Looking back at the lawsuit that transformed the chiropractic profession part 1: 
Origins of the conflict
Claire D. Johnson, DC, MSEd, PhD and Bart N. Green, DC, MSEd, PhD

Objective: This paper is the first in a series that explores the historical events surrounding the Wilk v American Medical Association (AMA) lawsuit in which the plaintiffs argued that the AMA, the American Hospital Association, and other medical specialty societies violated antitrust law by restraining chiropractors’ business practices. The purpose of this paper is to provide a brief review of the history of the AMA and the origins of chiropractic and to explore how the AMA began its monopoly of health care in the United States, possible reasons that organized medicine acted against chiropractic, and how these events influenced the chiropractic profession.

Methods: This historical research study used a phenomenological approach to qualitative inquiry into the conflict between regular medicine and chiropractic and the events before, during, and after a legal dispute at the time of modernization of the chiropractic profession. We used primary and secondary data sources. The final narrative recount was developed into 8 papers that follow a successive time line. This paper is the first of the series and explores the origins of the aversion of organized American medicine to other health professions and the origins of the chiropractic profession.

Results: The AMA began in the mid-1800s to unify like-minded “regular” medical physicians who developed a code of ethics and promoted higher educational standards. Their efforts to unify had excluded other types of health care providers, which they called “irregular” practitioners. However, Americans were seeking more natural alternatives to the harsh methods that regular medical physicians offered at that time. Nearly 50 years after the AMA began, the chiropractic profession attempted to emerge during a time when many patients valued vitalism and their freedom to choose what health care provider they would access.

Conclusion: During the years that chiropractic developed as a healing profession, organized medicine was already well established and developing a monopoly in American health care. These events created the foundation on which the tensions between these professions were built and ultimately resulted in the Wilk v AMA lawsuit.

Key Indexing Terms: Health Occupations; Chiropractic; Medicine; Humanities; History, 20th Century; Antitrust Laws

INTRODUCTION
Chiropractic is an enigma. This profession developed in the late 1800s with an approach to health and disease that was different from orthodox medicine. Chiropractic formed a philosophy of health that focused on healing mainly by addressing the nervous system through manual means.1,2 Since the inception of the profession, chiropractors have provided conservative care to improve patients’ health. Chiropractic is said to be “the largest alternate or ‘unorthodox’ health profession in the United States.”3 American chiropractors provide about 190,000,000 office visits annually.4 As of 2017, chiropractic is a licensed or registered profession in 87 countries and may be the only form of health care available in some areas with limited resources.5,6 Yet, in spite of its accomplishments, this established health profession is often misunderstood.

Why do some people think that chiropractors are not “real” doctors or think that there is no evidence to support what chiropractors do? Why is it that each region has a different scope of practice, which makes it seem as if chiropractors are incongruent? Why is it that sometimes there seems to be tension between medical doctors and doctors of chiropractic, almost as if they are speaking different languages? How did chiropractic come to be the way it is today? To answer these questions, we must look back at the history that shaped the chiropractic profession. Contained within the heart of this history is the story of an antitrust lawsuit that was a turning point in a century-old
conflict. The suit was the *Wilk v American Medical Association (AMA)*.7

The lawsuit was a battle of wills that revealed much about the chiropractic and medical professions.7 Fifteen years would transpire between the preparation and its filing and the final denial of appeals. Through their grip and determination, the plaintiffs and lawyers, who were underresourced and outnumbered, brought this important lawsuit to successful completion in 1990. The events surrounding this antitrust lawsuit help to explain what obstacles chiropractic had to transcend to transform into the profession it is today. The lawsuit and its final decision facilitated the removal of some barriers imposed by the AMA and other organizations associated with organized medicine and thus was necessary so that chiropractors would be able to further develop the profession’s foundation on scientific grounds.8 These growth-related activities included but were not limited to events such as the Mercy Conference, the Research Agenda Conferences, and participation in collaborative activities with other professions. Examples include the Agency for Health Care Policy and Research Guidelines, the Neck Pain Task Force, the American Public Health Association, and the Global Spine Care Initiative.9–27 An additional outcome of the lawsuit was the eventual removal of barriers that were previously implemented by the AMA, which resulted in patients being allowed access to chiropractic care and that allowed chiropractors to work with other health care professionals in integrated care settings.28–41 These events likely would not have happened, and the chiropractic profession would not be as it is today without the 2 trials and the successful conclusion of the *Wilk v AMA* lawsuit.42 And yet, the remnants from the past are still with us today. By learning about the challenges that chiropractic had to overcome, we may better realize how the vestiges from the past continue in today’s culture and what the chiropractic profession may still need to consider as it looks to the future.

The purpose of this paper is to provide an overview of the initial context of how organized medicine was formed, how the AMA began its monopoly in health care, and how, nearly 50 years later, the chiropractic profession emerged into this challenging environment.

**METHODS**

This historical study used a phenomenological approach to qualitative inquiry into the conflict between organized medicine and chiropractic and the events before, during, and after a legal dispute at the time of modernization of the chiropractic profession. The metatheoretical assumption that guided our research was a neohumanist paradigm. As described by Hirschheim and Klein, “The neohumanist paradigm seeks radical change, emancipation, and potentiality, and stresses the role that different social and organizational forces play in understanding change. It focuses on all forms of barriers to emancipation—in particular, ideology (distorted communication), power, and psychological compulsions and social constraints—and seeks ways to overcome them.”43 We used a pragmatic and postmodernist approach to guide our research practices such that objective reality may be grounded in historical context and personal experiences and interpretation may evolve with changing perspectives.44

We followed techniques described by Lune and Berg.45 These steps included identifying the topic area, conducting a background literature review, and refining the research idea. Following this, we identified data sources and evaluated the source materials for accuracy. Our methods included obtaining primary data sources: written testimony, oral interviews, public records, legal documents, minutes of meetings, newspapers, letters, and other artifacts. Information was obtained from publicly available collections on the Internet, university archives, and privately owned collections. Secondary sources included scholarly materials from textbooks and journal articles. The materials were reviewed, and then we developed a narrative recount of our findings.

The manuscript was reviewed for accuracy, completeness, and content validity by a diverse panel of experts, which included reviewers from various perspectives within the chiropractic profession ranging from broad-scope (mixer) to narrow-scope (straight) viewpoints, chiropractic historians, faculty and administrators from chiropractic degree programs, corporate leaders, participants who delivered testimony in the trials, and laypeople who are chiropractic patients. The manuscript was revised based on the reviewers’ feedback and returned for additional rounds of review. The final narrative recount was developed into 8 papers that follow a chronological story line.46–52 This paper is the first in the series that considered events relating to the lawsuit that transformed the chiropractic profession and explores the origins of the aversion of organized medicine to all other health professions and the early origins of the chiropractic profession.

