Meeting the Nation’s Primary Care Needs

Current and Prospective Roles of Doctors of Chiropractic and Naturopathic Medicine, Practitioners of Acupuncture and Oriental Medicine, and Direct-Entry Midwives

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Developed through the Primary Care Project of the Academic Consortium for Complementary and Alternative Health Care

In Collaboration with the: Association of Chiropractic Colleges

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Executive Summary

Context: The United States faces a growing shortage of primary care providers. An emergent theme in many, if not most, of the proposals to address this need is the importance of examining the use of non-medical doctor (M.D.) practitioners. However, workforce analyses and healthcare delivery practices have not to date engaged the potential contributions of four licensed disciplines that are already frequently accessed by significant numbers of people as their first choice, primary provider of care. These are the doctors of chiropractic and naturopathic medicine, practitioners and doctors of acupuncture and Oriental medicine, and direct-entry midwives.

Goal: The goal of this paper is to open a dialogue to assist policymakers, regulators, third-party payers, delivery system administrators, practitioners, and other concerned parties as well as the disciplines themselves in considering the optimal use of these professions as part of the nation’s primary care matrix.

Methods: The Board of Directors of the Academic Consortium for Complementary and Alternative Health Care (www.accahc.org), the membership of which includes most of the councils of colleges, accreditation agencies and certification and testing organizations from these four disciplines, endorsed the project and named the project directors. These co-directors created partnerships with councils of colleges from three of the professions and the accrediting agency from the fourth field. Each organization named a writing team to represent it on the project. These teams collaborated with the co-directors to set the dimensions of the discipline-specific chapters which would guide the writing teams. The teams developed a template of fourteen fields to be addressed within 5500 words. At least one field worked directly with its national professional organization. Each discipline specific chapter was subsequently endorsed by the relevant partner organizations. The analysis and recommendations were in turn endorsed by the ACCAHC Board of Directors prior to publication.

Findings: The approximately 107,500 licensed practitioners in these fields belong to disciplines with an existing, strong, self-identification as providers of primary care. Most of their clinical encounters are the result of patients seeking out practitioners of these disciplines as their initial choice for dealing with a health concern or problem. The existing accreditation standards for each of the disciplines recognize, to at least some significant degree, a broad scope of practice with educational requirements that encompass prevention and public health and treatment of acute conditions, as well as the management and co-management of chronic conditions. In numerous jurisdictions, some of these disciplines are already legally recognized as primary care providers. Some are currently included in medical home planning and programs to stimulate provision of primary care services to the underserved. As such, these disciplines presently relieve some of the burden on the primary care system. Generally unrecognized by the conventional medical community and workforce planners, these practitioner groups represent a hidden dimension of primary care in the United States.
Recommendations from the Project Co-Directors as Endorsed (abridged*):

To the Leaders of the Disciplines of Chiropractic, Naturopathic Medicine, Acupuncture and Oriental Medicine and Direct-Entry Midwifery:

Clarify your discipline's relationship with primary care in conventional medicine by identifying gaps in training and specify how these gaps might be addressed. Explicitly distinguish those in the discipline who work in primary care from those who prefer to work as specialists. Promote and engage research that will assist all stakeholders in understanding your discipline's role in helping meet primary care needs.

Specify the extent to which your discipline encompasses a distinct model of primary care, and clarify the unique contribution this approach can make to conventional primary care practice and coordinated care provided in patient-centered medical homes.

To Health Workforce Planners, Healthcare Professionals from Other Fields, Policymakers, Public and Private Funders, Government Agencies, and Other Stakeholders:

Prioritize learning about this hidden dimension of primary care delivery via funding and engaging high quality health services and epidemiological research on those individuals and families whose "first choice" for treatment is a licensed practitioner from one of these four disciplines.

Use and examine the contributions of these practitioners to patient satisfaction, quality of life, and cost in limited population primary care strategies (such as for the birth process, or for back pain) and in patient-centered medical homes. Treat the present inclusion of these practitioners as primary care providers as pilot projects from which all stakeholders can learn.

