools that will allow patients to more wisely spend their out-of-pocket health care dollars. It is likely that people will become better informed and more scrutinizing in their choices. Chiropractors have always been good at directly engaging consumers or patients, but will need to recognize that consumers and patients will be using these self-care tools that tell them when to go to a chiropractor, what the best course of therapy is, what the costs are in their communities, and who the best DCs are. Chiropractors should take part in developing the criteria that will be used to define "best" in this context.

**Avoid misleading arguments.** Much of the business-planning advice for chiropractors ignores outcomes. The public communication campaigns for the field, as well as marketing by chiropractors to consumers, must instead include a focus on the established therapeutic efficacy of chiropractic treatments. This will position chiropractors better in the marketplace of consumer-directed health plans.

***5. Create greater tolerance and mutual support within the profession.***

**Support chiropractic colleagues in a good faith pursuit of their visions.** In 1998 and 2005, IAF called for unity in the profession. Given the value of diversity within the profession and the improbability of unity in the profession (indeed, few professions can claim to be fully “unified”), IAF now recommends the development of a mature tolerance among chiropractors, and the authentic pursuit of the distinct visions of the focused-scope, middle-scope, and broad-scope wings of the profession.

***6. Promote individual chiropractors’ contributions to public health and to improving population health.***

**Identify roles in public health and population health for individual chiropractors and chiropractic organizations to assume.** Chiropractors, like all health care providers, must influence the health condition of their patients and their communities. Since 1998 IAF has recommended that chiropractors promote health equity. Improving population health is part of that objective. Since our 2005 report, increasing the population’s health has gained more recognition. The Triple Aim has become the leading standard for judging quality in health care systems (the aims are improved patient experience, lower per capita costs, and increased population health). All health care professionals and health care systems are considering how to increase population health. Chiropractors must reimagine and reinvent their roles. The fact that hundreds of chiropractors have joined the Chiropractic Section of the American Public Health Association serves as an indicator of the growth of this topic. We recommend that each chiropractor understand what contribution he or she can make to public and community health, and how to become involved in these fields. We recognize that many are already doing this, but most chiropractors are not. We also recommend that relevant organizations in the field develop options or roles for chiropractors in population health, as the Foundation for Chiropractic Progress has done regarding chiropractors’ roles in the Patient-Centered Medical Home.

***7. Develop geriatric chiropractic.***

**Develop outcomes for chiropractic care of elders and press Medicare to expand the coverage of chiropractic care.** One of the largest growth areas in health care will be care for elders or geriatric care. The health care needs of the elderly population are more pronounced than younger age groups, and will grow disproportionately as the Baby Boomers age. Aging Baby Boomers will look for alternative methods of care that can help them reduce pain, treat their conditions, and remain as active and as healthy as possible. Chiropractic has much to offer for elders. We recognize that chiropractic care for elders is complicated by Medicare’s “subluxation only” coverage for chiropractic care. Medicare’s coverage should be expanded to include diagnosis and evaluation by chiropractors as well as those chiropractic treatments for conditions covered by other insurers and state statute. There is also the challenge that Medicare payment levels for services are low and will be under pressure to remain low or even be reduced. Chiropractors must generate better evidence for geriatric chiropractic. In addition, as they show their cost effectiveness, DCs will need to press Medicare to expand coverage and maintain adequate payment levels.

# APPENDIX 1: Interviewed Experts

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**Daren Anderson, MD**

Vice President & Director of Quality  
Community Health Center, Inc. (CHCI)

**Rand Baird, DC, MPH, FICA, FICC**

World Federation of Chiropractic (WFC)

**Joseph Brimhall, DC**

President,  
University of Western States

**Gert Bronfort, PhD, DC**

Research Professor  
Vice President of Research  
Director of the Musculoskeletal Research Program  
Northwestern Health Sciences University

**Leo Bronston, DC, MAppSc**

Bronston Chiropractic

**Ahmed Calvo, MD MPH**

Health Resources and Services Administration  
(HRSA)

**J. David Cassidy, DC, DrMedSc, PhD**

Senior Scientist in the Division of Health  
Care and Outcomes Research  
Toronto Western Hospital Research Institute,  
University Health Network and Professor in  
Division of Epidemiology  
Dalla Lana School of Public Health, University  
of Toronto

**David Chapman-Smith**

Secretary-General  
World Federation of Chiropractic

**Ashley Cleveland, MA, DC**

Provost  
Cleveland Chiropractic College

**Gerard W. Clum, DC**

Director  
The Octagon, Life University

**Richard (Buz) Cooper, MD**

Director of the Center for the Future of the Health Care  
Workforce at New York Institute of Technology and a  
Senior Fellow in the Leonard Davis Institute of Health  
Economics at the University of Pennsylvania

**James M. Cox, DC, DACBR**

Director of Radiology  
Chiropractic Medicine, Inc.

**Simon Dagenais, DC, PhD, MSc**

Chief Scientific Officer  
Palladian Health

**Andrew S. Dunn, DC, MEd, MS**

Staff Chiropractor  
VHA Western NY Health care System

**Ross Edmundson, MD**

VP, Medical Director Health Care Management  
Florida Hospital

**David Elton, DC**

Senior Vice President of Clinical Programs for  
Physical Medicine  
OptumHealth, United Health Group

**J. Michael Flynn, DC**

Private Practice  
Houma, Louisiana

**Arlan Fuhr, DC**

President & CEO  
Activator Methods International, Ltd.

**Melissa Gilroy, DC, PAC**

**Christine Goertz, DC, PhD**

Vice Chancellor for Research and Health Policy  
Palmer Center for Chiropractic Research

**Bart Green, DC, MEd, DACBSP**

Editor-in-Chief, Journal of Chiropractic Education  
Associate Editor, Publications Department,  
National University of Health Sciences

**Scott Haldeman, DC, MD, PhD, FRCP(C), FAAN**

Clinical Professor, Department of Neurology  
University of California, Irvine

**John Hanks DC, MHS, DABCO**

Senior Chiropractic Consultant, Kaiser Permanente,  
Rocky Mountain Region  
Private practice, Healthmark Integrated  
Medical Group

**Elise Hewitt, DC, CST, DICCP, FICC**

Portland Chiropractic Group

**Eric L. Hurwitz, DC, PhD**

Department of Public Health Sciences  
John A. Burns School of Medicine  
University of Hawaii, Manoa

**Clyde Jensen, PhD**

Vice President of University Relations  
University of Western States

**Greg Kawchuk, BSc, DC, MSc, PhD**

Canada Research Chair in Spinal Function  
Associate Professor, Faculty of Rehabilitation  
Medicine  
University of Alberta

**Matthew H. Kowalski, DC, DABCO**

Osher Clinical Center at Brigham and  
Women's Hospital

**Reiner Kremer, DC, NMD, MPH, DABCI, PA-S**

Private Primary Care Practice  
Franktown, Colorado

**Anthony J. Lisi, DC**

Director, Chiropractic Program  
Veterans Health Administration

**Dennis M Marchiori, DC, PhD**

Chancellor  
Palmer College of Chiropractic

**Brian McAulay, DC, PhD**

President  
Parker University

**Rick McMichael, DC**

Immediate Past President  
American Chiropractic Association

**William Meeker, DC, MPH**

President  
Palmer College of Chiropractic West Campus

**R. Douglas Metz, DC**

Chief Health Services Officer & EVP  
American Specialty Health

**William E. Morgan, DC**

Physical Medicine and Rehabilitation Department  
Walter Reed National Military Medical Center

**Donald R. Murphy, DC, DACAN**

Clinical Director, Rhode Island Spine Center  
Clinical Assistant Professor, Department of  
Family Medicine  
Alpert Medical School of Brown University

**Mary Selly-Navarro, RD, DC**

Navarro Chiropractic

**David O'Bryon, JD, CAE**

Executive Director  
Association of Chiropractic Colleges

**Bill O'Connell, MBA/MPA**

Executive Director  
American Chiropractic Association

**Ian C. Paskowski, DC**

Medical Director, Medical Back Pain Program  
The Jordan Hospital

**LTC Timothy L. Pendergrass**

Allied Health Staff Officer  
Office of the Army Surgeon General

**Stephen M. Perle, DC, MS**

Professor of Clinical Sciences  
University of Bridgeport

**Donald M. Petersen Jr., BS, HCD(hc), FICCC(h)**

Dynamic Chiropractic

**Reed B. Phillips, DC, PhD**

President Emeritus Southern California  
University  
of Health Sciences  
Consultant and Writer

**Daniel Redwood, DC**

Professor  
Cleveland Chiropractic College – Kansas City

**John Rosa, DC**

Owner  
Accessible Beltway Clinics

**Lewis G. Sandy, MD, MBA**

Senior Vice President, Clinical Advancement  
UnitedHealth Group

**John Scaringe, DC, EdD**

President/CEO  
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# APPENDIX 2: Background and Key Forces Shaping Chiropractic

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Scenarios present alternative paths to the future, in this case for chiropractic in 2025. Scenarios grow from a consideration of a few key forces and many elements in the systems they portray. In constructing the scenarios for this Chiropractic 2025 report, we reviewed our earlier scenarios, spoke with experts and leaders in chiropractic, developed preliminary forecasts, and had structured interviews with many more leaders and experts in health care and chiropractic. We also followed leads on specific topics, for example, chiropractors with successful or novel practices, as well as chiropractors pursuing the “safety valve” option of becoming a physician’s assistant or nurse practitioner. Those we interviewed are listed in Appendix 1 above. In this Appendix 2 we present some of the thinking and assumptions about key forces related to chiropractic that shaped our forecasts. Where we used published or Internet-available sources we will cite those. Where the thinking came from our interviews we will say “an interviewee” or “multiple interviewees,” without identifying them, as the interviews were done on a confidential basis.

The table of contents below identifies the range of key forces covered in this Appendix. Scenarios are intended to allow individuals and organizations to think about what might happen, and what they want to happen. In considering the discussion of these key forces, please consider to what extent you agree with the descriptions below. Feel free to adjust any of the assumptions, make appropriate changes in the scenarios, and then use the revised scenarios to consider the implications for the chiropractic field or for your practice.

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## Chiropractic Schools, Education, and Philosophy

What will chiropractic education in the U.S. look like in 2025? Our interviewees expressed a wide range of views on how the schools, enrollment, costs, curriculum, and training opportunities may develop over the next decade. However, all agree that to overcome challenges in enrollment and tuition as well as meet the opportunities and challenges of a changing U.S. health care industry, chiropractic schools will need to innovate in educational and curricular delivery as well as boost chiropractic research activity.

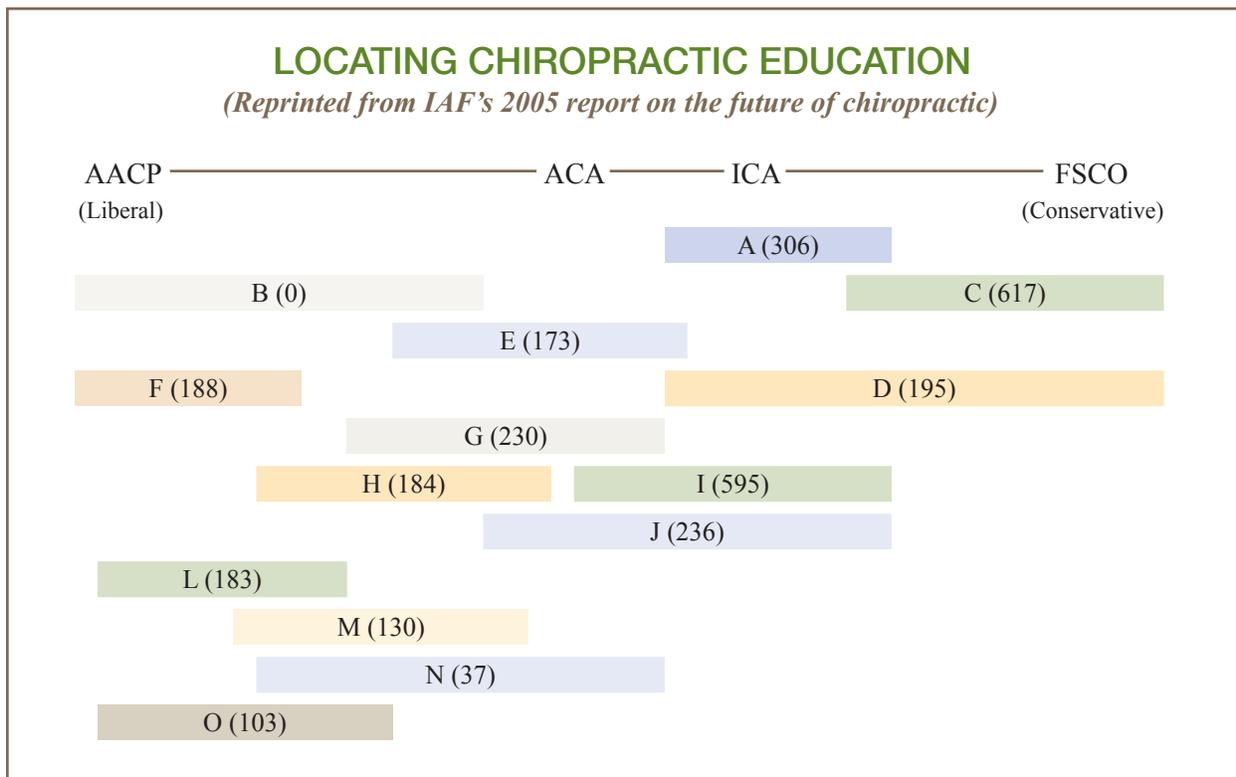
### *Number and Types of Chiropractic Schools*

The number of U.S. chiropractic degree programs and institutions accredited by the Council on Chiropractic Education (CCE) has risen from 17 to 18 since IAF's 2005 report on the future of chiropractic.<sup>1</sup> This change includes the fact that D'Youville College chiropractic program obtained accreditation in July 2007,<sup>2</sup> the National University of Health Sciences opened its Florida campus in July 2011,<sup>3</sup> and the Los Angeles branch of Cleveland Chiropractic College closed down in August 2011 due to declining enrollment.<sup>4</sup> Some programs are considering partnerships with other health professional schools and/or with chiropractic schools with differing philosophical orientations to attract more students and offer a range of tracks that vary in philosophical emphasis, tuition cost, and study time. IAF's Chiropractic 2025 scenarios assume that one or more of the existing U.S. chiropractic programs or institutions may close or merge with another school by 2025, for reasons mentioned by interviewees including a lack of affiliations, little diversity in terms of degree programs or certifications, or having too few students to remain viable.

Chiropractic programs continue to be offered solely through privately-funded institutions. All but two of the programs are offered through relatively specialized institutions; the D'Youville College and University of Bridgeport programs are affiliated with regional universities. Efforts to set up the nation's first public chiropractic school at Florida State University failed when Florida's Board of Governors voted against the proposed school in January 2005.<sup>5</sup> Most interviewees do not consider it likely that another state-funded chiropractic college will emerge by 2025, due to declining chiropractic enrollment trends, public education budget cuts, or lack of leadership to spearhead another attempt at establishing a state-funded chiropractic program. However, other experts indicated that there continues to be an interest by state schools in chiropractic education, and that it is very possible that a state-funded chiropractic college will be successfully set up over the next decade, assuming more effective involvement and support of chiropractic organizations than was the case in Florida. Representing a step in this direction is National University of Health Sciences Florida Campus located at the University Partnership Center at St. Petersburg College. St. Petersburg College is a public community college that used excess campus space to host degree programs that were deemed to be useful for the community.

