

# The Case for Chiropractic: How Chiropractic Care Benefits Patients and Insurers



"Low-back pain is the No.1 cause of disability worldwide and the top reason opioids are prescribed."







Chiropractic care warrants a new look by health-care professionals, physicians and health-plan payers as a safe, effective and non-invasive approach for spinal health and well-being. It offers drug-free, holistic, conservative care that's centered on each patient's needs. Today, there's strong data supporting chiropractic care including a wealth of findings from academic and aggregated clinical studies.

Spinal pain is common among American adults. About two-thirds, or around 207 million people, have experienced serious enough back or neck pain to seek help from a health-care professional at some point in their lives, according to the latest report in a multiyear, large-scale study conducted with Gallup.1 Low-back pain is the No.1 cause of disability worldwide and the top reason opioids are prescribed.2

Billions of dollars are spent each year to address spinal pain in the United States.<sup>3</sup> For insurers and other health-care payers, it's time to recognize that endorsing and covering chiropractic care will save their organizations money and heighten patients' quality of care. Endorsing chiropractic care will reduce payouts for other, more expensive health-care options that patients often do not prefer and are less effective.

Understanding that this option for musculoskeletal pain management and overall wellness is often covered by health insurance and doesn't require an extended series of visits also has made chiropractic care popular. Health-care plan payers, from the Department of Veterans Affairs to private-sector insurers, are awakening to the benefits of chiropractic care.

Doctors of chiropractic are conservative-care professionals who are expert in administering less-invasive, low-cost care that supports the body's natural healing and can ameliorate and even prevent the need for riskier treatments such as prescription narcotics.4

Research indicates that overall health-care expenditures may be lower for U.S. adults with neck and back pain who seek care from complementary and integrative health-care professionals like chiropractors.<sup>5</sup> That means cost savings (i.e., increased earnings) for health insurers and government payers alike.

Notably, research shows that many adults seeking relief for significant neck or back pain chose to see a medical doctor or physical therapist, rather than a chiropractor, because they have insurance coverage for those modes of care.<sup>6</sup> Increased coverage for chiropractic would predictably lead to increased utilization. Nearly half of adults who have been to a chiropractor within the last five years say they would go more often if care was less expensive.7

Today, there are more reasons than ever for payers to support chiropractic care.





do those with insurance for chiropractic care. Payers should scrutinize the fact that our 2017 survey with Gallup found that 60 percent of chiropractic patients in the past year had coverage for chiropractic care, with 46 percent of them reporting that insurance paid for only some of their chiropractic care. Patients' primary reasons for their out-of-pocket expenses were the use of out-of-network doctors and unmet deductibles.<sup>12</sup>

In response to a wave of new research about chiropractic care that endorses its benefits, some insurers and payers are working to remove barriers for policyholders. For example, UnitedHealthcare in July 2019 started offering employers in some states a benefit for policyholders with acute low-back pain that makes it more affordable to access physical therapy and chiropractic care. It plans to expand the benefit to employers with self-funded plans and in more markets through 2021.

# Insurance Awareness

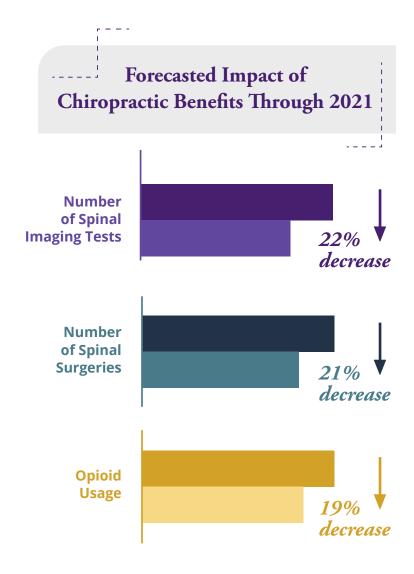
#### WHAT CAN HEALTH PLANS DO?