To All Stakeholders:

Utilize the separate chapters delivered in this project as the basis of more multi-stakeholder, interprofessional working summits where each discipline can further develop a strategy that will help guide these professions into a more appropriate relationship with the nation's primary care matrix. Such a summit would optimally be convened by an independent agency. Recommendations would be bilateral: to the disciplines and to each of the principal stakeholders in the healthcare policy, regulatory, payment and delivery system.

*From the full recommendations endorsed by ACCAHC Board of Directors on page 21
A Note on Names of Members of the Disciplines

Various names are used for professionals in each of these disciplines due to such factors as state requirements, professional associations and personal preferences. Most of those are utilized one or more times in this document.

**Acupuncture and Oriental medicine:** acupuncturist, practitioner of acupuncture and Oriental medicine, practitioner of traditional Chinese medicine, Oriental medical doctor, and acupuncture physician.

**Chiropractic (medicine):** chiropractor, doctor of chiropractic, chiropractic doctor, chiropractic physician

**Midwifery:** midwife, direct-entry midwife, certified professional midwife

**Naturopathic medicine:** naturopathic physician, naturopathic doctor, naturopathic medical doctor, doctor of naturopathic medicine, naturopath
Doctors of Chiropractic and Primary Care

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Endorsed by the
Association of Chiropractic Colleges

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Introduction

Evolving continuously from its inception in Iowa in 1895, Chiropractic is now a well-acknowledged health profession routinely used by the public, capable of broad diagnostic activity, conservative treatment, and health promotion. It has developed a respected scientific evidence base and Doctors of Chiropractic (DCs) are embedded in a growing number of health delivery and reimbursement systems, including Workers’ Compensation programs, Medicare, the Veteran’s Health Administration, and the U.S. Department of Defense. The practice of Chiropractic is a licensed healthcare profession in all fifty states, the District of Columbia, the U.S. Virgin Islands, Puerto Rico, and other territories of the United States. All of these licensing jurisdictions accept or require graduation from a Council on Chiropractic Education (CCE) accredited educational program, and all recognize the CCE Standards as the educational requirements for chiropractic licensure.

Chiropractic care is a systems-based, whole-person approach to health care that focuses primarily on the locomotor system of the body. It incorporates the recognition that all aspects of the body are interrelated and interdependent and that organisms have powerful self-healing mechanisms. The primary aim of chiropractic health care is to support and, when possible, improve the natural functions and processes inherent to life. This is accomplished through manual procedures including mobilization and manipulation, physical modalities and procedures, lifestyle counseling, nutritional advice and therapy, and other measures that lie within the professional and legally authorized scope of practice of Doctors of Chiropractic.

Within the chiropractic profession there are individuals that concentrate their practices in specific domains such as diagnostic imaging, sports, orthopedics, pediatrics, nutritional counseling, and other specialties. Others within the profession have adopted an emphasis on musculoskeletal conditions and/or spinal dysfunctions, and focus their practices accordingly on these disorders. Regardless of the choice of practice focus, practice restriction or theoretical model that individual Doctors of Chiropractic assume, they have all been educated to the CCE definition of primary care.

Internal Definitions of Primary Care

Primary Care Definitions in Chiropractic Educational Standards

The Council on Chiropractic Education (CCE) is the only programmatic accrediting agency for chiropractic that is recognized by the United States Department of Education, and the concept of primary care has been included in CCE standards for over twenty years. In the most recent revision of its accreditation standards which will become effective in January 2012, CCE includes the following.1

“An accredited DCP [Doctor of Chiropractic degree Program] prepares its graduates to practice as primary care chiropractic physicians, and provides curricular and clinical evidence of such through outcome measures. CCE applies the understanding that in order to competently practice as a primary care chiropractic physician, DCP education trains its graduates to:

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• Practice primary health care as a portal-of-entry provider for patients of all ages and genders.
• Assess and document a patient’s health status, needs, concerns and conditions.
• Formulate the clinical diagnosis(es).
• Develop a goal-oriented case management plan that includes treatment, prognosis, risk, lifestyle counseling, and any necessary referrals for identified diagnoses and health problems.
• Follow best practices in the management of health concerns and coordinate care with other healthcare providers as necessary.
• Promote health, wellness and disease prevention by assessing health indicators and by providing general and public health information directed at improving quality of life.
• Serve as competent, caring, patient-centered and ethical healthcare professionals and maintain appropriate doctor/patient relationships.
• Understand and comply with laws and regulations governing the practice of chiropractic in the applicable jurisdiction.