### *Philosophical Orientation of Schools*

There have been philosophical divisions among chiropractors and chiropractic colleges since the early years of the profession. In our 2015 Chiropractic Scenarios done in 2005, IAF surveyed the presidents and/or deans of the chiropractic colleges and had them place their school and all of the other schools on a spectrum that moved from conservative to more liberal. Figure 2 shows those results.



**FIGURE 2**

(A) Cleveland Chiropractic College, (B) Florida State University, (C) Life College (now Life University), (D) Life Chiropractic College West, (E) Logan College of Chiropractic, (F) National University of Health Sciences, (G) New York Chiropractic College, (H) Northwestern Health Sciences University, (I) Palmer College of Chiropractic, Palmer West, Palmer Florida, (J) Parker University, College of Chiropractic, (K) Sherman College of Chiropractic, (L) Southern California University of Health Sciences, (M) Texas Chiropractic College, (N) University of Bridgeport Chiropractic College, and (O) Western States Chiropractic College (now University of Western States).

Thirteen out of fifteen of the colleges responded to our 2005 survey. The numbers in parentheses are the number of graduates in 2002 compiled from the IPED-NES database. Reprinted from “The Future of Chiropractic Revisited: 2005-2015.” The Institute for Alternative Futures; Alexandria, VA: 2005. Available from <http://www.altfutures.org/future-chiropractic-revisited-2005-2015>, page 23.

Differences in aspirations and philosophy among chiropractic schools remain. In fact, several of those we interviewed felt that the relative position of the schools has remained similar to those shown in Figure 2. Other interviewees thought that there would now be more clustering in the middle, with the exception of Life University, Southern California University of Health Sciences, National University of Health Sciences, and University of Western States. However, as one interviewee pointed out in this third round of chiropractic scenarios, there is not a linear correlation between program philosophy and research quantity or quality.

We did not repeat the survey because the dimensions of the chiropractic philosophy have become more complex, as the discussion below and the scenarios indicate. Doing this mapping in 2013 would require mapping not only colleges but also several other players in the field, particularly chiropractic organizations, national and state associations, and networks. Furthermore, it became clear during our interviews and research that there is not a convenient or universally agreed-upon way of differentiating the camps or communities within chiropractic.

The Figure below identifies various terms used for these chiropractic communities:

Chiropractic Communities		
Liberal		Conservative
	Pragmatic	Philosophical
	Mixer	Straight
Broad-scope	Middle-scope	Focused-scope

The last row of categories were used in *Chiropractic Peace*, a book edited by William McDonald, DC, MEd, that includes chapters authored by leaders from the three practice philosophies—Gerard Clum, DC (focused-scope), Ashley E. Cleveland, DC, MA (middle-scope), and Reed B. Phillips, DC, PhD (broad-scope). Based on *Chiropractic Peace*, the categories can be described as follows:

- Focused-scope: detects and adjusts vertebral subluxations to restore normal nerve function, i.e., provides care toward the overall wellbeing of the patient, as opposed to the treatment of a given condition
- Middle-scope: combines subluxation adjusting with other conservative treatment and diagnostic procedures
- Broad-scope: uses a wide array of manual and other procedures to diagnose and treat conditions that expand beyond the typical musculoskeletal, orthopedic, and neurological examinations; many favor being able to prescribe medicines

Not all chiropractors are familiar with this book and these groupings, and some may even feel offended by the terms (e.g. many focused-scope practitioners do not believe their scope is focused or narrow, even if they believe that subluxation is real; and some chiropractors are unhappy with “middle-scope” as not having any meaning). In the second row of the chart above, “philosophical” chiropractors refers to those who believe that correcting/removing subluxations provides spine health and enables the nervous system to convey the body’s self-healing capacities to all parts of the body. They believe that there is vital life force behind this self-healing capacity, and many think that the “why” of chiropractic is more important than “what” chiropractors do. Chiropractors use manipulation to alleviate subluxations, foster self-healing, and create optimal health. “Pragmatic” chiropractors provide effective manipulation and related services on the basis of their effectiveness in dealing with the patient’s conditions. “Conservative,” in the first row, can describe “straights” or those who only provide adjustments to treat subluxation, and do not treat conditions. Yet “conservative” and “natural” are terms most chiropractors would prefer in describing their chiropractic care, regardless of the community to which they belong. Given these possibilities for naming the communities, we frequently use the focused-scope, middle-scope, and broad-scope terminology used in *Chiropractic Peace*. As relevant in this report, we will also call the focused-scope community philosophical chiropractors if that better suits the discussion at hand. Though we recognize that all three communities are philosophical, we have also found that the focused-scope community can be more fundamentalist in owning and describing their philosophy.

We also recognize that there is diversity within each of the three dominant communities on the spectrum. For example, within the broad-scope community, there are three main themes of focus, including 1) gaining prescription rights in order to better meet primary care demands, particularly in rural areas; 2) treating non-neuromusculoskeletal conditions conservatively without prescription rights; and 3) focusing on neuromusculoskeletal conditions with prescription rights.

Furthermore as noted, regardless of differences along the continuum, commonalities among all (or most) chiropractors include the appreciation for the body's innate ability to heal itself, the use of manual modalities (including manipulation and mobilization), and a commitment to conservative care.

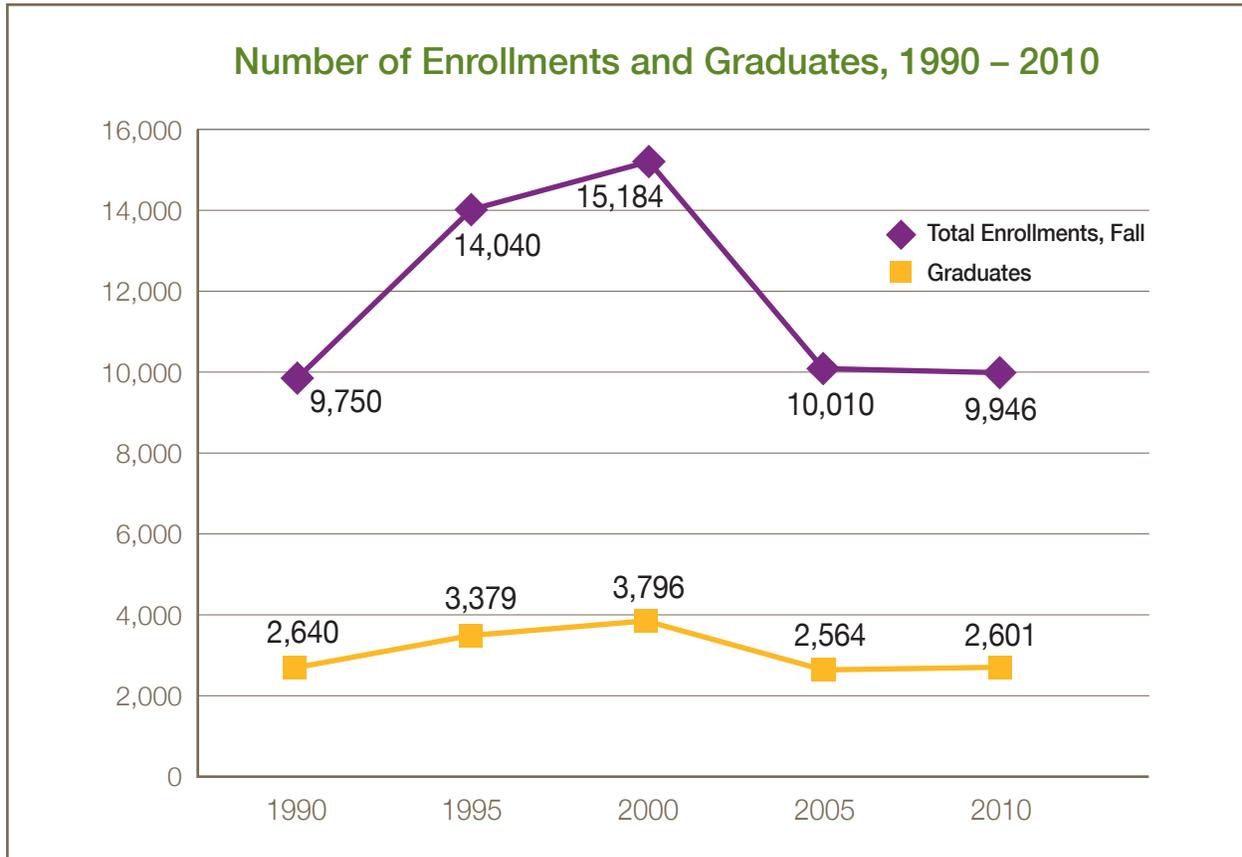
Several interviewees thought that the relative positioning of the colleges in Figure 2 above remains accurate. Thus, using these terms, chiropractic colleges that fall to the broad-scope end of the spectrum include National University of Health Sciences, Southern California University of Health Sciences, and University of Western States. Colleges that fall to the opposite, focused-scope end of the spectrum include Life University, Life Chiropractic College West, and Sherman College of Chiropractic. Colleges that hold the middle-scope ground include Cleveland Chiropractic College, Logan College of Chiropractic, New York Chiropractic College, Northwestern Health Sciences University, Palmer College of Chiropractic, Parker University, Texas Chiropractic College, University of Bridgeport, and now D'Youville College as well. Of the approximately 10,000 chiropractic students enrolled in 2010, more than 6,480 were enrolled in middle-scope, 2,060 in focused-scope, and 1,400 were enrolled in broad-scope institutions and programs.<sup>6</sup>

The orientation of the schools is important. However, virtually all of a chiropractor's practice is driven by what the licensing laws of his or her state allow in terms of scope of practice, and what health care payers cover. This means that the bulk of chiropractors (80% by our estimate) are middle-scope, while focused-scope and broad-scope each represent an estimated 10% of practicing chiropractors.

Yet these divisions are important in that much attention and visibility for the chiropractic field comes from the conflicts among these communities. For example, the broad-scope practitioners continue to try to expand their practice rights to include pharmaceutical prescribing, as "advanced practice chiropractors."<sup>7</sup> The philosophical chiropractors feel that is an affront to the meaning and purpose of chiropractic and have fought vehemently in several states to prevent the expansion to prescribing rights. As the scenarios consider this, the uncertainties to explore include how destructive the conflict will be and how many states will ultimately expand practice scopes to include prescription rights.<sup>8</sup>

### *Enrollments and Graduations*

A critical issue for the colleges, and ultimately the future of the profession, is enrollment. How many young people are willing to commit the time and dollars to four years to get a doctor of chiropractic (DC) degree? Although there are variations in enrollment trends (going up at some campuses, going down at others), most schools of chiropractic have experienced overall declines in enrollment over the last decade, particularly the smaller colleges. In 1995, enrollment at chiropractic colleges in the United States was estimated at 14,040 students.<sup>9</sup> Since then, enrollment has fallen to an average of 10,000 students a year.<sup>10</sup> Figure 2 shows the number of chiropractic enrollments and graduates over a two decade period between 1990 and 2010. This drop contributed to the largest forecasting error in IAF's 1998 scenarios focusing on the year 2010. Using data from the U.S. Bureau of Labor Statistics and other major sources at the time, the 1998 report included a forecast that the total supply of chiropractors would go from 55,000 in 1995 to over 100,000 in the United States by 2010.

**FIGURE 3**

SOURCES: (1) “A study of the need for and feasibility of a chiropractic college at Florida State University.” Prepared in compliance with Legislative Proviso in Specific Appropriations, #189-#192, FY 1999-2000, General Appropriations Act. February 1, 2000. <http://www.cepri.state.fl.us/pdf/Chiropractic.pdf>. p.10, 11. (2) National Center for Education Practices, Digest of Education Statistics (2011) Table 295: Degrees conferred by degree-granting institutions in selected professional fields, by sex of student, control of institution, and field of study: Selected years, 1985-86 through 2009-10. [http://nces.ed.gov/programs/digest/d11/tables/dt11\\_295.asp](http://nces.ed.gov/programs/digest/d11/tables/dt11_295.asp). (3) Association of Chiropractic Colleges. (Jan 2013). Private communication.

Interviewees for the current Chiropractic 2025 scenario report offered a variety of rationales accounting for this downward trend. Some noted that the mid-1990s levels of enrollment were abnormal due to an exceptionally large demographic pool of applicants, and that in the longer term around 10,000 enrolled chiropractic students has been the norm. Others associated the presumably temporary decreased enrollment in chiropractic programs with increased enrollment standards for DC programs. Still others thought the downturn was affected by the growing number of chiropractic programs outside of the U.S., which foreign students can choose to attend over schools in the U.S. If accreditation status is ignored, there are now more chiropractic programs outside of the U.S. than within it. Interviewees also cited the rise of health care costs, an unfavorable insurance environment for chiropractors, student debt, and the strong competition from the schools of other health professions. For the future, interviewees expected

overall enrollment trends to either remain flat or continue declining over the years leading to 2025. Some would consider stabilizing enrollments at approximately 10,000 to be a success. Enrollments at individual institutions, however, may significantly shift. For example, Life University currently reports approximately 1,600 chiropractic enrollees, and the university is forecasting that its enrollment will grow to 2,000 by 2020.

On the one hand, enrollment could continue declining if the career opportunities and return on investment (ROI) experienced by those choosing to become other kinds of health professionals (particularly physical therapists, physician assistants, or nurse practitioners/advanced practice nurses), seem more attractive. Physical therapy programs and osteopathic colleges, for example, have blossomed over the last decade.

On the other hand, overall enrollments could increase if ROI and practice opportunities for the profession improve. Implementation of the Patient Protection and Affordable Care Act (PPACA) could improve coverage of chiropractic care in some states, driving enrollments up as DCs have a chance to practice in those areas. For this purpose, interviewees indicated the need for chiropractors to stay actively engaged in health care reform conversations and the development of ACOs and PCMHs (to enable DCs to practice within them), to increase opportunities for integrated clinical training and inter-professional education, and to successfully conduct practice research and data collection to demonstrate the value of chiropractic care. Additional factors leading to increased enrollments may also include the new marketing and alumni/ae relationship management efforts of chiropractic colleges. For example, Life University reached out to its national alumni/ae network during its *Power of One* tour to encourage alumni/ae to promote their practice field.<sup>11</sup> Other colleges have also recently begun to deepen their relations with alumni/ae.

### **Entrance Requirements**

Although the National Board of Chiropractic Examiners (NBCE) developed the chiropractic equivalent of the Medical College Admission Test (MCAT), there is no required chiropractic college admission test. Instead, the CCE has been raising standards for student admissions since the early 2000s. In 2012, admission to a chiropractic college requires a minimum of three academic years (90 semester hours) of undergraduate studies earned with a 2.5 GPA and including a minimum of 24 semester hours in life and physical science courses.<sup>12</sup> After January 2014, a 3.0 GPA will be required.<sup>13</sup> In addition, new accreditation standards will allow a broader cross-section of undergraduate work to qualify for entry into chiropractic colleges.

Some colleges go beyond the minimum requirements. Two schools require a bachelor's degree as an admission requirement, up from one in 2005.<sup>14</sup> At least another two colleges publicly state that although they do not require an undergraduate degree, they may prefer applicants with a bachelor's degree for some campuses. For example, Palmer College of Chiropractic awards priority seating at its Florida campus to applicants with bachelor's degrees, given that the state of Florida requires a bachelor's degree to have been completed before granting a chiropractic license.<sup>15, 16</sup> In fact, 13 states require a completed bachelor's degree before granting a chiropractic license, and Nebraska is considering adding such a requirement.<sup>17</sup> As a result of these developments at the individual school level, a 2010 NBCE survey revealed that the proportion of respondent students holding a post-secondary degree upon entering a chiropractic college has increased by 10% (from 83.8% in 1991 to 93.1% in 2010). However, as regulations do not specify that bachelor's degrees must be obtained before or during chiropractic school,<sup>18</sup> five chiropractic institutions are offering students the opportunity to earn or complete their bachelor's degrees while concurrently pursuing and completing the doctor of chiropractic program.

