



# The Cost-Effectiveness Paper...Now What?

Presented by  
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CEO-[www.chiro-consulting.com](http://www.chiro-consulting.com)



What is  
going to  
be YOUR  
legacy?

The Guardian logo is displayed in white serif font on a solid red rectangular background. The word "The" is positioned above "Guardian", with the "G" in "Guardian" being significantly larger and more prominent than the other letters.

**The  
Guardian**

**Forgiveness**



# About Dr. Farabaugh

- Past President-**Central Ohio Chiropractic Association**
- Past President-**Ohio State Chiropractic Association** (OSCA) 1996-1997
- Past President: **Ohio State Chiropractic Board** 2012-2013
- Appointed by **Governor's Voinovich and Strickland** for various committees and positions.
- Founder: **ChiroLtd and Chiropractic Bootcamp** seminars
- Past Chairman-The **Clinical Compass** (formerly the Council on Chiropractic Guidelines and Practice Parameters (CCGPP))
- **Published** ~ 15 papers (Clinical Practice Guidelines-CPGs) and a book chapter, etc.
- 2024 Appointed to The **Scientific Commission**/The Clinical Compass.
- **ODG Advisory Board**
- 2023 to Present: Chairman of **ACA Research Committee**
- Testimony/Expert opinion in over **100 malpractice cases**
- Fellow in **International College of Chiropractors**
- Elected: **CCE Councilor**-Cat. 2-Clinicians
- **AMI-National Physical Medicine Director**

# **The Problem:**

## **Traditional (allopathic) Costs Low Back Pain**

- What are the associated costs of a typical case per ODG?
- Source: <http://www.odg-twc.com/>

# L/S Sprain: S33.5

- Typical case **Reserve** Calculator Projections (Claim Typical)

Reserve Bucket	Estimated Exposure	Amount Paid to Date	Existing Reserves	Reserve Increase Requirement
Indemnity (-)	\$1,493.89			\$1,493.89
Medical (-)	\$3,451.15			<b>\$3,451.15</b>
Expense & Administrative (-)	\$461.66			\$461.66
<b>Total</b>	<b>\$5,406.70</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$5,406.70</b>

# L/S Sprain: S33.5

- Typical case
  - With confounding factors of:
    - Pain > 30 days, obesity, opioids, depression

## Reserve Calculator Projections (Claim Typical)

Reserve Bucket	Estimated Exposure	Amount Paid to Date	Existing Reserves	Reserve Increase Requirement
Indemnity (-)	\$4,821.20			\$4,821.20
Medical (-)	\$10,917.59			<b>\$10,917.59</b>
Expense & Administrative (-)	\$1,183.31			\$1,183.31
<b>Total</b>	\$16,922.10	\$0.00	\$0.00	<b>\$16,922.10</b>

# Intervertebral disc displacement, lumbosacral region: M51.27

- Typical Case

Best Practice* (+)	Claim Typical (+)	Claim Max (+)	
Indemnity (-)	\$3,531.02	\$4,685.40	\$6,111.39
Medical (-)	\$19,630.73	\$25,405.33	<b>\$36,501.91</b>
Expense & Administrative (-)	\$2,430.02	\$2,004.13	\$2,659.38
<b>Total Cost</b>	\$25,591.77	\$32,094.86	<b>\$45,272.68</b>

# Intervertebral disc displacement, lumbosacral region: M51.27

- With confounding factors of:
  - Pain > 30 days, obesity, opioids, depression

	Best Practice* (+)	Claim Typical (+)	Claim Max (+)
Indemnity (-)	\$3,531.02	\$16,840.26	\$28,519.80
Medical (-)	\$19,630.73	\$80,368.78	<b>\$196,548.73</b>
Expense & Administrative (-)	\$2,430.02	\$5,199.55	\$10,289.45
<b>Total Cost</b>	\$25,591.77	\$102,408.59	<b>\$235,357.98</b>