**Primary Care Positions and Policies in Chiropractic Professional Associations**

The American Chiropractic Association (ACA) has published a statement referencing and extending the Institute of Medicine’s definition of primary care to the chiropractic profession: “Primary care is the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community.” For each of the key concepts in the definition, the ACA position paper makes the logical case that chiropractic physicians are equipped and ready to fulfill the primary care mission.\(^2\) The International Chiropractors’ Association also has a position that states, “The DC can provide all three levels of primary care interventions and therefore is a primary care provider, as are MDs and DOs. The doctor of chiropractic is a gatekeeper to the health care system and an independent practitioner who provides primary care services. The DC’s office is a direct access portal of entry to the full scope of service.”\(^3\)

**Internal Discussion Over Primary Care**

There is little internal disagreement that all Doctors of Chiropractic should enjoy direct primary contact or “portal-of-entry” access by patients without the need for referral by another healthcare provider. This is legally codified in all states’ scope of practice regulations. Beyond that there is no single agreed-upon model of care delivery because some Doctors of Chiropractic choose to focus on musculoskeletal disorders, and others choose to practice in a broader context. In clinical practice, chiropractic primary care may be actuated in a variety of ways depending on how the local delivery system is structured. For example, referencing the current discussion on how much of primary care in the U.S. will most likely be delivered in the future, the Foundation for Chiropractic Progress released a monograph entitled, “The Role of Chiropractic Care in the Patient-Centered Medical Home.”\(^4\) In essence, the Patient-Centered Medical Home (PCMH) concept describes primary care as requiring a team of health professionals with

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interrelated and yet distinctive skills and knowledge. Because Doctors of Chiropractic have demonstrated evidence-based skills and specialized knowledge regarding the musculoskeletal system (and its many related health complaints) seen in primary care practice, they can play an important and cost-effective role on community-based primary care teams.⁵ Another recent publication formalized an ongoing discussion regarding the value of establishing a “primary spine care practitioner.”⁶ It further makes the case that Doctors of Chiropractic are best-positioned to tackle a role that has increasingly been identified as a need in westernized healthcare systems in a similar manner to which dentists and optometrists fill primary care niches for oral and vision health.⁷

Variable views on primary care are represented within the chiropractic profession, but there is little data to indicate what fraction of the profession prefers any particular model. In any case, the differences are simply one of degree to the same extent that no single medical or other healthcare provider can meet all attributes of all primary care definitions at all times. Despite definitional nuances and regulatory language, all providers that aspire to primary care status are limited by choice, statute, knowledge, or circumstance. Within their state-mandated legal scope of practice, all Doctors of Chiropractic are trained to appropriately diagnose and manage the majority of healthcare issues that may present to their offices, and evidence exists to support that this is the case, including the referral or co-management of patients that present with problems beyond the legal scope of chiropractic practice or expertise.⁸

**Primary Care Practice Model Including Referral and Co-management**

As described above, the predominant model of chiropractic primary care practice has been promulgated and articulated by the Council on Chiropractic Education (CCE), which further defines primary health care as follows: “Care that is provided by a health care professional in the patient’s first contact within a health care system that includes an examination and evaluation, diagnosis and health management. A Doctor of Chiropractic practicing primary health care is competent and qualified to provide independent, quality, patient-focused care to individuals of all ages and genders by: 1) providing direct access, portal of entry care that does not require a referral from another source; 2) establishing a partnership relationship with continuity of care for each individual patient; 3) evaluating a patient and independently establishing a diagnosis or diagnoses; and, 4) managing the patient’s health care and integrating health care services including treatment, recommendations for self-care, referral, and/or co-management.”⁹ This model is uniformly addressed by all accredited chiropractic colleges in the U.S. by required adherence to CCE standards.

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⁷ Hartvigsen J, Foster NE, Croft PR. We need to rethink front line care for back pain. BMJ. 2011;342:d3260.