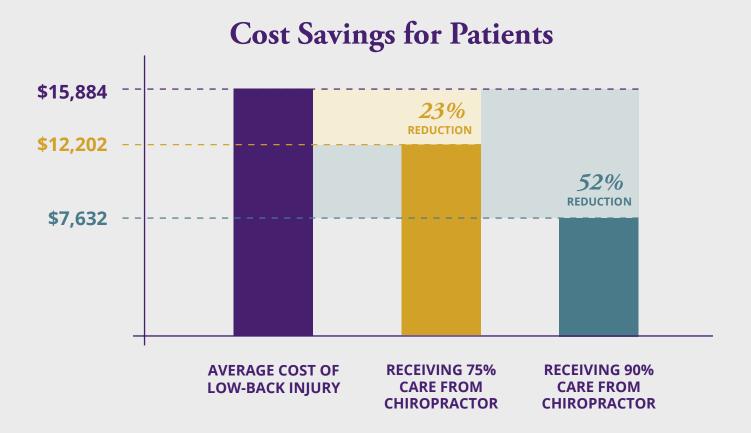
For many companies, musculoskeletal complaints are the No.1 reason employees go to a health-care provider.8 Clinical studies have shown spinal pain regularly co-exists in patients with other physical and mental illnesses.9

Health plans, from Medicaid to Medicare to private-sector insurers, usually cover physical and occupational therapy and chiropractic care for chronic pain, but a recent medical research study found that visit limits and prior authorization restrictions by the insurers are common. Lack of consistent insurance coverage and management of patient use by payers underscores the need to improve payment for management of chronic, non-cancer low-back pain when it's such a widespread condition.<sup>10</sup>

Chiropractic care safely reduces patients' pain and health-care costs. "The average cost of a low-back injury claim in the U.S. is \$15,884. When a worker with such an injury receives at least 75 percent of care from a chiropractor, the claim cost decreases to \$12,202 and when the worker receives at least 90 percent of care from a chiropractor, the average cost declines even further to \$7,632."

In the same vein, research with American adults shows that chiropractic patients without insurance for this type of care pay nearly twice as much for a typical chiropractic appointment as





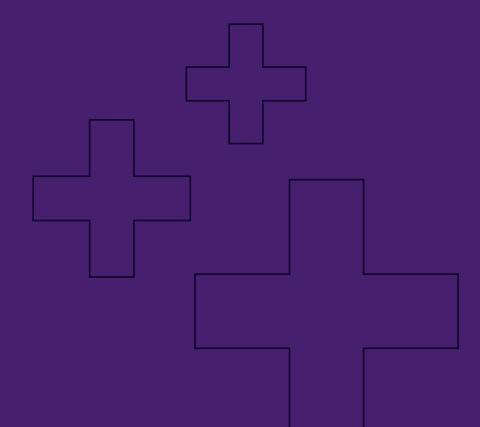
The company says it hopes to improve health outcomes, reduce costs and avoid often-unnecessary invasive methods and opioid prescriptions. UnitedHealthcare based its decision on a new report about non-pharmaceutical care for low-back pain issued by OptumLabs.

With the updated benefit design, UnitedHealthcare plan participants enrolled in eligible employer-sponsored health plans can pay nothing out of pocket (including waived deductibles or copays) for the first three visits if they select physical therapy or chiropractic care for the management of low-back pain. Based on its own analysis, the insurer says this benefit design has the potential to reduce the number of spinal imaging tests by 22 percent, spinal surgeries by 21 percent and opioid use by 19 percent — while lowering the total cost of care for eligible plan participants and employers.<sup>13</sup>

Critically, the OptumLabs study confirmed that higher out-of-pocket costs made it less likely for patients with low-back pain to choose clinically recommended non-invasive care, such as physical therapy and chiropractic.

UnitedHealthcare's coverage changes are a great example of how evidence from rigorous research can trigger innovation, leading to positive changes for health-plan members' lives. The OptumLabs report that persuaded UnitedHealthcare to ease access to chiropractic care for its policyholders could show more health plans how to play an important role in making it easier for consumers to consider non-invasive therapies for lower-back pain.





Recent medical research studies suggest that making a consultation with conservative-care therapists may be a beneficial strategy to reduce the risks of early- and long-term opioid use.

Modifying health insurance benefit designs could be one way to encourage patients to use these non-invasive therapies as a first line of treatment for their low-back pain.

**OPTUMLABS STUDY** 





Patients seek out the non-drug benefits of chiropractic with a growing understanding of the years of rigorous, hands-on clinical training and preparation that doctors of chiropractic undergo. Soundness of care is a major reason that adults with neck or back pain chose their health-care provider, our 2018 survey with Gallup concluded. Just over half (51 percent) said they opted for chiropractic care because "this health-care professional provides the most effective treatment for my pain." Through health-care payer education, we can keep adding to the level of insurers' comfort and confidence about chiropractic care and its positive outcomes.

# Mainstream Acceptance

#### **EVIDENCE ENDORSES RESULTS**

Doctors of chiropractic receive years of rigorous graduate education and clinical training. They are educated in basic sciences, clinical sciences, and to integrate research evidence, clinical experience and patient preferences in their care. Through chiropractic adjustments and other manual care, they embody a tradition of compassionate effectiveness that yields high patient satisfaction. They are ready to collaborate and coordinate with other health professionals caring for their patients, and they strive to enhance patients' quality of life.

