

1 **Politics ahead of patients: the battle between medical and chiropractic professional**
2 **associations over the inclusion of chiropractic in the American Medicare system**

3
4 **ABSTRACT**

5 Healthcare professions struggling for legitimacy, recognition, and market share can
6 become disoriented to their priorities. Healthcare practitioners are expected to put the
7 interests of patients first. Professional associations represent the interests of their members.
8 So when a professional association is comprised of healthcare practitioners, its interests may
9 differ from those of patients, creating a conflict for members. In addition, sometimes
10 practitioners' perspectives may be altered by indoctrination to a belief system, or
11 misinformation, so that a practitioner could be confused as to the reality of patient needs.
12 Politicians, in attempting to find expedient compromise, can value a "win" in the legislative
13 arena over the effects of that legislation. These forces all figure into the events that led to the
14 acceptance of chiropractic into the American Medicare system. Two healthcare systems in a
15 political fight lost sight of their main purpose: to provide care to patients without doing harm.

16
17 **KEYWORDS**

18 Healthcare policy, Medicare, Chiropractic, X-ray, Radiology, American Medical Association
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INTRODUCTION

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The classical version of the Hippocratic Oath contains a well-known sentiment: “First do no harm.”¹ The oath set forth an idea that has become integral to healthcare professions, that the interests of patients supersede those of the practitioners. Medical physicians, chiropractors and others continue to administer a version of it upon graduation.² Yet, in struggling for legitimacy, recognition, and market share in a fee-for-service structure, professions can become disoriented to their priorities. Professional associations, which represent the interests of their members, who in this case are health practitioners, find that sometimes those interests conflict with the interests of their members’ patients, or the public at large. In addition, sometimes practitioners’ perspectives may be altered by indoctrination to a belief system, or misinformation, so that a practitioner could be confused as to the reality of patient needs. These forces all figure into the events leading to the acceptance of chiropractic into the American Medicare system. I believe this paper is the first scholarly work to explore these events. Themes of professionalization, professional identity, and legitimacy figure prominently. Chiropractic sought legitimation through wider acceptance by policymakers and other healthcare providers, and they wanted a share of the aged care market. Organized medicine sought to protect the public from what they considered a danger to public health, and they fought to control government reimbursement services. Legislators acted as they usually do, by weighing public opinion and lobbyist influence, then taking the expedient action. In the end, chiropractic was accepted into Medicare, but not to the degree they had hoped. Organized medicine inserted a “poisoned pill” into the legislation at the last minute, hoping to derail the entire process, but it did not work as anticipated. Legislators scored a victory, though, by passing a popular bill expanding Medicare with much more than just the addition of chiropractic. Richard Nixon, who was helped to re-election in 1972 by its passage, called it “landmark legislation that will end many old inequities and will provide a

45 new uniform system of well-earned benefits for older Americans, the blind and the
46 disabled.”³ All participants in the chiropractic portion of the Medicare expansion process
47 focused on their own interests rather than those of their patients and some patients were
48 harmed, physically, mentally, and/or financially.

49 The [REDACTED] University Human Research Ethics Committee approved this
50 research (approval number 2012/152). This paper draws on a variety of primary sources of
51 information, including interviews with several key figures involved in the events described
52 herein as well as their contemporaneous writings in professional publications, the
53 Congressional Record, and one audio recording. I also utilized secondary sources like books,
54 newspapers and journal articles accessed in public and private archives.

55 The history of health care in the United States of America (USA) involves disparate
56 forces, including government, insurance companies, pharmaceutical and medical device
57 manufacturers, doctors’ groups, and professional associations. Emphasis on health promotion
58 and consumerism have also affected policy decisions. There has been no unified national
59 policy on healthcare in the USA, but rather many policies on various aspects of healthcare.
60 This patchwork has resulted in entrepreneurship and research that has offered exceptional
61 care to some, but not all, and it carries a massive economic cost. Healthcare spending in the
62 USA is more than twice per capita the amount in the UK, and the overall outcomes are not as
63 good. All the American government provider systems arose after a private insurance system
64 was well-established, and were shaped to support that private system, with the fee-for-service
65 model that was economically advantageous for doctors, hospitals, and medical groups. One
66 of the most influential organizations in consolidating this structure was the American
67 Medical Association (AMA) which had successfully opposed all forms of nationalized
68 healthcare.⁴

69 Medical professional associations, including the AMA, have long been influential in

70 American healthcare.⁵ In the mid-19th Century, a wide variety of ‘irregular’ health
71 practitioners competed on a market basis with “regular” or orthodox physicians for patients.
72 Many medical treatments at this time were either without effect other than placebo; others
73 were simply dangerous.⁶ This disorganized environment led a group of physicians to draft a
74 set of ethical and educational standards for practitioners. The document became the 1847
75 Code of Medical Ethics of the AMA. It was a public proclamation that formed the basis of
76 the fiduciary relationship between patients and practitioners. In exchange for the
77 responsibility of ensuring trust in the uniform standards of skills and behaviour for physicians
78 as well as acting in the public interest, it claimed autonomy for the profession.⁷ But
79 Sociologist Tracey Adams cites the fluidity in the definition of ‘public interest’ and notes
80 changes in response to public demand over time. She also acknowledges incomplete
81 understanding as to the true motivations of professions invoking the concept of public
82 interest. Whether used in earnest or cynically to gain power and status, the social contract
83 made the professional association more powerful.⁸ Physicians were allowed to determine
84 standards of skills and behaviour that one must demonstrate in order to become and remain a
85 physician, and even the scope of what is considered medical practice. The 1847 pact formed
86 the base on which were built the ideas of self-regulation and monopoly power which would
87 eventually impact all alternative systems, including chiropractic, once it was founded in
88 1895. Sociologist and authority on professionalism Eliot Freidson noted that exclusivity of
89 membership and special expertise supported by professional associations helped create public
90 acceptance of a profession’s self-regulation.⁹ The social pact could only be subsequently
91 altered from within the association, and transgressors could be banished and left without its
92 protections.¹⁰

93 Alternative healthcare systems, which by definition were outside medical associations
94 like the AMA, were viewed as rivals, marginalized with rhetoric, disparaging labels, and

95 later, legal action. Chiropractors were only one group among many, including osteopaths,
96 homeopaths and Christian Scientists, who were called “quacks” and denigrated in various
97 publications.¹¹ Beginning in 1870, organized medicine, led by the AMA, began to use its
98 power in order to suppress these alternative systems. Legislators were lobbied to pass laws
99 regulating the practice of medicine. Medicine became defined as provision of any type of
100 healthcare by any type of practitioner. In 1906, the AMA was able to ensure that licensure
101 was granted only to graduates of schools approved by their Council of Medical Education.¹²
102 Thus, alternative practitioners could be prosecuted for practicing medicine without a licence.
103 This was the beginning of a hegemonic process continued by the AMA for decades.