Doctors of Chiropractic and Primary Care

Evidence of Patient Use as First Contact Provider

Utilization and Market Share of Chiropractic

Chiropractic has a significant footprint in the U.S. healthcare system. Approximately 65,000 Doctors of Chiropractic are licensed as first contact healthcare providers making it “the third largest ‘primary’ health profession in the U.S. (behind medicine and dentistry).”9 In 2004, there was an estimated 2.39 Doctors of Chiropractic per 10,000 adults in the U.S., a ratio that has remained relatively stable. Depending on the nature of various surveys, somewhere between 8 – 12% of the adult U.S. population seeks chiropractic care annually.10,11,12,13,14 generating (in 2005) approximately $7.3 billion, or 3.3% of national healthcare outpatient service expenditures.10 In 2006, approximately 12.6 million U.S. adults made 109 million visits to Doctors of Chiropractic.10 An additional 2.1 million or 2.9% of children in the U.S. received chiropractic/osteopathic care.14 Surveys of patients seeking professional help for back and neck pain or chronic pain indicate that between 30 and 40% choose chiropractic care.15,16,17,18 Approximately 85% of chiropractic patients seek care on a primary care basis, that is, without referral from another healthcare practitioner.19,20 The rest are either referred to chiropractic care by other healthcare practitioners, or they receive concurrent care from other practitioners.8,19

Doctors of Chiropractic are distributed throughout the country with a slightly greater concentration in suburban and rural areas compared to urban centers, and with the Midwest over-represented compared to the South.9,10 In some rural areas, Doctors of Chiropractic may be the only healthcare providers within a reasonable distance of many patients.21 The demographic attributes of chiropractic patients, including the elderly22 and children,23 are fairly well-distributed across gender, age, occupation, and income level.9

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Some differences between medical and chiropractic patients have been observed in terms of attitudes, health status, insurance coverage, and other factors, but the largest difference is the much higher proportion of musculoskeletal complaints in the case-mix of DCs.17,24,25,26,27,28

**Conditions Managed by Doctors of Chiropractic**

Pain-related health complaints make up one of the largest components of all primary care practices, regardless of profession, and they seem to be getting worse.29,30 This point was made again most recently by a high profile report by the Institute of Medicine that calls for a “cultural shift” in the way pain is dealt with, including a recommendation that most care and management of pain should be done through primary care providers, leaving only complex cases to specialists.31

Scientific evidence from a variety of sources indicates that the majority of patients seeking chiropractic care have painful conditions of the musculoskeletal system, especially spine and extremity joint related.17,19,26,27 A smaller number of patients use chiropractic care for many other ambulatory complaints and to enhance their well-being and quality of life.8,12,32,33 A substantial portion of patients come to chiropractic care when medical care is perceived as unhelpful or has proven unsatisfactory.12,34

The question of whether chiropractic care is an expensive add-on to usual medical care or whether it successfully substitutes for medical care was addressed by a series of retrospective analyses of large third-party payer databases. This research provides strong evidence that the availability of chiropractic care substitutes for medical care in a cost and clinically effective way.35,36,37 In other words, when patients have equal access to chiropractic care and medical care, they will not seek care from medical providers for the same musculoskeletal condition. A monograph published by Mercer came to a similar conclusion on

the cost-effectiveness of chiropractic care based on the results of randomized controlled trials. Studies in the workers’ compensation domain and in corporate settings have also found chiropractic care to be cost-effective.

**Health Outcomes and Satisfaction with Chiropractic Care**

A full discussion of the body of research on the outcomes of chiropractic care is beyond the scope of this paper. However, it is important to note that the treatment procedures most associated with Chiropractic, spinal manipulation and mobilization, have been studied in at least 100 randomized controlled clinical trials and many observational studies. The most and best studies have focused on spine-related pain conditions and headache, but other conditions are being studied as well. The evidence has been summarized in a number of high-quality systematic reviews and incorporated into practice guidelines developed by many professional groups in many nations. In one recent important example, spinal manipulation is recommended as a treatment for both acute and chronic back pain in a guideline developed jointly by the American College of Physicians and the American Pain Society. In another, spinal manipulation/mobilization was acknowledged as one of the most evidence-based treatments for neck pain by the Neck Pain Task Force of the International Bone and Joint Decade. The U.S. National Institutes of Health has funded chiropractic related research for 15 years and now presents a positive conclusion on the value of spinal manipulation and mobilization for common pain conditions.

