



# TRENDS IN THE USE AND CHARACTERISTICS OF CHIROPRACTIC SERVICES IN THE DEPARTMENT OF VETERANS AFFAIRS

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## ABSTRACT

**Objectives:** The purpose of this study was to analyze national trends and key features of the Department of Veterans Affairs' (VA's) chiropractic service delivery and chiropractic provider workforce since their initial inception.

**Methods:** This was a serial cross-sectional analysis of the VA administrative data sampled from the first record of chiropractic services in VA through September 30, 2015. Data were obtained from VA's Corporate Data Warehouse and analyzed with descriptive statistics.

**Results:** From October 1, 2004, through September 30, 2015, the annual number of patients seen in VA chiropractic clinics increased from 4052 to 37 349 (821.7%), and the annual number of chiropractic visits increased from 20072 to 159366 (693.9%). The typical VA chiropractic patient is male, is between the ages of 45 and 64, is seen for low back and/or neck conditions, and receives chiropractic spinal manipulation and evaluation and management services. The total number of VA chiropractic clinics grew from 27 to 65 (9.4% annually), and the number of chiropractor employees grew from 13 to 86 (21.3% annually). The typical VA chiropractor employee is a 45.9-year-old man, has worked in VA for 4.5 years, and receives annual compensation of \$97860. VA also purchased care from private sector chiropractors starting in 2000, growing to 159533 chiropractic visits for 19435 patients at a cost of \$11 155654 annually.

**Conclusions:** Use of chiropractic services and the chiropractic workforce in VA have grown substantially over more than a decade since their introduction. (*J Manipulative Physiol Ther* 2016;39:381-386)

**Key Indexing Terms:** *Chiropractic; Veterans Administration; Health Services*

The Department of Veterans Affairs (VA) operates the largest integrated health care system in the United States, including 144 hospitals, more than 1400 other health care facilities, and a workforce of more than 326 000.<sup>1</sup> More than 9 million of the approximately 22 million living US Veterans are enrolled in VA's health care system.<sup>2</sup> Each year, approximately 7 million of those enrolled receive

health care services at VA facilities, including more than 86 million outpatient visits and 700 000 admissions.<sup>3</sup>

The VA recently began a 2-phased approach to introduce chiropractic care to its complement of health care services. In 1999, Public Law 106-117<sup>4</sup> authorized VA to provide chiropractic care by purchasing these services from private sector chiropractors. VA Directive 2000-014, issued May 5, 2000, established VA's first policy on chiropractic care and enabled VA facilities to begin purchasing chiropractic care. Subsequently, in 2001, Public Law 107-135<sup>5</sup> added chiropractic care to the standard medical benefits available to all eligible VA patients and authorized VA to deliver these services on-site at a minimum of 21 medical facilities. VA Directive 2004-035, issued July 16, 2004, updated VA chiropractic policy and enabled VA facilities to begin delivering on-station chiropractic care by hiring and/or contracting with licensed doctors of chiropractic (DCs).

Since then, VA has expanded its delivery of chiropractic care<sup>6</sup>; but currently, little detail is known about the use of VA chiropractic services over time, details of these services, or characteristics of the VA chiropractic workforce. The purpose of this study was to analyze national trends and key features

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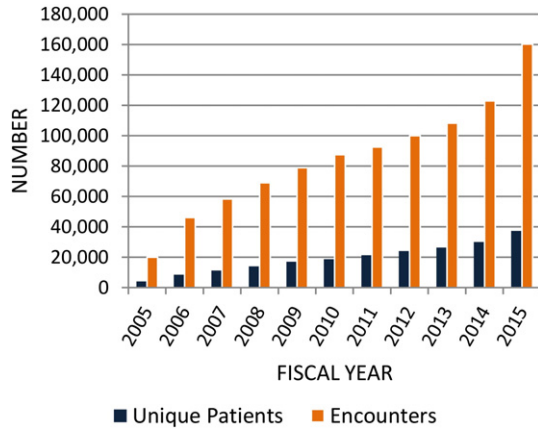
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**Fig 1.** Total number of unique patients receiving on-station VA chiropractic care and total number of on-station chiropractic encounters.

of VA’s chiropractic service delivery and chiropractic provider workforce since their initial inception.