104 Professional autonomy is often moderated by government regulation. But calls for
105 oversight have often come from within a profession. Regulation brings legitimation and
106 additional enforcement mechanisms for exclusivity of access. That is, the public assumes that
107 regulated practitioners are competent, and the profession can limit entry to its ranks, which
108 can help ensure competence of practitioners. It can also decrease competition. This has been
109 seen frequently with healthcare, where medical professional associations and the state work
110 together, limiting the ability of alternative practitioners like homeopaths, botanical healers,
111 apothecaries and others to provide services designated as “medical.”¹³

112 A number of other factors also assisted medicine’s rise to dominance. Medical
113 anthropologist Hans Baer characterizes the hegemony of the AMA as a class issue, involving
114 a coalition of interests with a common goal: “The emerging alliance around the turn of the
115 century between the AMA, which consisted primarily of elite practitioners and medical
116 researchers based in prestigious universities and the industrial capitalist class, ultimately
117 permitted biomedicine to establish political, economic, and ideological dominance over rival
118 medical systems.”¹⁴

119 Scientific advancement, such as with inoculations, meant that patients became less

120 likely to understand how treatments worked, yet nonetheless were able to benefit from those
121 treatments. Matthew K. Wynia, long-time Director of the AMA Institute for Ethics and
122 Center for Patient Safety, posits that over time this led to pride, paternalism, loss of empathy
123 and reduced standards of customer service in the medical profession. The growth of scientific
124 medicine also achieved so many successes in cures and treatments that arguments against
125 medical control of healthcare seemed almost ridiculous.¹⁵ Hubris and power combined to lead
126 to a sense of entitlement. The AMA began to believe its judgment was infallible, and that the
127 state was its enforcement arm.

128 The hegemonic process helped lead to the disappearance of some alternative
129 therapies, but many still exist. Of all the complementary and alternative (CAM) health
130 professions, only American osteopathy took the route of eliminating its alternative practices
131 and beliefs. This resulted in the AMA removing its cultism label from osteopathy in 1961.
132 The AMA even extended membership to osteopaths and allopathic residency programmes
133 accepted osteopathic graduates. But the tradeoff for osteopathy was that by the 1970s it had
134 lost its unique identity in America and was virtually indistinguishable from medicine.¹⁶

135 Several authors have touched on the chiropractic episode, but little historical analysis
136 has been undertaken. Two contemporaneous authors and chiropractic supporters, AMA
137 whistleblower William Trever and chiropractor Chester Wilk, adopted a position of outrage
138 at the tactics of the medical opposition to chiropractic, and both related much first-hand
139 information in their books. Wilk later became the main plaintiff in a successful anti-trust
140 lawsuit against the AMA.¹⁷ Trever included reproductions of internal AMA and state-based
141 medical group memos as well as correspondence with legislators. Some of these documents
142 were also used as exhibits in Wilk's suit. But neither author related the specific details of the
143 Medicare episode.¹⁸ Peterson and Wiese in *Chiropractic: An Illustrated History*, sociologists
144 Holly Folk, Susan Smith-Cunnien and Walter Wardwell, and historian J. Stuart Moore only

145 briefly mention Medicare in their histories.¹⁹

146 None of the above sources explain the legislative manoeuvring that resulted in the
147 outcome. None provide the details of how the traditional use of radiography in chiropractic
148 enabled the AMA to develop the x-ray clause for the legislation, the mechanism by which the
149 scope of practice was limited. A brief background on the traditional chiropractic healthcare
150 paradigm is necessary for context.

151 **THE ORIGINS AND DEVELOPMENT OF CHIROPRACTIC**

152 Although manual manipulation of bones and joints as a healing art has existed for
153 centuries, the particular method that came to be called chiropractic originated in the USA in
154 1895. For the first few decades of its existence, chiropractic considered itself alternative
155 rather than complementary to medicine, and some in the profession still do. The traditional
156 chiropractic ideology or practice paradigm was a form of vitalism. Daniel David Palmer,
157 known as D.D., was a Canadian-born merchant and self-styled “magnetic” healer living in
158 Davenport, Iowa at that time. Palmer credited a mysterious force that he called Universal
159 Intelligence, essentially a form of god, as responsible for life and health. This force
160 manifested in humans as “Innate Intelligence” in the brain, and was transmitted as “nerve
161 impulses” down the spinal column through nerves to all the organs and body parts. Therefore,
162 if a vertebra was slightly out of place, a state he called “subluxation”, it could impinge
163 nerves, alter the flow of the impulses, and create ill health. D.D. held the opinion that 95% of
164 disease was caused by subluxated vertebrae and the remaining 5% by subluxated peripheral
165 joints, such as the elbow or ankle.²⁰ Palmer began teaching his new theory to others almost
166 immediately, including to his son Bartlett Joshua Palmer, known as B.J. After D.D. suddenly
167 departed Iowa for the west coast in 1902, B.J. assumed responsibility for the school his father
168 had started, asserting himself as leader of the budding profession. In 1910 he made a decision
169 that would have repercussions more than half a century later by incorporating x-ray into

170 chiropractic as a way to prove subluxations.²¹

171 Through the mid-20th century, chiropractic took steps toward professionalization.
172 Kansas and North Dakota were the first states to license chiropractors and by 1963 all but
173 two states had chiropractic legislation, although scopes of practice varied.²² The National
174 Board of Chiropractic Examiners was established in 1961, and the Federation of Chiropractic
175 Licensing Boards in 1968.²³ The Council on Chiropractic Education, formed in 1935 by the
176 National Chiropractic Association (forerunner to the ACA) in an effort to standardize
177 chiropractic education, was accredited by the Department of Health, Education and Welfare
178 in August 1972.²⁴ Reforms led to the decline in numbers of teaching institutions from 42 in
179 1930, most with 18-month courses, to 15 in 1963, all with 4-year courses. These efforts seem
180 to have been taken in a sincere effort to gain legitimacy. Donning the mantle of orthodoxy in
181 organizational structures must also have made chiropractic more palatable by a wider swath
182 of legislators.