**RESULTS**

**American Medicine in the 1800s**

Organized medicine in the United States today is vastly different from what it was during its infancy. The drugs and surgeries of the 1800s were not scientifically proven, and by today’s standards most would be considered poisonous (eg, mercury) or barbaric (eg, surgery without anesthesia or antisepsis).53 However, at that time, those were the only tools available for medical physicians, and they fought to maintain the practices of their trade.54 As Rothstein stated when describing medicine in the 1800s, “Inasmuch as early nineteenth-century physicians were ignorant of the etiology and means of contagion of diseases, the relationship between their theories of medicine, their therapies, and the actual disease states had no scientific basis.”54

Diseases that we now know are caused by bacteria or viruses medical doctors believed were caused by “vapors” or excess body fluids.55 Basic knowledge that we take for granted, such as that germs are responsible for yellow fever or that vitamin D deficiency can cause rickets, was unknown.53 Reliance on clinical observation was the...
norm. The experimental science in medicine that we expect today was nonexistent simply because experimental scientific methods had not yet been developed as applied to health care.65

Orthodox medical practices and beliefs evolved over decades. Bloodletting and purging slowly gave way in the mid-1800s to the use of cocaine, morphine, alcohol, quinine, and aspirin as therapeutic methods. By the 1880s, there was a wider acceptance by medical doctors of the germ theory.53 And following this, “America did not move into the mainstream of Western medicine until Welch introduced the principle in the 1890s that laboratory training and research were fundamental to medical education.”53

The American health care climate in the 1800s was chaotic. Lack of health care regulations resulted in a highly competitive marketplace and unsafe medical practices due to lack of training and lack of effective treatment methods.57,58 For most of the 1800s, medicine was not a licensed profession throughout the United States.54,55 In the 1840s, no certification was required for the practice of medicine; thus, “almost anyone could practice ‘medicine,’ and many did.”60 With the health care marketplace flooded with healers ranging from the unqualified to those with formal European medical training, there grew a desire by some in the medical profession to rein in the chaos.

Regular Medicine

One medical sect in the United States began to organize and eventually became what was to be known as regular medicine (ie, orthodox medicine). A group of medical physicians in the 1800s called themselves regular physicians. They labeled other medical healers, who also called themselves “medical doctors,” with the term irregular to set themselves apart from these competing providers.54,55 This distinction was important in that this exclusivity would eventually be used to restrain other health practitioners from practicing. The regular medical physicians wanted to create an elite organization in which only their members could participate within its infrastructure (eg, hospitals, universities, accreditation, research, education, and reimbursement).

The following is a definition from a medical publication in the 1880s about regular medical doctors:

Who is a regular physician? The Cincinnati Lancet answers, “One who is a graduate of a reputable school of medicine or a licentiate of a medical society that is auxiliary to, or in affiliation with the American Medical Association, and practices his profession in accordance with the code of ethics adopted by that society.”62

In the early 1800s, regular medical doctors mainly used bloodletting and purgatives.63 The prevalent regular medical theory was that illness was caused by an imbalance in the fluids of the body. By draining blood or by inducing vomiting or diarrhea, medical physicians believed that patients would regain their health. These drastic treatment methods were considered by some to be more harmful than the diseases that people were experiencing. It was proposed that many people died, due to the harsh treatments, who might have otherwise survived their disease or affliction.64

The regular medical doctors competed with the other medical sects who were vying to dominate health care in the United States. These alternative medical schools did not align with the regular doctors and promoted less invasive and more natural methods. The irregular medical physicians used natural, homeopathic, or eclectic methods and claimed to offer better and safer care.65 They competed with the regular medical doctors for patients, which motivated regular medical doctors to join together to create a health care monopoly. The regular medical physicians fought against all irregular healers by labeling them as quacks and working to gain dominance in the health care marketplace through political and legislative methods.

However, at the time, there was no central organized body for the medical profession in the United States. Each state had unique health care regulations, which led to disunity.53 The result was that educational standards for both regular and irregular medicine physicians were low. The regular medical doctors saw this as an opportunity to take action.

Birth of the AMA

Regular medical physicians banded together to create a unified standard within their profession across the states. As was stated in transcripts from the early meetings, “For if we cannot make rules or laws which will banish ignorance, stupidity, and empiricism, we can, at least, fix our own standard of qualification, and thereby say who we will recognize as our associates.”66 In order to accomplish unification, a combined effort was needed, which resulted in the formation of the future powerhouse of organized medicine, the AMA. The beliefs and actions of the founding members of the AMA would eventually have profound effects on the future chiropractic profession. These beliefs and actions would later become part of the basis of the Wilk v AMA lawsuit.

In 1847, the first AMA meeting was held. The assembly focused on medical educational standards, the regulation of the profession of medicine, and the development of a code of ethics. These actions addressed their concerns that entering the field of medicine was too easy, causing a market flooded with physicians. Nathan Smith Davis Sr, MD, who was a founding member of the AMA and first editor of the Journal of the American Medical Association, described the poor qualifications:

At present, there is no standard of primary qualifications for the student of medicine. It matters not whether he has any knowledge of the natural sciences or ancient languages, or even competent knowledge of his mother tongue. All the young man has to do, is to gain admittance into the office of some physician, where he can have access to a series of ordinary medical text-books, and see a patient perhaps once a month, with perhaps a hasty post-mortem examination once a year; and in the course of the three years thus spent, one or two courses of lectures in the medical colleges, where the whole science of medicine, including anatomy,
physiology, chemistry, materia medica, pathology, practice of medicine, medical jurisprudence, surgery, and midwifery, are all crowded upon his mind in the short space of sixteen weeks (a time hardly sufficient to dissect carefully and minutely one subject); and his education, both primary and medical, is deemed complete.66

These early medical leaders hoped that the AMA would unify the state medical societies and rein in low educational standards and practices to better control the practice and business of medicine. As a result, the committee recommended the following action: “First. The standard of preliminary or preparatory education should be greatly elevated, or rather, a standard should be fixed, for there is none now, either in theory or in practice.”58

This decision set the stage for the AMA to later use its control over education, the setting of standards, and licensure to limit who gained admittance into the field of medicine. This influence over who could enter the health care system also contributed to the eventual monopoly of health care by regular medicine.

The AMA’s founding fathers developed a code of ethics to outline professional behavior and declare what was considered acceptable practice among regular medical physicians.58 The AMA Code of Ethics stated that AMA members’ practices were to be based on science and that anyone who practiced outside of their views of science would be shunned. This code of ethics helped the AMA exclude other practitioners who did not ascribe to the AMA’s philosophical views.

