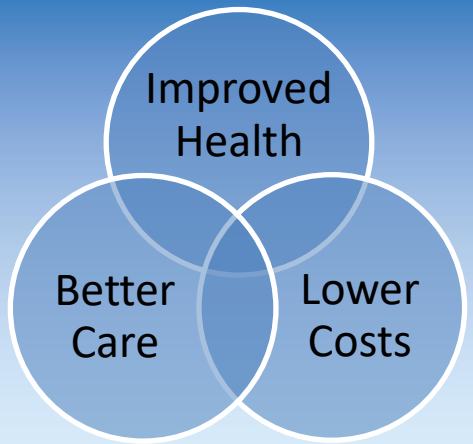


Musculoskeletal Care: Strategies for Significant Cost Savings, Improved Patient Outcomes & Decreased Opioid Use

Delaware Chiropractic Services Network (DCSN)
Chiropractic Services Network of PA (CSNPA)

Dr. Douglas A. Fasick, President
Dr. George Schreppler, First Vice President
Dr. Stacy S. Cohen, Second Vice President
Dr. Scott E. Rosenthal, Secretary/Treasurer

1536 Kirkwood Highway
Newark, DE 19711
(302) 655-8398

csncare.com

25 North 3rd Street
Oxford, PA 19363
(610) 932-9061

Who We Are

The Chiropractic Services Network is comprised of two sister companies serving both Delaware and Pennsylvania.

Founded in 1994, the Delaware Chiropractic Services Network (DCSN) administers and provides the chiropractic network for several of Delaware's larger insurance carriers. The DCSN is currently responsible for the chiropractic care given to over one-third of the total Delaware population.

The Chiropractic Services Network of PA (CSNPA) was founded in 2015 in order to fill the growing need and interest for managed chiropractic care in Pennsylvania.

With the Triple Aim in mind, both of our organizations share the same core philosophy of creating a sustainable win-win relationship for the patient, provider and carrier. The bridge we create allows for the best patient outcome and experience, significant dollar and resource savings for the carrier, State, ACO and/or employer and better working environment for the provider.

High Cost of Spine Care in the U.S.

- The U.S. health care system spends about as much each year on spine problems as it does on cancer.

  - *Journal of the American Medical Association*. 2008; 299(6):656–664

- **"Low back and neck pain was estimated to be the third-largest condition of health care spending, at $87.6 billion"**

  Annual growth was estimated to be highest for emergency care (6.4%) and prescribed retail pharmaceuticals (5.6%)

  -*Journal of the American Medical Association*. 2016; 316 (24): 2627

JAMA December 27, 2016 Volume 316,

Table 3. Personal Health Care Spending in the United States by Condition for 2013

Rank[a]	Condition	Assigned Aggregated Condition Category	2013 Spending (Billions of Dollars), $	Annualized Rate of Change, 1996-2013, %
	All conditions		2100.1	3.5
1	Diabetes mellitus	Diabetes, urogenital, blood, and endocrine diseases	101.4	6.1
2	Ischemic heart disease	Cardiovascular diseases	88.1	0.2
3	Low back and neck pain	Musculoskeletal disorders	87.6	6.5
4	Treatment of hypertension	Treatment of risk factors	83.9	5.1

- 75% of spine care expense is associated with surgery, imaging, prescriptions, injections, evaluations and emergency room visits.

  -*Data retrieved from the UnitedHealthcare national commercial claims database, July 1, 2013−June 30, 2014. November 10, 2014*

Recommendation #1:
Analyze Cost Drivers & Treatment Path Efficiency
Provider Type Comparison

Recommendation: analyze cost data based on common musculoskeletal conditions (back pain, neck pain, etc.) in order to determine potential savings and inefficiencies

Cost of Care: Episode/PMPM for the same condition by provider type

- ✓ Evaluate the costs of a condition rather than only looking at the cost of a provider type
- ✓ Identify the best treatment paths and greatest cost-savings
- ✓ More accurate in determining costs, cost-offsets or cost-savings of a particular provider type
- ✓ Analysis to include all allowable charges (MRI, radiography, treatment, pharma, etc.) paid by the carrier and paid by the patient for care.
- ✓ Track Episode and PMPM (per member per month) costs based on specific ICD-10 codes separated by type of treating provider

NORTH CAROLINA STATEWIDE CLAIMS' DATA ANALYSIS

State Health Plan for Teachers and State Employees (NCSHP)

Blue Cross Blue Shield of North Carolina – May 2016

Treatment Path Comparison:

headaches, neck and low back pain

(uncomplicated and complicated)

Evaluated the most common diagnosis codes used across all 3 professions

(Medical/Osteopathic, Chiropractic, and Physical Therapy)

660,000 covered beneficiaries between the years 2006-2009

(7,394,504 total claims evaluated)

Risk-adjusted analysis was utilized for claims between 2006-2009 in order to compare the more typical patient

(apples to apples)

Journal of Manipulative & Physiological Therapeutics, Volume 39, Issue 4, (May 2016)

NORTH CAROLINA STATEWIDE EMPLOYEE/TEACHER CLAIMS' DATA ANALYSIS

Results

Chiropractic care costs were on average:

33-76% less for uncomplicated low back pain

50-79% less for complicated low back pain

10%-79% less for headaches

41-80% less for uncomplicated neck pain

54-84% less for complicated neck pain

Journal of Manipulative & Physiological Therapeutics, Volume 39, Issue 4, (May 2016)

North Carolina Statewide Employee/Teacher Claims' Data Analysis

conclusions

- "Creating policies to encourage the use of lower-cost services, such as chiropractic care, may be a mechanism to mitigate the escalating costs associated with headache management."
- "Given our cost-conscious healthcare environment it would appear reasonable to ensure that patients with neck pain have adequate access to DC [doctor of chiropractic] services."
- "Policy makers are beginning to use levers that incent the use of lower cost services for the management of LBP, such as DC care, to mitigate the rising cost associated with specialty/referral care."

Referral care: hospitals, surgical centers, emergency medicine, and other specialty referral services and providers

Journal of Manipulative & Physiological Therapeutics, Volume 39, Issue 4, (May 2016)

Recommendation #2:
Incentivize Lower Cost Treatment Path Utilization

As multiple studies suggest and conclude:

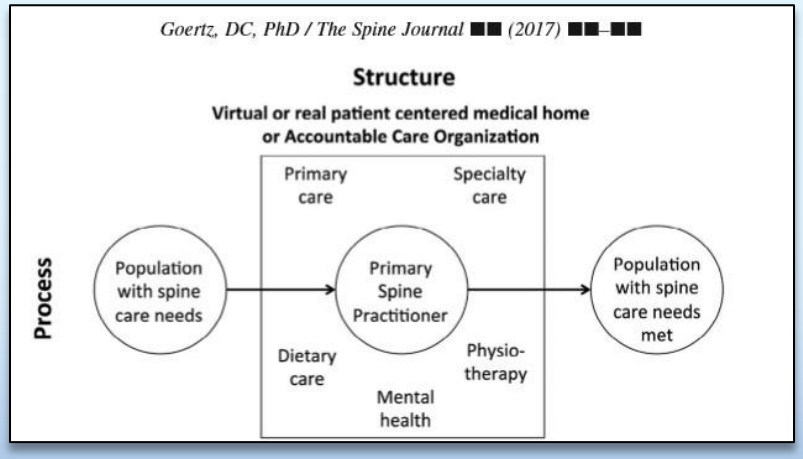
Incentivize the use of chiropractic care as a first line treatment for musculoskeletal conditions (especially, back and neck pain and headaches).