Scientific evidence for how patients progress under chiropractic care has been confirmed in many randomized clinical trials and systematic reviews, which compile results of numerous randomized trials. A recent systematic review of 51 randomized trials conducted by RAND, a major health-services research organization, and published in the peer-reviewed Spine Journal<sup>14</sup> concluded that, "...manipulation and mobilization are likely to reduce pain and improve function for patients with chronic low-back pain..."

Another systematic review of 15 randomized trials published in the Journal of the American Medical Association<sup>15</sup> found that, "among patients with acute low back pain, spinal manipulative therapy was associated with modest improvements in pain and function at up to six weeks…"

#### Know The Risks Of Serious Side Effects/ Death Associated With Common Treatments For Musculoskeletal Pain

**SPINE SURGERY** 1,800 PER 1 MILLION

**CERVICAL-SPINE (NECK) SURGERY** 500 PER 1 MILLION

**USE OF NSAIDS/ASPIRIN** 153 PER 1 MILLION

**PRESCRIPTION OPIOID PAIN MEDS** 53.6 PER 1 MILLION

CHIROPRACTIC ADJUSTMENT
<1 PER 1 MILLION (ABOUT 1 IN 5.85 MIL)

#### WHAT IS CHIROPRACTIC CARE?

Chiropractic care offers safe, effective and non-invasive management of back and neck pain, but chiropractic is much more than an effective modality to address spine pain. It's a health-care profession that focuses on the structure and function of the locomotor system and related systems of the body and their impact on overall health. Doctors of chiropractic are primary-care professionals who specialize in spinal health and well-being. Through careful spinal adjustments, teamed with coaching on diet, exercise and overall good health habits, patients can tap into the body's homeostatic intelligence and powers of self-healing to restore proper function.

Our research, gleaned from the series of annual perception surveys conducted with Gallup since 2015, shows millions of adults in the United States are more likely to describe chiropractic care and physical therapy as "very effective" for significant back and neck pain (70 percent combined), while just 15 percent thought the same of back surgery's effectiveness.17

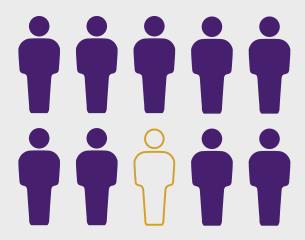
Patient-centered, integrated care that includes chiropractic is appropriate for most patients with musculoskeletal problems. Doctors of chiropractic are eager to work with other health-care professionals to find the most effective management option for improved patient outcomes.

Models of healthcare that integrate chiropractic are preferred over the more traditional approaches to the handling of back pain, which commonly involves emergency-room visits, liberal use of imaging, opioids, spinal injections and surgery.<sup>18</sup>

More broadly, clinical researchers have identified potential solutions that offer new directions for chiropractic care. These include the redesign of clinical pathways, integrated health and occupational interventions to cut work disability, changes in compensation and disability claims policies, and public health and prevention strategies.<sup>19</sup>

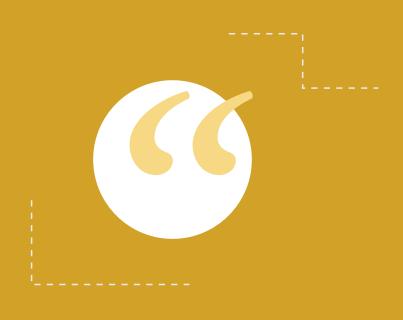
In our 2017 survey, patients who had seen a medical doctor, chiropractor or physical therapist for significant back or neck pain in the last 12 months rated their chiropractors and physical therapists particularly well on style of interaction and wait times. Roughly nine out of 10 patients surveyed who saw a chiropractor said he or she listens, provides quick, convenient access to care, demonstrates compassion and

## **Quality Care Rating**



**9 out of 10 patients** surveyed who saw a chiropractor said he or she listens, provides quick, convenient access to care, demonstrates compassion and explains things well.

explains things well. Of those who had seen a medical doctor for the same pain in the last year, most were less likely to say their medical doctor often did these things.<sup>20</sup>





Absolutely (the chiropractic clinic is valued), especially now in the day and age that we live where we're looking to keep costs down and look for other alternatives besides prescription drugs and surgeries. I think it's definitely a good thing to have chiropractic integrated in with the hospital network."