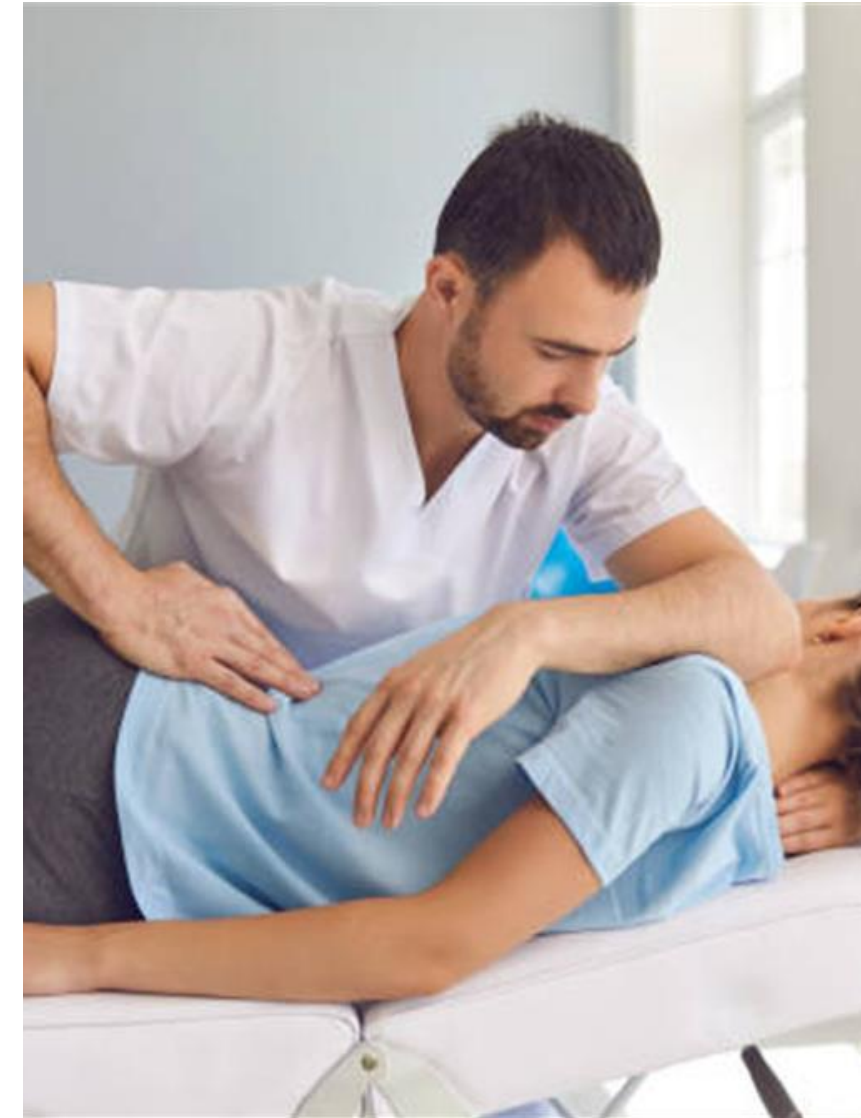


# Post Laminectomy Syndrome: M96.1

- With confounding factors of:
  - Pain > 30 days, obesity, opioids, depression

<b>Best Practice* (+)</b>	<b>Claim Typical (+)</b>	<b>Claim Max (+)</b>	
Indemnity (-)	\$1,493.89	\$8,488.04	\$20,575.00
Medical (-)	\$34,505.05	\$158,298.36	<b>\$366,595.39</b>
Expense & Administrative (-)	\$3,477.88	\$8,064.49	\$15,992.81
<b>Total Cost</b>	\$39,476.82	\$174,850.89	<b>\$403,163.20</b>

## The Cost-Effectiveness paper completed...*Now what?*



**Conservative Care versus Medical Care**





The Editorial Board of *Chiropractic & Manual Therapies* voted the following article as  
**the best published in the journal in 2024.**

**Cost of chiropractic versus medical management of adults with spine-related musculoskeletal pain: a systematic review.**

Congratulations to:

Ronald Farabaugh, Cheryl Hawk, Dave Taylor, Clinton Daniels, Claire Noll, Mike Schneider, John McGowan, Wayne Whalen, Ron Wilcox, Richard Sarnat, Leonard Suiter, and James Whedon

Iben Axén  
Co-Editors-In-Chief

Simon French







# **The “Why” Behind the Paper**

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KROGER PHARMACY #[16847](#) as your current pharmacy. This is one of your last reminders to visit or call your pharmacy and have this filled.