Lever examples:

- ✓ Tiered copays
  - Lower copays for chiropractic when compared to more expensive and invasive treatments such as opioid medications, spinal injections and surgery
- ✓ Exempt low cost, conservative care choices from plan deductibles (if applicable)
- ✓ Avoid barriers to accessing chiropractic care (such as requiring PCP referrals) in order to avert driving patients into more expensive treatment paths

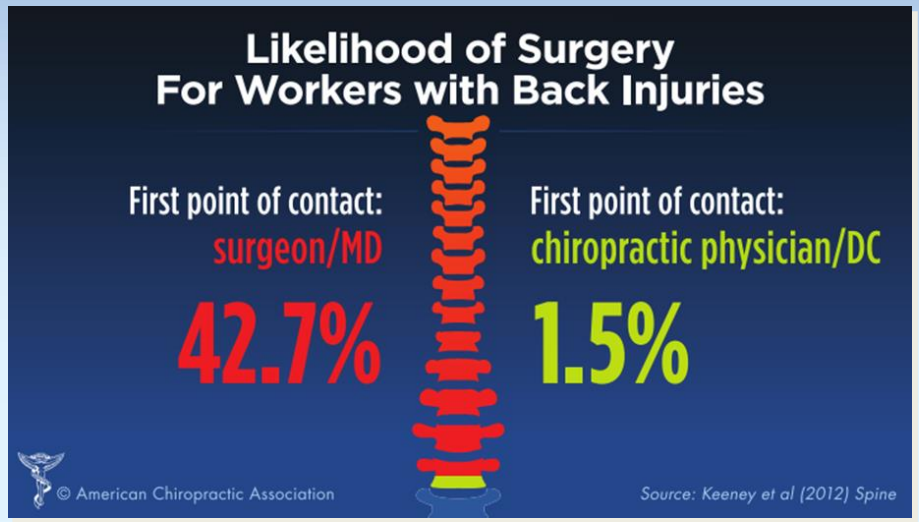
Primary Spine Practitioner (PSP) Model:
The Doctor of Chiropractic

- "Care of spine pain patients can be time-consuming and challenging, particularly to primary care providers whose minimal training in spine care can produce discordant care"
- "We believe that changing how spine care is delivered can help achieve triple-aim goals of improved care, improved outcomes, and reduced costs"
- "Central to this process is the establishment and empowerment of a Primary Spine Practitioner (PSP) who can manage acute and chronic spine care and function within a patient-centered medical home accountable Care Organization, or independently (as a virtual member of such organizations)."
- "Patients with back pain who present to a health-care system will be initially referred to the PSP."
- "we anticipate overall per-capita costs will decline, largely through substitution of less expensive care that emphasizes patient activation and conservative care that offers alternatives to addictive medications"



A proposal to improve health-care value in spine care delivery: the primary spine practitioner
Christine M. Goertz, DC, PhD, William B. Weeks, MD, PhD, MBA, Brian Justice, DC, Scott Haldeman, MD, PhD, DC
The Spine Journal , Volume 17 , Issue 10 , 1570 – 1574. 16 June 2017

Lower Surgical Rates and Costs



- "Even after controlling for injury severity and other measures, workers with an initial visit for the injury to a surgeon had almost nine times the odds of receiving lumbar spine surgery compared to those seeing primary care providers, whereas workers whose first visit was to a chiropractor had significantly lower odds of surgery. Approximately 43% of workers who saw a surgeon had surgery within 3 years, in contrast to only 1.5% of those who saw a chiropractor."

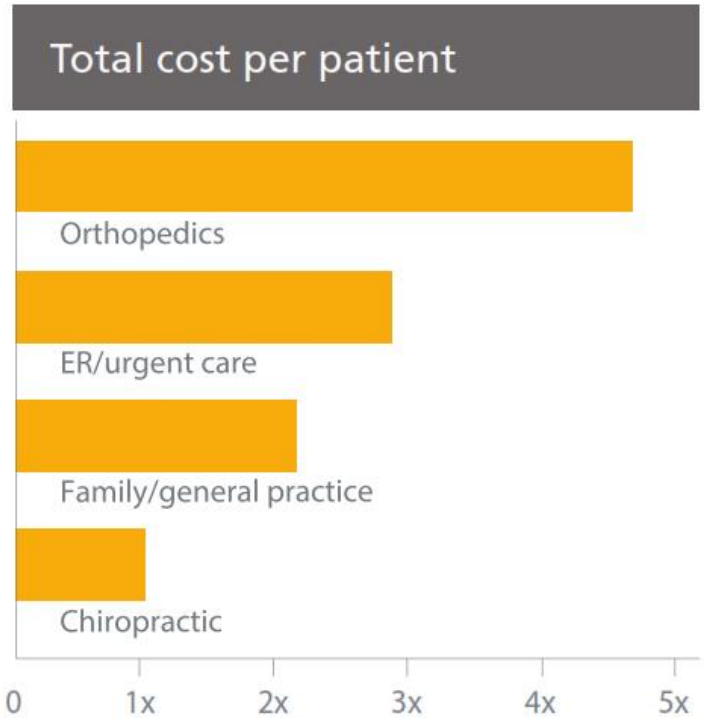
- "Persons with occupational back injuries who first saw a chiropractor had lower odds of chronic work disability and early receipt of magnetic resonance imaging (MRIs)"… "and higher rates of satisfaction with back care."

Early predictors of lumbar spine surgery after occupational back injury: results from a prospective study of workers in Washington State.

Keeney BJ[1], Fulton-Kehoe D, Turner JA, Wickizer TM, Chan KC, Franklin GM.

Spine. 2013 May 15;38(11):953-64

Cost impact by first provider seen for spine care treatment



Did you know?

More than 30% of Americans have a musculoskeletal condition that requires medical attention.[1]

The **U.S. health care system** spends about as much each year on spine problems as it does on cancer.[2]

Spinal patients starting with a chiropractor see an average of 1.7 different providers compared to 3.2 different providers for spinal patients starting with other specialties.[3]

1. American Association of Orthopedic Surgeons. The burden of musculoskeletal diseases in the United States. Rosemount, IL: American Academy of Orthopedic Surgeons; 2008.