**METHODS**

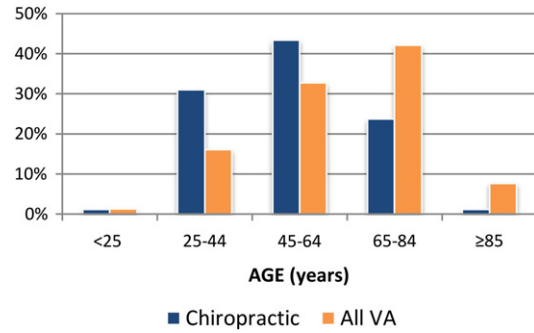
This study was a serial cross-sectional analysis of VA administrative data. The data used in this work were obtained from VA’s Corporate Data Warehouse and were analyzed using ProClarity (ProClarity Corp, Boise, ID) and Microsoft Excel (Microsoft Corp, Redmond, WA). The project was approved by the Institutional Review Board of the VA Connecticut Healthcare System.

VA administrative data are tracked by fiscal year (FY), running from October 1 of a given calendar year through September 30 of the next. Information on chiropractic services provided on-site at VA facilities (including visits, patient factors, and services delivered) was identified in VA corporate data by the numeric code (Stop Code) 436. We obtained Stop Code 436 data from both the primary and secondary code positions, which allow for capturing chiropractic workload data whether it was assigned to a chiropractic clinic or to a different clinic in which a DC may be providing care (eg, pain medicine, primary care).

Information on the chiropractic workforce (on-site employees) was identified by the occupational code 0604 for FY 2005 through FY 2013. Beginning in FY 2014, VA changed this code as part of a national data management reorganization; thus, for subsequent fiscal years, we used occupational code 0601, subcode 97.

Data on chiropractic care purchased from private chiropractors (also known as *fee-basis* care) were obtained using the numeric code (Purpose of Visit Code) 75.

Data were sampled from the first record of VA chiropractic services and workforce through the end of FY 2015. We assessed all available data and did not attempt



**Fig 2.** Age distribution of patients receiving on-station chiropractic care compared with all VA patients receiving any on-station outpatient services for FY 2014.

to account for missing elements. Data were analyzed using descriptive statistics.

**RESULTS**

**On-Station Chiropractic Services**

Eleven patient visits to 3 VA on-station chiropractic clinics were identified in FY 2004 data, reflecting the first few clinics that were established before October 1, 2004. However, for on-station chiropractic services and workforce trend analyses, the 11-year time frame of FY 2005 through FY 2015 (October 1, 2004, through September 30, 2015) is presented in this article.

On-station chiropractic use is shown in Figure 1. From FY 2005 to FY 2015, the total number of patients seen each year in VA chiropractic clinics increased from 4052 to 37349 (approximately 112% in the first year, then an average of 18% per year thereafter, with a total increase of 821.7% over the 11-year period). During this same time, the number of annual chiropractic visits increased from 20072 to 159366 (approximately 130% in the first year, then an average of 15% per year thereafter, with a total increase of 693.9% over the 11-year period).

We analyzed select patient demographics; *International Classification of Diseases, Ninth Revision* (ICD-9) codes; and Current Procedural Terminology (CPT) codes for on-station chiropractic visits in each fiscal year and report FY 2014 as a representative example. In that year, 15.8% of patients seen in VA chiropractic clinics were female compared with 9.7% of the general VA outpatient population. As shown in Figure 2, patients in VA chiropractic clinics were somewhat younger than the general VA outpatient population. These demographics varied very little each year from FY 2005 through FY 2015.

The primary ICD-9 diagnostic codes assigned to each on-station chiropractic visit each fiscal year were captured and collapsed into broad categories for year-to-year comparison. In FY 2014, approximately 59.2% of chiropractic visits were

assigned primary diagnostic codes for low back conditions; 24.3%, neck conditions; 10.4%, other or nonspecific musculoskeletal conditions; and 6.1%, thoracic conditions. This distribution varied very little each year from FY 2005 through FY 2015.