The resolutions from the first AMA meeting were distributed and published in newspapers across the United States. Included was the recommendation to lengthen the course of instruction in medical school from 4 to 6 months (Fig. 1).67 There was an explicit declaration that anyone who was considered an irregular practitioner by their standards was not allowed.

Included in the 1847 Code of Medical Ethics was the consultation clause. This clause prohibited AMA members from consulting with any practitioner who came from a school not considered to be regular (orthodox) medicine—even if they were from other medical schools (eg, homeopathic or eclectic):

ART. IV. Of the duties of physicians in regard to Consultations...But no one can be considered as a regular practitioner or a fit associate in consultation whose practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology and organic chemistry.61

Thus, decades before the birth of chiropractic, the AMA forbade regular medical doctors from practicing with other types of practitioners.

The AMA steadily became stronger. To protect the interest of its members, the AMA lobbied in their favor and coordinated the suppression of the licensure of other health care providers across America. To gain more control, the AMA urged each state medical society to suppress the efforts of irregular practitioners in their regions. For example, the State Medical Society of Iowa vigorously enforced its code of ethics to ensure that its membership did not include irregular practitioners. Its 1860 meeting minutes stated, “Whereas, among other subjects, this Society has been organized for the establishment of and maintenance of the dignity and honor of the profession, and for the suppression of quackery in all its forms.” The State Medical Society of Iowa would impeach...
members that violated this code. These efforts would have a devastating effect on these other health professions. 

Forbidding consultation with or referral of patients to other health professionals became a long-standing strategy that the AMA used to control patient access to health care. This put a stigma not only on these alternative healers but also on those who chose to become their patients. A newspaper commentary in 1883 explains these concerns:

The rules of the American Medical Association...were in a few respects arbitrary and oppressive. In operation since 1845, or nearly forty years, they led to the formation of state and county medical societies by the homeopathics and eclectics, and to the founding of sectarian colleges, hospitals and dispensaries. They deprived many sick and dying persons of the best medical and surgical advice of the regular profession; aroused the indignation of the public at large against such narrow-minded and cruel procedures, and arrayed many physicians and lay persons against true and liberal medical art and science.

Even within its ranks, the AMA’s intent to monopolize was recognized. Among the AMA member state associations, there were some who questioned the intentions of the AMA. For example, in the 1880s, the Medical Society of the State of New York withdrew its AMA membership in protest of the AMA Code of Ethics. The New York society leadership argued that the consultation clause did not put the patient first; instead, it focused on creating a monopoly for regular medical physicians.

The duty of the AMA was to protect its members, and it had strict stipulations for membership, which was also critical to medical practitioner survival. Members were provided with a network of other physicians, which was vital for garnering referrals and increasing practice revenue. Some local societies also provided professional liability insurance, legal consultation, and billing services to members. Services such as the provision of medical care to the indigent and to veterans through federally funded programs provided an additional source of income through local societies for many medical doctors. Society membership also served to connect physicians with hospital privileges, thereby extending practice and financial networks and the ability to care for more people. It was nearly impossible to successfully practice medicine if one was not an AMA member.

To become a medical society member, the candidate had to graduate from a regular medical school, practice in an “ethical” manner as defined by the AMA, and be vetted by the current society members. Any providers deemed by the society to be irregular would not be allowed to join and therefore would be left without the resources necessary to practice. Physicians recognized that if the AMA determined that their behavior was “unethical,” they would be ostracized socially, their association membership would be revoked, and they would lose their many membership benefits, which included hospital privileges. Only regular medical physicians were allowed to work in and refer to others within regular medical hospitals.

State of Medicine

The practices of medicine evolved slowly. Medicine eventually recognized that the pharmaceuticals of that day, such as mercury, could cause severe poisoning, permanent disfigurement, disability, or death. In the 1860s, during the American Civil War, there were disagreements about the use of mercury as a medical treatment. As the century progressed, regular medical physicians began to abandon the use of their heroic therapies that they had once held in high regard. With few viable drugs available and the discovery of antibiotics still far in the future (eg, penicillin was discovered in 1928), regular medical doctors had few effective therapies to offer patients.

In the United States, during this post Civil War chasm in health care, there were few regulations for health providers. The American public was searching for safer and more effective health care methods. The time was opportune for alternative healers to emerge and prosper. It was in this environment that chiropractic was introduced.

Birth of Chiropractic

Chiropractic was born in the mid-1890s. At this time, practices that focused on the body’s natural healing powers to cure illness were popular. Magnetic healing was one such practice. Magnetic healing proposed that “animal magnetism” was a natural invisible force in all living things that could heal the sick. Magnetic healers were relatively common and advertised to attract patients. Many of them included the term doctor or physician, which was standard at that time. Examples of magnetic healers can be seen in Figure 2 and included Dr Razer (1891), Dr Wood (1885), Dr Walter (1893), and Dr Stockdale (1895).

Daniel David (DD) Palmer studied various forms of natural healing and practiced as a magnetic healer beginning in the 1880s (Fig. 3). It was during this time that chiropractic evolved. He observed how his patients responded to different treatment methods, and he discovered that some of his patients responded exceptionally well to spinal manipulation. In the mid-1890s, DD Palmer announced his discovery of a new healing method that he would later call chiropractic. He emphasized that chiropractic was a distinct healing art and was different from orthodox medicine:

The Old School of medicine looks upon disease as an enemy which must be conquered, subdued, vanquished, routed, driven out. They declare war, they muster their forces, arm themselves with death-dealing poisonous drugs, they have quite a combat, a great fight, and imagine they come off the battlefield victorious.

DD Palmer’s philosophical foundation was vitalism, which was a popular concept of his time in America. Vitalism was a belief that the whole organism is made up of more than the sum of its parts as opposed to the body being only a number of parts with no interconnecting relationship. In this vitalistic model, the mind and the body were interconnected and could influence each other. In this
Figure 2 - Examples of advertisements for magnetic healers, which were common in the late 1800s.
way of thinking, living beings embodied a vital force, which was the cause of life. Vitalism was an opposing philosophical model to the mechanistic biomedical philosophies of orthodox medicine.

The biomedical model suggested that the mind and body were separate and functioned independently; therefore, medical treatment should be done separately from matters of the mind. In the medical model, there was no attribution to innate intelligence. Benjamin Rush, a thought leader in early American medicine who influenced generations of medical physicians, offered the following view when referring to the healing power of nature:

The principle is devoid, not only of all intelligence, but possesses no healing power of any kind. It appears to be the blind effort of matter, and is as much the effect of physical necessity as the falling of a stone when thrown into the air, or the direction of a plant toward the sun, when confined in a green house. I do not object to the power, therefore, but to the names which have been given to this blind and physical agency of nature in diseases.