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The health care consuming public has a positive opinion of the value of chiropractic care. One of the largest surveys ever conducted\textsuperscript{30,32} found that 65% of patients who used chiropractic care for back or neck pain reported it “helped a lot,” outranking all other treatments surveyed including prescription medications.\textsuperscript{53} Similar findings have been repeated in other surveys, observational studies and in randomized controlled trials.\textsuperscript{40,54,55} When directly measured, patients' satisfaction with chiropractic care consistently outranks that received from other healthcare providers.\textsuperscript{56,57,58,59} Strong support by patients has probably contributed to Chiropractic's current position as the most widely utilized profession-based complementary and alternative medicine (CAM) practice in the U.S.\textsuperscript{60,61}

### Evidence of Wellness, Health Promotion and Primary Prevention

#### Primary Prevention and Primary Care

Primary prevention is emphasized by virtually all healthcare professionals and has been repeatedly encouraged to be a part of primary care practice.\textsuperscript{62,63,64,65} Integration of complementary and alternative medicine, including Chiropractic, into mainstream health delivery, may yield better overall patient health outcomes.\textsuperscript{66,67} The chiropractic profession is visibly committed to the goals of public health and has embraced the concepts of wellness, health promotion and primary prevention in a number of

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Rationale for Prevention in Chiropractic

Chiropractic students are familiar with tasks related to primary care\(^73\) and a focus on primary prevention as primary care is a good fit for Doctors of Chiropractic.\(^74,75\) In some areas of the country, a Doctor of Chiropractic may be the only provider delivering health promotion services.\(^21,76\) Doctors of Chiropractic tend to see patients more frequently than family practice or primary care medical providers and develop close doctor-patient relationships.\(^77\) Consequently, there is a greater opportunity for prevention messages to be delivered and for preventive patient behaviors to be reinforced over time.\(^78,79,80\) In one study, chiropractic patients over age 65 reported making only half the annual number of visits to medical doctors compared with the national average for this age group.\(^33\) In another, patients reported choosing chiropractic care for general wellness.\(^22\)

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76 Callahan D, Cianculli A. The chiropractor as a primary care health provider in rural, health professional shortage areas of the US: an exploratory analysis. Arlington, VA; 1993.


Co-morbidity of Chronic Spine Patients, Health Promotion and Primary Prevention

Doctors of Chiropractic report seeing a high proportion of patients with musculoskeletal health complaints with co-morbidities suggesting a great need and an opportunity for a variety of primary prevention interventions. Furthermore, studies of case-management strategies employed by Doctors of Chiropractic indicate that a high proportion currently use one or more methods of primary, secondary and tertiary prevention depending on case presentation.

Chiropractic Education in Wellness, Health Promotion and Primary Prevention

The chiropractic scholarly community supports training and evaluation of public health interventions. Paper presentations on the topic are made annually at the American Public Health Association and at the Association of Chiropractic Colleges – Research Agenda Conference. The Council on Chiropractic Education requires clinical competencies to be learned by students in primary prevention, health promotion and wellness. Furthermore, the National Board of Chiropractic Examiners, through its required nationally standardized examinations, tests chiropractic students on their ability to understand, advise on, and deliver prevention and health promotion services to patients.

Governmental, Regulatory Agency and Third-Party Payer Recognition as Primary Care Providers

The Council on Chiropractic Education (CCE) is the only chiropractic accrediting agency recognized by the United States Department of Education, and its standards are accepted as required education for all licensing jurisdictions in the U.S. As described above, the CCE standards specifically state that DC students are trained to function as primary care chiropractic physicians. Each state has its own enabling legislation and statutes for regulating the chiropractic profession. In all cases, Doctors of Chiropractic enjoy direct patient or portal-of-entry access for patients, perhaps the single most important attribute of the primary care concept. However, the notion of primary care is relatively historically recent and for that reason was rarely originally introduced into the great majority of statutes governing Chiropractic in the first part of the 20th century. Two states, Illinois and Iowa, do explicitly include Doctors of Chiropractic.