183 Like other CAM professions, chiropractic has a schism that it has not yet reconciled.²⁵
184 The two main groups of chiropractors have often been referred to as “straights” and “mixers.”
185 This division reflected an emphasis on treatments employed. Straights used manual
186 manipulation or “adjusting” of the spine for all ailments. Mixers “adjusted” as well, but also
187 used heat, cold, ultraviolet, massage techniques, and other ancillary measures not including
188 drugs and surgery. In this paper, I change the focus of the division from treatment methods to
189 aetiology of disease. Broadly, some within the profession hold to the traditional idea that
190 subluxations are the predominant influence on health, and often radiography is considered the
191 primary tool for detecting this “lesion.”²⁶ This group will be referred to as traditional or
192 vitalistic chiropractors. The other group will be referred to as biomedically-oriented
193 chiropractors. Generally, they believe in germ theory, the utility of vaccinations, judicious
194 use of diagnostic imaging, and other mainstream healthcare tenets. They focus on manual

195 therapy for biomechanical conditions, view themselves as complementary rather than
196 alternative, and seek integration with overarching health systems. In my opinion, it is more
197 important to understand the paradigm a healthcare practitioner applies to health and disease
198 than to focus on treatment methods. The overall paradigm is more revealing of a
199 practitioner’s comprehension of diagnosis, science, and evidence, and therefore gives greater
200 insight into the differences in the chiropractic factions.

201 These groups do not neatly divide into the two main professional associations in the
202 USA, the American Chiropractic Association (ACA) and International Chiropractors
203 Association (ICA). There is overlap of health paradigm in both membership populations,
204 although the ICA tends to have more traditionalists in its leadership and constituents, and the
205 ACA more biomedical. In the 1960s, the ACA had about twice as many members as the
206 ICA. There were also “independents” who belonged to neither group, and in this group the
207 paradigm varied as well. For purposes of this paper, the predominant paradigm of each
208 association will be used in the understanding that uniformity of opinion did not exist, but
209 tendencies did.

210 **THE AMA’S EFFORTS TO CONTAIN AND ELIMINATE CHIROPRACTIC**

211 By the 1960s, most alternative health systems in the USA had either disappeared, like
212 Thompsonians and naprapaths, had been marginalised into insignificance like Christian
213 Scientists and naturopaths, or been incorporated into medicine like osteopaths. Chiropractors,
214 however, retained their independence, and had gained a small but consistent part of the
215 healthcare market. About 10% of Americans and Canadians have used their services.²⁷
216 Chiropractic became a particular target of the AMA. The AMA’s methods were many and
217 varied. They printed and distributed thousands of anti-chiropractic brochures to schools,
218 colleges, medical practices and organizations. They sent fake prospective student applications
219 to chiropractic colleges in order to expose weaknesses in the education system. They wrote

220 letters to professional journals and popular magazines, lobbied legislators at the local, state,
221 and federal levels to try to exclude chiropractic, and they pressured members of influential
222 committees.²⁸

223 In 1963, the AMA formed a Committee on Quackery to “[determine] the true nature
224 of chiropractic and its practitioners, and to inform the medical profession and the public of its
225 findings.”²⁹ The product of this investigation was a pamphlet, entitled *Chiropractic: The*
226 *Unscientific Cult*. In setting the tone for the Committee, the AMA House of Delegates issued
227 the following statement: “Either the theories and practices of scientific medicine are right and
228 those of the cultists are wrong, or the theories and practices of the cultists are right and those
229 of scientific medicine are wrong.”³⁰ In 1967, H. Doyl Taylor, secretary of the Committee on
230 Quackery and a leading figure in AMA efforts on chiropractic, spoke at a “quackery
231 workshop” held at Ball State University in Indiana, framing the discussion with this
232 statement: “As you know, [chiropractic] is a cult, about as far removed from scientific
233 medicine, the diagnosis and treatment of human illness as it is possible to get.”³¹ The
234 ridiculing nature of these words de-legitimised chiropractors in the structure of the argument.
235 It portrayed the AMA as representing the norm and chiropractic as deviant. Sociologists
236 Yvonne Villanueva-Russell and Susan Smith-Cunniien asserted that by defining chiropractic
237 as “deviant” and using derogatory terms like “unscientific cult,” the AMA could frame itself
238 as mainstream, reasonable, and scientific, for its own social and political benefit.³²

239 Despite acknowledging that a variety of practice paradigms existed within
240 chiropractic, the AMA’s focus remained on the vitalistic chiropractors.³³ Some of the
241 statements by the Committee on Quackery seem political or adversarial, rather than clinically
242 detached: “With the establishment of the Committee on Quackery, in 1964, extensive study
243 was made to determine exactly what chiropractic is and where it is most vulnerable to public
244 exposure.”³⁴ Trever expresses it this way: “the Committee lacked sufficient ‘scientific proof’

245 to back their slanderous campaign.”³⁵ Because of the extreme measures to ensure secrecy at
246 the AMA, the totality of the information that the Committee obtained on chiropractic
247 practices is not known.³⁶ However, the examples they cited were damning for chiropractic.
248 The pamphlet included reproductions of advertisements claiming cures for various diseases
249 including cancer and mental illness. Chiropractors were quoted making statements against the
250 utility of vaccinations. Repeatedly noted was an epistemology invoking appeal to authority;
251 the “authority” was usually either D.D. or B.J. Palmer. The *Unit Plan* also denigrated
252 chiropractic educational standards, which were, in fact, inferior to those of medicine.³⁷ It
253 further stated: “The prime mission of the Committee on Quackery at its founding was to be,
254 first, the containment of chiropractic, and, ultimately, the elimination of chiropractic as a
255 health hazard.”³⁸ Part of the plan was to influence legislative bodies.³⁹ It stated that “the
256 Medicare-Medicaid rules on chiropractic [must be] drawn as tightly as possible.”⁴⁰ The *Unit*
257 *Plan* described ghost-writing policy statements and distributing publications on behalf of
258 various “independent” bodies such as the American Federation of Labor-Congress of
259 Industrial Organizations (AFL-CIO) and the Consumer Federation of America in order to
260 lend the weight of ostensible support from respected organizations to their message.⁴¹ The
261 AMA sponsored multiple regional conferences called “Health Quackery – Chiropractic” over
262 a period of five years. They attempted to derail accreditation of chiropractic schools. Doctors
263 and hospitals were forbidden from granting chiropractors any privileges including receiving
264 referrals of patients for x-rays or blood tests. The *Unit Plan* did concede that after
265 chiropractic ceased to exist, chiropractors, with their manual skills, might be able to be
266 retrained “to serve as another extension of the physician’s hands.”⁴²

267 At this point it could be argued that the AMA and other medical associations
268 genuinely believed that they were acting in the public interest, fulfilling their fiduciary duty
269 as they saw it, by attempting to limit public access to chiropractors, whom they viewed as

270 dangerous. Their later actions became more ethically questionable.