The CPT codes assigned to each chiropractic visit each year were captured and also collapsed into broad categories for year-to-year comparison. In FY 2014, approximately 49.5% of visits were assigned chiropractic spinal manipulation codes; 21.2%, evaluation and management; 12.6%, physical modalities; 9.3%, other manual therapies; 4%, acupuncture; and 3.4%, exercise/active care. From FY 2005 through FY 2015, there were a 10.2% increase in the use of exercise/active care codes and a 6.9% decrease in the use of physical modality codes, whereas use of the remaining CPT codes was relatively stable.

### Chiropractic Workforce

During the study period, the total number of VA chiropractic clinics grew on average 9.4% per year (from 27 to 65), and the number of chiropractor clinician employees grew on average 21.3% each year (from 13 to 86 employees). Key characteristics of the chiropractic employee workforce are presented in Table 1. The typical VA chiropractor employee is a 45.9-year-old man, has worked in VA for 4.5 years, and receives annual compensation of \$97860.

### Purchased Chiropractic Care

Seven patients receiving purchased chiropractic care were identified in FY 2000 data. This grew only slowly in the 5 fiscal years before the establishment of on-station chiropractic clinics. Then, as seen in Figure 3, from FY 2005 to FY 2015, the rate of growth increased more rapidly. In FY 2005, VA purchased 8244 private chiropractic visits for 1072 Veterans at a cost of \$428667. In FY 2015, VA purchased 159533 private chiropractic visits for 19435 Veterans at a cost of \$11155654.

## DISCUSSION

Prior work on VA chiropractic services has included a provider survey,<sup>7</sup> observational reports of patient outcomes,<sup>8-11</sup> a mixed-methods program assessment,<sup>12</sup> and 2 randomized clinical trials.<sup>13,14</sup> This current study reports details of national trends in VA chiropractic clinical services. Our results show that the use of chiropractic care and the chiropractic workforce in VA have grown dramatically since their inception in FY 2005. The 2001 law<sup>5</sup> mentioned above remains the only congressional mandate for VA to provide on-site chiropractic services. VA met the minimum requirement of this law in FY 2005; therefore, any expansion or development seen from FY

**Table 1.** VA Chiropractor Employee Workforce Trends

Fiscal Year	Total Onboard	Total Female	Total FTE	Average Age	Average Years Served	Average Annual Salary
2004	—	—	—	—	—	—
2005	13	—	8.8	41.4	0.8	\$72566
2006	17	1	14.0	44.5	1.8	\$77899
2007	20	1	17.3	44.4	2.6	\$82116
2008	24	1	22.1	45.4	3.5	\$86458
2009	29	2	26.2	44.6	3.7	\$89680
2010	36	4	30.1	45.5	4.3	\$88836
2011	44	6	37.4	45.1	4.2	\$91017
2012	41	6	37.0	46.0	5.0	\$93232
2013	45	8	42.5	45.8	5.6	\$96858
2014	63	11	57.5	45.2	5.1	\$95748
2015	86	16	78.2	45.9	4.5	\$97860