LEHIGH VALLEY HEALTH NETWORK STAFF MEMBER







66

I cannot express my gratitude enough for this competent doctor... for me it is life-changing. To be semi-pain-free in that joint is something I cannot remember ever."

NICOLE ROACH

### Patients' Stories Matter Most

Patients may be the most effective champions of chiropractic care, and heath-care providers and insurers should listen to their stories.

#### **NICOLE ROACH**

Nicole Roach, pictured above, by age 30 had suffered for 16 years with chronic pain in her right sacroiliac, or SI joint, where the iliac bone articulates with the sacrum helping to form the pelvis. She had seen an array of specialists and therapists and had tried many forms of alternative medicine to relieve her constant pain. She even was put on a pain-management program that included invasive injections into her spine and SI joint for more than a decade. Nicole eventually turned to chiropractic care in her quest for a diagnosis.

With the help of a doctor of chiropractic, she found relief and has started to live almost pain-free, exercise more (see photo above) and enjoy new activities.

"The doctor thoroughly listened to my complications, explored options that had never been thought of or done for me, and has reduced my pain level of a constant 8 on the pain scale in that joint for over 16 years to a 2-4."

#### **SHARON GILMORE**

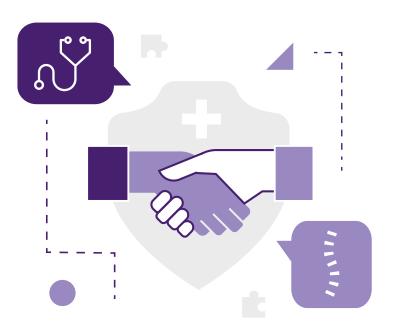
Another chiropractic patient, military veteran Sharon Gilmore, pictured below, tells a similarly transformative story. After being medically discharged from the armed services, Sharon struggled with depression, anxiety and chronic pain in her neck and back. Her very first visit to a chiropractor gave her pain relief, better sleep and improved health. "Since I've been getting adjusted and going to the gym and working out, I can honestly say it helps me manage my PTSD (post-traumatic stress disorder) a whole lot better. It's helping me to function on a daily basis."

Now chiropractic is a way of life for Sharon, and she tells everyone to try it.



SHARON GILMORE





# Care Collaboration

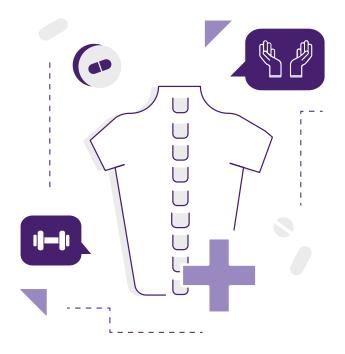
#### **LOW-BACK PAIN CAUSES MOST DISABILITY**

As noted, low-back pain and other musculoskeletal problems are the top reason employees go to a heath-care provider, which has striking implications for health plans and policy.<sup>21</sup>

Beyond being a well-documented, effective care for that back pain that plagues so many, chiropractic care also offers benefits for sufferers of neck, upper- and mid-back discomfort, as well as people beset with shoulder, elbow and knee pain, and migraines and headaches, including problems resulting from auto accidents or sports injuries.

As insurers and heath-care policy makers are starting to recognize, favorable outcomes often result from the use of chiropractic care integrated with other conservative-care methods such as physical therapy, acupuncture and yoga/ exercise/stretching. They perceive the value in providing coverage for good-quality care that often achieves similar outcomes as more-invasive methods that lead to longer recovery and claims periods.





they take pain medication prescribed by a doctor. About a third, or 31 percent, say chiropractic care is safer than prescription pain medication for significant neck or back pain.<sup>25</sup> And 44 percent of Americans we surveyed see prescription painkillers as a "crisis" or "very serious problem" in their local area.<sup>26</sup>

As concern over the nation's opioid epidemic has grown, non-drug pain management choices like chiropractic care have earned more attention and acceptance from the medical community. Pursuing drug-free options can also be attractive to employers and insurers because the cost is often lower and disability leave is minimized.

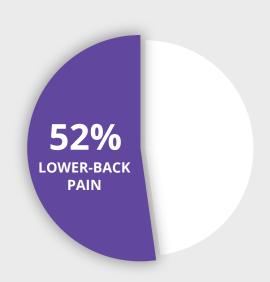
# Holistic Health

#### **NON-DRUG PAIN MANAGEMENT**

With the opioid crisis driving a search for other pain-management options, chiropractic care can be an outstanding choice among non-drug therapies. Lower-back pain is the most common reason for an opioid prescription in general—52 percent of prescribed opioids are for lower-back pain, according to new research by OptumLabs and Boston University School of Public Health.<sup>22</sup>

The team's study, recently published in the medical journal BMJ Open,<sup>23</sup> found that individuals who received initial non-invasive care from a physical therapist, chiropractor or acupuncturist for their new-onset lower-back pain had decreased odds of short- and long-term opioid use, compared with those who received initial care from a primary-care provider or specialist physician.<sup>24</sup> Acknowledging this drug-free option's success rate could reshape public policy and insurance coverage related to prescriptions for habit-forming medications to address back pain.