The impact of more stringent admission requirements on enrollment levels is unclear, but the effects seem to be positive. In an online poll by *Dynamic Chiropractic* in March 2012, about 80% of 426 respondents indicated that they advocate raising the entry requirements for admission to all chiropractic colleges.<sup>19</sup> Another study concluded that while raising standards would spark a "period of readjustment" in enrollment numbers, it would also limit academic underachievement during studies.<sup>20</sup>

## *Tuition and the ROI Story*

According to the National Center for Education Statistics, annual tuition fees for chiropractic schools in the U.S. have tripled between 1988 and 2008 (from \$8,000 to \$24,000).<sup>21</sup> Moreover, the pace of increase has accelerated since the early 2000s. By comparison, medical college tuition fees increased more than chiropractic fees did between 1988 and 2000, but the growth rate has declined since then. Alternatively, fees at dentistry, osteopathy, and podiatry colleges did not rise as much or as rapidly as the costs of chiropractic colleges.<sup>22</sup> Interviewees expected chiropractic college tuition to continue increasing, although at a slower rate over the years to 2025.

However, a prospective student's decision to become a chiropractor might be influenced more by ROI than by the absolute cost of college fees. Some interviewees observed that prospective students are increasingly asking about ROI, even if they feel that becoming a chiropractor is "a calling." Chiropractors' incomes have not gone up in recent years, but student debt has skyrocketed. Several interviewees indicated that they do not expect to see new chiropractors' incomes trending up for some time, and expect that new graduates will find it increasingly difficult to set up a successful practice due to shrinking reimbursements. In order to address the student loan burden, some interviewees support shortening the four years of chiropractic education in order to lower cost of attendance. Some chiropractic colleges offer what is known as a 3+1 program, in which students complete three years of undergraduate study, enroll at and complete one year of a DC program, and transfer the credits to the original college to complete their bachelor's degree (however, if colleges charge to recognize these transferred credits, tuition costs would not be reduced). Other strategies include Palmer College's utilization of a Match.com-like platform for its DC students to successfully match students with career opportunities and get to jobs or income more quickly. One interviewee pointed out that medical colleges are reducing prerequisite education in order to reduce overall student debt. DC colleges may mimic this model in order to reduce student debt as well.

## *Degrees*

Currently, becoming a doctor of chiropractic requires approximately 7-11 years of education after high school, depending on entrance requirements and whether students undertake additional years of study to pursue one or more specialties.<sup>23</sup> Postgraduate chiropractic training is available for a variety of specialties,<sup>24</sup> and after such training chiropractors may take exams leading to certificates or "Diplomate" status in a given specialty.

Chiropractors often obtain specialized training and use specific techniques, such as active release therapy, diversified technique, Activator methods, and Gonstead techniques. Chiropractors can also undergo training in such areas as oriental medicine, massage therapy, acupuncture, manipulation under anesthesia, and naturopathic medicine. Certificates can be obtained for sports care, spinal trauma, rehabilitation, extremity expertise, and animal/veterinary chiropractic. Diplomates can be obtained in Gonstead research, family practice, pediatrics, (medical) acupuncture, sports sciences/sports care, radiology, rehabilitation, diagnosis and internal disorders, neurology, and clinical nutrition.<sup>25</sup> According to one survey conducted by *Chiropractic Economics* magazine in 2012, the most common specialty certifications among current practitioners among 410 DCs responding are family practice (22% of respondents) and sports and rehabilitation (8%).<sup>26</sup> A review of specialties listed on college websites indicates that nutrition and sports are the most commonly offered specialties.

Obtaining specialties, certificates, diplomates, and multiple degrees is actually a rising trend among students and doctors of chiropractic. Reasons for this include the potential for higher incomes and greater return on investment (ROI) for the cost of education, as well as a means of standing out from competitors within and beyond the field. In some cases, DCs obtain specialties as per state regulation (a pediatric chiropractor in Iowa, for example, must obtain a post-graduate degree in order for the pediatric specialty to be recognized).

Several interviewees felt that Diplomate certifications are familiar to the profession, but do not have sufficient credibility outside of it. They expected that diplomates will decline in popularity and will be replaced by master's degrees. Although the majority of chiropractors may continue to have a Bachelor of Science, a Doctorate of Chiropractic and some continuing education, interviewees expected chiropractors to hold more dual degrees, Masters of Arts, and PhDs in the future. Many interviewees felt that such degrees, recognized outside the chiropractic profession, would help chiropractors gain "cultural authority," i.e. respect for the chiropractic profession and recognition of its abilities within the lay and scientific communities. Interviewees noted that students holding dual degrees tended to get hired in practice settings such as Veterans Health Administration (VHA) hospitals and Department of Defense (DoD) facilities because of their dual degree, as medical groups are looking to get as many options as possible for the price of fewer employees. In practice, however, graduates with multiple degrees do not necessarily practice all of the disciplines from which they graduated. Some interviewees also noted that to minimize students not completing their DC degrees, DC colleges may limit acceptances to dual degree programs. Nevertheless, chiropractic colleges, sometimes in partnership with other universities, are increasingly developing and offering master's and dual degree programs in a variety of fields, including acupuncture, oriental medicine, nutrition, naturopathic medicine, public health, business administration, research, diagnostic imaging, sports science, and rehabilitation.

Chiropractors' interest in practicing acupuncture in particular appears to have driven significant changes among chiropractic colleges. In California, for example, DCs cannot practice acupuncture without an acupuncture degree. Thus, the Southern California University of Health Sciences integrated the former Los Angeles Chiropractic College (LACC) with the College of Acupuncture and Oriental Medicine to make dual enrollment convenient. Similarly, New York Chiropractic College has merged with an acupuncture school, and Northwestern Health Sciences University and National University of Health Sciences have started their own schools of acupuncture. The acupuncture degree seems to have improved the ROI and expanded the sources of revenue for some recent graduates. However, as some interviewees noted, although many DCs have been trained or certified in acupuncture over the years (e.g., 400 of 1,900 licensed chiropractors in Colorado), they may struggle to integrate acupuncture (and be paid for providing acupuncture) in a cost-effective manner.

A specialty qualification does not grant chiropractors the right to charge more. However, it has the potential to raise the quality of care, thereby improving the practitioner's reputation with his or her clients, and recognition within the medical domain can attract more referrals from other health providers.<sup>27</sup>

One major degree change that some schools are considering, in conjunction with the pursuit of broader prescribing rights for chiropractors, is the Doctor of Chiropractic Medicine (DCM) degree. The DCM degree was first proposed by Western States Chiropractic College in 1994 as a post-DC degree training program that aimed to prepare chiropractors to perform minor surgery and prescribe pharmaceuticals.<sup>28</sup> However, the degree has not been developed to date, although the National University of Health Sciences grants a "DCM" degree which is exactly the same as a DC degree.<sup>29</sup> Some interviewees felt that the rising pressure for a DCM would continue, and that its development would help facilitate the integration of the profession into the broader health care system.

## *Curriculum*

Each DC program's curriculum is comprised of a minimum of 4,200 instructional hours of course credits that address specific subjects.<sup>30</sup> However, the latest curriculum standards published by the CCE in 2011 provide "greater flexibility in designing curricula and clinical experiences to achieve the required meta-competencies and clinical outcomes."<sup>31</sup> Chiropractic students at Southern California University of the Health Sciences (SCUHS), for example,

share core courses and clinical internships with other health profession students at SCUHS, before separating into specialties. National University of Health Sciences also offers joint courses and clinical training opportunities.

Furthermore, students have historically been generally ill-prepared for running their own practices. However, DC colleges are increasingly providing students training in all aspects of chiropractic practice, from the clinical to the back office. SCUHS, for example, is planning to begin business simulations in spring 2013.

Although the chiropractic community is debating prescription rights, the core DC education may not change. Some schools, particularly the broad-scope colleges, would be open to expanding their offerings to include pharmacology and related subjects. These schools are also likely to offer the relevant training for practicing chiropractors to get certified as eligible to use the prescribing rights.

In any case, shared educational pathways should increase the impact of DC programs on chiropractors' integration into the health care system as a whole. In this context, interviewees mentioned that the establishment of one or more public chiropractic schools could be a major breakthrough in promoting successful integration of chiropractors into the health care system. This integration has become the norm for the chiropractic profession in other countries. In many countries (e.g., Canada and Denmark), it includes public higher education for chiropractors. Some interviewees felt that one DC program successfully begun at a public university would lead to others. However, other interviewees thought that the establishment of a DC program at a public university was not likely to occur by 2025.

### *Research Training*

There has been a focus on training chiropractors to do research, urging them to get PhDs or other graduate degrees. The number of DC-PhDs who can do research has grown significantly. One interviewee estimated that there are currently 100 DC-PhDs. However, as some interviewees noted, DC graduates with high student loan debt do not necessarily have the option of going into research. Additionally, as DCs become more focused on research, they may leave chiropractic colleges to do research on chiropractic at other universities or institutions. For example, James Whedon, DC, MS, is at the Center for Health Policy Research at the Dartmouth Institute for Health Policy and Clinical Practice where he has conducted research on chiropractic use in Medicare using the Center's access to Medicare claims data.

Given their history as private chiropractic colleges, none of the chiropractic schools would be considered a major research university. However, research—particularly on the efficacy and cost-effectiveness of chiropractic care—is growing at most schools. Four schools (Palmer College of Chiropractic, National University of Health Sciences, Northwestern Health Sciences University, and University of Western States) have been developing their research capacity and conducting research with federal funding. Palmer College, for example, used funding from the Health Resources and Services Administration to train its faculty in research methods, and the faculty members have in turn trained their students. In addition, Palmer College began to offer additional financial incentives (e.g., “publication bounties”) for research and publications. This Palmer College effort has successfully led to a significant increase in publications and research at the institution. Chiropractic colleges may also develop a registry of chiropractic college clinics and chiropractors to gather data on care. Similarly, Texas Chiropractic College, Logan College of Chiropractic, and Parker University College of Chiropractic all partnered to form a new collaborative research program in 2011, the Integrative Chiropractic Outcomes Network (ICON), and called for other chiropractic institutions and chiropractors to join.<sup>32</sup> Additionally, the Lincoln Chair's research program at the University of South

Florida is now in its fifth year and remains the only endowed chiropractic research program at a College of Medicine within the U.S.<sup>33</sup> The more philosophical-leaning Life University has also expanded its research on vitalism and has developed its Octagon series of conferences to promote this research and the integration of chiropractic and health care reform.

### *Clinical Training and Partnerships*

One of the direct measures mentioned by the CCE to assess whether a student has reached the “meta-competencies,” which are the basis of CCE evaluations,<sup>34</sup> involves “relevant internships/clinical experiences with evaluation.” No minimum number of hours is specified. Chiropractic colleges are free to define, explicitly or not, how many clinical training hours they deem necessary and how to integrate them into the curriculum, as long as students eventually acquire the meta-competencies.

A common theme among interviewees is the need for more clinical training opportunities for DC students, and particularly opportunities that allow them to rotate through hospitals and care settings with other health professionals. While MDs receive clinical training in a variety of settings to translate learning into real-world experiences, clinical training opportunities for chiropractors have been limited so far. Chiropractic programs were already offering training at associated clinics. Also, DC graduates have the option of joining a practicing chiropractor’s practice as an associate before moving on to their own practice. However, there is an overall trend toward providing chiropractic students with more field practice and clinical training before licensure.

Although DC residencies do not formally exist in the VHA or DoD medical facilities, a rising number of DC students are also training in these settings. Since the introduction of chiropractic services to the VHA in 2004, for example, chiropractic students may undergo clinical training within VHA medical facilities that have affiliations with chiropractic institutions.<sup>35</sup> As of April 2009, 17 VHA facilities had established academic affiliations with 11 chiropractic colleges and several other affiliations were in development.<sup>36</sup> In 2013, there are 46 chiropractic clinics in the VHA, staffed by 49 chiropractors: 41 of these are employees, 4 are contractors, and 4 are without compensation appointments in conjunction with an academic affiliate. Palmer College has affiliations with 11, and will send approximately 30 students to clinical rotations this year.

Although the VHA is not the largest provider of chiropractic training, it may be the largest provider of *integrated* training opportunities for chiropractic students to practice with other health care professionals. As one interviewee forecasted, the number of affiliations that chiropractic colleges have with VHA hospitals may increase exponentially by 2025.

### *Disruptive Innovations*

Given flat or declining enrollments in most colleges and increasing tuition fees, interviewees felt that chiropractic education needs reform. DC colleges are interested in improving the quality of education, including reducing duplication by improving coordination in coursework and curriculum with undergraduate programs. Students trying to obtain multiple degrees have to manage both the costs of the programs and the time required to acquire new skills. Interviewees noted that DC colleges need to consider a more multifaceted system beyond the traditional classroom.

To address these challenges, many higher educational institutions have begun in recent years to offer programs of study either entirely online or through a “blended-learning environment,” i.e., a combination of online and offline learning that allow teachers to coach and tutor students on more of an individual basis. For example, 40% of course

work for the M.A. in Acupuncture offered by National University of Health Sciences is conducted online. Many non-chiropractic college courses are offered through Massive Open Online Courses (MOOCs), which have enjoyed a growing popularity in the U.S. MOOCs distribute content on major web platforms that are produced specifically for online instruction. University-level content is provided via platforms such as Coursera, Udacity, and edX. The increasingly popular Khan Academy largely targets the K-12 population. As Clayton Christensen puts it, “the rise of online education could effectively render terrible teachers redundant, while bolstering the careers of talented educators.”<sup>37</sup> Applied to chiropractic education, MOOCs may in the coming years offer both challenges and opportunities. Although interviewees varied in their comfort with how far to take online learning in the chiropractic curriculum, they felt that there could easily be a consortium of online courses, including continuing education and elective courses in subjects such as business, contract management, and legal matters, as well as basic sciences, clinical reasoning, and case presentations. Ultimately, such flexibility widens the range of choices available to students. In the longer-term, once students graduate, this may also allow for greater chiropractor diversity, increasing the range of choices for customers.

### *Loan Repayment*

It has become a challenge for DC college graduates to make a living while paying back their loans. Much of the graduate DCs’ debt now comes from their undergraduate studies. According to a 2010 survey conducted by the American Chiropractic Association (ACA), 72% of recently graduated respondents reported holding \$100,000 to \$200,000 in student loan obligations, and 15% had over \$200,000 in debt.<sup>38</sup> Although this survey shows that *current* chiropractic students are somewhat comfortable with their loan burden, it is not clear how many *prospective* students are put off by high costs and small financial aid.

Besides private loans, federal aid for the doctor of chiropractic programs consists of a number of student loan programs, particularly Perkins Loans, Federal Direct Loans, and Federal Direct Grad PLUS loans. Chiropractic students may also receive support from chiropractic-specific organizations. For example, until its demise in 2009, the Foundation for Chiropractic Education and Research (FCER) had been supporting major funding and infrastructure development for chiropractic research as well as fellowships and research residencies in chiropractic colleges. Another source of support is NCMIC, which has established a self-perpetuating foundation to fund both research and educational projects.<sup>39</sup>

Additionally, Rep. Bruce Braley (D-Iowa) introduced the Frontline Providers Loan Repayment Act in 2011. If passed by Congress, it provides for chiropractic student loan repayment in exchange for commitment to practice in an underserved area for at least 2 years, similar to the National Health Service Corps.