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in definitions of a primary care provider. Doctors of Chiropractic have been direct-access Medicare providers since the 1970s without being explicitly described as primary care providers. The Joint Commission (formerly JCAHO), a powerful accrediting agency, recognizes Doctors of Chiropractic as “physicians,” along with medical doctors, dentists, podiatrists, and optometrists.

Workers’ Compensation laws provide payment for direct access to chiropractic care for injured workers, as well as the great majority of fee-for-service health insurance programs, including those working under various managed care models. The new Patient Protection and Affordable Care Act (PPACA), Section 3502, names Doctors of Chiropractic as potential members of community primary healthcare teams to support the development of Patient-Centered Medical Homes. Relatedly, the Health Information Technology for Economic and Clinical Health Act (HITECH) of 2009 authorizes and supports Doctors of Chiropractic to adopt specified electronic health record systems that will dovetail with the infrastructure needs of PCMHs and other delivery organizations.

Healthcare Quality Initiatives and Chiropractic Care

The chiropractic profession recognizes and supports the healthcare quality movement in a variety of ways. Best practices and clinical practice guidelines have been developed starting in the 1990s and efforts have continued with, for example, the establishment of the Council on Chiropractic Parameters and Practice Parameters, which publishes and updates best practice documents on a regular basis. Four chiropractic colleges have received major funding from the National Institutes of Health to initiate curricular and other educational changes that would increase the learning of evidence-based care (EBC) decision making in chiropractic practice. A recent randomized clinical trial demonstrated the greater effectiveness of guideline-based chiropractic care compared to usual medical care for acute back pain. The U.S. Army’s Pain Management Task Force, through its PCMH model, supports the use of chiropractic care as effective for low back pain management. The Institute for Clinical Systems Improvement (ICSI) Low Back Pain (Adult) Guideline, 14th Edition, released in 2010, specifically lists Doctors of Chiropractic as appropriate healthcare providers.

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Research Relative to Chiropractic Primary Care

The issue of primary care has been studied and discussed in the chiropractic profession’s scholarly journals for at least two decades. Many papers are commentaries on the components of the variety of definitions of primary care and the extent to which Doctors of Chiropractic provide it. Others report data focused on questions around the primary care concept.

In 2000, Teitelbaum conducted qualitative surveys in four communities and found that, “Current practice models of chiropractors do not include a strong allopathic model of primary care, although they are consistent with consumer preferences and satisfying to chiropractors.” Gaumer facilitated two expert panels that included medical doctors to create a taxonomy of primary care activities. Doctors of Chiropractic were deemed capable of making diagnoses 92% of the time and contributing therapeutically in more than 50%, suggesting opportunity for DCs and MDs to work together on patient care and organizational strategy. An additional paper focused on barriers to expanding primary care roles for DCs. These will be discussed in more detail below, but some state licensing laws have been recognized as potentially challenging.

A survey of chiropractic organizational leaders and Connecticut DCs in 2003 concluded that DCs in that state qualify as primary care providers by education, licensure, definition, and intra-professional consensus. Knowledge of primary care activities was assessed and compared between final-term chiropractic students and medical students entering residency training. Chiropractic students scored close to but generally lower than medical students, but scored better than their counterparts on the musculoskeletal section of the test. Gaumer analyzed data from a 1998 random survey of users and non-users of chiropractic care with respect to primary care. The lack of knowledge about Chiropractic demonstrated by non-users was striking. At that time over a decade ago, Chiropractic users and non-users were about equally willing to consider using non-MDs as primary providers, but only a minority would choose a DC.

In 2007, Cambron surveyed a small sample of chiropractic patients who “overwhelmingly believed” that DCs could treat their musculoskeletal conditions. However, only 19% saw their DC as their primary care provider despite moderately high agreement that DCs can treat 17 types of non-musculoskeletal conditions seen commonly in primary care medical practice. On the other hand, a convenience sample of chiropractic patients from four practices in New Mexico recently suggested that DCs were perceived as primary care providers and that 85% would prefer that their DC have limited drug prescription.