Our research shows that Americans prefer drug-free pain management and are very aware of the dangers associated with opioid use and the potential for abuse. In fact, 78 percent prefer to try other ways to address their physical pain before



# Opioid Prescriptions

Lower-back pain is the most common reason for an opioid prescription in general — **52 percent of prescribed opioids are for lower-back pain.** 



# **AMERICAN COLLEGE OF PHYSICIANS** LBP GUIDELINES

The American College of Physicians' (ACP) current guideline recommends the spinal manipulation therapy, or SMT, provided by chiropractors as a first-line non-drug treatment for acute low-back pain. For chronic sufferers, the ACP recommends chiropractic care along with conservative interventions such as exercise. low-level laser therapy, acupuncture and yoga.<sup>27</sup> It also recommends a treatment schedule of two to three times a week for two to four weeks for acute or subacute pain.<sup>28</sup>



Beyond pain management, chiropractic care offers holistic wellness benefits that more employers and healthcare payers are starting to realize. Some major corporations even provide on-site chiropractic services as part of wellness care for their employees. In a recent study by Daniel Lord, D.C., and other spine specialists, findings showed that integrating physical medicine in employer-sponsored clinics decreased wait times for these services to seven days (two to four times faster than visiting a doctor's office or clinic). Patients receiving care in employer-sponsored clinics also experienced marked improvements in their avoidance of actions they thought would cause back-related pain, and in their functional status, or the measure of their ability to perform daily activities. All these improvements happened in eight fewer visits than were needed to a heath-care provider outside of the workplace, resulting in \$472 to \$630 savings/patient episode.<sup>29</sup>

Heath-care administrators, physicians and patients all value the synergies when chiropractic care is used in multidisciplinary settings, according to new research. Fully integrating chiropractic care improves outcomes, reduces costs and absenteeism and increases employee retention for companies.<sup>30</sup>

Insurance companies stand to benefit in similar ways from covering integrated options. Public-health programs also note the benefits of chiropractic care when opioids have been prescribed for back and joint pain. Among veterans of recent U.S. wars, a 2018 study found nearly one-third of patients receiving VA chiropractic services also received an opioid prescription, yet the frequency of opioid prescriptions was lower in three 30-day time frames assessed after patients' chiropractic visits than before.<sup>31</sup>

Studies of Medicare patients and of more than 2 million insurance subscribers report total annual healthcare costs to be 30 percent to 50 percent less with chiropractic care than with medical doctor-only care for back pain.<sup>32</sup>



Anthony Lisi, D.C. (at right in photo), knows the benefits that chiropractic care can have for disabled or chronic back and neck pain sufferers from the armed services. He's national director of chiropractic services for the Veterans Health Administration, the largest integrated healthcare system in the U.S. He was instrumental in establishing the first federally funded chiropractic residency training program at the VA. The VA began providing chiropractic care for veterans in 2004, and in recent years has worked with 44,000 former service members each year.







**ANTHONY LISI, D.C.** 

National Director of Chiropractic Services, Veterans Health Administration

# **Medicare Patients Drastically Reduce Annual Costs With** Chiropractic Care

2 million insurance subscribers report total annual healthcare costs to be 30 to 50 percent less with **chiropractic care** than with medical doctor-only care for back pain.



DANIEL LORD, PALMER ALUMNUS



Daniel Lord, D.C., CCSP ®, a 2008 graduate of Palmer College of Chiropractic West in San Jose, California, is the clinical program director at Crossover Health, which provides integrated primary care services to Fortune 500 companies across the country.

Crossover's program includes chiropractic care as a core offering, to help reduce musculoskeletal cost and improve the health outcomes of its members.

Dr. Lord was the lead contributor to a May 2019 research paper that confirmed that a strategy of early access to physical medicine in workplaces has been associated with a 36 percent improvement in patient outcomes, 52 percent less imaging, 56 percent fewer spinal injections, 59 percent less lumbar surgeries, and 62 percent less opioid use.<sup>33</sup>



# Resounding Results

#### **RESULTS SPEAK FOR THEMSELVES**

Why do patients request and return for chiropractic care?