### *Forecasting Enrollments and Practicing DCs*

As is the case for practicing chiropractors, diversity characterizes the contents, formats, and experiences that chiropractic education delivers in the U.S. The general attractiveness of chiropractic education is influenced by the ROI question for chiropractic students heavily burdened by debt contracted during or prior to their chiropractic studies. Currently, the U.S. education system as a whole is striving to provide solutions to skyrocketing tuition fees and uneven quality of education. This is spearheaded by online platforms providing on-demand personalized learning, but also by innovations at the individual institution level. Chiropractic education is following the same path, with an interest in adopting online learning and an array of curricular innovations.

An important innovation addressing the ROI issue, and implemented by a growing number of colleges, is multidisciplinary training and the possibility to earn different degrees concurrently. Chiropractic students can now earn a doctor of chiropractic degree along with degrees in other complementary and alternative medicines or allopathic disciplines. Chiropractic colleges are also working to expand clinical training in diverse settings including VHA hospitals and DoD facilities, as well as practices, clinics, hospitals, and even international settings. Another common trait is the focus on improving the reputation of chiropractic and facilitating chiropractors' future integration into the U.S. health care system by encouraging research, the pursuit of degrees recognized outside the profession, and training opportunities in integrated settings.

However, there is uncertainty regarding the extent to which the schools' efforts will successfully maintain, much less grow, enrollment levels over the years to 2025. How interest in chiropractic as a career, federal tuition support, public funding for chiropractic research, clinical training opportunities, and the chiropractic school landscape evolve depends in large part on the success of practicing chiropractors and state and federal leaders in advancing their profession and reputation in an increasingly value-based health care system.

The scenarios play out these factors in different ways. We developed a simple model to track year-by-year changes out to 2025. In this model, our forecast for chiropractic college enrollment in Scenario 1, is 8,000 students enrolled in the year 2025 compared to 9,632 in 2012. This reflects the declining trend seen in the last 10 years and the grim perspectives in ROI for young chiropractors in the first years of their practice. Given the competition from other professions and only partial success with DCs integration into primary care, we assume this 1% decline in the total number of enrolled students each year from 2012 to 2025. In the "hard times and civil war" Scenario 2, many chiropractors are unemployed, there is far less integration into delivery systems, physical therapists and other effectively compete for manipulation, and the intense battles between broad-scope chiropractors seeking pharmaceutical prescribing rights and the philosophical chiropractors vehemently opposing them get the greatest attention for the profession. In Scenario 2, the number of enrollments is cut in half from 2012 to 2025, going down to 5,000 students. In Scenario 3, evidence of chiropractic's efficacy and cost effectiveness is shown for the field and for local chiropractors, many chiropractors are integrated into primary care and ACOs, the profession gains cultural authority, and demand for chiropractic grows, along with favorable attention to the profession. This drives enrollments in Scenario 3 up to 12,000 students by 2025, or a 25% growth. Finally, in Scenario 4, DCs are shown to be effective in most settings, outcomes research and protocols dictate effective course of treatment, a large group of self-care consumers wisely buy DC services, and research on vitalism connects the professions origins with advancing science. This increasingly bonds the profession and attracts more health oriented patients. In Scenario 4 this keeps the number of enrollments stable from 2012 to 2025 at about 10,000 students.

In all scenarios we assume that, as chiropractic studies take an average four years and assuming that close to 10% of students who start do not graduate, around 22.5% of the total number of students enrolled in chiropractic colleges graduate each year.

In terms of forecasting practicing DCs, we start with a base estimate of around 55,000 practicing DCs in 2012.<sup>40</sup> We forecast the number of practicing chiropractors for 2025 in each scenario by adding the chiropractors that graduate each year to the net number of chiropractors practicing the year before. The net number of practicing chiropractors accounts for dropouts and retirements. In Scenarios 1, 3 and 4, we assume that each year on average 2.5% of all practicing chiropractors drop out of practice or retire due to age or financial reasons. In Scenario 2, this percentage is 4.6% as chiropractors are in dire straits. As a result, in Scenario 2 the number of chiropractors in practice declines by 18%, reaching 45,000 by 2025. In Scenario 1, by 2025 63,000 chiropractors are in practice (a 13% growth from 2012 to 2025). In Scenario 3, the number of practicing DCs rises by 22% to 68,000 in 2025. Finally, in Scenario 4 this number reaches 66,000, with 19% growth.

## The 50 States of Chiropractic

Chiropractic faces a variety of different challenges and regulations in every state. Chiropractors cannot perform acupuncture in many states, including Georgia (where DCs also cannot use vitamins),<sup>41</sup> Kentucky,<sup>42</sup> and Minnesota.<sup>43</sup> Kansas does not prohibit DCs from performing acupuncture, but it does prohibit DCs from referring to themselves as “chiropractic physicians.”<sup>44</sup> There are different regulations regarding the drawing of blood as well. DCs cannot draw blood (by needle syringe) in Arizona,<sup>45</sup> but they can do so in Iowa.<sup>46</sup> Iowa also allows DCs to give nutritional advice, but not to “profit from the sale of nutritional products coinciding with the nutritional advice rendered.”<sup>47</sup> Colonic irrigation is generally not considered to be within the scope of practice for DCs,<sup>48</sup> and generally DCs cannot use X-rays except for in analysis or diagnosis.<sup>49</sup> Minnesota does not allow DCs to use any device that utilizes sound or heat to treat a condition unless the device was approved by the Federal Communications Commission (FCC), and does not allow devices to be used above the patient’s neck.<sup>50</sup> In some cases, chiropractors can gain licenses with expanded scope. For example, in Maryland, chiropractors can get an expanded license that includes the right to practice physical therapy.<sup>51</sup>

In addition to serving under widely varying regulations, chiropractors are not evenly distributed throughout the United States. According to data from the Federation of Chiropractic Licensing Boards, fewer than 1,000 active chiropractic licenses were registered for the U.S. Virgin Islands, the District of Columbia, Puerto Rico, and 24 states in 2011.<sup>52</sup> Eight states had between 1,000 and 2,000 active licenses registered, ten states had 2,000-3,000 active licenses registered, Georgia and New Jersey had over 3,000 active licenses registered, Illinois and Pennsylvania had over 4,000 active licenses registered, while Texas, Florida, and New York had at least 5,000 active licenses registered. California had over 13,000 active licenses registered.

Further adding to the diversity of the chiropractic experience, each state has different plans to cover certain essential health benefits (EHBs), in relation to the Patient Protection and Affordable Care Act (PPACA). These EHB plans do not always include chiropractic coverage, but when chiropractic coverage is included the plans do not cover them in the same manner. Proposed EHB Benchmark Plans may cover chiropractic up to a certain annual monetary limit per patient, up to a certain number of annual visits per patient, may cover chiropractic entirely, or may not cover chiropractic at all.

Only four states (Alabama, Idaho, Illinois, and Montana) have plans that propose to cover chiropractic with annual monetary limits per patient. These plans propose to cover chiropractic care with per patient annual limits of \$600 (Alabama and Montana), \$800 (Idaho), and \$1,000 (this plan from Illinois, where chiropractors’ scope of practice is as broad as medical doctors—minus surgery and pharmaceutical prescribing rights—only covers manipulation).

Twenty-eight states have plans that propose to cover chiropractic care with limitations on annual visits per person. The EHB plan for the state of Washington covers the fewest annual visits, at 10 visits per person. Eight proposed state plans cover 12 annual per person visits, another eight state plans cover 20 annual per person visits. Maine’s plan is the most generous, covering 40 annual visits per person.

Thirteen states have plans that propose to cover chiropractic care without quantitative limits on service. These include Iowa, Kansas, Louisiana, Maryland, Minnesota, New Hampshire, New Jersey, New Mexico, New York, South Carolina, South Dakota, West Virginia, and Wisconsin. In contrast, proposed plans for five states (California, Colorado, Hawaii, Oregon, and Utah) and the District of Columbia do not cover chiropractic care.

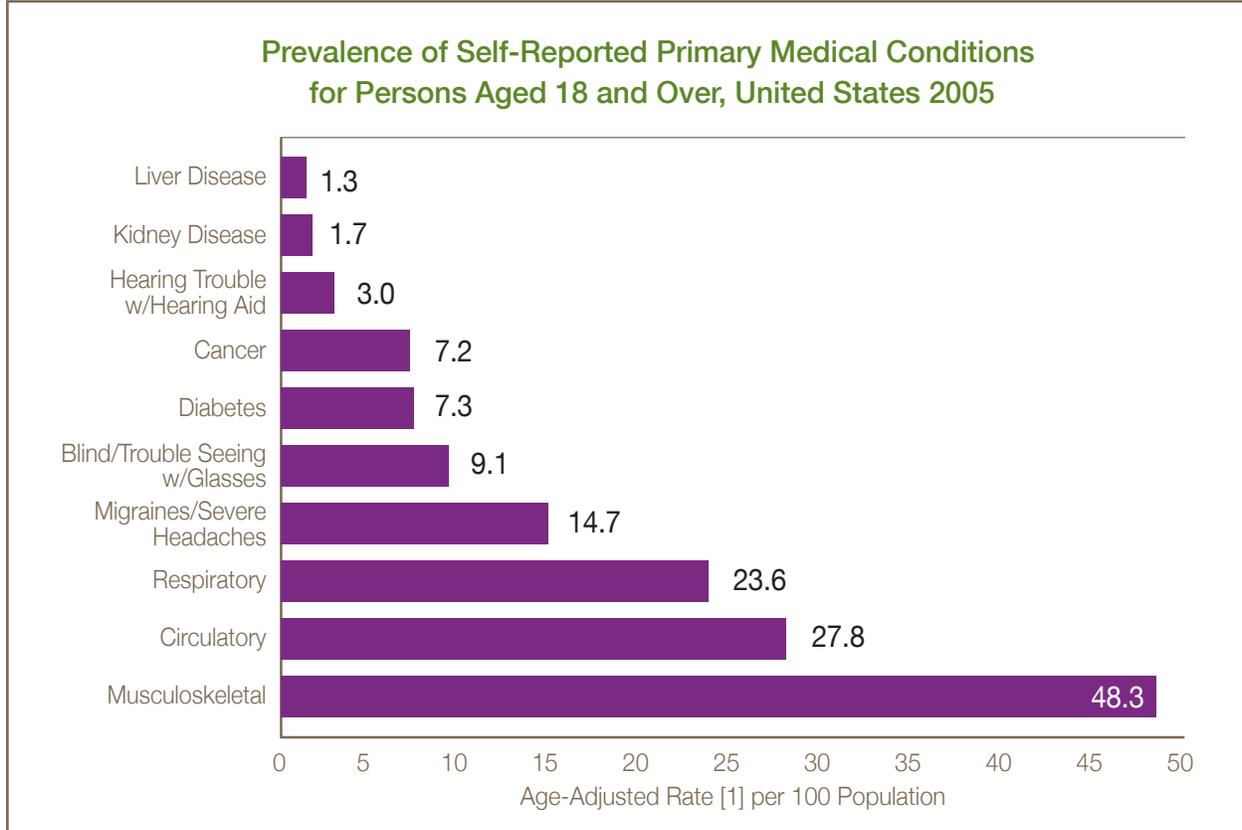
## Chiropractic Utilization, Demand, and Competition

### *Chiropractic Utilization: General Demand*

The use of chiropractic varies by state and region as well. Chiropractic is one of the most widely used and best established complementary and alternative medicine (CAM) professions in the U.S.<sup>53</sup> This has been consistent since the first nationally representative data on CAM use in the United States, a 1990 telephone survey of over 1500 adults.<sup>54</sup> The three most frequently used forms of CAM were massage therapy (7%), chiropractic care (10%), and relaxation techniques (13%). Nationally representative studies of CAM use in the U.S. presented similar prevalence estimates (the three largest CAM studies in the U.S. had results of 6.8%,<sup>55</sup> 7.5%,<sup>56</sup> and 7.6%<sup>57</sup> for prevalence estimates of chiropractic utilization). The 2007 National Health Interview Survey found that chiropractic care was the most commonly used therapy for low back pain, with 74% of survey respondents who had used any therapy for back pain reporting the use of chiropractic care.<sup>58</sup> The American Chiropractic Association (ACA) stated in the 2004 White House Conference on Aging<sup>59</sup> that 11% of American adults seek chiropractic care each year, making chiropractic the most commonly used CAM therapy. Davis et al., 2013<sup>60</sup> report that around 12 million adults used chiropractic care each year between 2002 and 2008. In terms of expenditures, Davis et al., 2009<sup>61</sup> found that the proportion of outpatient U.S. health care expenditures for chiropractic care rose slightly from 2.15% to 3.26% between 1996 and 2005, even as the growth in chiropractors slowed. Davis et al, 2013 point out that expenditures for chiropractic varied between \$6 billion and \$8 billion from 2002 to 2008.<sup>62</sup>

As noted, there are a range of estimates for use of chiropractic care among the general population of the United States. A 2002 article found that estimates varied from 3% to 18%.<sup>63</sup> A more recent 2007 review found estimates to generally range between 6-12%.<sup>64</sup> Use of chiropractic varies by region, with higher use in the upper Midwest, areas in the East and West Coasts and lower use in the South. Studies have also found that chiropractors are frequently sought in rural, medically underserved areas, where there is often a shortage of health care professionals, particularly to address the needs of older patients.<sup>65</sup> Probst et al.<sup>66</sup> found that conditions likely to be associated with pain (bursitis, headaches, myalgias, low back pain [LBP], and degenerative joint disease) were higher among rural visits than among urban visits (8.5% versus 5.4%). Using the 1996 and 1997 National Ambulatory Care Surveys, Probst et al. found that back symptoms comprised 2.5% of rural visits compared to 1.8% of urban visits.<sup>67</sup> LBP accounted for 2% of diagnoses associated with rural ambulatory visits, and 1.1% of diagnoses associated with urban ambulatory visits.<sup>68</sup>

The ACA in the 2004 White House Conference on Aging stated that more than 30% of patients with LBP seek chiropractic care, and that over 90% of chief complaints among chiropractic patients are musculoskeletal (typically headaches, spine-related back pain, and neck pain).<sup>69</sup> Figure 3 below is taken from the Executive Summary of *The Burden of Musculoskeletal Diseases in the United States: Prevalence, Societal, and Economic Cost*.<sup>70</sup> It reveals how prevalent musculoskeletal conditions are in persons aged 18+.

**FIGURE 4**

According to the Bone and Joint Decade organization, musculoskeletal diseases and disorders comprise the leading cause of disability in the U.S. and account for over half of all chronic conditions in people age 50+ in developed nations.<sup>71</sup> Furthermore, “the economic impact of these conditions is also staggering: in 2004 the sum of the direct expenditures in health care costs and the indirect expenditures in lost wages has been estimated to be \$849 billion dollars, or 7.7% of the national gross domestic product.”<sup>72</sup>

According to the Academic Consortium for Complementary and Alternative Health Care (ACCAHC), about 60% of chiropractic patients consult a chiropractor for complaints directly related to back pain.<sup>73</sup> Other musculoskeletal complaints comprise 20% of new patient consultations.<sup>74</sup> Certain non-musculoskeletal conditions and headaches comprise another 10% each for the remainder of patients.<sup>75</sup>

The ACCAHC also points out that employer-sponsored health plans and wellness programs are increasingly including chiropractic care, and that chiropractors are increasingly working in integrated settings (e.g., community clinics, hospitals, DoD and VHA facilities).<sup>76</sup> As mentioned in the Chiropractic Schools, Education, and Philosophy section above, many athletes and athletic teams at the college, university, professional, and Olympic levels take advantage of chiropractic care.<sup>77</sup> Maximized Living, for example, is a health care delivery system of about 500 DCs who teach “five essentials” (toxicity, exercise, mindset, nerve supply, and nutrition) to achieving all-around wellbeing in life and permanently correct subluxations. Maximized Living sent over 100 DCs to supervise athletes on the U.S. sitting volleyball, wrestling, weightlifting, and judo teams.<sup>78</sup>

Some interviewees also posited an increased demand for pediatric chiropractic given a growing population of parents demanding more non-allopathic care for pediatric chronic care, and frustration among pediatricians that they cannot seem to help patients without prescribing drugs, many of which have not been tested in children and babies. It was noted, however, that although chiropractors are licensed to treat children in all 50 states, most might feel more comfortable with treating adults than with treating young children or babies.