In the developmental years of chiropractic, illness was thought to be caused by the interruption of nerve impulses that influenced Innate Intelligence, which DD Palmer felt was God’s presence in man. DD Palmer’s beliefs that a higher power (Universal Intelligence) emancipated health as a result of inborn healing or homeostatic capacities (Innate Intelligence). These vitalist concepts were compatible with widely believed American points of view. DD Palmer linked Innate Intelligence to the body’s physical function. DD Palmer said,

Knowing that our physical health and the intellectual progress of Innate (the personified portion of Universal Intelligence) depend upon the proper alignment of the skeletal frame, prenatal as well as postnatal, we feel it is our right and bounden duty to replace any displaced bones, so that the physical and spiritual may enjoy health, happiness, and the full fruition of earthly lives.

He hypothesized about how the body was interconnected and the important role that the nervous systems played with health and life. DD Palmer further expounded,

Chiropractic is founded upon the principle that, all functions are performed thru nerves; that health is a condition where the controlling intelligence is able to send mental impulses outward thru nerves; that disease is a condition caused by bone pressure on nerves. This infringement creates aberration of nerve impulse. ... Innate (the intelligence born with us) runs the vital functions of the body with perfect precision, at birth and during life, providing that its impulses are not interfered with. This being the case, the intelligent director knows all about the running of the vital economy; it only remains for us as Chiropractors, fixers, adjusters, to learn the condition of nerves which favor health and vice versa. There is no more harm for a Chiropractor to be versed in physiology than in that of medicine, providing he does not hinder or disturb Innate in the performance of a work of which it knows much more than we can ever know. Educated Intelligence should learn to make it possible for Innate to have free control of all the vital functions.

When we, as Chiropractors, have adjusted all displaced bones of the skeletal frame, made it possible for Innate to perform all the functions in a natural manner, what more can we do? What more should we do? We might as well try to inform the tree how to run the functions of its roots, bark, leaves and sap. The tree could well reply by saying, 'I...'

Figure 3 - DD Palmer’s early advertisement in the Davenport Times, October 29, 1891. This advertisement is similar to other magnetic physician advertisements at that time.
know better how to run the functions of my existence than you. Make my environments suitable and I will look after my vital economy.’ We cannot impart information to Innate on a subject of which we know but little and of which it knows all. Innate has always existed; it is a scion of Universal Intelligence. We can no more direct the vital functions of the animal economy than we can that of the plant.

One of the underlying hypotheses was that *chiropractic vertebral subluxations* (spinal joint dysfunctions) would cause nerve interference. DD Palmer proposed that health could be restored by identifying and removing the interference to the nervous system.

As there were many views of chiropractic, there were also many definitions of chiropractic vertebral subluxation. Some early chiropractors hypothesized a static model where a vertebra shifted out of place and pinched nerves (Fig. 4a). Thus, for those with this model, the purpose of the chiropractic adjustment was to restore alignment. Other chiropractors proposed alternate hypotheses. One such hypothesis was that chiropractic vertebral subluxations were caused by altered axes of motion within spinal joints. They proposed that the chiropractic adjustment would restore the normal field of motion, thereby restoring function (Fig. 4b). Regardless of which subluxation model was used, early chiropractors focused mainly on the vertebral column, spinal nerves, the nervous system, and the restoration of health through chiropractic adjustments (manual manipulations).

**Chiropractic Distinct From Regular Medicine**

Chiropractic developed as a distinct health care option and was separate from regular (orthodox) medical care. The primary chiropractic modality was the spinal adjustment (manipulation of the spine by hand), which was delivered by chiropractors in chiropractic offices. Due to the exclusionary stance imposed by the AMA, these practices were not allowed within medical clinics or hospitals. Whereas the fields of nursing and physical therapy would later become accepted as supporting professions within the house of medicine, chiropractic originated and developed as a stand-alone profession, not as a complement to an existing method, such as regular medicine.

Chiropractors offered patients a fully formed method for obtaining health. Early advertisements promoted chiropractic concepts, such as that if interference in the nervous system could be removed, then the body would be able to heal itself, no matter the cause, disease, injury, or other health-related issues.

While this evolution in thought may seem to lack a scientific basis by our current standards, it should be noted that this method was common at that time. Other professions, including orthodox medicine, were founded and developed without any experimental scientific evidence. Thus, the developments based on empiric observations without experimental trials were typical in the late 1800s and early 1900s. Randomized clinical trials or other types of experimental research designs to show efficacy or
safety were not available. In fact, the first medical randomized clinical trials did not occur until the 1940s.65

DD Palmer did not envision chiropractic to be an adjunct to the field of medicine (Fig. 6). Instead, he viewed chiropractic as a distinct, stand-alone health field and an alternative to regular medicine.92 DD Palmer said, "Our healing is done entirely by the hands; there are no drugs used."100 He claimed that chiropractic was not only different but also better than medicine. He wrote,

We do not go to the drug store nor ransack all creation to find a remedy. The remedy is in righting the wrong. The cause of the disease is in the sufferer, and the cause must be
corrected. Often the circulation of the blood is obstructed at some place, causing some of the numerous blood diseases. If so, would it not be much better to remove the obstruction than to throw into the circulation one of the many poisons used by the medics for such purpose?7100

By the early 1900s, medicine adopted antisepsis techniques and pharmaceuticals that targeted various microbes101–103. The focus of medical philosophy was on causes of disease to which pharmaceuticals or surgery could be used to induce a cure. In contrast, the chiropractic paradigm of science and healing focused on the body’s natural ability to heal itself.104

Early chiropractic research focused on recording detailed observations of anatomy and clinical methods but not experimentation. This type of observational recording was considered an acceptable approach to science by a large segment of the American population, particularly in rural states, where the populace was opposed to urbanization, industrialization, and the rise of experimental medicine.89

Regular medicine had been established for decades and continued to expand. The young chiropractic profession fought within this milieu to remain separate and distinct from medicine. However, there were differing views on what path to take and what the chiropractic profession should become. This would result in internal strife within chiropractic.
Divisions Within Chiropractic

As chiropractic expanded across the United States, the approaches within chiropractic multiplied. Leaders from chiropractic colleges would share their competing viewpoints during association meetings and in local newspaper advertisements. Arguments about how the profession should evolve were the cause of great contention and would play an eventual role in the Wilk v AMA lawsuit.