271 **THE INCLUSION OF CHIROPRACTIC IN MEDICARE**

272 In 1964, Lyndon Johnson won the presidency; his agenda included improving
273 healthcare.⁴³ However, concessions had to be made to medical special interest groups,
274 including coverage for physician outpatient services as well as hospital visits for both general
275 and specialty practitioners. Physicians were given total freedom in diagnosis, treatment and
276 prescription of medications. The fee-for-service model was retained, and people were able to
277 see whichever doctor they wanted.⁴⁴ The bill with these provisions became the first iteration
278 of Medicare, and it passed with AMA approval in 1965,⁴⁵ resulting in improved health and
279 well-being for many people across the country.⁴⁶ Medicare quickly became popular, and
280 other health professions, including chiropractic, optometry, social work, and eight others
281 requested inclusion. Congress opened an investigation into the possibility of expanding
282 Medicare.⁴⁷ In 1967, Wilbur Cohen, the Secretary of Health, Education, and Welfare (HEW),
283 was tasked with undertaking the study.

284 The government required the health professions to provide evidence of legitimacy.
285 The Federation of Chiropractic Licensing Boards (FCLB) oversaw chiropractic licensing.
286 Chiropractor Richard E. Vincent represented the FCLB in testimony to the House Ways and
287 Means Committee, assuring Congress that there were professional standards as well as a
288 mechanism for upholding them.⁴⁸ However, the assessment process turned out to be neither
289 straightforward nor transparent. According to sociologist and HEW committee member
290 Walter Wardwell, the report essentially had been written before the committee even met.⁴⁹
291 He also related that pressure was applied to members of the committee to adopt the AMA
292 position. Wardwell later revealed all the anti-chiropractic documents and verbal
293 recommendations from AMA members that he had received as a member of the committee.⁵⁰

294 Sociologist Catherine Biggs has indicated that in Canada, the government responded

295 to the tension between the popularity of chiropractic services and the opposition of the
296 powerful medical lobby by calling for a Royal Commission or equivalent to study the matter.
297 In Canada's case, the government reports provided rationales for including chiropractic in
298 state-funded healthcare.⁵¹ Not so in the USA. The final HEW report issued 28 December
299 1968 recommended that chiropractic not be included in Medicare, concluding:

300 Chiropractic theory and practice are not based upon the body of basic
301 knowledge related to health, disease, and health care that has been widely
302 accepted by the scientific community. Moreover, irrespective of its theory,
303 the scope and quality of chiropractic education do not prepare the
304 practitioner to make an adequate diagnosis and provide appropriate
305 treatment.⁵²

306 Upon receiving news of the report, the chiropractic professional associations
307 responded with a White Paper, accusing Congress of a biased process and attempting to
308 clarify what they perceived as mischaracterizations of the profession. Congress dismissed it
309 as invalid.⁵³ The two main chiropractic associations, the ACA and ICA, embarked on a
310 political pressure campaign. It was comprised of three elements: working to amalgamate the
311 two associations, letter writing to Congress, and lobbying through personal connections.
312 Being faced with a larger, better funded, and more politically connected lobbying
313 organization in the AMA, it was of paramount importance for chiropractic to present a
314 unified front to the world. In addition, experience had taught chiropractors that state and
315 federal panels insisted on a single body of representation. ACA member James Cox
316 remembers: "I've testified in my state of Indiana before House and Senate committees. If you
317 go in there split, you know what they say: 'You get it together and then you come back.'"⁵⁴
318 This created the impetus to join the two chiropractic professional associations. The ICA had
319 about 4000 members.⁵⁵ They were overt in their advocacy of a traditional, vitalistic view of

320 chiropractic and wanted the legislation to consider only the treatment of vertebral
321 subluxation.⁵⁶ The ACA had about 7500 members, and tended to be more biomedically-
322 oriented. The ACA's position was that chiropractors should be reimbursed for all the services
323 that they provided, not just for attending to vertebral subluxations. These services varied state
324 to state, depending on the licensure regulations, but included therapeutic ultrasound,
325 electrotherapy, massage techniques, and rehabilitation protocols.⁵⁷

326 The ICA insisted that the ACA agree to a definition of chiropractic known as the
327 "Chicago scope of practice."⁵⁸ It focused on spinal subluxations as the cause of all disease,
328 with radiography for subluxation detection. Contemporaneous articles in chiropractic
329 magazines included promotion of x-ray imaging for subluxation analysis by ICA
330 chiropractors. For example: "It enables him to see inside and through the living body,
331 pinpointing with accuracy, the health problem areas... This aid is necessary in visualising the
332 misalignments of the spinal column..."⁵⁹ The strength of this belief can be seen in its
333 longevity and the language used by some of its proponents. In 1977, Leon R Coelho, chair of
334 the ICA Radiation Control Committee and director of the Roentgenology Department of the
335 Palmer College of Chiropractic wrote an article entitled "If spinography is dead, so is
336 chiropractic" in an ICA publication and included the following:

337 Spinography is an imperfect system. Chiropractic is an imperfect
338 system, yet growing and surviving in an imperfect world. *But do you know*
339 *something? IT IS THE BEST OF ALL SYSTEMS OF WHICH WE ARE*
340 *CONSCIOUS. HAVE FAITH IN IT, NOURISH IT, LOVE IT, because it*
341 *is all part of something much greater than us, and that something, within*
342 *itself, is perfection. [All emphasis original.]*⁶⁰

343 In contrast, ACA members published articles on the mainstream use of the x-ray for
344 pathological diagnosis and railed against the idea of using ionising radiation as a screening

345 tool for all patients.⁶¹ The ICA model for the radiographic visualization of subluxations was
346 denigrated by ACA chiropractors including Joseph Howe, who noted that normal anatomical
347 asymmetry, minor variations in osseous architecture, slight changes in patient position during
348 radiography, and the physics of the x-ray beam all invalidated the idea that “subluxations”
349 could be identified and quantified on radiographs. The tiny misalignments claimed by some
350 chiropractors to be lesions causing disease were due either to illusion or imagination.⁶² The
351 schism in chiropractic was particularly stark on the use of the x-ray. The potential merger of
352 the two chiropractic associations failed again.⁶³