### *Demand: Geriatric Care and Medicare Beneficiaries*

Interviewees expected demand for chiropractic care to grow for sports and pediatric care, but much greater anticipation was expressed regarding geriatric chiropractic. Chiropractic has a great market opportunity among Medicare beneficiaries and older patients. With high national rates of back pain and chronic pain, particularly among the elderly, and the aging of the Baby Boomer generation, chiropractors have an opportunity to be in very high demand. In 2004, reporting data from the 1990s, the ACA stated that 17% of chiropractic patients are over the age of 65.<sup>79</sup> Dougherty et al.<sup>80</sup> posit that DCs are well-suited for treating elderly patients through interventions such as fall prevention, nutritional counseling, exercise/physical activity, acupuncture, and spinal manipulative therapy.

Weigel et al.<sup>81</sup> conducted a longitudinal study of chiropractic use among Medicare beneficiaries over a fifteen year period (1993-2007), and found that 14.6% of the beneficiaries used chiropractic at some point during that period, with an average prevalence of 4.8% receiving chiropractic treatment in any given year. Whedon et al.<sup>82</sup> also analyzed Medicare claims data for services provided by chiropractic physicians in 2008. They found that the mean regional supply of chiropractic physicians was 21.5 per 100,000 adult capita. There was an average of about 1,100 DCs per state, and an average 2.5 DCs per 1,000 Medicare beneficiaries. The average percentage of Medicare beneficiaries who used chiropractic was 7.6%, and there was an average of 34,502 users of chiropractic per state. Chiropractic use among Medicare recipients was strongly associated with cervical spine or low back problems, and supply of chiropractors was positively correlated with use of chiropractic service (though not necessarily increased intensity of use [i.e. more visits per patient]). Regional chiropractic use varied more than 17-fold, and regional chiropractic supply varied more than 14-fold. The lowest use of chiropractic services was in the south (excluding Florida), and the highest use of chiropractic care occurred in the Northern region prairie states, including Iowa, Illinois, and Nebraska. Thus, chiropractic availability for and use by Medicare beneficiaries predominated in rural states in the North Central U.S., and expenditures on chiropractic care were higher in the East and Midwest than in the far West. It should be noted that racial and ethnic minorities tend to be underserved and undertreated relative to whites in Medicare, possibly contributing to variation of chiropractic demand. In fact, 97% of Medicare users of chiropractic in 2008 were white.<sup>83</sup> This is affected by the relatively low percentage of chiropractors who are not white or male. (See “Practitioner Experience” for more on this.)

Wolinsky et al.<sup>84</sup> analyzed a nationally representative sample of Medicare beneficiaries ages 70 and older in the U.S., using CMS Medicare claims from January 1991 through December 1996. They confirmed results from Weigel et al., finding an annual average rate of chiropractic use of 4.6%. During the four-year period (two years after and two years before each respondent’s baseline interview), about 10% made at least one visit to a chiropractor. Among those who made at least one visit to a chiropractor, individuals with lower body limitations or who were overweight were more likely to have higher volumes of chiropractic visits, while those with lower incomes, or who had “poorer cognitive abilities,” or who lived alone visited a chiropractor less frequently. Hispanics and African-Americans, individuals with multiple depressive symptoms, people who lived in counties with lower than average supplies of chiropractors were far less likely to visit a chiropractor. However, individuals who were able to drive (and could therefore transport themselves to the chiropractic office), reported pain, suffered from arthritis, or drank alcohol were much more likely to visit a chiropractor.

As noted above, there are disparities in use of and access to chiropractic care. Mackenzie et al., 2003<sup>85</sup> found that whites are the most likely to use chiropractic. Using a data subset from the 1995 National Comparative Survey of Minority Health Care of the Commonwealth Fund, Mackenzie et al. came to overall prevalence estimates of 8% for chiropractic use (13% among non-Latino Whites, 5% among blacks and African-Americans, 9% among Latinos, 5% among Asian-Americans, and 9% among Native Americans). Graham et al., 2005 confirmed this using data from the 2002 National Health Interview Survey, finding that non-Latino whites used chiropractic care more frequently than other groups.<sup>86</sup> Mackenzie et al. also found that individuals with yearly incomes over \$25,000 were more likely to report use of chiropractic than those with annual incomes less than or equal to \$25,000. Predictors of CAM use in general were educational attainment (high school level or greater), being female, and being uninsured.

Regardless of factors that may influence use of chiropractic, Whedon et al.<sup>87</sup> found that use of chiropractic care is positively correlated with the supply of chiropractors (though, as noted above, a greater supply of chiropractors did not necessarily result in intensified use of chiropractic care). Whedon et al.<sup>88</sup> analyzed Medicare claims data for services provided by chiropractic physicians in 2008. They found that the mean regional supply of chiropractic physicians was 21.5 per 100,000 adult capita. Chiropractic use was strongly associated with cervical spine or low back problems. Regional chiropractic use varied more than 17-fold, and regional chiropractic supply varied more than 14-fold. In 2007, about 58,000 DCs were licensed to provide care to Medicare beneficiaries.

### *Competition and Conditions Treated*

Most chiropractors, regardless of age, location, race, gender, or years of experience, treat patients with back pain and spinal issues. Back pain and spinal issues affect the majority of the US population. “Spinal disorders” were one of the top five leading primary diagnosis groups for ambulatory medical care office visits in 2009,<sup>89</sup> and “diseases of the musculoskeletal and connective tissue” comprised about 8% of primary diagnoses at office visits.<sup>90</sup> The ACA points out that spinal pain affects up to 80% of US residents at some point in their lives.<sup>91</sup> Anderssen in a 1999 *Lancet* review explained that between 70-85% of all people will experience back pain at some time in their lives.<sup>92</sup> According to the Global Burden of Disease 2010 Project, back pain, particularly low back pain (LBP), is the leading cause of years lived with disability (YLDs) worldwide, and has maintained this rank since 1990.<sup>93</sup> In addition, neck pain has maintained its place as the fourth leading cause of YLDs worldwide since 1990.<sup>94</sup> Overall, musculoskeletal disorders were the second largest contributor to YLDs globally and in nearly all regions.<sup>95</sup> Estimates from U.S. national surveys found that 26% of U.S. adults reported low back pain (LBP) and 14% reported neck pain in the previous three months. LBP alone comprised about 2% of all physician office visits.<sup>96</sup> U.S. citizens and residents spend an estimated \$86 billion per year for spine problems, without witnessing noticeable and prolonged improvements.<sup>97</sup> Despite the large U.S. health care expenditure that goes to back and neck pain, Martin et al., 2008<sup>98</sup> found that the rise in expenditures did not actually result in improvements for patient back and neck pain conditions.<sup>99</sup> Much of these costs can be attributed to pharmaceutical and surgical interventions.<sup>100</sup> LBP is one of the most common reasons for doctor visits, with over 25% of adults reporting experiencing LBP within the previous three months for surveys conducted in 1998, 2008, and 2009.<sup>101</sup>

Chiropractic care (particularly spinal manipulation) has been proven to be clinically effective and cost-effective in treating back pain, neck pain, and spinal issues. Chiropractors also perform over 90% of spinal manipulations in the U.S.<sup>102, 103</sup> Furthermore, while manipulation is “underutilized” by physical therapists (PTs), several interviewees pointed to an increasing interest among PTs and other professions in receiving training to perform manipulations. Most of the more recent articles that were found dealt with case studies and efficacy of spinal manipulation by PTs. Flynn et al. explained in 2006 that “physical therapists in this country and internationally have used thrust spinal manipulation at much lower-than-expected rates.”<sup>104</sup>

Jette and Delito<sup>105</sup> conducted a review of 1,279 care episodes for patients of PTs with LBP. During the initial stages of care, manipulation was used at a rate of 3.7%.<sup>106</sup> During the middle and final thirds of the treatment episodes, the rate had dropped to 0.7% and 0.6% respectively.<sup>107</sup> Mobilization was used in 27% of the initial treatment plans, and less frequently during the final third of the episode of care.<sup>108</sup> For cervical conditions, mobilization was used at rates of 41.9%, 39.0%, and 33.1% during each consecutive stage of treatment.<sup>109</sup> Manipulation was used at rates of 1.8%, 0.8%, and 1.1% respectively.<sup>110</sup> A randomized control trial of physical therapy in the UK found that utilization of spinal manipulation was “negligible”<sup>111</sup> for patients suffering from LBP, particularly given the fact that some international guidelines suggested that spinal manipulation could help treat acute or subacute LBP. A survey of PT practice in Northern Ireland found that use of manipulation was “limited.”<sup>112</sup> A retrospective study of the first 200 patients with LBP referred to a newly established community-based physical therapy department found that manipulation was used in fewer than 5% of cases.<sup>113</sup> Studies have found that 35%-48% of PTs’ patients with LBP are likely to respond to spinal manipulation, implying that manipulation is being “underutilized” by PTs.<sup>114, 115, 116</sup>

The future supply of chiropractors is challenging to forecast. The U.S. Bureau of Labor Statistics projects 28% growth in the chiropractic job market between 2010 and 2020.<sup>117</sup> However, student enrollment in schools of chiropractic has been stagnant for several years, after declining from earlier peaks.<sup>118</sup> Enrollment is affected by interest in and familiarity with the field, family recommendations, and potential ROI on the costs of chiropractic colleges vs. the ROI of competing opportunities. In developing research for these scenarios, we found numerous cases of chiropractors having “escape valve” options of getting PA or NP degrees. Examples include: four of the 55 Physician Assistants in the January 2013 graduating class at one PA school were chiropractors; one chiropractor noted that 35 chiropractors in her state had become Nurse Practitioners; another DC became a PA in order to get a steady income, health insurance, paid vacations, and maternity leave. Some DCs were less likely to encourage their children and other family members to go to chiropractic school. At least one couple even encouraged their son to become a PT. PTs, or more accurately doctors of physical therapy (DPTs), tend to earn more in their starting income and to be employees. There are four times as many PTs as DCs currently and while BLS forecasts 28% growth for DCs, BLS forecasts 39% for PTs. By 2020 there will be five times as many PTs as DCs.

As noted above, we factored various paths for the number of practicing chiropractors to 2025. Assuming 55,000 in 2012, we developed a range for the scenarios of 45,000 to 68,000 practicing chiropractors by 2025. Our highest forecasts for 2025 remain below what the 2025 number would be if the U.S. Bureau of Labor Statistics forecast of 67,500 DCs in 2020 was extrapolated to 2025 (i.e., 74,700).

## Practitioner Experience, Income, and Income Sources

### *Chiropractic Demographics*

The 2010 Practice Analysis of Chiropractic, published by the National Board of Chiropractic Examiners (NBCE) found that 84.9% of its respondents identified as “Caucasian” and 77.6% identified as male.<sup>119</sup> Respondents to the Annual Salary & Expense Surveys from *Chiropractic Economics* tended to be males as well. Between the 2000 and 2012 Annual Salary & Expense Surveys, males represented the vast majority of the respondents, comprising 77.2% of respondents in 2010 (the year with the most female respondents yet).

The June 2012 *Healthcare* report from Georgetown University Center on Education and Workforce confirms findings from the Annual Salary & Expense Surveys conducted by *Chiropractic Economics*, i.e. that most chiropractors are male (74%, according to the June 2012 *Healthcare* report).<sup>120</sup> The June 2012 *Healthcare* report found the age distribution of chiropractors (both male and female) to be as follows:<sup>121</sup>

Percentage Distribution of Chiropractors by Age Group, Circa 2012	
AGE 25-34	28%
AGE 35-44	29%
AGE 45-54	29%
AGE 55-64	17%
AGE 65-74	4%

### *Solo vs. Integrated Practices*

As shown in the previous sections, chiropractic is by no means a homogenous profession. Chiropractors can practice in solo settings or in settings with other health professionals. For the purpose of this Appendix, an “integrated” setting includes at least one MD. Integrated settings include some hospitals, community health centers (CHCs), Department of Defense (DoD) and Veterans Health Administration (VHA) facilities, and even on-site corporate clinics and on-site patient-centered medical homes (PCMHs) on corporate campuses. (The final section of this appendix discusses chiropractors in these various settings in more detail.) Practitioners in integrated settings tend to experience high levels of cooperation, mutual respect across the health professions, and a collaborative atmosphere (though this collaborative relationship rarely begins immediately, and chiropractors in integrated settings often need to explain chiropractic care or deal with a level of confrontation). Chiropractors in solo settings may or may not benefit from referrals from other health professionals. In many cases, solo chiropractors who do benefit from referrals have established good relationships with other health professionals, via office and business visits, conferences, meetings, etc.