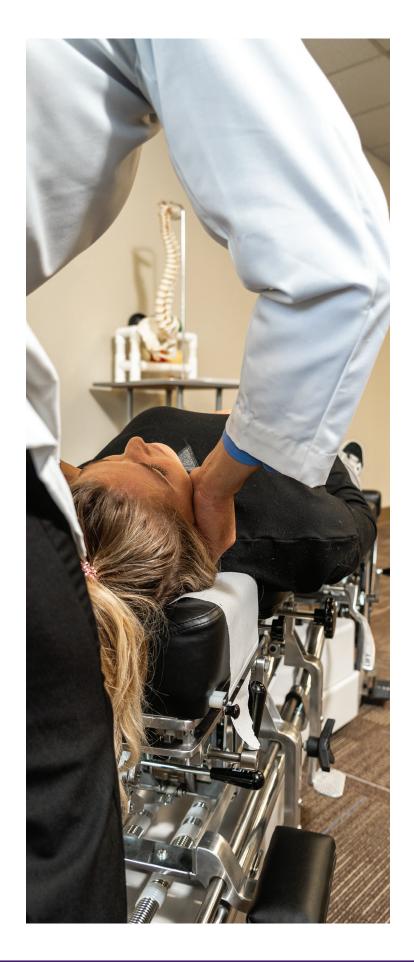
A recent study led by investigators at the Palmer Center for Chiropractic Research, done in conjunction with the RAND Corporation and the Samueli Institute, found that patients suffering from low-back pain who received chiropractic care in addition to usual medical care had better short-term improvements in low-back pain intensity and pain-related disability when compared with those who received usual medical care alone.

Results of this groundbreaking research are chronicled in the Journal of the American Medical Association's online JAMA Network Open.<sup>34</sup> The study—the largest randomized clinical trial in chiropractic research in the United States to date—took place from September 2012 to February 2016 and involved 750 active-duty U.S. military personnel at three sites across the country.

The prevalence of low-back pain among U.S. adults is estimated at 20 percent, with 50 percent to 80 percent of people reporting a significant episode at some point in their life. Low-back pain is also one of the most common causes of disability in U.S. military personnel.<sup>35</sup> So the policy implications for offering and insuring conservative care like chiropractic for such a large governmental patient group are broad and encouraging.

"This patient-centered, multi-site, pragmatic clinical trial provides the strongest evidence to date that chiropractic care is safe, effective and can be integrated into multidisciplinary healthcare settings," said Christine Goertz, D.C., Ph.D., lead author of the military personnel study. "These findings are critical as the United States healthcare system looks for ways to implement existing national guidelines from groups such as the American College of Physicians and the Joint Commission that recommend non-drug approaches, such as spinal manipulative therapy, as the first line of care for low-back pain." 36

Such evidence also could translate into reduced spending on claims — and ignoring it could be costly. A 2018 international clinical study published in The Lancet concluded that "without the collaborative efforts of [patients], policy makers, clinicians and researchers necessary to develop and implement effective solutions, disability rates, and expenditure for low-back pain, will continue to rise".<sup>37</sup>



# In Conclusion

Robust data collected by the Palmer Center for Chiropractic Research, in tandem with a wealth of supporting findings from academic and aggregated clinical studies, shows us that a new era has arrived for chiropractic care. The attractions are many for drug-free, holistic conservative care that's centered on each patient's needs. Traditional physicians and health-plan payers will benefit from learning how integrated healthcare involving chiropractic can help the patients they care for and cover—while saving on claims.

The safe, effective and non-invasive nature of chiropractic care warrants a new look by others in the health-care professions who may not have considered the latest scientific evidence.

Making insurance coverage for this care available and easier to understand is an important part of advancing chiropractic care today. Insurance providers that make proactive benefit-design changes, and companies working with private-sector employer plans and government payers, are essential to opening the door to wellness for many more patients in the United States.

Many people have the impression that the use of integrative health care creates substantial add-on costs for health-care systems and individual payers. This is simply is not true.