353 The ICA and ACA submitted separate statements to the government. The ICA
354 requested reimbursement for spinal x-rays and spinal adjustments only. The ACA statement
355 acknowledged the usefulness of standard physical examination and diagnostic tests and also
356 discussed “subluxation,” but as a biomechanical dysfunction, rather than a vitalistic entity,
357 and without the necessity of radiography to identify.⁶⁴ The ACA statement also invoked the
358 idea of freedom of choice in health care and requested recognition of states’ rights in regard
359 to scope of practice. That is, the ACA argued that Medicare legislation should reimburse for
360 whatever services chiropractors were licensed to provide in each state, rather than be limited
361 to adjusting spinal subluxations as the ICA advocated. This limit was viewed as overriding a
362 state’s right to determine the scope of practice for chiropractors.⁶⁵ HEW denied this argument
363 in 1969, citing lack of evidence for the effectiveness of chiropractic treatment and asserting
364 that their responsibility for the “safety and welfare of beneficiaries” allowed HEW to
365 determine the services to be reimbursed.⁶⁶

366 Because the two chiropractic associations portrayed chiropractic differently, the AMA
367 was able to choose a portrayal of chiropractic that could serve to bolster its position opposing
368 Medicare coverage for chiropractors. Hoyt B. Duke of the ACA recognised this, writing that
369 the rigidity of the ICA’s position and the infighting that it caused were making chiropractic

370 vulnerable to attack by the AMA.⁶⁷ There is no indication that either the ICA or ACA were
371 acting cynically or simply playing for power; they both sincerely believed that their position
372 was the correct one. The ICA believed that they were preserving chiropractic more truly to
373 the founder's ideals. The ACA was less concerned with tradition and was trying to move
374 chiropractic into a new phase of existence, embracing a more scientific approach to
375 healthcare.

376 The two chiropractic professional associations did cooperate on other lobbying
377 efforts. David D. (Dave) Palmer, grandson of founder D.D. Palmer, was the president of the
378 Palmer College of Chiropractic in the late 1960s and early 1970s. As such, his assent was
379 considered necessary for consensus on any strategic chiropractic-wide project. Palmer met
380 with ICA President William Day, ACA President Gerald Brassard, and other influential
381 chiropractors in 1970 to discuss the "intensified Medicare-inclusion plan."⁶⁸ It included an
382 organized letter writing operation to encourage Congressional Representatives and Senators
383 to support including chiropractic in the Medicare expansion bill. The sample letters
384 distributed by the chiropractic associations highlighted the benefits of chiropractic and also
385 appealed to sensitive areas in American politics: market freedom and American
386 Exceptionalism.⁶⁹ American Exceptionalism was expressed by sociologist and political
387 theorist Seymour Lipset as: liberty, egalitarianism, individualism, populism, and laissez-faire.
388 Lipset noted that even before the rise of the neoconservatives, which started with President
389 Ronald Reagan, the USA had lower rates of taxation, a less developed welfare state, and
390 fewer government-owned industries than other industrialised nations.⁷⁰ The idea of freedom
391 in the healthcare marketplace attained similar enshrinement and this was also present in the
392 chiropractic community.⁷¹ Chiropractors argued that the AMA and government policies were
393 restricting peoples' freedom to choose the health care provider that they desired. William
394 Day wrote, "It is the birth-right of every American citizen to have the right to choose his own

395 particular type of health care, and it is our duty to make it possible for them to have the
396 opportunity to choose chiropractic!”⁷² The goal was to have 10,000 letters sent from
397 chiropractors and patients. Ultimately, at least a million letters went out.⁷³ Because of this
398 popular support, many House Members introduced bills on the subject. Congressman Wilbur
399 Mills, who had been instrumental to the passage of Medicaid legislation, noted that this had
400 influenced the decision to include chiropractic.⁷⁴

401 William Scott (Bill) Day was a particularly influential figure in the lobbying effort.
402 Day had been a Washington State Representative from 1959-1969 before being elected to the
403 State Senate from 1969-1980.⁷⁵ He was a graduate of the Palmer School (1947), and the son
404 of two Palmer graduates. He took over the clinic in Spokane, Washington that his parents
405 started, and his son Tim, also a Palmer graduate, has operated it since Day’s death in 1984.
406 Day helped ensure that traditional chiropractic was legislated as the scope of practice in
407 Washington.⁷⁶ He also supported the traditional paradigm for chiropractic in Medicare,
408 testifying to that effect as Legislative Chairman of the ICA in front of the Senate Finance
409 Committee on September 16, 1970, along with other representatives of the ICA and ACA.⁷⁷

410 Steve Renner also attended the Palmer school, and was employed in Day’s clinic from
411 1976 - 1982. He recalled discussing the matter with Day: “[Bill] became friends with
412 Washington State's two U.S. Senators, Henry Jackson and Warren Magnuson. These two
413 were high-ranking Democrats in Congress. So because Bill was subluxation-based and his
414 connections with Jackson and Magnuson is how chiropractic became included in Medicare
415 [sic].”⁷⁸ Richard Vincent, an ACA chiropractor and president of the FCLB at the time, recalls
416 the situation similarly: “Bill Day was President of the [Washington] State Senate. Magnuson
417 was the Senator from Washington to Federal Government, and he was chair of the
418 Appropriations Committee, powerful. He was a driving force on healthcare. Now this is my
419 personal opinion: the influence that Bill Day had on Senator Magnuson was what drove the

420 subluxation [focus of the legislation].”⁷⁹ Day’s perspective, as president of the ICA, was
421 transmitted to the federal legislature through Senators Jackson and Magnuson. It limited
422 chiropractic to the Chicago definition, that is, spinal subluxation relief requiring routine
423 radiography to detect subluxations. Later, in December 1972, Palmer issued a statement
424 disavowing the indiscriminate or routine use of x-rays, but affirming the remainder of the
425 “Chicago definition” of chiropractic.⁸⁰