2. Expenditures and health status among adults with back and neck problems, JAMA. 2008; 299(6):656–664.

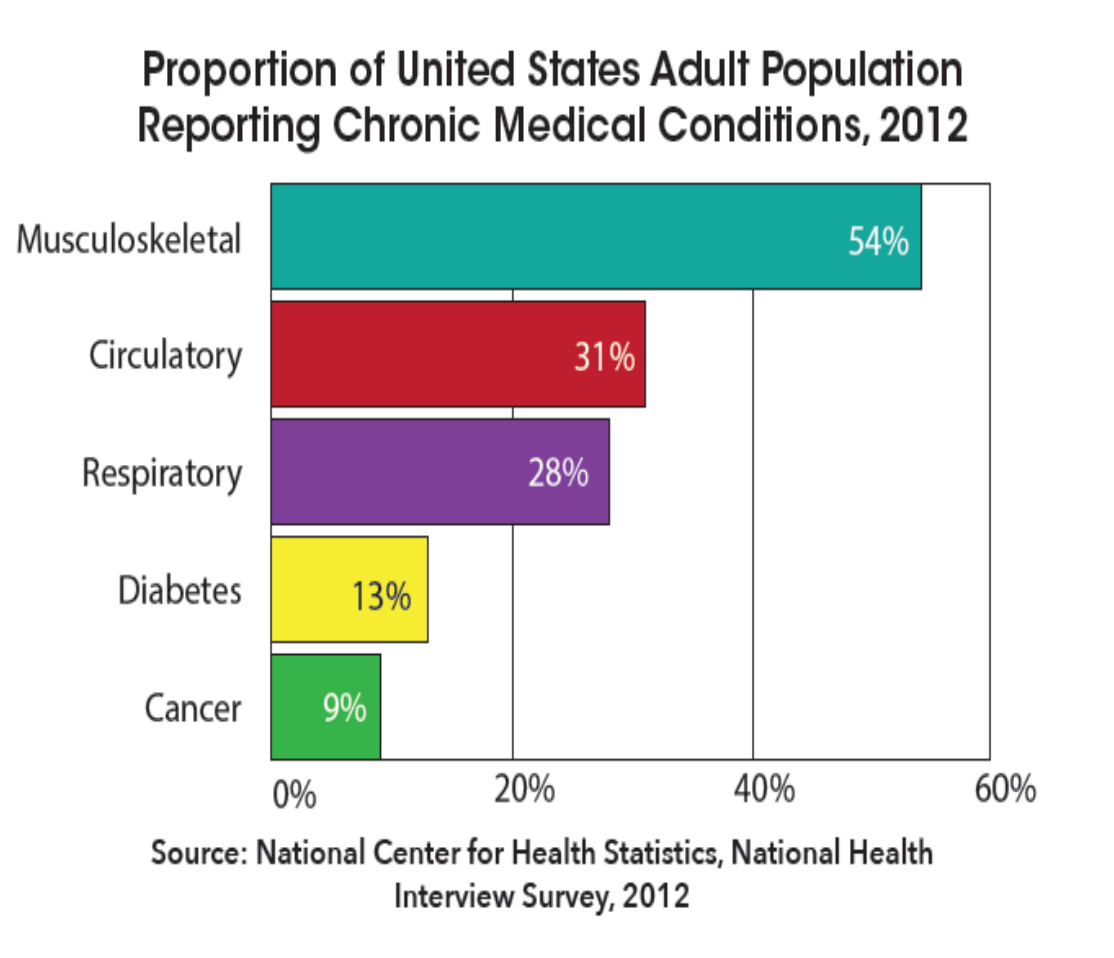
3. Elton D. The distribution and analysis of annualized claims data for more than 3.7 million commercial health plan members. Data retrieved from the UnitedHealthcare national commercial claims database, July 1, 2013–June 30, 2014. November 10, 2014.

Optum.com

Chronic Disease/Pain Management
Musculoskeletal

- What are the current treatment/management options?
- Do current policies encourage treatment paths resulting in the lowest cost and best treatment outcomes?
- What are the costs to the State?
- What are the long-term consequences of the current options and secondary costs?
  - (opioid dependency/addiction, disability, loss of productivity, condition deterioration, recurrences and future medical costs, etc.)

Chronic Disease/Pain in the U.S.



Current State Employee Health Plan and Medicaid Policies

- State employees (dependents and partners) and Medicaid recipients suffering from chronic pain and disease do not receive the drug-free option of receiving chiropractic supportive care for chronic pain and disease.

Recommendation #3:
Instate Chiropractic Chronic Disease/Pain Management

Add a policy for the inclusion of Chiropractic Supportive Care:

Chiropractic Supportive Care means continuous, interval-based long-term treatment that is necessary for patients with chronic pain and/or disease. This care includes, but is not limited to, treatment for patients who must resume care, notwithstanding having been discharged from chiropractic care as cured for any particular ailment, because that person's body is unable to sustain those results due to treatment withdrawal.

Chiropractic Chronic Disease & Pain Management:

- ✓ Prevents opioid dependence/addiction
- ✓ Limits expensive inpatient admissions and readmissions
- ✓ Decreases rates of costly injections and surgeries
- ✓ Halts or slows deterioration and decreases future medical costs
- ✓ Allows for better productivity and greater participation in the workplace and community
- ✓ Prevents disability and paid sick leave
- ✓ Improves employee/recipient satisfaction and provides a drug-free alternative for managing chronic disease

Delaware Medicaid Expansion of Cost Effective Chiropractic Care - 2016

DEPARTMENT OF HEALTH AND SOCIAL SERVICES
DIVISION OF MEDICAID AND MEDICAL ASSISTANCE
Statutory Authority: 31 Delaware Code, Section 512 (31 **Del.C.** §512)

PROPOSED

PUBLIC NOTICE

Chiropractors' Services

DMMA PROPOSED REGULATION APA 16-025a REVISION

- "DMMA would like to extend coverage of chiropractors' services to all Delaware Medicaid beneficiaries in an effort to increase the quality of care, as well as reduce long-term costs of treating chronic pain. Pain is a leading cause of disability and a major contributor to healthcare utilization."

- "Conventional medical treatment for chronic musculoskeletal pain (e.g., nonsteroidal anti-inflammatory drugs and surgery) and use of opioids often lack long-term benefit or subject patients to other risks, such as medication side effects and opioid dependency. It is also costly to the United States, not just in terms of health care expenses and disability compensation, but with respect to lost productivity and employment, reduced incomes, lost school days, and decreased quality of life. According to the National Health Statistics Report, No. 98, issued on October 12, 2016, "Use of Complementary Health Approaches for Musculoskeletal Pain Disorders Among Adults: United States, 2012," there is increasing clinical trial evidence for the efficacy of some complementary health approaches in treating specific musculoskeletal pain disorders, such as chiropractic"

Fiscal Impact

The expansion of chiropractic services is proposed as a cost effective alternative to traditional pain treatment and management services. There is no estimated fiscal impact.

Outcome: the public comment period ended on 1/2/2017. No comments were received and the proposal was accepted. CMS approved the State's request and the plan took effect (retroactively) on 1/1/2017.

Low Back Pain Episode Costs

funded by the National Institutes of Health

Analysis of Medicare recipients with chronic Low back pain (cLBP) over 5 years, between 2007 and 2011

Chiropractic care reduces Medicare costs for chronic low back pain by 50-80%

"patients who obtained only CMT [Chiropractic Manipulative Therapy] had Medicare Part A expenditures that were about 80% lower, and Part B and D expenditures that were about 50% lower, than those of patients who did not use any CMT during their cLBP episode."