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authority. In an interesting multi-year demonstration, clinical utilization and cost outcomes from an innovative Independent Physician Association that exclusively used DCs and other complementary and alternative clinicians as primary care providers, found that patients experienced more than a 60 percent decrease in hospitalizations, 59 percent fewer hospital days, 62 percent fewer outpatient surgeries and an 85 percent decrease in pharmaceutical costs compared to patients who saw medical doctors. Notably, over a seven year period, the chiropractic primary care providers managed 60% of their enrolled members without a referral.

In Canada, Garner investigated the effect on attitudes of adding DCs to two community primary healthcare teams of medical and allied health professionals. Using qualitative and quantitative methods, the original teams showed large and significant increases in trust in shared care, legitimacy, and effectiveness of chiropractic. Further work in this vein found that factors in the categories of communication, practice parameters and service delivery were necessary to promote professional integration of chiropractic care on community-based primary care teams.

Professional Goals or Objectives Relative to Primary Care

The goal of the chiropractic profession in the United States is to provide health care in the role of a primary care chiropractic provider, and it is clear that the training a Doctor of Chiropractic receives is consistent with serving in that capacity. This is explicitly described in the January 2012 Council on Chiropractic Education Standards as follows, "The didactic and clinical education components of the curriculum are structured and integrated in a manner that enables the graduate to demonstrate attainment of all required competencies necessary to function as a primary care chiropractic physician."

This same concept is shared by the Councils on Chiropractic Education International in the International Chiropractic Accreditation Standards. According to the CCEI, "the purpose of his/her professional education is to prepare the chiropractor as a primary health care provider." Review of the mission statements of accredited chiropractic colleges with particular attention to the educational goals and professional qualifications of graduates provides further support that the professional goals of the colleges are for their graduates to serve as primary care providers. This objective is shared by the profession's national trade associations, the American Chiropractic Association, and the International Chiropractors’ Association as described previously.

Comparative Educational Standards for Primary Care

The most recent paper that directly compared the educational standards of chiropractic programs versus allopathic programs appeared in 1998. The conclusion of the study revealed that “considerable commonality exists between chiropractic and medical programs.” In regards to the basic sciences portion of the curricula, the programs were more similar than dissimilar. This similarity was in both the content of the subjects offered and the time allotted to each subject. In the clinical sciences some common areas were identified, but this area of the curricula demonstrated the greatest divergence in types of subjects offered and time allotted to topics. The time spent in the clinical practice portion of the educational process demonstrated the greatest difference between chiropractic and allopathic education with medical schools exceeding chiropractic schools. However, the therapeutic interventions in which chiropractic and medical students are educated are quite distinct from one another. The settings in which the interventions are delivered also vary greatly from primarily ambulatory settings for chiropractic interns, to mostly tertiary hospitals for medical students. The comparison revealed that with these similarities and differences established, future studies should examine the quality of the two educational programs in more detail.

Medical educators have decried the demonstrated deficiencies in musculoskeletal clinical competencies in medical education despite the high public health burden of these kinds of disorders and their common prevalence in primary medical practice. Chiropractic students receive significantly more instruction on musculoskeletal topics and there is evidence that they are more knowledgeable in this domain than medical students.

Educational Standards as a Basis for Primary Care

The Council on Chiropractic Education accreditation Standards, as described above, clearly provide the learning basis for primary care chiropractic practice. The CCE Manual of Policies further specifies educational programs for the Doctor of Chiropractic degree. It minimally requires the equivalent of 4,200 instructional hours which ensures that the program is commensurate with doctoral level professional training in a health science discipline, a portion of which incorporates this training into patient care settings. Mandatory meta-competencies have been identified regarding the skills, attitudes, and knowledge that a Doctor of Chiropractic program provides so that graduates will be prepared to serve as primary care chiropractic physicians. These competencies require a Doctor of Chiropractic to demonstrate that she/he can:

- perform an initial assessment and diagnosis;
- create and execute an appropriate case management/treatment/intervention plan;
- promote health, wellness, safety and disease prevention;
- communicate effectively with patients, doctors of chiropractic and other healthcare professionals, regulatory agencies, third-party payers, and others as appropriate;
- produce and maintain accurate patient records and documentation;

• be proficient in neuromusculoskeletal evaluation, treatment and management;
• access and use health related information;
• demonstrate critical thinking and decision making skills, and sound clinical reasoning and judgment;
• understand and practice the ethical conduct and legal responsibilities of a healthcare provider;
• critically appraise and apply scientific literature and other information resources to provide effective patient care; and
• understand the basic, clinical, and social sciences and seek new knowledge in a manner that promotes intellectual and professional development.