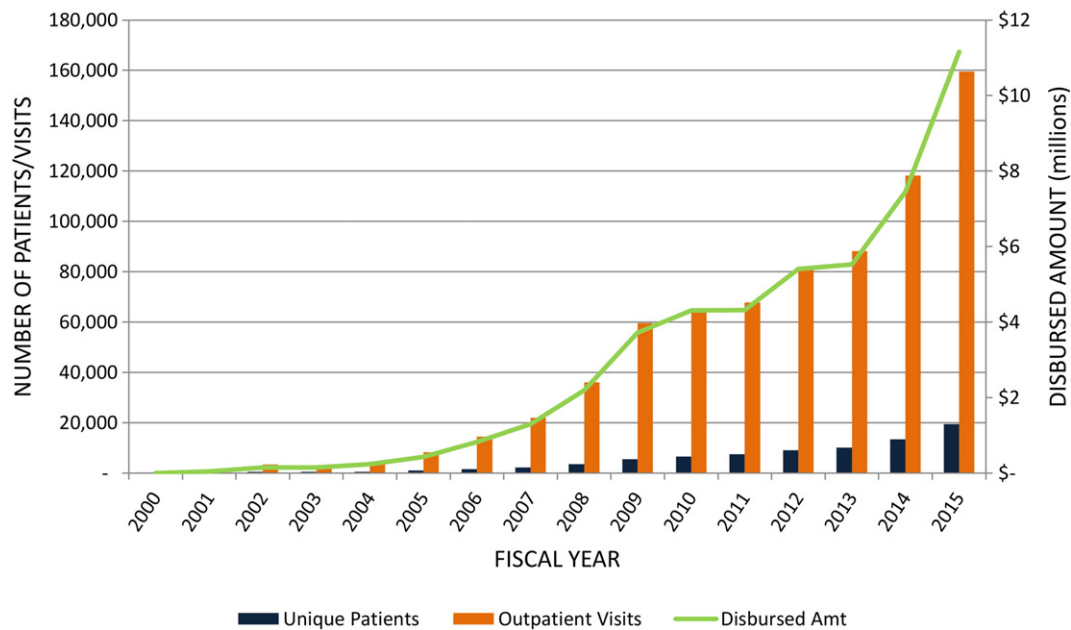
FTE, full-time equivalent

2005 through FY2015 represents the organic growth of this new service.

This growth may be explained by multiple factors including the natural trend of diffusion of change in any large medical system,<sup>15,16</sup> unique aspects (such as patient demand, patient access) related to the VA system,<sup>17,18</sup> and/or the successful performance of VA chiropractors.<sup>12</sup> This last aspect may be particularly relevant because, historically, chiropractic services were very rarely included in US hospital systems, which presented significant operational and cultural barriers for VA to implement these services.<sup>12</sup>

Because little is known about the introduction of chiropractic services to other US integrated hospital systems, there are no obvious comparators against which to gauge the manner, rate, and extent of penetration of these services in VA. Consequently, the reported trends in chiropractic use in VA depict the actual development of the program but may or may not reflect optimal practice patterns. This work did not attempt to assess patient-oriented outcomes, substitution of other services, or any other measure of impact associated with VA chiropractic care. Yet, the fact that these services have expanded consistently and substantially beyond the minimum mandated level may suggest that some VA decision-makers perceive value in providing chiropractic care.

Our results indicate that VA chiropractic clinics saw a greater percentage of female and younger patients compared with the national VA outpatient population. This demographic tendency is consistent with the cohort of Veterans from the recent conflicts in Iraq and Afghanistan, which is known to have a high prevalence of musculoskeletal conditions.<sup>19</sup> We identified ICD-9 and CPT codes assigned to on-station VA chiropractic visits, suggesting that VA chiropractors are seeing patients for similar conditions and providing similar services as previously reported in private sector<sup>20</sup> and other VA<sup>7</sup> work. Our study did not aim to assess patient complexity; however, other work has shown that VA patients with musculoskeletal pain conditions carry a high burden of disease.<sup>21,22</sup>



**Fig 3.** Total number of unique VA patients receiving purchased chiropractic care outside of VA, total number of those visits, and total dollar amount disbursed for purchased chiropractic services.

We noted only 1 change in the types of on-station chiropractic services over time: a trend of decreased frequency of physical modality codes and an increased frequency of exercise/active care codes. This could be explained by changes in coding and/or practice patterns among existing VA DCs or the addition of new DCs with new coding and/or practice patterns over time. It was beyond the scope of this work to attempt to explain the reasons for this change, but it is interesting to note that the change is consistent with current evidence on the management of low back pain,<sup>23</sup> the condition most commonly seen by VA DCs.

This study also reports chiropractor clinician workforce data obtained directly from human resources records rather than provider self-report. This may be one of the most accurate depictions of these data in the United States, albeit from a small, constrained provider population. VA managerial data show that very few DCs have left VA after being hired, and recent applicants for VA chiropractor positions typically outnumber available slots by more than a hundredfold; thus, VA positions appear to be in high demand by US DCs.

Consistent with VA policy for all health care services, delivery of chiropractic services occurs through a combination of care provided on-station at VA facilities as well as care purchased from community chiropractors. Purchased care may be used to supplement on-station chiropractic care at a given facility (for instance, to meet demand that exceeds current on-station capacity), or it may be the only mechanism whereby that care is delivered (for instance, at a facility that does not have an on-station DC).