"expenditures for CMT were offset by lower expenditures for psychiatric, physical therapist (PT), or DO services and with substantially lower pharmaceutical (and particularly pain medication) costs"

"back surgery rates were substantially lower among patients who used only CMT"

THE ASSOCIATION BETWEEN USE OF CHIROPRACTIC CARE AND COSTS OF CARE AMONG OLDER MEDICARE PATIENTS WITH CHRONIC LOW BACK PAIN AND MULTIPLE COMORBIDITIES

William B Weeks, MD, PhD, MBA, Brent Leininger, DC, James M Whedon, DC, MS, Jon D Lurie, MD, MS, Tor D Tosteson, ScD, Rand Swenson, DC, MD, PhD, Alistair J O'Malley, PhD, and Christine M Goertz, PhD, DC

Journal of Manipulative and Physiological Therapeutics : February 2016; 39:63-75.e2

Low Back Pain Episode Costs

continued

"Our findings suggest that, from a Medicare cost standpoint, CMT may be a cost-efficient first line treatment choice for older, multiply-comorbid patients with cLBP"

"If policymakers encouraged DCs [Doctors of Chiropractic] to have a greater role in initially managing such patients, patients may have episodes of care that were shorter and less costly (both overall and per episode day), and they might have lower pharmaceutical expenditures for pain medications"

THE ASSOCIATION BETWEEN USE OF CHIROPRACTIC CARE AND COSTS OF CARE AMONG OLDER MEDICARE PATIENTS WITH CHRONIC LOW BACK PAIN AND MULTIPLE COMORBIDITIES

William B Weeks, MD, PhD, MBA, Brent Leininger, DC, James M Whedon, DC, MS, Jon D Lurie, MD, MS, Tor D Tosteson, ScD, Rand Swenson, DC, MD, PhD, Alistair J O'Malley, PhD, and Christine M Goertz, PhD, DC

Journal of Manipulative and Physiological Therapeutics : February 2016; 39:63-75.e2

Opioids

- Nationwide, on average, 82.5 out of every 100 Americans had a prescription written for opioid painkillers in 2012 (DE is 90.8:100, PA: 88.2:100) *(Centers for Disease Control and Prevention)*
- Use of opioids – most common treatment for low back pain *(Univ. Texas Health Science Center)*
- Up to 50 percent of back pain sufferers are prescribed an opioid - "Opioids are impeding the effective treatment of low back pain" *(The BackLetter: January 2015 –Vol. 30)*
- Patients treated with opioid drugs were on average: disabled 69 days longer than and had a 3 times increased risk for surgery *(Spine. 2007; 32:2127-2132)*
- A recent meta-analysis revealed that narcotics provide little to no benefit in acute back pain, they have no proved efficacy in chronic back pain, and 43% of patients have concurrent substance abuse disorders, with aberrant medication-taking disorders as high as 24% of cases of chronic back pain. *(JAMA Intern Med. 2013 ;173(17):1573–1581)*
- "When you talk to people who use heroin today, almost all of them will tell you that their opioid addiction began with exposure to painkillers." *-Dr. Kolodny, president of Physicians for Responsible Opioid Prescribing*

Truven Health Analytics-NPR Health Poll: Back Pain

May 2017

- "Many more patients are getting opioids than you would expect"
- "back pain sufferers who are prescribed opioids for pain may be particularly at risk for dependency and addiction"
- "Among those experiencing such pain, 70 percent went to a medical doctor, 14 percent to a chiropractor"
- "The most frequently mentioned treatment recommended by a medical professional was prescription painkillers"
- "Curbing inappropriate opioid prescriptions for chronic pain is a focus of efforts"

-www.npr.org/sections/health-shots/2017/05/19/528516985/poll-doctors-are-still-prescribing-lots-of-opioids-for-low-back-pain
-http://truvenhealth.com/media-room/press-releases/detail/prid/208/prescription-painkillers-most-common-treatment-for-patients-seeking-care-for-back-pain
-http://truvenhealth.com/Portals/0/NPR-Truven-Health-Poll/TRU_17785_0317_NPR%20Poll_Back%20Pain_final.pdf

Recommendation #4:
Lower Opioid Usage Rates with Chiropractic Care

- ✓ Incent State employees to opt for lower cost, conservative options such as chiropractic physician care over opioid prescriptions
- ✓ Chiropractic physician care trials prior to authorization of an opioid pain medication use

  *If an opioid is unavoidable, chiropractic should be a concurrent part of the treatment plan

- ✓ Provide chiropractic supportive care as a drug-free option for chronic disease/pain
- ✓ Offer programs that transition current long-term opioid users to other pain management strategies, including nonpharmacological treatments such as chiropractic
- ✓ Work Comp: Encourage chiropractor as first doctor of contact for work-related spinal injuries
- ✓ Member education (newsletter, etc.)

Low Back Pain Treatment Guidelines

February 2017

The American College of Physicians (ACP) recommends in an evidence-based clinical practice guideline published in *Annals of Internal Medicine* that physicians and patients should treat acute or subacute low back pain with:

non-drug therapies such as spinal manipulation, superficial heat, massage, acupuncture

[common procedures offered by chiropractic physicians]

> "Physicians should avoid prescribing unnecessary tests and costly and potentially harmful drugs, especially narcotics, for these patients."
>
> *Nitin S. Damle, MD, MS, MACP, president, American College of Physicians*

Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians

Amir Qaseem, MD, PhD, MHA; Timothy J. Wilt, MD, MPH; Robert M. McLean, MD; Mary Ann Forciea, MD

Annals of Internal Medicine, 14 February 2017

"In 2012, the pharmaceutical industry spent more than $27 billion on drug promotion— more than $24 billion on marketing to physicians and over $3 billion on advertising to consumers (mainly through television commercials). This approach is designed to promote drug companies' products by influencing doctors' prescribing practices."

The Pew Charitable Trusts

Among the most prevalent conflicts of interest are those arising from physicians' interactions with drug company sales representatives, or "detailers." Pharmaceutical companies employ about 90,000 detailers… to market their products to physicians"

Journal of General Internal Medicine

In 2014, pharmaceutical profits surpassed $1 trillion and are expected to climb past $1.3 trillion by 2018

Reuters

"The opioid lobby has been doing everything it can to preserve the status quo of aggressive prescribing."

Andrew Kolodny, MD, founder, Physicians for Responsible Opioid Prescribing

"Americans now consume four-fifths of the global supply [of opioids]"

The Economist

"Breaking the dependence of the medical profession on the pharmaceutical industry will take more than appointing committees. It will take a sharp break from an extremely lucrative pattern of behavior."

Dr. Angell, the first female editor-in-chief of the New England Journal of Medicine

"Conflicts of interest may bias more than research. They may also affect influential guidelines issued by professional and government bodies, as well as decisions by the Food and Drug Administration (FDA)."

Journal of the American Medical Association

"Manipulation, which is supported by most guidelines, is recommended by PCPs in only 2% of the acute nonspecific LBP cases. This gap in adherence to evidence-based practice recommendations by clinicians has become popularly known as the "know-do gap"—the gap between what is known and what is done in practice."

Population Health Management

"One opportunity to facilitate compliance with clinical guidelines is to assure that the first health care provider seen is best able to administer the treatment likely to benefit a particular patient. This can be achieved, in part, by implementing a triage approach for the early referral of well-defined subgroups of patients into appropriate clinical pathways."