Some of the early graduates from DD Palmer’s schools held degrees previously earned from other health care professions and began their own chiropractic schools after their graduation.85 Perhaps due to their multiprofessional training, some of these chiropractic graduates wanted to include additional nondrug, nonsurgical therapeutic methods. They proposed that, in addition to chiropractic adjustments (ie, manipulations) to the spine, the combination of therapies would facilitate the removal of nerve interference caused by chiropractic vertebral subluxations. This broad-scope view included therapeutics such as nutritional support, rehabilitation, education for exercises, and other modalities.

Another group of chiropractors argued for a limited, narrow scope of practice, which was what the Palmers referred to as the “straight” viewpoint. They suggested that chiropractors should perform only adjustments to the spine, only by hand, and without any adjunctive support or procedures.98 Those supporting the straight view

Figure 7 - An advertisement from Dr BJ Palmer in the Daily Times (Davenport, IA), September 10, 1902.

Figure 8 - An advertisement in an Iowa newspaper by a medical physician from the same era (1898.) This advertisement shows a similar style, which promises to cure a list of diseases. “He treats and cures Paralyis, Rheumatism and Neuralgia, Cholera, Epilepsy (fits). Dr Crider also treats and cures Bright’s Disease, Diabetes Mellitus, Chronic Prostatis, Syphilis, Dropsy, Scrotitis, Gravel and Hydrocele, Piles and Fistula, Hernia, Cross Eye, Enlarged Tonsils, Tumors and Scrofula, and all kinds of Kidney, Liver and Stomach Complaints.”
labeled their opponents with the derogatory term “mixers.” They said that the broad-scope practitioners “mixed” other methods into chiropractic, thus sullying the “pure” and “straight” chiropractic.

In general terms, there were conflicting views within the profession. There were those chiropractors who practiced with a narrow scope or “straight” (eg, spine-focused and hand adjustments only) and those who practiced with a broad scope or “mixer” (eg, include modalities in addition to hand adjustments). These terms are sometimes used today; however, the meaning depends on who is using the term, and there are ranges, with a majority of practicing chiropractors falling between the 2 extremes of the spectrum of “straight” and “mixer.”

Regardless of which chiropractic view, mixer or straight, the primary purpose of chiropractic practice was to remove nerve interference by addressing chiropractic subluxations so that patients could achieve better health. In the early years, both the straight and the mixer chiropractic groups declared that they existed independent of medicine and claimed that chiropractic could treat or cure many of the diseases or conditions that could afflict mankind. These chiropractic advertisements (Fig. 7) give insight into that time and show that chiropractors were using similar advertising methods as other health care providers at this time (Fig. 8).

As the chiropractic profession emerged, leaders in organized medicine recognized that internal fighting between the chiropractic straight and mixer factions prevented the advancement of the chiropractic profession. Organized medicine would later use this internal strife to exploit weaknesses within chiropractic to the AMA’s advantage.

**Americans Embraced Chiropractic**

In the late 1800s, Americans were seeking alternatives to medical drugs and surgery for various reasons. They may have avoided regular medical care because of the reputation of harmful medical practices such as bloodletting or a personal belief that drugs were harmful and that a more natural approach was preferred. While people were looking for natural ways to achieve better health, one of many alternatives was chiropractic.

Chiropractors set up their practices across America. They set up their practices in big towns, small towns, and areas where they were the only health care provider available. Chiropractors would practice where orthodox medical physicians would not, allowing them to establish themselves in many regions. The body of chiropractors grew in the early 1900s, and so did the number of patients who sought their help.

By providing affordable care, a natural approach to healing, and a genuine interest in delivering care in small towns across America, chiropractors established a strong base of grassroots support. Chiropractors offered services to those who could not pay or allowed patients to pay when they could. Blue-collar workers and manual laborers in rural America found that the chiropractic visits helped them and allowed them to get back to work quickly. As more and more people experienced chiropractic, there seemed to be a tipping point when chiropractic became entrenched in American culture. As this method of health care became popular, more and more people reported regaining their health under chiropractors’ care, and the American public quickly began to embrace chiropractic.

As the chiropractic profession emerged, it grew in its own way since it was not under the control of the AMA. Many of the early chiropractic theoretical and scientific approaches were unconventional, and regular medicine rejected chiropractors and their chiropractic theories. The continued rise of the chiropractic movement aggravated the leaders of the AMA and local medical societies. The infrastructure to eradicate alternatives to medicine had been in place from the beginning of the AMA, and the AMA would later use these mechanisms to strike at chiropractic in the following century.

**DISCUSSION**

This review of the AMA’s origins helps us better understand how the AMA began its monopoly of health care in the United States, possible reasons that organized medicine acted against chiropractic, and how these events could influence the growth of the chiropractic profession.

The purpose of a professional association is to promote the interests of its members. This purpose may lead to actions that influence legislation, policy, and communications to the public. Often, these actions may conflict with the activities or directions of other professions. However, it is expected that the actions that associations take are within the law. Political, medical, or other health professional associations acted in the same way as political chiropractic associations—each had in mind what was considered the best interest of its members.

From its beginning, the AMA had established its aims to protect what it considered regular medicine and excluded competing health professions. The AMA was founded with the goal to contain other professions in the name of science and to eliminate what the AMA defined as quackery, even though the medical practices of that time (eg, bloodletting and purging or practicing surgery without aseptic technique) might be considered quackery by today’s standards. The leaders of the AMA had been attacking and eliminating other professions for decades before chiropractic came onto the scene. Any current perception that the AMA developed a new stance on chiropractic in the 1960s, right before the Wilk v AMA lawsuit, would be inaccurate. The conflict ethos of the AMA and its practice of persecution against competing groups began decades before the chiropractic profession had ever been established.

The AMA’s founders had hoped that their efforts would result in the unified and sole delivery of their paradigm of medical care. The AMA eventually achieved the elimination of other types of medical professions, namely, the eclectic and homeopathic schools, and the eventual absorption of the osteopaths into regular medicine.

Somehow, chiropractic survived and thrived outside of the medical construct. Chiropractic’s founder, DD Palmer, envisioned a new form of health care through chiropractic
in which the power of the body would provide the power to heal. He was emphatic that chiropractic was a distinct observed science and that it was not medicine, nor should it be subservient to medicine.

Chiropractic developed during a time when medicine was establishing its monopoly in health care in the United States. Chiropractors struggled to find the professional domain to practice without being attacked. Some of chiropractic’s unique terminology was used to define chiropractic as a separate and distinct profession, thus setting the boundaries that medicine continued to challenge.

While many attacks against chiropractic were external, such as from medical associations, some conflicts arose from various factions within the chiropractic profession. The vision for which direction the emerging chiropractic profession should take changed frequently and was fragmented. These internal chiropractic conflicts were often about chiropractic terms and definitions and whether legislation granting licensure should be narrow scope (“straight,” spine focused and hand adjustments only) or broad scope (“mixer,” whole body and including modalities in addition to hand adjustments).