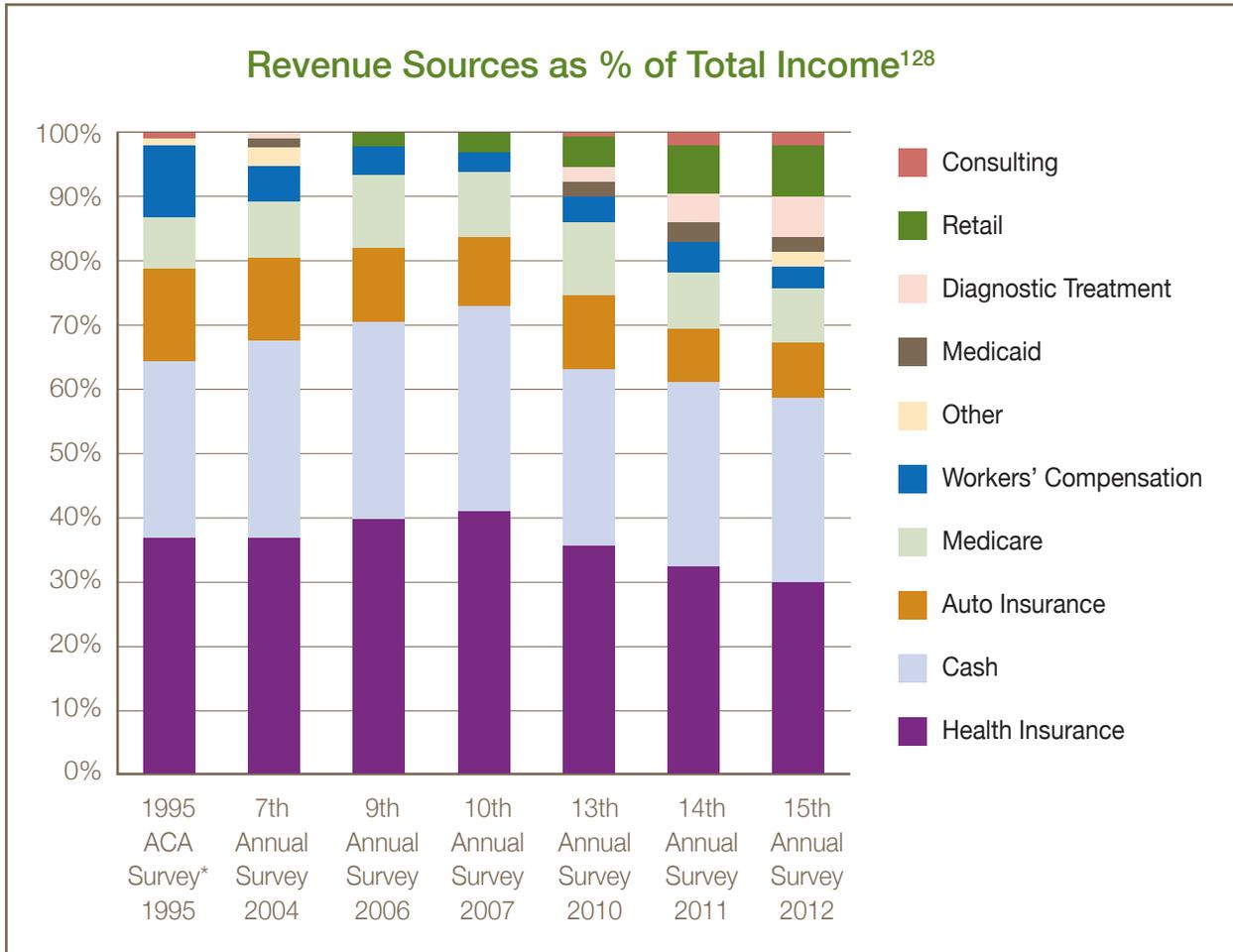
### *Income and Income Sources*

Being in an integrated or solo setting can also impact income. According to the Annual Salary & Expense Surveys conducted by *Chiropractic Economics*, DCs in groups/partnerships and integrated care plans earn more than DCs in solo practices. DCs with other specialists in their clinics tend to earn much more than DCs without specialists in their clinics. Integrated clinics also have more patient visit averages, and more new patients per week than non-integrated clinics. Cash-based practice is common for chiropractors, who are generally only reimbursed officially for manipulation and treating back pain.

In terms of income, *Chiropractic Economics* reports that the average salary for DCs over the past few years has generally ranged from \$82,500 to almost \$120,000.<sup>122</sup> 2012 saw the lowest average salary for DCs at \$82,500<sup>123</sup> (the only average close to this comes from 2010, when the average salary was \$87,538).

The South has tended to produce some of the highest-earning DCs, with DCs on the East Coast also being high earners.<sup>124, 125</sup> Most DCs prefer to practice in the suburbs, and DCs practicing in the suburbs tend to have the highest median net practice incomes compared to rural and urban DCs.<sup>126</sup>

In general, the older the DC, the more intense the patient work load, and the more money he or she earns, though income earned tends to drop after age 60. In 2011, however, there was no relation between age and income.<sup>127</sup> Consistently, however, male DCs earn much more than female DCs. Male DCs tend to have more years of experience, and there are far more male DCs than female DCs (in 2012, 18.9% of respondents to the *Chiropractic Economics* Survey were female, compared to 81.1% of respondents being male). Figure 4 below shows a breakdown of revenue sources for many chiropractors.



**FIGURE 5**

\*Source: Goertz C. Summary of 1995 ACA annual statistical survey on chiropractic practice. *J Amer Chiropr Assoc* 1996; 33(6):35-41. For the sake of consistency, “Private Insurance (Indemnity)” and “Prepaid/Managed Care” were both combined into “Health Insurance.”

As the figure above shows, cash and health insurance form a large part of chiropractors’ incomes. Interviewees explained that workers compensation is still an important income source for DCs in small communities. Health insurance is declining as a percentage—from a high of 41% in 2006 to just over 36% in 2012. Cash has remained fairly constant at around 25%. Auto insurance has dropped from around 15% to about 7%. Workers Compensation has declined from 11% to 4%. Medicare has gone from over 10% to about 8%. Medicaid has remained less than 3%. Diagnostic Treatment has grown (now about 8%), as has Retail (now about 9%). A growing percentage of chiropractors’ income (roughly 8%) is from retail sales. The table below identifies trends in % of respondents to the Annual Salary & Expense Surveys from *Chiropractic Economics*, who sell various products.

Percentage of Respondents in the *Chiropractic Economics* Salary & Expense Surveys Who Sold Retail Products

PRODUCTS SOLD					
SURVEY	Nutritional Products/Supplements	Pillows	Orthotics	Topical Analgesics/Ointments/Topical Creams <sup>129</sup>	Hot/Cold Compresses
5th Annual Survey (2002)	76%	80%	73%	53%	N/A
9th Annual Survey (2006) <sup>130</sup>	70%	71.8%	61.6%	44.2%	66.4%
11th Annual Survey (2008)	71%	73.6%	59.8%	52.2%	67.2%
13th Annual Survey (2010)	76.5%	69.1%	68.5%	70.1%	61.9%
14th Annual Survey (2011)	62.90%	59.90%	55%	51.80%	48.20%
15th Annual Survey (2012)	72%	68%	65%	60%	52%

## Research on Chiropractic Care

### *Research Infrastructure*

Most chiropractors are in practice and are not involved in clinical or analytical research. However, research on chiropractic care, its cost-effectiveness, and its clinical efficacy, has been recognized as one of the major components required to help chiropractors achieve “cultural authority.” It is essential for greater inclusion/integration into health care, particularly primary care, and for specific reimbursement levels. Given the independent and entrepreneurial history of the chiropractic field in the U.S., the typical research infrastructure of academic researchers, federally funded research from the National Institute of Health (NIH) and other agencies, and the ability to do research on delivery systems, data on chiropractic care has been lacking. (Conventional health care, despite numerous advantages in relation to chiropractic, has also failed to consistently do research on its quality and outcomes.) The chiropractic field recognized decades ago the need to support research, and much research on chiropractic remains funded by the chiropractic community. Nevertheless, chiropractors have been somewhat successful in broadening that research, and many have published with MDs and other researchers.<sup>131, 132, 133</sup> This has helped these DCs to obtain some of the few NIH funded research grants in the CAM field. In recent decades the number of chiropractors doing research has been growing. While not all are doing research, many of the estimated 100 DCs with PhD degrees are engaged in chiropractic research. So the human infrastructure for research on chiropractic care is growing, and much of this research comes from the U.S., Canada, and Europe.

Around the world, chiropractic care and chiropractors are increasingly built into health care systems where state-supported chiropractor training is provided. Various regulatory bodies and accreditation agencies are working to remove hindrances to practitioner mobility across legal jurisdictions. In many of those countries, research on chiropractic is built into their national health research systems. This is particularly true in Denmark and Switzerland. In Canada, major universities receive funding to support professors who do research on their health profession. Several of these Canadian professorships have been awarded to chiropractors, and some DCs with PhDs in Canada chair major positions in several hospitals and universities. Research from beyond the U.S. will be important in showing chiropractic efficacy, though some have noted a prejudice by health insurance companies against recognizing research done in other countries that supports chiropractic efficacy.

### *Research on Conditions Treated*

Most clinical research on chiropractic focuses on manipulation,<sup>134</sup> and research most strongly supports chiropractic care with regards to low back pain and neck pain. Chiropractic care can also prove helpful against headaches, whiplash-associated disorders, and various extremity conditions.<sup>135</sup> According to the National Center for Complementary and Alternative Medicine, “Spinal manipulation appears to be a generally safe treatment for low-back pain when performed by a trained and licensed practitioner.”<sup>136</sup> Yet research from many professionals outside of chiropractic can sometimes dispute the effectiveness of chiropractic care. For example, many articles by Edzard Ernst, MD, PhD, FRCP, FRCPEd, dismiss the cost-effectiveness or clinical efficacy of chiropractic care, “with the possible exception of back pain,”<sup>137</sup> and it is not difficult to find articles that decry manipulation as unsafe. Chiropractic experts tend to dismiss many of these reports, citing questionable methods and biased reviews of the evidence.

More comprehensive analyses of chiropractic care for various conditions have come to mixed conclusions regarding different conditions. The UK Evidence Report (Bronfort et al.)<sup>138</sup> found that “evidence is inconclusive for cervical manipulation/mobilization alone for neck pain...and for manipulation/mobilization for mid back pain, sciatica, tension-type headache, coccydynia, temporomandibular joint disorders, fibromyalgia, premenstrual syndrome, and

pneumonia in older adults.” Evidence has also proven inconclusive concerning spinal manipulation against asthma, with some studies support manipulation’s effectiveness against asthma.<sup>139</sup> While the UK Evidence Report (Bronfort et al.), found that “Spinal manipulation is not effective for asthma and dysmenorrhea when compared to sham manipulation, or for Stage 1 hypertension when added to an antihypertensive diet.”

The clinical evidence base for manipulation/mobilization is inconclusive or unsupportive for several conditions, including some pediatric conditions. The UK Evidence Report (Bronfort et al.) found that “in children, the evidence is inconclusive for otitis media and enuresis.”<sup>140</sup> Studies in Denmark and the UK showed that chiropractic manual therapy may be effective in treating infantile colic.<sup>141, 142, 143</sup> However, the UK Evidence Report (Bronfort et al.) found spinal manipulation to be ineffective for infantile colic and asthma when compared to sham manipulation.

Our research and interviews pointed to an increased need for geriatric research among chiropractors. In-depth geriatric chiropractic research has not yet been conducted on a large scale, despite the anticipated large influx of older patients as the population ages. However, the study of geriatric chiropractic is growing, and some of our interviewees argued that there is a growing evidence base that supports chiropractic treatment of spinal, hip, knee, and shoulder dysfunction in older patients.

Research on effectiveness of chiropractic is significant in that there is a long list of presenting and concurrent patient conditions which chiropractors treat. The table below presents those which are routinely seen, often seen, sometimes seen, and rarely seen by chiropractors. Many of these conditions, as noted above, have not been shown to be effectively treated by chiropractic care. In addition, arguments rage about the most effective treatment courses, particularly the number of visits or adjustments required for treating particular conditions. The range of conditions routinely seen includes spinal subluxation/joint dysfunction. Often seen conditions include headaches, osteoarthritis/degenerative joint disease, extremity subluxation/joint dysfunction, joint sprains, hypolordosis of cervical or lumbar spine, muscular tears/strains, and intervertebral disc syndrome, among others.

Frequency of Presenting and Concurrent Patient Conditions for Chiropractic<sup>144</sup>

CONDITION AND FREQUENCY (SCALE OF 0-4 ON A WEEKLY BASIS)					
<b>ROUTINELY SEEN (More than 2/week)</b>	Spinal subluxation/ joint dysfunction (3.9)				
<b>OFTEN SEEN (1-2/week)</b>	Headaches (3.3) Osteoarthritis / degenerative joint disease (3.3)	Extremity subluxation/ joint dysfunction (3.2) Sprain of any joint (3.1)	Muscular strain/tear (3.0) Intervertebral disc syndrome (3.0) Radiculitis or Radiculopathy (2.9)	Hypolordosis of cervical or lumbar spine (3.1) Myofascitis (2.9) Vertebral Facet Syndrome (2.9)	Peripheral neuritis, neuralgia, or neuropathy (2.8) Tendinitis/ tenosynovitis (2.7)
<b>SOMETIMES SEEN (1-3/month)</b>	Hyperlordosis of cervical or lumbar spine (2.4) Kyphosis of thoracic spine (2.4) Functional scoliosis (2.2) Obesity (2.1)	High blood pressure (2.1) Fibromyalgia (2.1) Bursitis or synovitis (2.1) Carpal or tarsal tunnel syndrome (2.1)	Sinus condition (2.0) Osteoporosis/ osteomalacia (2.0) Allergies (1.9) Structural Scoliosis (1.9) TMJ Syndrome (1.8)	Dizziness/ vertigo (1.7) Thoracic outlet syndrome (1.7) Vertigo/loss of equilibrium (1.6) Spinal stenosis/ neurogenic claudication (1.6)	Diabetes (1.6) Menstrual Disorder/PMS (1.5) Congenital/ developmental anomaly of any joint (1.5)

**CONDITION AND FREQUENCY (SCALE OF 0-4 ON A WEEKLY BASIS)**

<b>RARELY SEEN (1-10/year)</b>	Nutritional disorders (1.4)	Hiatal hernia/esophageal reflux (1.3)	Colitis or diverticulitis (0.9)	Benign prostatic hypertrophy (0.7)	Angina or myocardial infarction (0.6)
	Upper respiratory or ear infection (1.4)	Bacterial infection (1.2)	Fracture (0.9)	Anemia (0.7)	Peripheral artery or vein disorder (0.6)
	Pregnancy (1.4)	Thyroid or parathyroid disorder (1.1)	Cranial nerve disorder (0.8)	Adrenal disorder (0.7)	Herpes simplex (0.6)
	Menopause (1.4)	Kidney or urinary tract infection (1.0)	Incontinence (0.8)	Heart murmur or rhythm irregularity (0.7)	Herpes zoster (0.6)
	Viral infection (1.4)	Acne, dermatitis, or psoriasis (1.0)	Occupational or environmental disorder (0.8)	Kidney stones (0.7)	Skin cancer (0.6)
	Asthma, emphysema, or COPD (1.4)	Muscular atrophy (1.0)	Eating disorders (0.7)	Bacterial or fungal infection (0.7)	Inguinal hernia (0.6)
	Congenital/developmental anomaly of bone (1.4)	ALS, multiple sclerosis, or Parkinson's (0.9)	Benign prostatic hypertrophy (0.7)	Ulcer of stomach, small intestine, or colon (0.7)	Immunological disorder (0.5)
	Systemic/rheumatoid arthritis or gout (1.4)	Psychological disorders (0.9)	Dislocation of any joint (0.8)	Hemorrhoids (0.7)	Vascular claudication (0.5)
	Damaged nerve/plexus (1.3)	Colic (0.9)	Stroke or cerebrovascular condition (0.7)	Female infertility (0.6)	Endocrine or metabolic bone disorder (0.5)
		Bacterial or viral infection (0.9)	Eating disorders (0.7)		Bone tumor/metastasis (0.5)

Sometimes seen conditions include hyperlordosis of cervical or lumbar spine, kyphosis of thoracic spine, functional and/or structural scoliosis, obesity, high blood pressure, fibromyalgia, bursitis or synovitis, carpal or tarsal tunnel syndrome, sinus condition, osteoporosis/ osteomalacia, allergies, TMJ syndrome, dizziness/vertigo or loss of equilibrium, thoracic outlet syndrome, spinal stenosis/neurogenic claudication, diabetes, menstrual disorder/PMS, and congenital/developmental anomaly of any joint. Insurers do not cover chiropractic care for most of these items and are not likely to do so until there is strong evidence of efficacy and cost-effectiveness. Many of these conditions go beyond what a spine and musculoskeletal focused provider would treat. Some relate to a primary care role, others to specific specialties.