Population Health Management

Greater Access To Chiropractic Lowers Opioid Prescription Rates

Study of Disabled Medicare Recipients

"A higher per-capita supply of DCs [Doctors of Chiropractic] and Medicare spending on CMT [chiropractic manipulative therapy] were inversely associated with younger, disabled Medicare beneficiaries obtaining an opioid prescription"

"findings suggest that America's opioid epidemic might be reduced should Medicare consider a clinical trial of chiropractic spinal manipulation prior to conventional medical care for patients with neck or back pain"

Cross-Sectional Analysis of Per Capita Supply of Doctors of Chiropractic and Opioid Use in Younger Medicare Beneficiaries
William B. Weeks, MD, PhD, MBA, Christine M. Goertz, DC, PhD
Journal of Manipulative & Physiological Therapeutics, Volume 39, Issue 4, Pages 263–266 (May 2016)

Typical Carrier Management of Chiropractic Services:
Inefficient & Increases costs to the State

- Medical management programs are currently designed to restrict/limit access to chiropractic physician care
  - Such as denying care beyond arbitrary yearly visit caps or requiring a referral
- False premise that savings are gained through restricting access to chiropractic
  - Decreased access drives patients into expensive care options (pharma/opioids, surgery, injections, urgent care/ER, etc.)
  - Policies that deny chiropractic as an option for chronic disease/pain management promotes costly and addictive opioid prescription use and increased surgical rates
- Higher condition recurrence rates and associated treatment costs
  - Chiropractic care reduces recurrence rates when compared to medical care and physical therapy[1,2]

[1]*Journal of Occupational Rehabilitation, Volume 39, Issue 4, Pages 263–266 (May 2016)*
[2]*Journal of Occupational and Environmental Medicine March 14, 2011*

Higher Costs Associated with Restricting Access to Chiropractic Physician Care

- The RAND Health Insurance Experiment found that use of chiropractic care (i.e., access) was cut in half when patient cost-share was 25% or more of the visit cost.
- The current trend towards higher patient cost-sharing may be driving patients away from the lower cost chiropractic services and towards more expensive patterns of care.
- In 2007, the North Carolina legislature reversed a mandate limiting copayment amounts for chiropractic physician care in the North Carolina State Health Plan (NCSHP) population.
- This policy change significantly increased the copayments for chiropractic physician care.
- **Following the policy change in late 2007, which raised chiropractic copayments and the patient cost-share, spending on low back pain increased from 105.6 million dollars in 2007 to 130.2 million dollars in 2009 (a 24.6 million increase in two years)**

Journal of Manipulative & Physiological Therapeutics, Volume 39, Issue 4, Pages 252-262 (May 2016)

Delaware Chiropractic Services Network (DCSN)

Effective time-tested cost-saving solutions

- ✓ Substitution of low-cost chiropractic care for high cost options (opioids, surgery, urgent care/ER, etc.)
- ✓ DCSN management of the chiropractic physician network for insurance companies at no cost to the State or the carrier (providers pay a small admin fee)
- ✓ Allows for patients to receive the necessary amount of chiropractic care (with the associated savings) by removing arbitrary care restrictions
- ✓ Closely monitors provider performance and identifies outliers (over-utilizers)/Peer oversight
- ✓ Individual outliers are educated and given the opportunity to improve performance without penalizing or restricting the remaining network of efficient chiropractors
- ✓ Provider education (best practices, documentation, etc.)
- ✓ High patient satisfaction rates

Summary:
DCSN Recommendations for Cost Savings and Reducing Opioid Use in the State Employee and Medicaid plans

1. Incentivize the use of chiropractic care as a first line treatment for back and neck pain and headaches.

2. Chiropractor as doctor of first contact for work-related spine injuries

3. Instate policies allowing chiropractic care for chronic disease/pain management

4. Chiropractic physician care trials prior to authorization of:
    - Spinal surgery
    - Spinal injections
    - Opioid pain medication use

    *If an opioid is unavoidable, chiropractic should be a concurrent part of the treatment plan

5. Transition long-term opioid users for musculoskeletal pain to chiropractic care

6. DCSN peer oversight of individual provider utilization and performance

Addendum

Additional resources regarding the role of chiropractic in reducing rates of opioid use

THE NATIONAL PRESS CLUB

National Press Club Press Conference
Held on March 14, 2017
Improving Drug Free Pain Care in America

http://www.f4cp.com/flash-video/videos/Improving_Drug_Free_Pain_Care_in_America.mp4

CHIROPRACTIC
A KEY TO AMERICA'S
OPIOID EXIT STRATEGY

Foundation for Chiropractic Progress White Paper
http://www.f4cp.com/files/industry-news/f4cp-opioids-2.0-white-paper-web.pdf

SCU
SOUTHERN CALIFORNIA UNIVERSITY OF HEALTH SCIENCES

Association between Utilization of Chiropractic Services and Use of Prescription Opioids among Patients with Low Back Pain

James Whedon DC, MS
Southern California University of Health Sciences, Whittier, CA

CLINICAL COMPASS
Evidence · Education · Empowerment
Powered by CCGPP

Objective

Among patients with low back pain, to compare recipients of chiropractic services with non-recipients with regard to use of prescription opioid analgesics.

Introduction

The United States is burdened by an epidemic of opioids prescribed for spinal pain, with escalating costs and incidence of adverse events , but no long-term improvement in clinical outcomes. Spinal manipulation as practiced by chiropractors is an effective non- pharmacological approach for care of spinal pain, and the supply of chiropractors as well as spending on spinal manipulative therapy is inversely correlated with opioid prescriptions in younger Medicare beneficiaries. This suggests that increased availability and utilization of chiropractic services could lead to reductions in opioid prescriptions, but it is not known how chiropractic care may influence patient behavior with regard to use of prescription opioids. The purpose of this study was to quantify the association between utilization of chiropractic services for low back pain and use of prescription opioids.

Design & Methods

We hypothesized that recipients of chiropractic services have lower likelihood of filling a prescription for an opioid analgesic, as compared to non-recipients. To test this hypothesis, we employed a retrospective cohort design for analysis of the New Hampshire All-payer Claims Database. The study population was comprised of patients aged 18-99 years residing in New Hampshire, with office visit for low back pain at least twice within 90 days. We excluded subjects diagnosed with cancer.

We identified cohorts of recipients and non-recipients of chiropractic services in 2013. We compared the cohorts with regard to incidence of prescription fills for opioids and associated charges. We employed logistic regression to compare recipients of chiropractic services to non-recipients with regard to likelihood of opioid prescription fill.

We controlled for patient demographics and comorbidities. Because cohort assignment was not randomized, the study was at risk for selection bias, because recipients and non-recipients of chiropractic care may differ with regard to their disposition toward use of prescription medications. To reduce this risk of selection bias, we employed weighted propensity scoring to create equivalent cohorts for comparison.

Opioids Prescribed for Back Pain

Acetaminophen/Codeine	Meperidine HCl
Acetaminophen/Codeine #2	Methadone HCl
Acetaminophen/Codeine #3	Methadone HCl Intensol
Acetaminophen/Codeine #4	Morphine Sulfate
Acetaminophen/Codeine Phosphate	Morphine Sulfate CR
Butalbital	Morphine Sulfate ER
Butalbital Compound	Oxycodone HCl
Codeine Sulfate	Oxycodone HCl CR
Codeine/Acetaminophen	Oxycodone/Acetaminophen
Fentanyl	Oxycodone/Aspirin
Fentanyl Citrate Oral Transmucosal	Oxycodone/Ibuprofen
Hydrocodone Bitartrate	Oxymorphone Hydrochloride
Hydrocodone Bitartrate/ Acetaminophen	Pentazocine/Acetaminophen
Hydrocodone Bitartrate/Homatropine	Pentazocine/Naloxone HCl
Hydrocodone Polistirex/ Chlorpheniramine	Tramadol HCl
Hydrocodone/Acetaminophen	Tramadol HCl ER
Hydrocodone/Homatropine	Tramadol Hydrochloride/ Acetaminop
Hydrocodone/Ibuprofen	Dihydrocodeine
Hydromorphone HCl	Levorphanol
Hydromorphone HCl Dosette	

Discussion

Few studies have examined the comparative effectiveness of non-pharmacological care for low back pain as an upstream primary care strategy for reducing the use of opioid analgesics. Use of chiropractic care may lead to reduced use of opioid medications among patients with low back pain. Such a finding could exert a positive impact on patient care by pointing to a strategy for reducing unnecessary patient risk, particularly with regard to use of opioids.