The differing viewpoints about the ideal chiropractic practice added to the internal strife within chiropractic as it evolved. These conflicts added to the strain on resources and prevented a united front when chiropractors attempted to pass or change legislation. The lack of a unified vision undermined the strength that was needed to protect the chiropractic profession from external attacks. Infighting also weakened any concerted effort to further expand its scientific knowledge base, build educational efforts, or develop its research infrastructure. Chiropractic was struggling with internal issues when political medicine’s power grew substantially and was shifting toward a narrow-scope and mixer/broad-scope national associations. Chiropractic developed during a time when medicine was struggling with internal issues when political medicine’s power grew substantially and was shifting toward a foundation in experimental science.

Squabbles between chiropractic factions were often made public. From an early time, AMA leadership was aware of the “house divided” within chiropractic. The AMA exploited the animosity between the straight/narrow-scope and mixer/broad-scope national associations in its attempts to contain and eliminate the chiropractic profession. These details were eventually revealed during the Wilk v AMA trials.112

Limitations

This historical narrative reviews events from the context of the chiropractic profession, and the viewpoints are limited by the authors’ framework and worldview. Other interpretations of historic events may be perceived differently by other authors. The context of this paper must be considered in light of the authors’ biases as licensed chiropractic practitioners, educators, and scientific researchers.

The primary sources of information were written testimony, oral interviews, public records, legal documents, minutes of meetings, newspapers, letters, and other artifacts. These formed the basis for our narrative and time line. We acknowledge that recall bias is an issue when referencing sources, such as letters, where people recount past events. Secondary sources, such as textbooks, trade magazines, and peer-reviewed journal articles, were used to verify and support the narrative. We collected thousands of documents and reconstructed the events related to the Wilk v AMA lawsuit. Since no electronic databases exist that index many of the publications needed for this research, we conducted page-by-page hand searches of decades of publications. While it is possible that we missed some important details, great care was taken to review every page systematically for information. It is possible that we missed some sources of information and that some details of the trials and surrounding events were lost in time. The above potential limitations may have affected our interpretation of the history of these events.

Some of our sources were interviews, manuscripts, or letters where the author recalled past events. Recall bias is an issue when referencing interview sources. Surviving documents from the first 80 years of the chiropractic profession, the years leading up to the Wilk v AMA lawsuit, are scarce. Chiropractic literature existing before the 1990s is difficult to find since most of it was not indexed. Many libraries have divested their holdings of older material, making the acquisition of early chiropractic documents challenging. While we were able to obtain some sources from libraries, we also relied heavily on material from our own collection and materials from colleagues. Thus, there may be relevant papers or artifacts that were inadvertently missed. Our interpretation of the events related to the trials is limited to the materials available. The information regarding this history is immense, and due to space limitations, not all parts of the story could be included in this series.

CONCLUSION

By the time the new healing profession was given the name “chiropractic,” organized medicine was already established on its path to developing a monopoly in American health care. Organized medicine had successfully controlled or eliminated other health care paradigms and was poised to do the same with chiropractic. These events formed the foundation on which the tensions between these 2 professions escalated and ultimately resulted in the Wilk v AMA lawsuit.

ACKNOWLEDGMENTS

We thank the following people for their detailed reviews and feedback during development of this project: Ms Mariah Branson, Dr Alana Callender, Dr Cindy Chapman, Dr Gerry Clum, Dr Scott Haldeman, Mr Bryan Harding, Mr Patrick McNerney, Dr Louis Sportelli, Mr Glenn Ritchie, Dr Eric Russell, Dr Randy Tripp, Mr Mike Whittmer, Dr James Winterstein, Dr Wayne Wolfson, and Dr Kenneth Young.

FUNDING AND CONFLICTS OF INTEREST

This project was funded and the copyright is owned by NCMIC. The views expressed in this article are only those of the authors and do not reflect the official policy or position of NCMIC, the National University of Health Sciences, or the Association of Chiropractic Colleges. BNG is the editor in chief of the Journal of Chiropractic Sciences, or the Association of Chiropractic Colleges.
No other conflicts of interest were reported.

About the Authors

Claire Johnson, DC, MSEd, PhD, has been a licensed chiropractor for 30 years and is the editor in chief for 3 scientific journals: Journal of Manipulative and Physiological Therapeutics, Journal of Chiropractic Medicine, and Journal of Chiropractic Humanities. She has decades of experience publishing in the fields of clinical and historical research and is a professor at the National University of Health Sciences. The daughter of a medical physician, she grew up in the San Francisco Bay Area, where she witnessed the conflicts between medical and chiropractic providers and wondered why such tensions existed. One of her passions has been to try to unravel this mystery and find a way forward. Her work with interprofessional relationships has included coordination of a team of international spine experts who developed an evidence-informed spine care model for communities around the world. Her master’s degree in health professions education and her public health doctorate contribute to her expanded worldview and greater understanding of the interconnectivity of this important historical subject, including the impact of this trial on chiropractic, patients, and the public. Claire Johnson is a professor at the National University of Health Sciences (200 East Roosevelt Road, Lombard, IL 60148; cjohnson@nuhs.edu).

Bart Green, DC, MSEd, PhD, provides chiropractic care in an interdisciplinary, on-site corporate health center in San Diego, California, and is a faculty member at the National University of Health Sciences. He has developed doctorate courses in the domains of chiropractic history and clinical education at several chiropractic programs. He is the editor in chief of the Journal of Chiropractic Education. He was raised in the Los Angeles area, where he observed health disparities and the need for both medical and chiropractic care to be made more available for underserved populations. He is a skilled communicator and has experience navigating the complexity of interprofessional collaborative relationships in the medical health care environment. He served on the medical staff at Naval Medical Center San Diego in an interdisciplinary, on-site corporate health center in San Diego, providing chiropractic care to active-duty military members. He has taught in clinical settings training chiropractors, chiropractic students, medical students, nursing students, residents, physician assistant students, and navy corpsmen. Bart Green is a lecturer at the National University of Health Sciences (200 East Roosevelt Road, Lombard, IL 60148; bgreen@nuhs.edu). Address correspondence to Claire Johnson, 1507 East Valley Parkway 3-486, Escondido, CA 92027; cjohnson@nuhs.edu. This article was received August 8, 2019, revised March 7, 2021, and accepted April 21, 2021.

Author Contributions

Concept development: CDJ, BNG. Design: CDJ, BNG. Supervision: CDJ. Data collection/processing: CDJ, BNG.