### *Cost-Effectiveness and Outcomes Generation*

Increasingly, cost-effectiveness research, as well as patient satisfaction, is being gathered at the site of care. In IAF's two earlier scenario reports we recommended that all practicing chiropractors generate outcomes on their care. There is very slow movement in that direction. Chiropractors are in the process of adopting electronic health record (EHR) systems. Increasingly, chiropractic networks associated with providers and insurers, such as American Specialty Health (ASH) and OptumHealth, use the EHRs of those systems to gather information on specific chiropractors. Chiropractors in the Army use the same EHRs that all other providers in the Army use. In addition to the EHR record that OptumHealth's DC members collect, OptumHealth plans to have patients complete a short survey on outcomes and patient satisfaction. Recording outcomes, summarizing and comparing them across DCs and other providers will grow both within practices, by networks and by community and patient groups. IAF forecasts that in communities, both local ratings groups like Angie's List and national organizations such as PatientsLikeMe will have consumers/patients rate their providers and share this information. Ultimately these consumer groups will require DCs and other providers to include summaries of their own results on their outcome measures that will be used in the local comparisons of providers.

Chiropractors' research also needs to focus on comparative effectiveness of the various methods used by DCs. For example, how does flexion-distraction compare with standard manual manipulation for LBP? Does the Activator device work as well as high velocity low amplitude (thrust) manipulation for neck pain and headaches? What is the relative effectiveness of the soft tissue techniques used by DCs to treat muscle and tendon problems, such as Active Release Technique, Graston Technique, post isometric relaxation, and the NIMMO technique? All of these various manipulation and mobilization methods need to be sorted out clinically in terms of which techniques or tools worked best for the treatment of which conditions. This includes determining if there are subsets of patients who respond better to certain types of procedures over others. This identification of outcomes and patient subsets will require effective use of EHRs, including the optimal utilization of the genomic, epigenetic, and biomonitoring data for patients that EHRs will include in the years ahead.

Beyond individual DCs' effectiveness and outcomes is the larger question of cost effectiveness of chiropractic care. In the U.S., cost-effectiveness research has been conducted by DCs, other professionals, and insurance groups. A retrospective claims analysis on Blue Cross Blue Shield of Tennessee's intermediate and large group fully insured population between October 2004 and September 2006 showed that DC-initiated treatment was much more cost-effective than MD-initiated treatment.<sup>145</sup> This cost-effectiveness has been confirmed by other studies as well. Martin et al. (2012) used a national sample of patients suffering from spine conditions to study health care costs associated with use of CAM, using the 2002-2008 Medical Expenditure Panel Survey.<sup>146</sup> They found that CAM users had lower inpatient expenditures. Davis et al. (2013) found that the U.S. CAM market might in fact be more self-regulating than the market for mainstream medicine,<sup>147</sup> and that any attempt to reduce national health care expenditure by eliminating coverage for CAM (including chiropractors for back pain) would have little impact, if any, on national health care expenditure.<sup>148</sup>

OptumHealth, a major chiropractic network that is a subsidiary of United Health has analyzed United claims and found that going to chiropractors for back pain saves money. When the patient's first visit is with an evidence-based chiropractor, the severity-adjusted total episode cost is 35% lower than the overall average total episode cost for treatment of back pain. OptumHealth's analysis of expenditure distribution for treatment of over 290,000 complete episodes of non-surgical back pain ending in 2005 showed that spinal manipulation and therapeutic exercise only comprised 16% of total expenses, while over 40% of treatment costs were for services that had little efficacy (e.g. radiology).<sup>149</sup>

Medicare can also provide a major demonstration of potential cost savings from chiropractic care. The Medicare Chiropractic Services Demonstration Project found that in most sites for the study health care costs did not increase significantly with the addition of chiropractic services. However this study's largest site was in Illinois where chiropractors increased their levels of care for the patients in the demonstration, thus increasing the total cost of care. The results of the demonstration are thus difficult to interpret, due to questions about the representativeness of the Illinois demonstration site.

### *Research on Primary Care By Chiropractors*

Some chiropractic colleges consciously train chiropractors to provide primary care. In Illinois chiropractors are authorized to act as primary care physicians (PCPs) with a wide scope of practice under the administrative rules of the Illinois Department of Insurance and the Illinois Department of Public Health.<sup>150</sup> Specifically chiropractors are licensed with full physician status (as a "person licensed under the Medical Practice Act to practice medicine in all of its branches or a chiropractic physician").<sup>151</sup> The only distinction between DCs and MDs in Illinois is that DCs may not use operative surgery or drugs.<sup>152</sup> A study analyzing the use of DCs as PCPs by Sarnat (MD), Winterstein (DC), and Cambon (DC, PhD) conducted between 1999 and 2002 for Alternative Medicine Integration Group (AMI), an integrative medicine independent physician association (IPA), showed decreases over a seven-year period (including the additional three-year update to the original study) of 85% in pharmaceutical costs, 62% in outpatient surgeries and procedures, 59% in hospital days, and 60.2% in hospital admissions when compared with conventional medicine IPA performance in the same time frame and geography for the same health maintenance organization product.<sup>153</sup> High patient satisfaction rates were reported in all years in that study.<sup>154</sup> Dr. Sarnat co-founded AMI, which in the late 1990s reached a contract with Blue Cross Blue Shield (BCBS) of Illinois to allow BCBS Illinois members to have the option of choosing an AMI chiropractor as a primary care physician.<sup>155</sup>

### *Vitalism and Epigenetics*

Beyond efficacy and cost-effectiveness, there are other important aspects of chiropractic research. Focused-scope chiropractors promote the idea that their principles, clinically applied concepts, and work on subluxation all enable the body's natural healing capacities to be communicated effectively through the healthy spine and nervous system. This leads some to argue that they are not treating conditions directly, but rather treating conditions by *restoring health*. However, when confronted with such chiropractic concepts, including "innate intelligence" or "subluxation," many conventionally trained scientific materialists, and many chiropractors, are skeptical. However, there is growing recognition that important scientific potential exists in the scientific exploration of the nature of health and healing, seen with the rise in scientific research on prayer, intention, and consciousness in healing as well as investigation of energy medicine, chi, and other traditionally vitalistic concepts. For example, Taylor et al. explain that chiropractic adjustments result in changes to sensorimotor integration, and that "emergent signals from optimal sensorimotor integration may underlie appropriate adaptation of respiratory patterns and homeostasis. This may go some way to explain some of the beneficial effects of chiropractic care on nonmusculoskeletal conditions."<sup>156</sup> Taylor et al. explain that many of the studies analyzed in their publication showed that chiropractic adjustments caused sensorimotor

integration changes within the central nervous system, but it was unclear whether those changes, whether caused by correction of vertebral subluxations or an “afferent barrage associated with the adjustive thrust,”<sup>157</sup> were affiliated with beneficial clinical outcomes.

Research in the scientific exploration of health and healing (which could potentially find overlap with epigenetics research) can also include the exploration of chiropractic concepts, theories, and principles. For this purpose, the chiropractic community will need to operationalize and publish key chiropractic concepts such as innate intelligence and retracing; new tools to detect and measure such forces; and research methods that can test key clinical theories found in traditional chiropractic principles and philosophy as they apply to health, disease, and healing. From such operationalized concepts, scientific questions and specific aims can be developed for research that can help develop new insights and views on contemporary vitalism. A step toward this direction is Life University’s annual Octagon conference series, which seeks to reconnect chiropractic with the larger field of vitalism—recognizing that most healing traditions, such as oriental medicine, Ayurveda, and Naturopathic medicine, have similar assumptions, or principles and clinical theories of their disciplines. These healing traditions also promote research on many aspects of the body’s self-healing capacity.

Another category of research beyond clinical efficacy and cost effectiveness focuses on epigenetics and the effect of spinal manipulation on gene regulation. The premise of epigenetics is that the physical environment, combined with how individuals react to, perceive, and behave within their environment, influences genetic activity. Thus, lifestyle choices, frequent exercise, and physical care/treatment such as manipulation should influence longer-term genetic activity. Manipulation influences the balance of inflammatory cytokines (which can amplify or limit inflammation) and the activity of “molecular chaperones”<sup>158</sup> (sometimes called “chaperone genes”<sup>159</sup> or “chaperone proteins”<sup>160</sup>) that influence genetic expression by ensuring correct transport or folding of proteins.<sup>161, 162</sup> It has been postulated that chiropractic care can affect genetic mechanisms by influencing physiological processes that affect DNA repair and oxidative stress. While several chiropractors question the credibility of the research conducted by Campbell et al., a 2005 article by Campbell et al. found that chiropractic care increased levels of serum thiol,<sup>163</sup> which can provide a surrogate estimate of DNA repair enzyme activity and human health. Through epigenetics, it has also been posited that chiropractic care can influence genetic expression by changing a patient’s perception of the environment to encourage appropriate, constructive responses to environmental changes.<sup>164</sup> Dr. Bruce Lipton posits in “Chiropractic Philosophy and the New Science: An Emerging Unity” that immaterial vibrational energy fields and physical chemicals (i.e., the material, physical, or chemical forces of science that serve as the foundation for the idea of genetic determinism) can control and coordinate the movement of proteins. Dr. Lipton posits that allopathic medical philosophy falls short of accepting the importance of the immaterial vibrational energy fields, and that biophysics research shows that vibrational energy waves can be more effective in signaling protein movements than physical chemicals, and thus are more significant in “controlling” life. Dr. Lipton credits D.D. Palmer with recognizing this over a century ago.<sup>165</sup>

Drs. Lipton and Weissman further explain that environmental signals (either physical or energetic) cause proteins to change shape and thus create the functions of life, “Because the majority of us have a perfectly healthy genome and produce functional proteins, illness in this group can likely be attributed to the nature of the signal. There are three primary situations in which signals contribute to dysfunction and disease. The first is *trauma*. If you twist or misalign your spine and physically impede the transmission of the nervous system’s signals, it may result in a distortion of the information being exchanged between the brain and the body’s cells, tissues, and organs.”<sup>166</sup>

New information on epigenetics has implications for personalized care, where providers could differentiate which patients would be more likely to respond to adjustments, or if some patients would be predisposed to back pain or back problems. Combining the research and concepts of epigenetics with those of self-healing and vitalism could prove a powerful impetus for greater acceptance of chiropractic legitimacy and could help move the field toward achieving much expanded cultural authority.

## Primary Care and Health Care Reform Opportunities for Chiropractic

The preceding sections of this Appendix have discussed various aspects of the current state of the chiropractic profession. This section will provide background on chiropractic's involvement in primary care (noting that the previous section discussed some research on chiropractic integration into primary care systems), and will move forward overall to discuss the potential developments of chiropractic within the context of expected legislative changes to health care. The Patient Protection and Affordable Care Act (PPACA) of 2010 opens new doors for the chiropractic field to enter mainstream medicine and integrate into the U.S. health care system. The law is aimed primarily at decreasing the number of uninsured Americans and reducing the overall costs of health care. In the near future, by 2014, the PPACA will bring health insurance to an estimated additional 32 million previously uninsured Americans, and many of the most significant changes are scheduled to take effect beginning January 1, 2014. For the longer-term, the PPACA includes a number of policies that expect providers to move away from a strictly fee-for-service model and to improve the coordination, quality, and cost of both the delivery of care and prevention efforts. The question for chiropractic will be how the profession will successfully navigate and pursue the demands and opportunities laid out by the PPACA and evolving health care system over the years to 2025 and beyond.

### *Coverage/Payment for Chiropractic Care*

Beginning on January 1, 2014, the PPACA requires that all non-grandfathered individual and small group health insurance plans sold in a state, including those offered through an exchange, cover certain essential health benefits (EHBs). Essential health benefits, at a minimum, will have to include ambulatory patient services, emergency services, hospitalization, maternity and newborn care, mental health and substance use disorder services, prescription drugs, rehabilitative and habilitative services, laboratory services, preventive and wellness care, chronic disease management, and pediatric dental and vision care. Approximately 68 million people are anticipated to access care covered by the essential health benefit requirement once the PPACA is fully implemented.<sup>167</sup>

As of December 5, 2012, most of the roughly two dozen states that have chosen their essential benefits—services that insurance will have to cover under the law—have decided to include chiropractic care in their packages. It is also likely to be an essential benefit in Alaska and Nevada, according to the Department of Health and Human Services. For the most part, states are defining their essential benefits as those provided by the largest health plan in their small-group insurance market. In Washington State, for example, that plan covers 10 chiropractic visits per year. States will most likely be able to change their benchmark plans after 2015. Thus, any interest groups that did not succeed in getting a particular service covered initially may have another chance to do so.<sup>168</sup>

In any case, the Provider Non-Discrimination provision, Section 2706 of the PPACA, is expected to carry the full force of federal law in January 2014. When fully implemented, this policy will for the first time forbid any U.S. health insurance company from refusing to cover services legally provided by a class of licensed health care practitioners (e.g., chiropractors) acting within the scope of their state licenses, if it covers those services when provided by a different class of practitioners (e.g., physical therapists, osteopathic physicians). The non-discrimination provision will be applicable to all health benefit plans both insured and self-insured. However, it will not apply to the two largest government insurance plans—Medicare, which offers partial chiropractic coverage nationwide, and Medicaid, where coverage varies from state to state. Furthermore, the PPACA does not mandate equal payment for equal work (e.g., paying a chiropractor who provides a service at the same rate as an MD providing that service).<sup>169</sup>

Looking further out, Accountable Care Organizations (ACOs) and Patient-Centered Medical Homes (PCMHs) promoted by the PPACA have the potential to become driving forces in the health care delivery system. Both models involve fee-for-service payments, but each also includes another means of payment to physicians: a pay-

for-performance component in ACOs and a per-patient care management fee in PCMHs. ACOs and PCMHs are essentially efforts to tie payment arrangements to quality care and cost-savings, thereby bringing increased accountability to health care. Through these organizations, doctors will initially be paid typically on a fee-for-service basis with incentives for providing quality care that also achieves cost savings. Essentially, if providers meet certain criteria during the delivery of care, the providers will share in any related cost savings. These new payment arrangements will most likely transition away from fee-for-service and gravitate toward bundled payments, episode based payments, or comprehensive care payment systems to accelerate value-driven health care.

As discussed below, The Foundation for Chiropractic Progress has provided strong recommendations for DCs to step up to take important roles on PCMH teams. The opportunity for chiropractors lies in the emphasis on cost-savings to drive medical homes and ACOs to consider including DCs. Davis et al. argue that “The Train is Leaving the Station” for DCs and other CAM practitioners to engage in ACOs.<sup>170</sup> For chiropractors to successfully join and remain members of PCMHs and ACOs, however, they will need to demonstrate the therapeutic and cost-effectiveness of their service and be willing to accept the role that the team assigns to them. Many interviewees also felt that it will be essential for DCs to develop positive relationships with MDs that will position them to get into ACOs, PCMHs, and their predecessor medical groups. This may require significant cultural changes in schools, as Hawk et al. found that among students in the health professions, chiropractic students had the least positive attitudes toward interprofessional collaborations and relationships.<sup>171</sup> When these groups do consider hiring or associating a DC with their team, they will be looking for experienced DCs, probably with at least three to five years of practice.