Limitations

No dates associated with prescription fills (year only). No diagnoses associated with prescription fills. No way to identify subjects with and without pharmacy coverage. Limited number of covariates available for propensity scoring and modelling.

Results

Patients with Opioid Prescription Fills

Cohort	N	Patients with Opioid Fills (%)	Patients with No Opioid Fills (%)
Recipients	6,868	1,286 (19)	5,582 (81)
Non-recipients	6,516	2,274 (35)	4,242 (65)

Likelihood of Opioid Prescription Fill

The adjusted likelihood of filling a prescription for an opioid was 55% lower among chiropractic recipients as compared to non-recipients (O.R. 0.45; 95% CI 0.40 - 0.47; p<0.0001).

	Recipients			Non-recipients				
Charges (Year)	N	Average Charges	SD	N	Average Charges	SD	Difference in Means	ttest pooled P
Clinical (2013)	6,866	$1,513	$5,678	6,478	$6,766	$14,550	5,253	<0.0001
Opioids (2013)	1,523	$154	$563	3,317	$592	$2,107	438	<0.0001
Clinical + Opioids (2013)	1,505	$2,402	$5,256	3,142	$6,818	$9,233	4,416	<0.0001
Clinical (2014)	3,904	$2,066	$7,718	2,906	$6,917	$16,193	4,851	<0.0001
Opioids (2014)	1,286	$204	$579	2,274	$921	$2,816	717	<0.0001
Clinical + Opioids (2014)	841	$3,697	$7,863	1,381	$7,021	$9,495	3,324	<0.0001

Summary & Conclusion

The adjusted likelihood of filling a prescription for a prescription opioid was 55% lower among chiropractic recipients as compared to non-recipients. Average per-person charges for clinical services for low back pain and for prescription opioids were also significantly lower for recipients of chiropractic services.

Acknowledgements & Disclosure

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Rhode Island
New law for reduction of opioid abuse

Posted Jul 11, 2017 at 4:04 PM

PROVIDENCE Journal

PROVIDENCE, R.I. — Gov. Gina Raimondo has signed into law legislation that would require insurers to cover non-opioid based chiropractic and osteopathic treatments for pain for people with substance-use disorders.

PROVIDENCE, R.I. — Gov. Gina Raimondo has signed into law legislation that would require insurers to cover non-opioid based chiropractic and osteopathic treatments for pain for people with substance-use disorders.

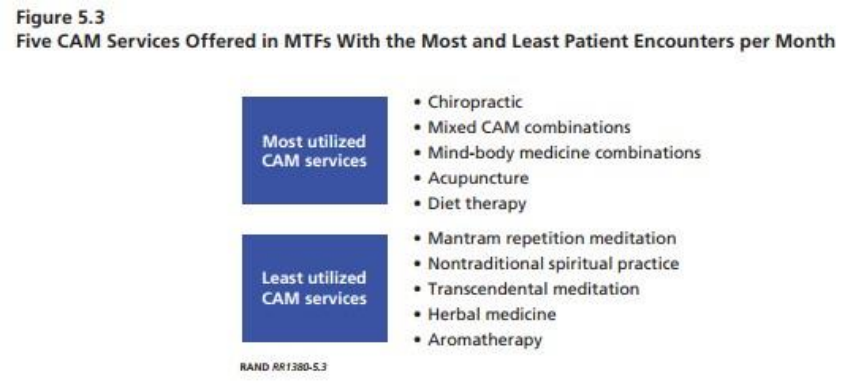
The legislation (S-0789Aaa and H-6124Aaa) introduced by Sen. Frank Lombardo III, D-Johnston, and Rep. Gregg Amore, D-East Providence, requires patients with substance-use disorders to be given access to evidence-based non-opioid pain treatment. Patients seeking the treatments must have insurance coverage, and the chiropractic care and osteopathic manipulative treatments must be deemed medically necessary and be performed by licensed individuals.

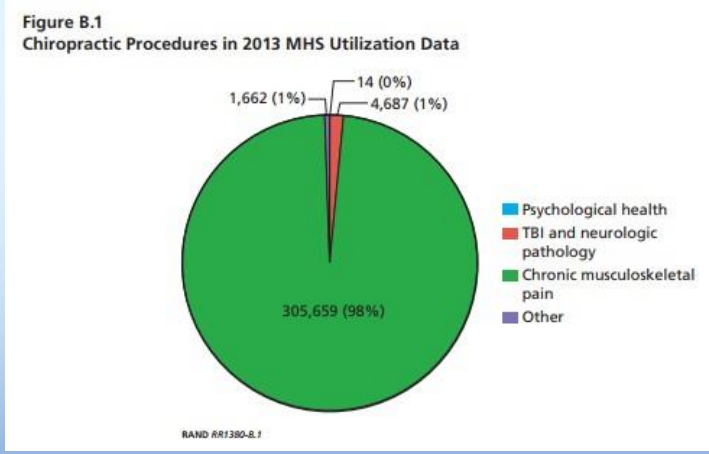
"With the opioid crisis worsening every day, it is imperative that insurance companies cover alternate and effective treatments for chronic pain, especially in the case of patients with substance use problems," Sen. Lombardo said in a statement released Tuesday.

Amore said: "It is no secret that opioids have been overprescribed in our state and that has led to a health epidemic. For many patients, particularly those with substance abuse problems, opioids are the wrong choice to manage pain. This bill will ensure that other proven treatments for pain are covered by insurance, hopefully lessening the impact of opioid abuse in our state."

Complimentary and Alternative Medicine (CAM) in the Military Health System - 2017

- "Chiropractic is the most popular CAM [service in terms of patient demand"
- "MTFs [Military Treatment Facilities] also reported that chiropractic is highly effective as measured by patient and provider report of success in symptom reductions and in observed reductions in medications of different types"
- "MTFs reported using chiropractic almost exclusively to treat various types of pain: back pain (96 percent of MTFs offering chiropractic) and **chronic pain (90 percent)** , followed closely by non-TBI-related headache (61 percent), acute pain (e.g., posttrauma/injury or preoperative or postoperative; 61 percent), arthritis (51 percent), and pain related to TBI (41 percent). The only 58 Complementary and Alternative Medicine in the Military"
- "VA did not include chiropractic in its [previous] survey because it is now considered mainstream, and no longer CAM, in the VHA [Veterans Health Administration]"





https://www.rand.org/content/dam/rand/pubs/research_reports/RR1300/RR1380/RAND_RR1380.pdf

JAMA®
The Journal of the American Medical Association

Acute Low Back Pain Treatment

April 2017

"**Findings:** In this systematic review and meta-analysis of 26 randomized clinical trials, spinal manipulative therapy was associated with statistically significant benefits in both pain and function"

Association of Spinal Manipulative Therapy With Clinical Benefit and Harm for Acute Low Back Pain Systematic Review and Meta-analysis

Neil M. Paige, MD, MSHS[1]; Isomi M. Miake-Lye, BA[1,2]; Marika Suttorp Booth, MS[3]; et al

Journal of the American Medical Association April 11, 2017;317(14):1451-1460.