The Department of Veterans Affairs' use of purchased chiropractic care began slowly at first and then grew more parallel with its use of on-station chiropractic care starting in FY 2005. However, we identified differences in the broad utilization rates between the two. From FY 2005 through FY 2015, the average annual number of visits per patient was 9.3 for purchased chiropractic care vs 4.6 for on-station care. We did not attempt to assess the appropriateness of either of these rates, and multiple factors may be at play in explaining this difference. For instance, in an undersupplied chiropractic clinic, some patients may receive only 1 on-station VA chiropractic visit and then be sent for purchased care off-site. However, our finding is consistent with other work showing a similar disparity in on-site vs off-site chiropractic utilization provided by a self-insured employer.<sup>24</sup>

As VA continues to unroll chiropractic services to meet Veteran demand, we expect to see additional increases in the use of on-station chiropractic care, the number of chiropractor employees, and the amount of chiropractic care purchased in the community. Our results show a period of significant expansion, yet we do not know the optimal sustainable size for the VA chiropractic program. The challenge for VA is to grow its chiropractic program in a way that yields the best clinical outcomes, meets Veterans' expectations, and helps control health care costs.

**Limitations**

All administrative databases are subject to data transmission, storage, and retrieval error. We did not attempt to identify or account for missing data, but previous work has



shown that VA administrative data for on-station care are highly accurate in multiple patient parameters,<sup>25,26</sup> and we have prior experience in VA data retrieval<sup>27–30</sup>; thus, it seems unlikely that missing data would substantially change our results with respect to on-station chiropractic services or workforce. However, VA purchased care (fee-basis) data capture may be subject to regional variation in use of the identifying Purpose of Visit Code; thus, our results in this category may be underreported. ICD and CPT codes are commonly used to analyze trends in service use; however, because of variation in coding fidelity at the provider level, the interpretation of these codes is limited. This study reported workforce data on chiropractor employees only and did not include contractors. Also, we did not measure the chiropractic workforce's percent effort distribution between clinical, administrative, research, and/or other position responsibilities. VA chiropractor workforce data cannot be extrapolated to chiropractors in other health care systems and/or private practice.

Future work is needed to better understand the most advantageous structures and processes of VA chiropractic care, that is, those resulting in the best outcomes for Veterans. This should include assessing models of patient access as well as identifying characteristics of optimal chiropractic care (eg, patient selection, chiropractic management options, and treatment frequency and duration). Studies assessing the effect that the use of VA chiropractic services has on the use of other VA health care services will be valuable, along with studies assessing patient-oriented outcomes such as physical function and satisfaction. Lastly, it may be useful to explore the impact that the VA chiropractic experience—facilitators, barriers, and consequences of expansion—can have on the integration of chiropractic services in the broader US health care system.

## CONCLUSION

Since their introduction more a decade ago, use of on-station chiropractic services in VA, the VA chiropractic workforce, and VA's use of purchased chiropractic care have grown substantially. The types of conditions for which patients see VA chiropractors and the types of services they receive are similar to previous reports of chiropractic care in the United States. Because VA continues to expand its delivery of chiropractic care, ongoing work is needed to assess the delivery of these services so that they can be optimized to provide the most value to Veterans and the VA health care system.

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## CONTRIBUTORSHIP INFORMATION

Concept development (provided idea for the research): A.L.  
Design (planned the methods to generate the results): A.L., C.B.

Supervision (provided oversight, responsible for organization and implementation, writing of the manuscript): A.L., C.B.

Data collection/processing (responsible for experiments, patient management, organization, or reporting data): A.L., C.B.

Analysis/interpretation (responsible for statistical analysis, evaluation, and presentation of the results): A.L., C.B.

Literature search (performed the literature search): A.L.  
Writing (responsible for writing a substantive part of the manuscript): A.L., C.B.

Critical review (revised manuscript for intellectual content; this does not relate to spelling and grammar checking): A.L., C.B.

### Practical Applications

- From October 1, 2004, to September 30, 2016, the number of patients receiving chiropractic services on-site at VA facilities annually increased from 4052 to 37349.
- During this same time, the number of patients receiving VA purchased chiropractic care increased from 1072 to 19435.
- The typical on-site VA chiropractic patient is a man between the ages of 45 and 64 years seen for low back or neck conditions, and receives spinal manipulation as well as evaluation and management services.
- The typical VA chiropractor employee is a 45.9-year-old man, has worked in VA for 4.5 years, and receives annual compensation of \$97860.

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