Analysis/interpretation: CDJ, BNG. Literature search: CDJ, BNG. Writing: CDJ, BNG. Critical review: CDJ, BNG.

© 2021 NCMIC

REFERENCES

1. Coulter ID. Chiropractic: A Philosophy for Alternative Health Care. Oxford, England: Butterworth-Heinemann; 1999.
2. Wardwell WI. Chiropractic: History and Evolution of a New Profession. St. Louis, MO: Mosby-Year Book; 1992.
3. Coulehan JL. Adjustment, the hands and healing. Cult Med Psychiatry. 1985;9(4):353–382.
4. Meeker W, Haldeman S. Chiropractic: a profession at the crossroads of mainstream and alternative medicine. Ann Intern Med. 2002;136:216–227.
5. Johnson CD, Green BN. Overview of chiropractic health care. In: Hawk C, ed. The Praeger Handbook of Chiropractic Health. Santa Barbara, CA: Praeger; 2017:1–21.
6. Himelfarb I, Hyland J, Ouets N. Practice analysis of chiropractic 2020. https://www.nbce.org/practice-analysis-of-chiropractic-2020/. Published 2020. Accessed September 18, 2020.
7. Wilk et al v American Medical Association et al Nos. 87-2672, 87–2777 895 F.2d 352 (7th Cir. 1990) (United States Court of Appeals for the Seventh Circuit 1990).
8. Keating JC, Jr, Green BN, Johnson CD. “Research” and “science” in the first half of the chiropractic century. J Manipulative Physiol Ther. 1995;18(6):375–378.
9. Haldeman S, Chapman-Smith D, Petersen DM. Guidelines for Chiropractic Quality Assurance and Practice Parameters: Proceedings of the Mercy Center Consensus Conference. Gaithersburg, MD: Aspen Publishing; 1993.
10. Johnson C. What is the Association of Chiropractic Colleges Educational Conference and Research Agenda Conference? J Manipulative Physiol Ther. 2007;30(4):249–250.
11. Johnson C, Green B. The Association of Chiropractic Colleges Educational Conference and Research Agenda Conference: 17 years of scholarship and collaboration. J Manipulative Physiol Ther. 2010; 33(3):165–166.
12. Mootz RD, Hansen DT, Breen A, Killinger LZ, Nelson C. Health services research related to chiropractic: review and recommendations for research prioritization by the chiropractic profession. J Manipulative Physiol Ther. 2006;29(9):707–725.
13. Haas M, Bronfort G, Evans RL. Chiropractic clinical research: progress and recommendations. J Manipulative Physiol Ther. 2006;29(9):695–706.
14. Mrozek JP, Till H, Taylor-Vaisey AL, Wickes D. Research in chiropractic education: an update. J Manipulative Physiol Ther. 2006;29(9):762–773.
15. Cramer G, Budgell B, Henderson C, Khalsa P, Pickar J. Basic science research related to chiropractic spinal adjusting: the state of the art and recommendations revisited. *J Manipulative Physiol Ther.* 2006;29(9):726–761.

16. Bigos SJ, Bowyer OR, Braen GR, et al. *Acute Lower Back Problems in Adults.* Clinical Practice Guidelines No. 14. Rockville, MD: US Dept of Health and Human Services, Public Health Service, Agency for Health Care Policy and Research; 1994. AHCPR publication 95-0642.

17. Haldeman S, Carroll L, Cassidy JD, Schubert J, Nygren A. The Bone and Joint Decade 2000–2010 Task Force on Neck Pain and Its Associated Disorders: executive summary. *J Manipulative Physiol Ther.* 2009;32(suppl 2):S7–S9.

18. Johnson C, Baird R, Dougherty PE, et al. Chiropractic and public health: current state and future vision. *J Manipulative Physiol Ther.* 2008;31(6):397–410.

19. Johnson C, Green BN. Public health, wellness, prevention, and health promotion: considering the role of chiropractic and determinants of health. *J Manipulative Physiol Ther.* 2009;32(6):405–412.

20. Egan J, Baird R, Killinger L. Chiropractic within the American Public Health Association, 1984–2005: pariah, to participant, to parity. *Chiropr Hist.* 2006;29:97–117.

21. Haldeman S, Nordin M, Chou R, et al. The Global Spine Care Initiative: World Spine Care executive summary on reducing spine-related disability in low- and middle-income communities. *Eur Spine J.* 2018;27(suppl 6):776–785.

22. Green BN, Johnson CD, Haldeman S, et al. The Global Spine Care Initiative: public health and prevention interventions for common spine disorders in low- and middle-income communities. *Eur Spine J.* 2018;27(suppl 6):838–850.

23. Johnson CD, Haldeman S, Nordin M, et al. The Global Spine Care Initiative: methodology, contributors, and disclosures. *Eur Spine J.* 2018;27(6):786–795.

24. Haldeman S, Johnson CD, Chou R, et al. The Global Spine Care Initiative: care pathway for people with spine-related concerns. *Eur Spine J.* 2018;27(6):901–914.

25. Haldeman S, Johnson CD, Chou R, et al. The Global Spine Care Initiative: classification system for spine-related concerns. *Eur Spine J.* 2018;27(6):889–900.

26. Johnson CD, Haldeman S, Chou R, et al. The Global Spine Care Initiative: model of care and implementation. *Eur Spine J.* 2018;27(6):925–945.

27. Green BN, Johnson CD, Haldeman S, et al. A scoping review of biopsychosocial risk factors and co-morbidities for common spinal disorders. *PLoS One.* 2018;13(6):e0197987.

28. Boon H, Verhoef M, O’Hara D, Findlay B, Majid N. Integrative healthcare: arriving at a working definition. *Altern Ther Health Med.* 2004;10(5):48–56.

29. Hawk C, Nyiendo J, Lawrence D, Killinger L. The role of chiropractors in the delivery of interdisciplin-
45. Lune H, Berg BL. *Qualitative Research Methods for the Social Sciences*. Harlow, England, NY, CA: Pearson; 2017.

46. Johnson CD, Green BN. Looking back at the lawsuit that transformed the chiropractic profession part 2: rise of the American Medical Association. *J Chiropr Educ.* 2021;35(S1):25-44. https://doi.org/10.7899/JCE-21-23.

47. Johnson CD, Green BN. Looking back at the lawsuit that transformed the chiropractic profession part 3: chiropractic growth. *J Chiropr Educ.* 2021;35(S1):45-54. https://doi.org/10.7899/JCE-21-24.

48. Johnson CD, Green BN. Looking back at the lawsuit that transformed the chiropractic profession part 4: Committee on Quackery. *J Chiropr Educ.* 2021;35(S1):55-73. https://doi.org/10.7899/JCE-21-25.