Effective Care

"In patients with chronic spinal pain syndromes, spinal manipulation, if not contraindicated, may be the only treatment modality of the assessed regimens that provides broad and significant long-term benefit."

Long-term follow-up of a randomized clinical trial assessing the efficacy of medication, acupuncture, and spinal manipulation for chronic mechanical spinal pain syndromes.

Muller R, Giles LG.

J Manipulative Physiol Ther. 2005 Jan;28(1):3-11

"Chiropractic was more beneficial than placebo in reducing pain and more beneficial than either placebo or muscle relaxants in reducing GIS [Global Impression of Severity Scale]"

A randomized clinical trial comparing chiropractic adjustments to muscle relaxants for subacute low back pain.

Hoiriis KT, et al.

J Manipulative Physiol Ther. 2004 Jul-Aug;27(6):388-98

Effective Care

"In a subgroup of patients with acute nonspecific LBP (low back pain), spinal manipulation was significantly better than nonsteroidal anti-inflammatory drug diclofenac and clinically superior to placebo."

Spinal High-Velocity Low Amplitude Manipulation in Acute Nonspecific Low Back Pain: A Double-Blinded Randomized Controlled Trial in Comparison With Diclofenac and Placebo

von Heymann, Wolfgang J. Dr. Med[*]; Schloemer, Patrick Dipl. Math[†]; Timm, Juergen Dr. RER, NAT, PhD[†]; Muehlbauer, Bernd Dr. Med[*]

Spine. 2013 Apr 1;38(7):540-8

"the first reported randomized controlled trial comparing full CPG [clinical practice guidelines]-based treatment, including spinal manipulative therapy administered by chiropractors, to family physician-directed UC [usual care] in the treatment of patients with AM-LBP (acute mechanical low back pain)."

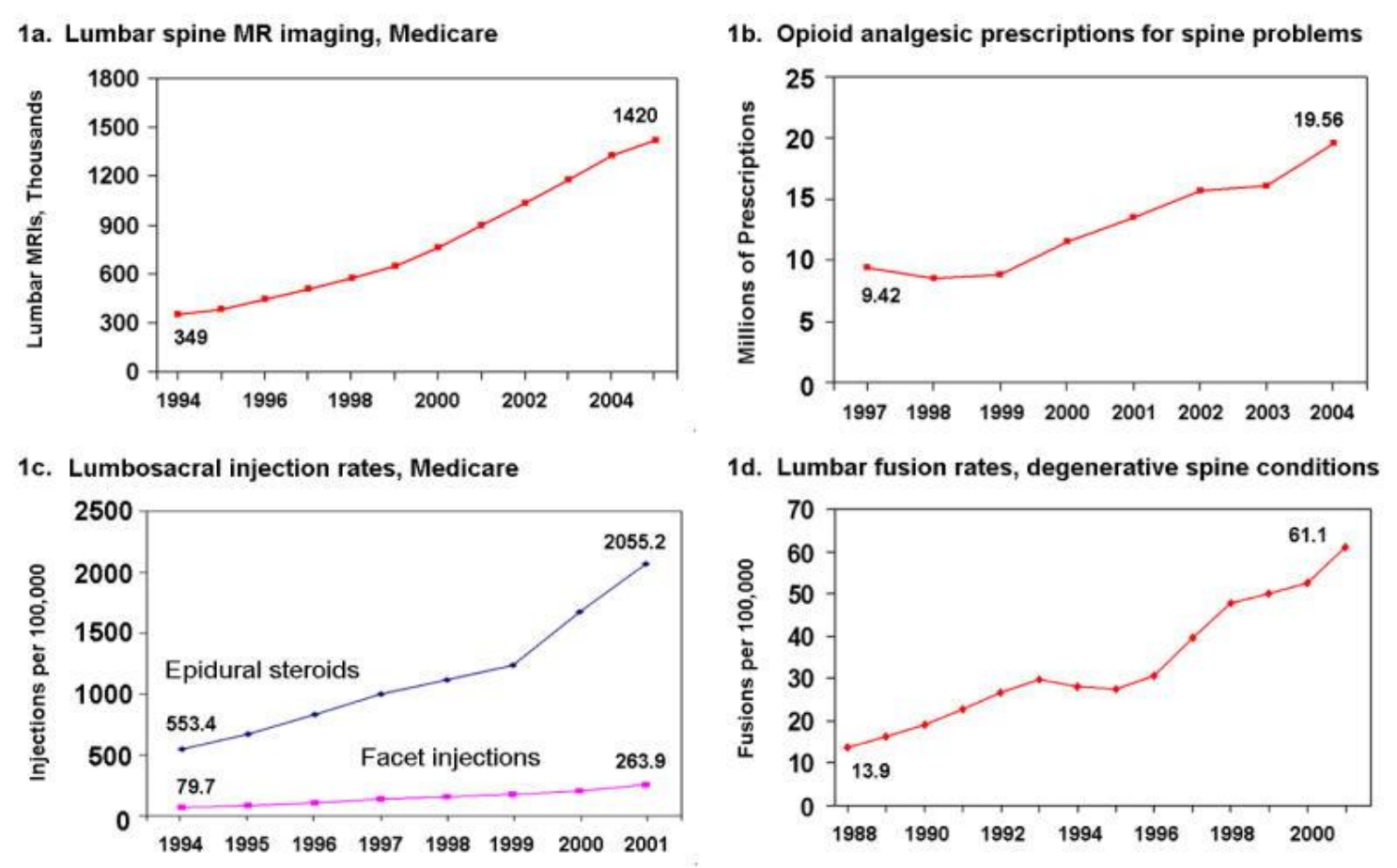
"treatment including CSMT [chiropractic spinal manipulative therapy] is associated with significantly greater improvement in condition-specific functioning" than usual care provided by a family physician."

The Chiropractic Hospital-based Interventions Research Outcomes (CHIRO) Study: a randomized controlled trial on the effectiveness of clinical practice guidelines in the medical and chiropractic management of patients with acute mechanical low back pain.

Bishop PB, Quon JA, Fisher CG, Dvorak MFS.

Spine Journal, 2010;10:1055-1064

Unsustainable Trends
Costly Back Pain Overtreatment



Journal American Board of Family Medicine : 2009; 22(1): 62–68.

Spine Care Cost Comparison

Journal Population Health Management 2013

Specialty	# Providers/ Episode	Radiology (%)	Pharma (%)
Chiropractor	**1.6**	**25**	**14**
PCP	2.1	37	37
Orthopedist	2.6	**80**	31
ER/Urgent Care	3.2	47	33
Neurologist	3.3	60	38
Physical Medicine & Rehab	3.0	59	40
Physical/Occup. Therapist	**4.1**	54	**43**

Cost Drivers:

Green= Lowest Rates Red=Highest Rates

Conservative spine care: opportunities to improve the quality and value of care.
Kosloff TM, Elton D, Shulman SA, Clarke JL, Skoufalos A, Solis A.
Population Health Management 2013;16:390–396.