426 The Congressional debate on chiropractic was robust. Influential Senator Ted
427 Kennedy opposed including chiropractic in Medicare. He cited cases of chiropractors
428 overstating their abilities to cure serious disease, like cancer, causing patients to avoid seeing
429 medical doctors, with tragic results. But other Senators countered that all health care
430 professions had a small percentage of incompetent or fraudulent practitioners. State
431 regulation, under which licensing/registration boards were established and maintained, was
432 considered adequate to protect the public in those professions and so it should be for
433 chiropractic as well.⁸¹ A few legislators related positive personal experience with a
434 chiropractor, but freedom of choice proved to be a particularly powerful argument regarding
435 healthcare in Congress. Most legislators agreed that the government should not tell citizens
436 that they could not go to a chiropractor instead of a medical doctor if that was their choice.⁸²

437 As sociologist Paul Starr noted, Americans were not willing to submit to the
438 judgement of experts, even in the realm of healthcare.⁸³ In fact, there was little evidence of
439 clinical effectiveness on which legislators could base a judgement. There were case anecdotes
440 from the publications of the professional associations and patient testimonials in pamphlets,
441 advertisements, and the letters to Congress. These “success stories” did not contain the level
442 of clinical detail to be publishable in peer-reviewed journals. The first randomized controlled
443 trial of chiropractic was not published until 1990.⁸⁴ The AMA gleaned evidence against
444 chiropractic similarly, from advertisements, anecdotes of patients harmed by chiropractors,

445 and by the investigation the AMA did into chiropractic education.⁸⁵

446 The bill expanding Medicare was debated in the U.S. Congress for two years, passing
447 in 1972, and it included chiropractic.⁸⁶ It contained 144 changes in welfare and health
448 benefits, and was estimated to cost \$5 billion. Its effects were vast, including coverage for
449 chronic renal disease, disabled people under 65, a Chiropractic was a very small part.⁸⁷
450 According to the New York Times (NYT), the House members of the conference committee
451 wanted to delay inclusion of chiropractic in favour of another study of it, but Senate members
452 wanted inclusion. Political “horse trading” ensued and the House yielded to the Senate in
453 exchange for unknown concessions on other matters. In addition, the NYT reported that some
454 sources said Wilbur Mills was annoyed at the AMA, and others indicated he “was tired of
455 standing up almost alone to the pressure of the chiropractors.”⁸⁸ The AMA took action to try
456 to neutralize chiropractic’s inclusion just before final passage of the bill in Congress by
457 leveraging the idea that “subluxations” were the cause of disease. Medical doctor Stephen
458 Barrett, a leading figure in the fight against chiropractic for decades, wrote to the AMA and
459 suggested that they bring a lawsuit, to “present to the court the impossibility of writing
460 regulations to pay for something that did not exist.” But he recalled receiving no response.⁸⁹
461 Instead, the AMA decided to try to amend the legislation just before passage.

462 AMA EFFORTS TO LIMIT THE UTILITY OF MEDICARE FOR 463 CHIROPRACTORS

464 After the House and Senate each pass their versions of a bill, any differences between
465 the two are reconciled in a conference committee. This committee is usually composed of
466 senior members of the House and Senate committees that originally considered the bill.
467 Amendments may be introduced during the conference committee, and after consensus is
468 achieved, the final version of the bill is produced for a vote in both the House and Senate.
469 This is a straight yea or nay vote; no further amendments are allowed on any bill that has

470 been through conference committee. If passed, it is sent to the President to sign into law or to
471 veto.

472 According to Stephen Barrett, wording from the AMA was inserted during the
473 conference committee.⁹⁰ The specific clause allowed reimbursement to chiropractors only for
474 manual manipulation of spinal subluxations that had been documented by x-ray. No other
475 services were covered, nor was the cost of taking and interpreting the radiographs
476 themselves. Thirty years after the Medicare legislation passed, Barrett recalled the episode:

477 A few weeks after the law was passed, Doyl Taylor, head of the AMA
478 Department of Investigation told me that when chiropractic inclusion
479 appeared inevitable, the “subluxation” language was inserted with the hope
480 of preventing chiropractors from actually being paid. The idea's originator
481 thought that because chiropractic's traditional (metaphysical)
482 “subluxations” were visible only to chiropractors, this provision would
483 sabotage their coverage.⁹¹

484 The NYT reported on this amendment made during conference committee, but gives
485 no attribution to any person(s) for the change.⁹² The amendment effectively nullified the
486 practical utility of reimbursement for chiropractic services, and may have been another factor
487 that allowed the House to accede to the inclusion of chiropractic in Medicare. At this point in
488 the Medicare expansion process, any legislator objecting to one element in this massive and
489 popular bill would have had to vote against the entire bill, a politically unwise move. The
490 final bill, including the amendment to chiropractic, passed in both Houses. On 30 October,
491 just a few days before the presidential election of 1972, President Richard M. Nixon signed it
492 into law.

493 The regulations in the bill had been narrowly formulated so that chiropractors were
494 considered “physicians” for the purpose of radiographically diagnosing and manually treating

495 a “subluxation” but not in any wider definition. Specifically, they were not “physicians”
496 under U.S.C. 1395x (s)(3), the part of the law that provided reimbursement for taking x-rays.
497 Reimbursement was also not given for physical exam or other diagnostic procedures.⁹³
498 Medicare reimbursed radiographs if a medical doctor ordered them, but the AMA forbade
499 medical doctors and hospitals at the time from accepting referrals from chiropractors.⁹⁴
500 Chiropractors were licensed in all fifty states to take radiographs. But if they performed their
501 own radiography, chiropractors would either have to absorb the cost themselves or ask
502 patients to pay for them. Therefore this legislation caused potential financial harm to patients.

503 Members of the ICA greeted the news of inclusion in Medicare with short-lived
504 jubilation until they realized they would not be reimbursed for the mandated radiography.⁹⁵
505 But within the ACA, it caused an immediate division of opinion. Some members thought
506 Medicare should be abandoned, rather than submitting to the codification in law of such a
507 narrow scope of practice. Joseph Howe was an outspoken ACA member involved with the
508 internal politics of the situation. He assessed the legislative outcome as deleterious and
509 expressed his opinion to the leadership: “I said throw it back. Please don’t tie us in to that
510 idea of subluxation being the only thing we do. But they didn’t [throw it back]. I think,
511 personally, it’s my opinion that Medicare has been a detriment to the profession from the
512 beginning.”⁹⁶ However, the new law brought prestige, legitimation, and gave access to a new
513 cohort of patients, even if chiropractors received inadequate reimbursement for those in that
514 cohort. Ultimately, the ACA leadership decided to accept it, hoping that it might be
515 broadened in the future.⁹⁷ James Winterstein, long-time president of National College of
516 Chiropractic, and an ACA member at the time, acknowledges the dilemma: “I was supportive
517 of inclusion of chiropractic medicine in the Medicare program, but not in the way it was
518 statutorily developed [limiting the scope of practice to spinal subluxation relief and requiring
519 x-rays]. That view was shared by most so called “mixers” of the time. We all thought,