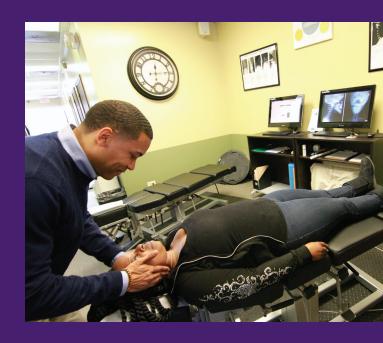
> The safe, effective and non-invasive nature of chiropractic care warrants a new look by others in the health-care professions

The actual cost—\$33 billion—is pocket change compared with the \$268 billion spent out-of-pocket on conventional care in the same year.38

Although an estimated 35.5 million Americans see a chiropractor in a year,39 further patient education will boost the numbers who find relief from this approach. It's also critical to realize that almost half of U.S. adults do not know whether their insurance covers chiropractic care. A lack of knowledge about health insurance coverage for this form of care, along with sensitivity toward costs, may be barriers preventing some from using chiropractic services.<sup>40</sup> This knowledge gap can be filled by payers and practitioners through accessible plan design, flexible methods of payment and patient education.

A range of evidence supports the cost-effectiveness of chiropractic management. More parties, from patients to payers, need to recognize and gain from the fact that chiropractic focuses on maintaining health naturally. Research shows that 95 percent of past-year chiropractic users say it's effective, and 89 percent recommend chiropractic to their family and friends.

Chiropractic and other integrative health practitioners are leading the shift away from condition-focused care toward health-oriented care. Making access to these providers an option for every patient, through all health insurance products in every state, will have significant short- and long-term impacts on both the health and economy of the United States. 41





- 1. Gallup-Palmer College of Chiropractic Annual Report: Managing Neck and Back Pain in America. (2018). Retrieved December 11, 2019, from https://news.gallup.com/reports/272771/palmer-chiropractic-annual-report-2018.aspx
- 2. Global burden of low back pain. (2018). Retrieved January 13, 2020, from www.sciencedaily.com/releases/2018/03/180321130901. htm
- 3. Dieleman, J.L. et al. (2017). Factors Associated With Increases in US Health Care Spending, 1996-2013. *JAMA*, 318(17), 1668-1678. DOI 10.1001/jama.2017.15927
- 4. Integrative Health and Medicine: Today's Answer to Affordable Healthcare. (2016). Retrieved November 15, 2019 from http://www.ihpc.org/wp-content/uploads/IHPC-CE-Booklet-March2015.pdf
- 5. Goertz, C.M. et al. (2018). Insurer Coverage of Nonpharmacological Treatments for Low Back Pain Time for a Change. *JAMA Network*, 1(6), 1-3. DOI: 10.1001/jamanetworkopen.2018.3037
- 6. Gallup-Palmer College of Chiropractic Annual Report 2018, ibid.
- 7. Americans' Perceptions of Chiropractic. (2015). Retrieved December 16, 2019, from https://www.palmer.edu/uploadedFiles/Pages/Alumni/gallup-report-palmer-college.pdf
- 8. National Research Council and the Institute of Medicine. (2001). *Musculoskeletal disorders and the workplace: low-back and upper extremities*. National Academies Press. DOI: 10.17226/10032
- 9. De Luca, K. et al. (2017). The Relationship Between Spinal Pain and Comorbidity: A Cross-sectional Analysis of 579 Community-Dwelling, Older Australian Women. *Journal of Manipulative and Physiological Therapeutics*, 40(7), 459-466. DOI: 10.1016/j. jmpt.2017.06.004
- 10. Heyward, J. et al. (2018). Coverage of Nonpharmacologic Treatments for Low-Back Pain Among US Public and Private Insurers. *JAMA Network*, 1(6), 1-14. DOI: 10.1001/jamanetworkopen.2018.3044
- 11. The Path to Change in the US Healthcare System: Chiropractic Cost-Effectiveness Supplement. (2012). Retrieved November 15, 2019, from https://chirosummit.org/uploads/CostEffect|ointStatement-1-9-2013.pdf
- 12. Heyward, J. et al, Ibid.
- 13. New UnitedHealthcare Benefit for Low Back Pain Helps Reduce Invasive Procedures and Address the Opioid Epidemic. (2019). Retrieved November 1, 2019, from https://newsroom.uhc.com/news-releases/back-pain-program.html
- 14. Coulter, I.D. et al. (2018). Manipulation and Mobilization for Treating Chronic Low Back Pain: A Systematic Review and Meta-Analysis. *Spine Journal*, 18(5), 866-879. DOI: 10.1016/j.spinee.2018.01.013
- 15. Paige, N.M. et al. (2017). Association of Spinal Manipulative Therapy with Clinical Benefit and Harm for Acute Low Back Pain: Systematic Review and Meta-analysis. *Journal of the American Medical Association*, 317(14), 1451-1460. DOI: 10.1001/jama.2017.3086
- 16. Gallup-Palmer College of Chiropractic Annual Report 2018, ibid.
- *17. Americans' Perceptions of Chiropractic*, ibid.
- 18. Foster, N. et al. (2018). Prevention and Treatment of Low Back Pain: Evidence, Challenges, and Promising Directions. *The Lancet,* 391(10137), 2368-2383. DOI: https://doi.org/10.1016/S0140-6736(18)30489-6
- 19. Ibid.
- 20. Gallup-Palmer College of Chiropractic Annual Report: Americans' View of Prescription Pain Medication and Chiropractic Care. (2017).