Journal Population Health Management 2013

- Manipulation, which is supported by most guidelines, is recommended by PCPs in only 2% of the acute nonspecific LBP cases. This gap in adherence to evidence-based practice recommendations by clinicians has become popularly known as the "know-do gap"—the gap between what is known and what is done in practice.

- The treatment options recommended for persons at "medium risk" are manual therapy (eg, manipulation) and specific exercises. Optimally, the management of patients at "high risk" should be overseen by providers such as chiropractors, who are skilled in providing behavioral therapy in addition to the same strategies targeted for patients at medium risk.

- One opportunity to facilitate compliance with clinical guidelines is to assure that the first health care provider seen is best able to administer the treatment likely to benefit a particular patient. This can be achieved, in part, by implementing a triage approach for the early referral of well-defined subgroups of patients into appropriate clinical pathways.

Conservative spine care: opportunities to improve the quality and value of care.
Kosloff TM, Elton D, Shulman SA, Clarke JL, Skoufalos A, Solis A.
Population Health Management 2013;16:390–396.

Lower Surgical Rates and Costs

60% of patients with sciatica secondary to lumbar disk herniation benefited from chiropractic spinal manipulation to the same degree as if they underwent surgical intervention.

- "Elective lumbar diskectomy is one of the most commonly performed surgical procedures in the United States, now exceeding 250,000 cases per year"
- There was no evidence that delay in surgery adversely affected the degree of improvement.

MANIPULATION OR MICRODISKECTOMY FOR SCIATICA?
A PROSPECTIVE RANDOMIZED CLINICAL STUDY
Gordon McMorland, DC, Esther Suter, PhD, Steve Casha, MD, PhD, FRCSC, Stephan J. du Plessis, MD, and R. John Hurlbert, MD, PhD, FRCSC, FACS
Journal of Manipulative & Physiological Therapeutics. 2010 Oct;33(8):576-84

Lower Spinal Injection Rates and Costs

Comparing self-reported pain and "improvement" of patients with symptomatic, MRI-confirmed, lumbar disk herniation treated with spinal manipulative therapy (SMT) or nerve root injections (NRI).

- 76.5% improvement in the chiropractic SMT group compared to 62.7% in NRI group
- The SMT group care costs were 23% less than the NRI group
- "None of the SMT patients required surgery. Three of the NRI patients received a second injection after the 1-month data collection period, and 3 others went on to have surgery"

Symptomatic Magnetic Resonance Imaging-Confirmed Lumbar Disk Herniation Patients: A Comparative Effectiveness Prospective Observational Study of 2 Age- and Sex-Matched Cohorts Treated With Either High-Velocity, Low-Amplitude Spinal Manipulative Therapy or Imaging-Guided Lumbar Nerve Root Injections.

Peterson CK, Leemann S, Lechmann M, Pfirrmann CW, Hodler J, Humphreys BK.

Journal of Manipulative & Physiological Therapeutics. 2013 May;36(4):218-25

Chiropractic vs. Physical Therapy for Back Pain: *Costs and Recurrence Rates*

"The type of healthcare provider first visited for back pain is a determinant of the duration of financial compensation during the first 5 months. **Chiropractic patients experience the shortest duration of compensation, and physiotherapy patients experience the longest**."

"The odds of having a second episode of financial compensation were higher among the workers who first consulted a physiotherapist."

Association Between the Type of First Healthcare Provider and the Duration of Financial Compensation for Occupational Back Pain
Blanchette M-A, Rivard M, Dionne CE, Hogg-Johnson S, Steenstra I.
Journal of Occupational Rehabilitation, Volume 39, Issue 4, Pages 263–266 (May 2016)

Reduced Disability Recurrence and Costs

- Study Objective: To compare occurrence of repeated disability episodes across types of health care providers who treat claimants with new episodes of work-related low back pain (LBP)

- Chiropractic manipulation for chronic non-specific LBP in injured workers results in a decreased disability recurrence when compared to care provided by physical therapists or medical physician services

Health Maintenance Care in Work-Related Low Back Pain and Its Association With Disability Recurrence
Manuel Cifuentes, MD, PhD, Joanna Willetts, MS, Radoslaw Wasiak, PhD, MA, MSc
Journal of Occupational and Environmental Medicine March 14, 2011; Vol. 197 [epub]

Lower Costs - Prevention of Iatrogenesis & Associated Costs

The orthopedic journal, *Spine*, reaffirms and supports Chiropractic manipulation as a safe treatment for the 65 to 99 age group

"Conclusion. Among Medicare beneficiaries aged 66 to 99 years with an office visit risk for a neuromusculoskeletal problem, risk of injury to the head, neck, or trunk within 7 days was 76% lower among subjects with a chiropractic office visit than among those who saw a primary care physician."

Risk of Traumatic Injury Associated With Chiropractic Spinal Manipulation in Medicare Part B Beneficiaries Aged 66 to 99 Years

Whedon, James M. DC, MS[*]; Mackenzie, Todd A. PhD[*]; Phillips, Reed B. DC, PhD[†]; Lurie, Jon D. MD, MS[*]

Spine: 15 February 2015 - Volume 40 - Issue 4 - p 264–270

Mercer Health Benefits (2009)

"When considering effectiveness and cost together, chiropractic physician care for low back and neck pain is highly cost effective [and] represents a good value in comparison to medical physician care and widely accepted cost-effectiveness thresholds."

Do Chiropractic Physician Services for Treatment of Low Back and Neck Pain Improve the Value of Health Benefit Plans?

An Evidence-Based Assessment of Incremental Impact on Population Health and Total Health Care Spending

Arnold Milstein, MD, MPH (Mercer Health Benefits), and Niteesh Choudhry, MD, PhD (Harvard Medical School)

Mercer Health Benefits (2009)

"about 40-50% of the patients in the medical care group showed moderate or substantial improvement at four weeks. However, manual-thrust manipulation group achieved substantially more improvement; 50-90% showed moderate or substantial improvement at four weeks. This suggests that manual-thrust manipulation should be considered a front-line treatment option for patients with acute or sub-acute low back pain."

Michael Schneider, DC, PhD
School of Health and Rehabilitation Sciences,
University of Pittsburgh, Pittsburgh, PA
Feb 23, 2015

> The time is now for early integration of alternative treatment for pain relief…multiple non-pharmacological approaches, methods and practitioners with evidence to support their inclusion should be considered important tools in addressing these public health challenges.[29]
>
> – PAINS Project

PAINS; Never Only Opioids; Fall 2014, Issue 5;
http://www.painsproject.org/wp/wp-content/uploads/2014/09/pain-policy-issue-5.pdf

About PAINS: The Pain Action Alliance to Implement a National Strategy (PAINS) is a consortium of leaders working in professional societies, patient advocacy organizations, policy groups, consumers, payers and the private sector working together toward a common vision and mission. PAINS began in response to the Institute of Medicine's report, Relieving Pain in America, which was submitted to Congress on June 29, 2011. The common ground upon which the alliance was founded is the shared belief that there is a "moral imperative" to improve the treatment of pain, the status quo is no longer acceptable, and by working together, a cultural transformation can occur. We embrace three methodologies: practical bioethics, community health development, and the health literate care model.