49. Johnson CD, Green BN. Looking back at the lawsuit that transformed the chiropractic profession part 5: evidence exposed. *J Chiropr Educ.* 2021;35(S1):74-84. https://doi.org/10.7899/JCE-21-26.

50. Johnson CD, Green BN. Looking back at the lawsuit that transformed the chiropractic profession part 6: preparing for the lawsuit. *J Chiropr Educ.* 2021;35(S1):85-96. https://doi.org/10.7899/JCE-21-27.

51. Johnson CD, Green BN. Looking back at the lawsuit that transformed the chiropractic profession part 7: lawsuit and decisions. *J Chiropr Educ.* 2021;2021(S1):97-116. https://doi.org/10.7899/JCE-21-28.

52. Johnson CD, Green BN. Looking back at the lawsuit that transformed the chiropractic profession part 8: Judgment impact. *J Chiropr Educ.* 2021;35(S1):117-131. https://doi.org/10.7899/JCE-21-29.

53. Duffy J. *From Humors to Medical Science*. 2nd ed. Urbana, IL: University of Illinois Press; 1993.

54. Rothstein WG. *American Physicians in the Nineteenth Century: From Sects to Science*. Baltimore, MD: Johns Hopkins University Press; 1992.

55. Gritzer G, Arluke A. *The Making of Rehabilitation: A Political Economy of Medical Specialization, 1890–1980*. Vol. 15. Berkeley, CA: University of California Press; 1989.

56. Craft A. The first randomised controlled trial. *Arch Dis Child*. 1998;79(5):410-410.

57. Starr P. *The Social Transformation of American Medicine*. New York, NY: Basic Books; 1982.

58. Davis NS. *History of the American Medical Association from its Organization Up to January, 1853*. Philadelphia, PA: Lippincott, Grambo & Company; 1855.

59. Mohr JC. *Licensed to Practice: The Supreme Court Defines the American Medical Profession*. Baltimore, MD: Johns Hopkins University Press; 2013.

60. Krause EA. *Death of the Guilds: Professions, States, and the Advance of Capitalism, 1920 to the Present*. New Haven, CT: Yale University Press; 1999.

61. American Medical Association. *Code of Medical Ethics of the American Medical Association*. Philadelphia, PA: American Medical Association; 1847.

62.Memoranda. *Am Lancet*. 1886;10(4):153.
Students and Practitioners. Portland, OR: Portland Printing House; 1910.

84. Johnson CD. Chiropractic Day: a historical review of a day worth celebrating. J Chiropr Humanit. 2020;27:1–10.

85. Keating JC, Cleveland CS, Menke M. Chiropractic History: A Primer. Davenport, IA: Association for the History of Chiropractic; 2004.

86. Brown MD. Old Dad Chiro: his thoughts, words, and deeds. J Chiropr Humanit. 2009;16(1):57–75.

87. Beck BL. Magnetic healing, spiritualism and chiropractic: Palmer’s union of methodologies, 1886–1895. Chiropr Hist. 1991;11(2):11–16.

88. Donahue JH. D. D. Palmer and innate intelligence: development, division and derision. Chiropr Hist. 1986;6:31–36.

89. Folk H. The Religion of Chiropractic: Populist Healing From the American Heartland. Chapel Hill, NC: University of North Carolina Press; 2017.

90. Urdang E. Human Behavior in the Social Environment: Interweaving the Inner and Outer Worlds. 3rd ed. Abingdon, England: Routledge; 2016.

91. Coulter HL. Divided Legacy: The Conflict Between Homoeopathy and the American Medical Association. Vol. 3. Berkeley, CA: North Atlantic Books; 1982.

92. Martin SC. The limits of medicine: a social history of chiropractic, 1895–1930. Chiropr Hist. 1993;13(1):41–44.

93. Leach RA, Phillips RB. The Chiropractic Theories: A Synopsis of Scientific Research. 2nd ed. Baltimore, MS: Williams & Wilkins; 1986.

94. Johnson C. Use of the term subluxation in publications during the formative years of the chiropractic profession. J Chiropr Humanit. 2011;18(1):1–9.

95. Johnson C. Modernized Chiropractic reconsidered: beyond foot-on-hose and bones-out-of-place. J Manipulative Physiol Ther. 2006;29(4):253–254.

96. Smith OG, Langworthy SM, Paxson MC. A text Book: Modernized Chiropractic. Cedar Rapids, IA: Lawrence Press Company; 1906.

97. Palmer BJ. The Science of Chiropractic: Its Principles and Philosophies. Davenport, IA: Palmer School of Chiropractic; 1906–1910.

98. Palmer BJ, Evins DD, Chance H. The Subluxation Specific, the Adjustment Specific: An Exposition of the Cause of All Disease. Davenport, IA: Palmer School of Chiropractic; 1934.

99. The new health science: Chiropractic. The Weekly Times-Record. February 1, 1917: 5.

100. Palmer DD. The key to chiropractic work. The Chiropractic. 1897;9(18):1.

101. Schlich T. Asepsis and bacteriology: a realignment of surgery and laboratory science. Med Hist. 2012;56(3):308–334.

102. Nakayama DK. Antisepsis and asepsis and how they shaped modern surgery. Am Surg. 2018;84(6):766–771.

103. Santesmases MJ, Gradmann C. Circulation of antibiotics: an introduction. Dynamis. 2011;31(2):293–303.

104. Wiese G. Chiropractic’s tension with the germ theory of disease. Chiropr Hist. 1996;16(1):72–87.

105. Keating JC Jr. Several pathways in the evolution of chiropractic manipulation. J Manipulative Physiol Ther. 2003;26(5):300–321.

106. Palmer B. We successfully cure all diseases. The Daily Times. September 10, 1902.

107. Dr J Jackson Crider. The Postville (Iowa) Review. April 15, 1898: 2.

108. Wardwell WI. Alternative medicine in the United States. Soc Sci Med. 1994;38(8):1061–1068.

109. Moore JS. Chiropractic in America: A History of a Medical Alternative. Baltimore, MD: Johns Hopkins University Press; 1993.

110. Senzon SA. Constructing a philosophy of chiropractic: evolving worldviews and modern foundation. J Chiropr Humanit. 2011;18(1):24–38.

111. Smith-Cunnien SL. A Profession of One’s Own: Organized Medicine’s Opposition to Chiropractic. Lanham, MD: University Press of America; 1998.

112. Bridges DR, Davidson RA, Odegard PS, Maki IV, Tomkowiak J. Interprofessional collaboration: three best practice models of interprofessional education. Med Educ Online. 2011;16.