Thank you. I'm good. I've visited my PCP this morning and my blood pressure is back to normal.

I'm so sorry to hear that. Please take your time. If you still want my



## Siri Found a Contact

Ava

+1 (540) 917-0297

Add



I'm so sorry to hear that. Please take your time. If you still want my help, just text me when you're ready.

We're committed to your health Ronald. Have questions or need help with this refill? If so, I can put you in contact with your pharmacy now. Let me know a good time to connect you. – Ava. If not, you can text STOP to opt-out of these reminders.

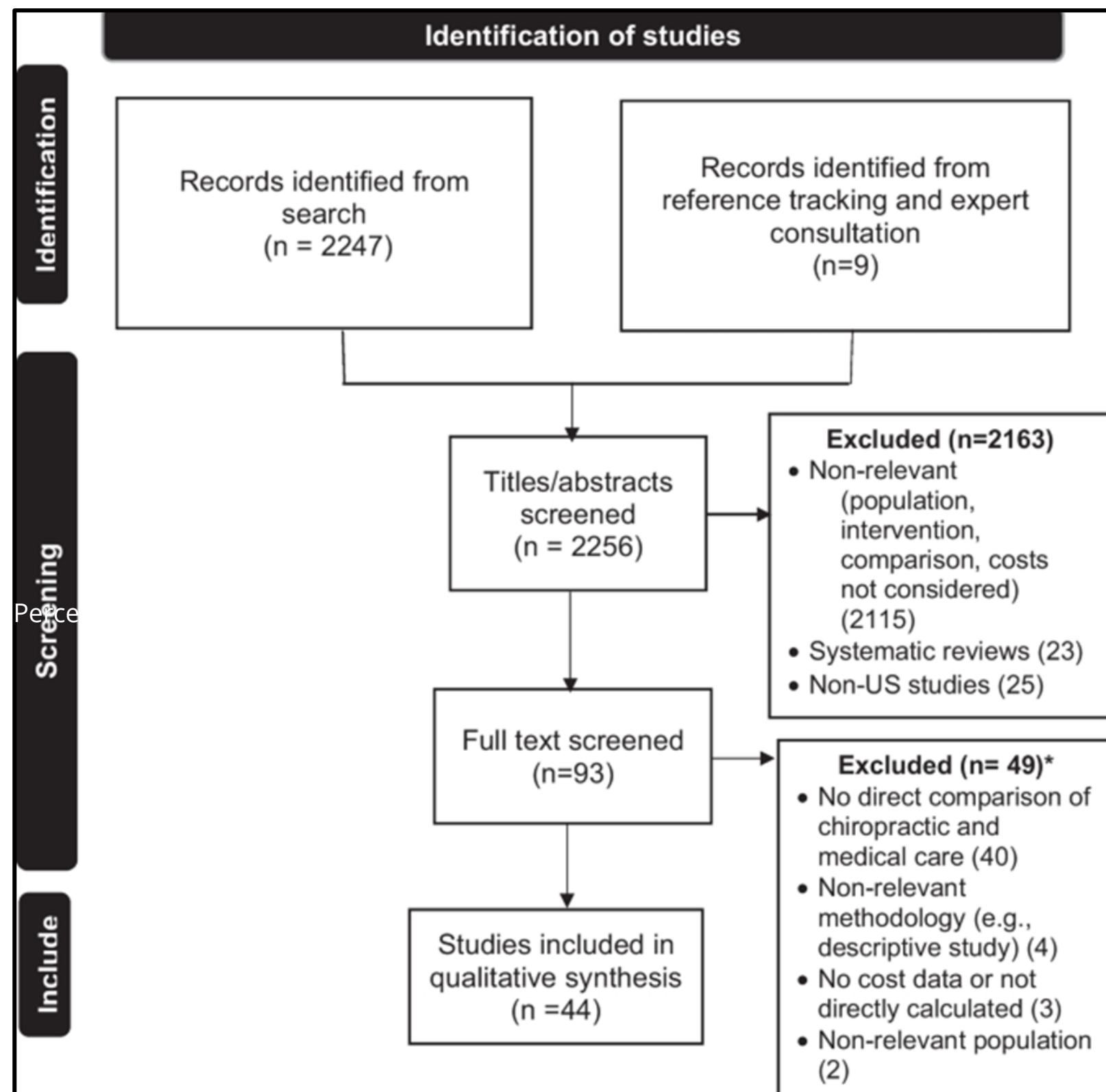
June 3, 2024



Wed, Jun 5 at 3:45 PM

Hi again, this is your friendly update on your missed medication refill. You can call or visit KROGER PHARMACY #[16847](#) to refill LOS\*\*\*\*. I can also help connect you to KROGER PHARMACY #[16847](#). Just give me a time that works.





# Cost of chiropractic versus medical management of adults with spine-related musculoskeletal pain: a systematic review.


Farabaugh et al. Chiropractic & Manual Therapies (2024) 32:8  
<https://doi.org/10.1186/s12998-024-00533-4> SYSTEMATIC REVIEW

Access the paper directly through the Journal of Chiropractic and Manual Therapy.

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Systematic review | [Open access](#) | Published: 06 March 2024

## Cost of chiropractic versus medical management of adults with spine-related musculoskeletal pain: a systematic review

[Ronald Farabaugh](#) , [Cheryl Hawk](#), [Dave Taylor](#), [Clinton Daniels](#), [Claire Noll](#), [Mike Schneider](#), [John McGowan](#), [Wayne Whalen](#), [Ron Wilcox](#), [Richard Sarnat](#), [Leonard Suiter](#) & [James Whedon](#)

*Chiropractic & Manual Therapies* **32**, Article number: 8 (2024) | [Cite this article](#)