520 however that this was the beginning that that as a profession we would be able to change the
521 language to provide a far better functioning statute for the profession and our profession.”⁹⁸

522 **THE CHIROPRACTIC SOLUTION TO MEDICARE REQUIREMENTS**

523 Chiropractors had many different definitions of vertebral subluxation, mostly tiny
524 changes in position, not acknowledged as real by the medical community and unable to be
525 reliably identified on radiographs by different chiropractors.⁹⁹ The ACA called for a meeting
526 to standardize the definition of radiographically demonstrable subluxations. The meeting took
527 place in Texas in November 1972 and became referred to as the Houston Conference. Within
528 the ACA there existed a group of chiropractors with a special interest in diagnostic imaging.
529 They undertook additional training as well as written and oral certification exams in order to
530 achieve the Diplomate of the American Chiropractic Board of Radiology (DACBR). These
531 “chiropractic radiologists” were called upon at the Houston Conference.¹⁰⁰

532 The radiographic demonstration of subluxation was imaginary to at least some
533 involved in the Houston Conference. There were deep misgiving and arguments on the
534 subject. Many of the participants considered the “subluxation” to be a functional lesion of
535 joint motion, rather than a displacement. For these chiropractors, there were no vitalistic
536 implications of “the cause of all disease”, but rather “subluxation” was a biomechanical
537 dysfunction amenable to a variety of manual methods, of which chiropractic adjustments
538 were only one.¹⁰¹

539 The new Medicare requirement ran counter to safety guidelines on the use of x-rays in
540 requiring all patients to be radiographed. Joseph Howe wrote: “To demand that there be
541 radiological evidence of vertebral subluxation in order to justify chiropractic treatment is
542 irresponsible. It is totally contradictory to proper radiological health procedure which
543 demands a clinical reason for any application of ionizing radiation to a human being.”¹⁰² The
544 x-ray requirement even seemed nonsensical to some legislators. Senator Mike Gravel

545 recognized that the AMA had put in place a requirement that ran counter to best medical
546 practice. He wrote that the law “imposes an improper interference with the work and
547 judgment of the Chiropractor. It does not guarantee the health and well-being of the patient;
548 in fact, it may endanger it.”¹⁰³ The idea that there was no safe dose of ionizing radiation,
549 called the linear, no-threshold (LNT) model, had been introduced to the world by Herman
550 Muller at his Nobel Prize acceptance speech in 1946.¹⁰⁴ Although there have been challenges
551 to this model,¹⁰⁵ and it has never been fully accepted in the chiropractic community,¹⁰⁶ it
552 became the dominant model in the ensuing decades. By 1956 the National Academy of
553 Sciences (USA) had adopted it. Then, within a few years this paradigm “had transformed
554 governmental regulatory agencies in many countries, including recommendations of the
555 UN.”¹⁰⁷ The National Council on Radiation Protection and Measurements (NCRP) issued
556 radiation protection standards in 1954, which were revised in 1957 and 1958.¹⁰⁸ The 1958
557 edition introduced the risk/benefit calculation to the application of ionizing radiation, which
558 later evolved into the ALARA (As Low As Reasonably Achievable) principle.¹⁰⁹ Despite
559 this, formal training in radiation safety was spotty in medicine.¹¹⁰ However, by the time of
560 the Medicare expansion in 1972 the potential hazards of x-rays, even at low, diagnostic
561 doses, had been well-publicized, and should have been known to chiropractors, physicians,
562 and legislators involved in the issue. There is evidence that this in fact was known in the
563 medical community; a letter from the Lehigh Valley Committee Against Health Fraud, a
564 group of health professionals including Stephen Barrett, to the United States Senate Finance
565 Committee stated that they considered chiropractic x-rays to be “window dressing” and “a
566 radiation hazard.”¹¹¹ This statement acknowledges both the understanding of the potential
567 danger of low levels of ionizing radiation, as well as the fact that x-rays should not be used in
568 the absence of clinical justification. In light of the comments above, key figures in both the
569 medical and chiropractic communities did understand the safety issue and spoke out about it.

570 It therefore seems more likely that the issue was ignored rather than unknown.

571 Despite concerns, the attendees at Houston Conference decided to comply with the
572 ACA leadership and tried to find a way to make the new legislation workable. Chiropractor
573 and DACBR James Cox recalled: “While I felt apprehension about taking the program [the
574 limited scope of practice as defined in Medicare] as it was... the consensus out of my
575 profession and out of the ACA was that it was the proper step to take, so I supported that,
576 because that’s what my profession wanted to do.”¹¹² The DACBR solution was to use
577 various medically recognized vertebral displacements and postural changes like
578 spondylolisthesis and scoliosis, calling them “subluxation” purely to meet the Medicare
579 requirement of radiographically documenting a positional change in one or more vertebrae in
580 order to justify reimbursement for treatment.¹¹³ James Winterstein remembered: “ACA
581 developed a “Medicare Manual” [the *Basic Chiropractic Procedural Manual*] and Joe Howe
582 and I wrote the section on radiography mostly at the kitchen table at my home office in West
583 Chicago, Illinois. In the manual we defined “subluxation” and showed examples and drew
584 radiographs from my practice as evidence for the various types of subluxation.”¹¹⁴ Joseph
585 Howe added: “We came up with seventeen classifications, which was just foolishness,
586 frankly.”¹¹⁵ These were political, not clinical definitions of subluxation. The DACBRs and
587 likely the ACA leadership knew that their “subluxations” were not the ultimate cause of
588 disease. Irradiating patients in order to document these subluxations ran counter to the
589 individual risk/benefit appraisal that should have been performed on each patient when
590 considering the use of x-rays. But, chiropractors were then able to document their “lesion” as
591 required by the law. The ACA published the “subluxations” in the *Manual* as well as in other
592 media.¹¹⁶ They also paid for several members to travel around the country giving
593 presentations disseminating the system.¹¹⁷ Some ACA members like Joseph Howe were
594 uncomfortable with the situation, but participated nonetheless: “Jim Winterstein and I

595 developed slides of all those things. We made it up in a carousel [for slide presentation] and
596 we set out, a group of us, to teach that across the world. Something I have regretted ever
597 since.”¹¹⁸ Chiropractors had found a way to make the legislation workable, although they
598 knew it was ethically questionable.