The opportunity for chiropractors to prove themselves in terms that can facilitate their integration into ACOs and PCMHs is offered by institutions like the new Patient-Centered Outcomes Research Institute (PCORI), established via Section 6301 of the PPACA to promote comparative effectiveness research. PCORI is promoting the evaluation and comparison of health outcomes and the clinical effectiveness, risks, and benefits of medical treatments, services, and items including “health care interventions, protocols for treatment, care management, and delivery, procedures, medical devices, diagnostic tools, pharmaceuticals (including drugs and biologicals), integrative health practices, and any other strategies or items being used in the treatment, management, and diagnosis of, or prevention of illness or injury in, individuals.”<sup>172</sup> In fact, one of PCORI’s Funding Announcement (PFA) Awards has already been given to a chiropractor, Dr. Schneider at the University of Pittsburgh.<sup>173</sup>

### *DCs in Patient-Centered Medical Homes (PCMHs)*

While ACOs must be delivery systems with at least 5,000 patients, PCMHs are primary care practices (mostly primary care teams but some are solo practitioners). The National Committee for Quality Assurance has recognized more than 4,300 practices as PCMHs. The PCMH is founded on a team-based model of care in which primary care providers are responsible for coordinating and tracking care across specialists and other providers. The model is facilitated by information technology, patient registries, and non-physician personnel such as nutritionists and care coordinators. In PPACA language (Section 3502), a PCMH is “a mode of care that includes: personal physicians; a whole person orientation; coordinated and integrated care; safe and high-quality care through evidence-informed medicine, appropriate use of health information technology, and continuous quality improvements; expanded access to care; and payment that recognizes added value from additional components of patient-centered care.”<sup>174</sup> While doctors of chiropractic are currently not recognized as primary care providers in the PCMH model, they are eligible to participate as a member of the patient’s multidisciplinary team.<sup>175</sup>

The extent to which DCs can play a role on such teams is a question yet to be answered. The Foundation for Chiropractic Progress (FCP) argues that DCs can contribute to patient care in a PCMH model and on primary care teams in several ways, including as neuromuscular and musculoskeletal specialists with direct or referral patient

access, with emphasis on care for headaches, back pain, and neck pain. Or, DCs could contribute as PCPs who also deliver care to patients seeking help for non-musculoskeletal conditions, and as providers of diagnostic and therapeutic prevention and health promotion services, including evidence-based diet and exercise counseling.<sup>176</sup>

Chiropractors can provide effective care for back and neck conditions that prove challenging to primary care providers. The FCP explains that care for patients with headaches, back pain, and neck pain is currently “fragmented,”<sup>177</sup> so improved coordination and cooperation will benefit these patients significantly. These conditions are highly prevalent in the United States. Two of the most frequently experienced non-migraine headaches are cervicogenic and tension-type headaches.<sup>178</sup> The Duke University Evidence-Based Center found that spinal manipulation is effective for the treatment of these headaches.<sup>179</sup> The second-most common reason for patients to visit a MD is back pain, and two-thirds of people will experience neck pain in their life.<sup>180</sup> Chiropractic care has frequently proven effective against these conditions.<sup>181</sup> In fact, the American Pain Society and the American College of Physicians released guidelines for low back pain (LBP) acknowledging spinal manipulation to benefit patients with chronic, acute, and sub-acute LBP. Their guidelines endorsed spinal manipulation as the sole non-pharmacologic approach that is effective against chronic and acute LBP.<sup>182</sup>

The FCP points out that DCs have a unique opportunity in rural populations, as their patients are more likely to present with non-musculoskeletal complaints.<sup>183</sup> DCs may serve as a first point of contact with the health system in these areas especially, and the consistent high levels of satisfaction with chiropractic care may help strengthen the relationship between DCs and their patients in these localities.<sup>184</sup> This has been the case in South Dakota, for example, where DCs provide a broad range of services, particularly in rural areas, and their activities complement the services offered by MDs and PCPs.<sup>185</sup> Going further, the FCP has recently partnered with URAC, a nonprofit health care accreditation and education organization, to conduct a pilot project that seeks to provide an opportunity for the chiropractic profession to articulate its role and validate its significance in improving costs, clinical efficiency, and overall patient outcomes.<sup>186, 187</sup>

A study authored by Gaumer et al. in 2001 reinforces the argument for including DCs in primary care teams. Gaumer et al. evaluated and assessed, by importance and frequency, almost 200 activities that “constitute primary health care.”<sup>188, 199</sup> The authors used two U.S.-based panels, one composed mostly of allopaths (the “interdisciplinary” panel with 60% MDs) and the other composed mostly of chiropractors. Both panels agreed that 92% of the nearly 200 activities were primary care activities. 60% of those activities were performed with similar frequency in both chiropractic and medical offices. The interdisciplinary panel felt that MDs were not needed at all or needed infrequently in 53% of the primary care activities (particularly the activities that were categorized under “information gathering,” “screening/prevention,” “counseling/education,” “injuries/trauma,” “musculoskeletal,” “ear, nose, and throat,” “pulmonary,” “gastrointestinal,” “dermatologic,” “behavioral,” and “special populations”); that 31% of the activities needed some MD involvement (particularly for activities categorized under “ophthalmologic,” and “genitourinary”); and that only 16% needed MD involvement all or most of the time (particularly activities that were categorized under “neurologic,” “infections,” and “cardiovascular”). The panel of DCs claimed to need MDs more often, as they did not perceive themselves as able to do some primary care activities, such as invasive diagnostic procedures, treating for sexually transmitted diseases, treating glaucoma, and treating cellulitis. More recently, a 2008 Canadian study found that integrating DCs into primary care teams yielded positive, successful, and cooperative results.<sup>190</sup>

The PCMH is likely to evolve into the Community-Centered Health Home (CCHH) that provides patient-centered, coordinated and effective care, but also assesses community conditions and understands how to advocate for population health or community health.<sup>191</sup> This parallels the pursuit of the Triple Aim as the standard for quality

for health care organizations (excellent patient experience, lower cost, improved population health). To improve population health, all health care providers and organizations will need to explore their role beyond the clinic in affecting community conditions, or “leveraging the social determinants of health.”<sup>192</sup> This is an important question for chiropractors, as well, explored in the section below on chiropractors and public health.

Coming back to the PPACA, Section 3502 on Establishing Community Health Teams to Support the Patient-Centered Medical Home provision names “doctors of chiropractic” as *potential* members of such integrated teams of providers. These teams “may include medical specialists, nurses, pharmacists, nutritionists, dietitians, social workers, behavioral and mental health providers (including substance use disorder prevention and treatment providers), doctors of chiropractic, licensed complementary and alternative medicine practitioners, and physicians’ assistants.”<sup>193</sup> However, because the language in the PPACA does not necessarily *require* the inclusion of DCs, it leaves room for marginalization of chiropractors.<sup>194</sup>

### *Accountable Care Organizations*

Another delivery model promoted by the PPACA is the Accountable Care Organization (ACO), defined as a group of providers and supplier of services (e.g., hospitals, physicians, and others involved in patient care) that will work together to coordinate care for the patients they serve across care settings. Essentially, ACOs offer two things that PCMHs do not: shared financial incentives with hospitals and/or specialists, and contractual partnerships around utilization, referral, and care-management patterns with those entities. The Centers for Medicare and Medicaid Services (CMS) has been a major driver behind ACOs, and the federal ACO program has thus far enrolled 154 organizations, where each ACO must cover 5,000 or more Medicare beneficiaries. CMS estimates that under the Medicare Shared Savings Program, at the most, approximately 270 ACOs will be formed and less than 5% of the Medicare population will be impacted by this program.<sup>195</sup>

DCs cannot independently establish an ACO, however they can partner with other providers (MDs or DOs) who are establishing an ACO and share in savings demonstrated by the organization. Thus, chiropractors wishing to participate in ACOs can get involved by (a) providing care as a contracted provider, similar to contracting with an insurance company or provider network; or (b) working directly in a hospital system or physician group that is a part of an ACO or PCMH.

Of particular interest to chiropractors should be the growing number of ACOs and other provider organizations developing specialized care pathways where patients are triaged according to their condition and its characteristics or severity. Potential gatekeepers for pathways include MDs, DOs, DCs, NPs, PAs, or DPTs who triage patients. For example, the gatekeeper for a primary spine care pathway could send patients with LBP, spine and musculoskeletal issues to chiropractic care, occupational health, physical medicine and rehabilitation, rheumatology, interventional pain management, neurosurgery or physical therapy. DCs functioning as the pathway gatekeeper, in essence, can aim to manage the majority of patients referred to the care pathway without the need for additional referrals. For patients who require specialized services, however, the DC can provide coordination of these services and follow-up to ensure that maximum benefit is derived and give other members of the care pathway the room to practice at the top of their license. Similar integrated pathways may also be developed for other high frequency health conditions such as diabetes, cardio, and obesity. Murphy et al. make the case for the establishment of a primary spine care practitioner, saying that this would unburden traditional PCPs and control costs, along with providing other benefits.<sup>196</sup> Hartvigsen et al. challenge the norm of using general practitioners (MDs) as gatekeepers for musculoskeletal conditions, and posit that “front line back care” would be better served by DPTs, DCs, and DOs.<sup>197</sup> Given the widespread prevalence of back pain and musculoskeletal issues in conjunction with other health conditions, integrated care pathways provide chiropractors with an opportunity to get involved throughout the ACO as well as PCMH teams.

At the time of this writing, 10 to 20 DCs have already successfully integrated into primary care medical homes. Interviewees varied in their expectations for systematic integration of DCs into mainstream health care. While some consider it likely to occur, others expect that the share of DCs employed by or fully included in primary care, ACOs or other medical groups will remain small. Many health care organizations are scrambling to adequately prepare to be certified as PCMHs, so the consideration of inclusion of DCs is not necessarily a current top priority for many of these groups. And once the systems get set and standardized, it may be more difficult for DCs to be included. There is potential for many DCs to be left behind and remain outside the system.

Overall, however, there is great opportunity for DCs to become members of PCMH or CCHH teams. As noted, there are already some chiropractors in this position. In addition, we estimate that thousands to tens of thousands of DCs could gain the positions on PCMH teams advocated by FCP and others. This would require quick and persistent efforts. It is critical that DCs establish or maintain ongoing relationships with relevant medical directors of medical groups, managed care plans, and similar groups that are part of or might join ACOs or become PCMH certified.

In parallel, interviewees forecast that while DCs would join PCMH teams in great numbers, so will physical therapists. PTs are already more embedded in and often owned by delivery systems, MDs more routinely refer to PTs, and PTs aspire to a similar role on the PCMH team as spine/musculoskeletal health leader. One interviewee forecast that for each DC that becomes a member of a PCMH team, two PTs will do likewise.

### *Integration of DCs in Other Practice Sites and Delivery Systems*

Beyond PCMH teams there is great potential for growth of DCs in some integrated settings. Thanks to long term commitments by the chiropractic community, the VHA and DoD provide special opportunities. VHA and DoD, as noted above, already provide some of the biggest integrated training opportunities for chiropractic students.<sup>198</sup> They also provide the majority of medical residencies in the U.S., therefore representing an opportunity to systematically promote interprofessional training and integration.<sup>199</sup> Access to chiropractic care in the DoD and the VHA is not yet universally available. Increasing availability to all VHA and DoD locations could significantly increase demand.

Currently there are an estimated 40 to 60 chiropractors working for the VHA, including at least 35 full-time employees (FTEs). Our interviewees' estimates for the number of DCs employed in some capacity by the VHA in 2025 ranged from 180 to 300. Furthermore, at least three dozen VHA facilities currently provide on-site chiropractic clinics and more are expected to open in the near future.

Currently there are between 80 and 120 current DCs working for the DoD, with 2025 projections ranging from 150 to some hundreds. However, the Army and other branches of the DoD are undergoing budget cuts, impacting all health professions in the Army and the rest of the DoD. Demand for chiropractic care may grow, somewhat countering these potential cuts. However, some interviewees noted that when budget cuts are enacted by administrations, chiropractors are usually the first to go.

An interesting phenomenon is that many Federally Qualified Health Centers (FQHCs) offer chiropractic care in some fashion. Data from the early 2000s collected by the Health Resources and Services Administration (HRSA) on FQHCs showed that over 70% of the FQHCs offered chiropractic care.<sup>200</sup> In 2001, for example, 73% of FQHCs offered chiropractic care (67.11% offered it via referral without paying, 2.01% via referral with paying, and 3.48% offered chiropractic care directly). In 2002, this slightly increased to 76% of FQHCs (69.28% via referral without paying, 2.49% via referral with paying, and 4.27% via direct provision of chiropractic care). All FQHCs offered physical therapy.

Community health centers (CHCs)—a type of FQHC—currently provide about 7% of primary care in the U.S., but they are likely to provide a larger portion of primary care as health care reform is implemented. In our research for this report, we found CHCs in Iowa, California, and Connecticut that utilized chiropractors.<sup>201</sup> Generally in these CHCs the CHC leaders have had positive personal experiences with chiropractic care, or they knew local chiropractors they trusted to provide care. In Connecticut and Iowa the CHC established a connection with a chiropractic college and functions as a training site as well. CHCs can prove an important opportunity for chiropractors. At least one interviewee suggested that the percentage of CHCs offering chiropractic care will increase by 2025, as CHCs search for ways to provide low-cost effective care and DCs look to gain business, exposure, and more experience. However, at least one other interviewee suggested that although CHCs may “offer” more chiropractic care, what really determines use and implementation of chiropractic care is method of delivery and payment.

Corporate clinics are another important opportunity for inclusion of chiropractors. Leading companies like Google, Microsoft, Cerner, and Cisco are moving to onsite health care that includes chiropractic care. The clinics take a variety of forms, some part of health insurance, some free care. But having chiropractors available at the clinic is increasingly a desired option.

### *Chiropractors, Public Health, and Prevention*

With increasing societal emphasis on prevention, the PPACA also provides opportunities for the chiropractic profession to go beyond patient care to engage in public health. Section 4001 on The National Prevention, Health Promotion, and Public Health Council has led to the development of the National Prevention Strategy, which was released on June 16, 2011, and aims to guide the nation in the most effective and achievable means for improving health and wellbeing. With the adoption of such national strategies for health and prevention (as well as others such as Healthy People 2020), chiropractors and chiropractic educational institutions (as with all clinical professions and health care systems) will need to clarify their roles in prevention and public health.

Collectively many organizations and individual DCs are involved in the “Straighten Up America” Campaign, focusing on activity and posture to promote health.<sup>202</sup> DCs have the opportunity to continue to press patients in their practice to live more healthy lifestyles. They can do more screening with their patients for hypertension, diabetes, smoking, and obesity. DCs can get involved in their communities to encourage exercise activity, and can also support worker safety. This prevention opportunity parallels the community service that many DCs do working with the chamber of commerce or other local groups. Many DCs have pursued an MPH (Master’s in Public Health) Degree and nearly 300 are members of the Chiropractic Section of the American Public Health Association (APHA). This section focuses on public health issues (such as wellness) in the context of chiropractic practices and policies.<sup>203</sup> Looking ahead, some interviewees felt that the number of DCs earning an MPH, joining the APHA, and engaging in public health activities and research will grow over the years to 2025.

The PPACA also offers new leadership opportunities for the chiropractic field. Section 4001 on The National Prevention, Health Promotion, and Public Health Council, for example, requires that its Advisory Group include “integrative health practitioners who have expertise in—(i) worksite health promotion; (ii) community services, including community health centers; (iii) preventive medicine; (iv) health coaching; (v) public health education; (vi) geriatrics; and (vii) rehabilitation medicine.”<sup>204</sup> The Board has been established, and although it does not currently include a chiropractor, DCs are eligible to join it in the future as they demonstrate expertise and increase their activities in these areas.

The PPACA also requires that the PCORI Board of Governors include a “state-licensed integrative health care

practitioner.” Indeed, since 2010 the Board includes a representative from the chiropractic community, Dr. Christine Goertz. The legislative provision also states that expert advisory panels will include “experts in integrative health and primary prevention strategies.”<sup>205</sup>

Additionally, under Section 5101, the National Health Care Workforce Commission is tasked with providing comprehensive information to Congress and the Administration about how to align federal health care workforce resources with national needs. Congress will use this information when providing appropriations to discretionary programs or in restructuring other federal funding. The language in the bill would insure that the need for doctors of chiropractic will be addressed when considering federal health care workforce programs. However, this Commission has not been funded, so no progress has been made on this front.<sup>206</sup>

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