  Retrieved on December 12, 2019, from https://www.palmer.edu/getmedia/32a0a7e4-26df-4d99-b4c9-e5e47b83ceac/palmer-gallup-annual-report-2017.pdf
- 21. Hartvigsen, J. et al. (2018). What Low Back Pain Is and Why We Need to Pay Attention. *The Lancet*, 391(10137), 2356-2637. DOI: https://doi.org/10.1016/S0140-6736(18)30480-X

- 22. Research from OptumLabs and Boston University builds case for noninvasive treatments for low back pain; contributes to translatable impacts. (2019). Retrieved on November 1, 2019, from https://www.optumlabs.com/news-events/news/boston-university-lowback-pain.html
- 23. Kazis, L.E. et al. (2019). Observational retrospective study of the association of initial healthcare provider for new-onset low back pain with early and long-term opioid use. BMJ Open, 20(9). DOI: 10.1136/bmjopen-2018-028633.
- 24. Research from OptumLabs and Boston University builds case for noninvasive treatments for low back pain; contributes to translatable *impacts*, ibid.
- 25. Gallup-Palmer College Annual Report 2017, ibid.
- 26. Americans Prefer Drug-Free Pain Management Over Opioids. (2019). Retrieved on October 29, 2019 from https://news.gallup.com/ reports/217676/americans-prefer-drug-free-pain-management-opioids.aspx
- 27. Qaseem, A. et al. (2017). Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians. Annals of Internal Medicine, 166(7), 514-530. DOI: 10.7326/M16-2367
- 28. Globe, G. et al. (2016). Clinical Practice Guideline: Chiropractic Care for Low Back Pain. Journal of Manipulative and Physiology Therapies, 39(1) 1-22. DOI: https://doi.org/10.1016/j.jmpt.2015.10.006
- 29. Ibid.
- 30. Corporate Innovators Integrate Chiropractic Care into Healthcare Clinics. (2019). Retrieved on October 29, 2019, from https://www. ahip.org/wp-content/uploads/F4CP-Corporate-Innovators-White-Paper.pdf
- 31. Lisi, A.J. et al. (2018). Opioid Use Among Veterans of Recent Wars Receiving Veterans Affairs Chiropractic Care. Pain Medicine, 19)1), 54-60. DOI: 10.1093/pm/pny11
- 32. Legorreta, A. et al. (2004). Comparative Analysis of Individuals With and Without Chiropractic Coverage: Patient Characteristics, Utilization, and Costs. Archives of Internal Medicine, 164(18), 1985-92. DOI: 10.1001/archinte.164.18.1985
- 33. Lord, D. et al. (2019). Integrated Physical Medicine at Employer-Sponsored Health Clinics Improves Quality of Care at Reduced Cost. Journal of Occupational and Environmental Medicine, 61(5), 382-390. DOI: 10.1097/JOM.000000000001536
- 34. Goertz, C. et al. (2018). Effect of Usual Medical Care Plus Chiropractic Care vs Usual Medical Care Alone on Pain and Disability Among US Service Members With Low-Back Pain: A Comparative Effectiveness Clinical Trial. JAMA Network Open, 1(1), 1-15. DOI: 10.1001/jamanetworkopen.2018.0105
- 35. Ibid.
- 36. Ibid.
- 37. Foster, N. et al., ibid.
- 38. Nahin, R. et al. (2009). Costs of Complementary and Alternative Medicine (CAM) and Frequency of Visits to CAM Practitioners, 2007. National Health Stat Report, 18, 1-14.
- 39. Gallup-Palmer College of Chiropractic Annual Report 2016, ibid.
- 40. Ibid.
- 41. Integrative Healthcare Policy Consortium, ibid.

MAIN CAMPUS PUBLISHED 2021

1000 Brady Street Davenport, IA 52803 800-722-2586

#### PALMER FLORIDA

4777 City Center Parkway Port Orange, FL 32129 866-890-5498

#### **PALMER WEST**

90 E. Tasman Drive San Jose, CA 95134 408-944-6000



The Trusted Leader in Chiropractic Education®