599 Another potential harm to patients never mentioned by either side is the fact that in a
600 proportion results from any type of diagnostic study there will be an anomalous result, often a
601 false-positive, that requires further investigation. This often causes anxiety and further cost
602 for patients needing additional studies, as was noted in the debate around mammography for
603 breast cancer screening.¹¹⁹

604 Even under these dubious circumstances, inclusion in Medicare was a significant
605 achievement for chiropractic. In 1972, few inroads had been made towards government
606 reimbursement for chiropractic services anywhere in the world, nor were there chiropractors
607 on staff in government hospitals. This event influenced contemporaneous registration and
608 reimbursement inquiries on chiropractic in several countries, but at least one, New Zealand,
609 stated that they “did not consider the formula applied in USA to be appropriate for their
610 area.”¹²⁰ The places where chiropractic has had the best success with integration into
611 government provision of healthcare are Denmark, Switzerland, and Canada. In those
612 countries, chiropractors in subsequent decades decided largely to abandon traditional
613 paradigms. Consequently, they are reimbursed equivalently with other practitioners. In
614 addition, those countries, and particularly Alberta in Canada, have the highest utilization rates
615 for chiropractic, about twice that of other areas.¹²¹ The first government investigation of cost-
616 effectiveness for chiropractic was a study in Canada on low-back pain in 1993; it reported
617 positive findings.¹²² However, evidence for improved patient outcomes from chiropractic
618 treatment based on the radiographic demonstration of chiropractic subluxations or postural
619 changes has never been documented in a peer-reviewed, indexed journal.

620 In 1979 the U.S. House of Representatives held hearings on overexposure to
621 diagnostic x-rays. Herman Olsen, president of the ACA, authored a submission representing
622 both his organization and the ICA, urging the elimination of the mandate for x-rays. The
623 General Accounting Office, a non-partisan bureau of analysts for the U.S. government, also
624 submitted the following statement regarding the chiropractic x-ray requirement: “Since the x-
625 ray serves no medical benefit... the patient is unnecessarily exposed to hazardous radiation
626 solely to fulfil an administrative requirement. The cost of the x-ray can be an expensive
627 burden to the Medicare beneficiary as well.”¹²³ But, this attempt to change the legislation
628 failed. The x-ray requirement was not removed from the Medicare regulations until 1 January
629 2000, when components of the Balanced Budget Act of 1997 were enacted.¹²⁴ Chiropractors
630 remained reimbursable only for manual manipulation to remove spinal “subluxations,” but
631 the subluxations could be documented by means other than x-ray.¹²⁵

632 CONCLUSION

633 This episode highlights an inherent conflict of interest in professional associations
634 that represent registered healthcare practitioners. Although the associations are bound to
635 protect and promote the interests of their members, not the public, the boards of professional
636 associations are largely comprised of professionals who are ethically bound to protect the
637 public.¹²⁶ The events described herein demonstrate that the focus by both organized
638 chiropractic and organized medicine was not solely on public interest but rather more heavily
639 on the interests of their respective professions. It shows the distortion of perspective that may
640 result during a “turf war”, in which two professions fight for, *inter alia*, public status and
641 healthcare dollars, with inadequate consideration of the patients receiving their services.

642 During this conflict, the stakes were high on both sides. Organized medicine framed
643 its position as protectors of the public from the “rabid dogs” and “killers” that were
644 chiropractors.¹²⁷ Biggs portrayed this episode as a critical junction in the legitimization and

645 economic survival of chiropractic as a profession. Recognition under Medicare raised
646 chiropractic's status and failure to be included would have meant that the cohort of Medicare
647 patients may have gone on to receive services from other practitioners, like
648 physiotherapists.¹²⁸ But it had negative effects for the profession, as well. It reinforced the
649 traditional chiropractic belief system and it did not conform to radiation safety guidelines.¹²⁹

650 All the professional associations involved in this battle lost sight of the civic duty that
651 comes with being a healthcare provider. The AMA decided to bet that the altering the
652 Medicare legislation would make it useless to chiropractors, but they lost the wager because
653 chiropractors found a way to work within the limits of the legislation. The AMA did not
654 adequately consider the consequences in the event that they lost.

655 Within chiropractic, the ICA had long promoted the use of x-rays for subluxation
656 analysis, although there was, and still is, little evidence to support that belief. This meant that
657 the scope of the legislation posed no ethical problem for them, but they were unhappy about
658 the lack of reimbursement. Some chiropractors in the ACA, though, compromised their
659 values on requiring clinical justification for the use of ionising radiation. The ACA advocated
660 for a system that they did not really believe in so that they could gain the political "win" of
661 becoming providers for Medicare patients.

662 For its part, the state took the expedient course. Legislators responded to the weight of
663 popularity of chiropractic, rather than clinical evidence for its effectiveness. They also
664 responded to strong emotions attached to the patriotic argument of freedom of choice. At
665 least one Senator has indicated that the change requiring radiography of all chiropractic
666 Medicare patients inserted into the conference committee report was considered insignificant
667 in the scheme of the overall bill.¹³⁰ Few Senators or Representatives would have been willing
668 to vote against Medicare expansion because of a change to one element in one part of the bill,
669 a large and popular piece of legislation.

670 Both medical and chiropractic professional associations put politics ahead of patients,
671 and the state took a course of compromise, trying to please everyone and ending up pleasing
672 no one. The damage from decades of x-rays being unjustifiably used on the Medicare
673 population has not been quantified, but is certain to exist. It manifested in several ways: in
674 potential damage to patients' health, the financial cost of x-rays, and by causing stress as well
675 as further diagnostic testing for patients with false-positive x-ray results. All parties,
676 including most importantly patients, would have benefitted if those involved in the battle for
677 chiropractic inclusion in Medicare had looked to evidence-based practice paradigms and
678 patient-focused care as their main objectives.

679

680 Notes

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¹ This is actually not word for word in the Oath, although the sentiment is. The phrase is: "I will keep them [the sick] from harm and injustice." Michael North [translator], "Greek Medicine – Hippocratic Oath," National Library of Medicine, 2002, available at: https://www.nlm.nih.gov/hmd/greek/greek_oath.html, (accessed 30 April 2019).

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