The mandatory meta-competencies and their required components and outcomes, plus recommended sources and types of evidence used to demonstrate student achievement of the meta-competencies and evidentiary guidelines for assessment, are cited in CCE Policy 3.89

**Focused Education to Enhance Skills in Primary Care**

Although DCs receive a broad-based clinical education, the often perceived limitation to comprehensive patient care may be due to the lack of a required post-graduate residency. Unlike medical education, chiropractic students are not required to complete a post-graduate educational program such as the traditional resident training programs that medical and osteopathic physicians often complete. Post-graduate resident programs represent an area that is receiving scrutiny within the profession and preliminary plans are being developed. Barriers to residency positions are many but include finances and the identification of institutional residency positions that can be filled. The development of residency programs for Doctors of Chiropractic may enhance their ability to function confidently as primary care physicians in all settings.

**Barriers to a Greater Role in Primary Care Practice**

There are a number of challenging barriers to DCs serving in primary care roles that are ably summarized by Gaumer.101 Legal barriers exist because some state practice laws limit the diagnostic and treatment procedures that DCs can provide. Currently, a majority of states prohibit DCs from prescribing medications or performing surgery.113 Professional barriers exist, including attitudes and behaviors that impede referrals and care coordination.114,115 The contentious history of Chiropractic with medicine has had lingering effects. Health delivery systems, including managed care programs are relatively unfamiliar with chiropractic care and are not used to dealing with DCs as part of the delivery mix. Financial challenges exist because some payers are uncertain or unwilling to reimburse DCs for primary care services. An egregious example is Medicare that pays for manipulative treatment, but not for the diagnostic work that must precede it. Competition with other providers for

primary care roles is also a factor. Some DCs may not be interested in the delivery of health promotion, primary prevention, or primary care. Doctors in the field may feel they are inadequately trained, depending on year of graduation or program they attended, and may not provide services for which they are not reimbursed such as health screenings, lab work, or certain types of diagnostic imaging. DCs may not maintain the skill set or self-efficacy to perform many primary prevention or primary care tasks. Finally, the public may not view DCs as primary care providers and therefore, may not choose them for this type of care.

Re-Thinking Primary Care

After more than a century of steady progress, Chiropractic has a significant presence in the healthcare industry, and it has the professional infrastructure in place to substantially assist with the nation’s evolving primary care challenges. Perhaps the most important question is what shape will primary care take in the evolving healthcare system? Many definitions, systems, professions and roles are currently in play and the answer relative to this profession’s role will be clarified over time. One possibility that is receiving great attention is the notion that primary care can only be completely and properly delivered by teams of healthcare professionals in the community. Primary care has always been seen as patient-centered, but now it must also take responsibility for community health.

In support of this theme, chiropractic authors\textsuperscript{24,96,97,116} make a cogent case for the distinction between primary medical care and primary health care. The distinction aligns with the holistic biopsychosocial model of health as opposed to the biomedical focus on disease alone, a perspective that Chiropractic has always embraced.

Primary health care in this view is different. The approach to care is anticipatory, continuous and preventive, emphasizing health promotion instead of episodic focus on specific conditions and cures. As opposed to primary medical care, primary health care pays attention to both objective and subjective findings; it is truly patient centered. Instead of medical specialists, the emphasis is on generalist health professionals who are trained and willing to work together. In this view, while primary medical care is dominated by medical physicians and internally focused on its own institutions and behaviors, primary health care explicitly seeks community participation and a wide range of professionals, always working with the patients as partners in the relationship.

D.D. Palmer, the founder of Chiropractic, once stated that the causes of disease could be summarized in just three categories: trauma, toxins, and auto-suggestion. Today, we can forgive the 19th century language, but also respect the wisdom that underlies the Chiropractic approach to health. The chiropractic profession is now poised to play a greater role as primary healthcare providers for the 21st century.