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**Research Question:**

- ***Is chiropractic management of spine-related musculoskeletal pain in U.S. adults associated with lower overall healthcare costs as compared to medical care?***





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- **PICO:** To answer the research question, we formulated PICO elements (Population, Intervention, Comparison, Outcome) as follows:

- ***P: U.S. adults with spine-related musculoskeletal pain***
- ***I: Chiropractic management***
- ***C: Medical care***
- ***O: Healthcare costs and use of procedures estimated to increase***







**Summary of Tables**

• **Table 1.** Included studies, by study design and first author.

- 4-Prospective cohort studies
- 22-Cohort studies (retrospective/cross-sectional)
- 17-Cost studies
- 1-Randomized controlled trial

• **Table 2.** Summary of included studies 2018-2022

**17**

• **Table 3.** Summary of included studies 1991-2017

**27**

• **Table 4.** Summary of findings for chiropractic management vs medical management, by year of publication.

**44**

- **Table 5 Association of chiropractic care with factors affecting costs, by study.**
- **Green**= chiropractic associated with either lower cost OR lower utilization
- **Yellow** = cost OR utilization did not significantly differ between groups
- **Red**= chiropractic associated either higher cost OR higher utilization
- **White** = study did not evaluate this cost type OR utilization

**Table 5** Association of chiropractic care with factors affecting costs, by study

Author Lastname	Publication Year	Types of Cost					Factors Affecting Cost							
		Total Cost	Cost per episode of care	Insurance/compensation cost	Long-term healthcare costs	Office visit costs	Diagnostic imaging	Optics	Surgery	Hospitalization	DC as 1st provider	Injection procedures	Specialist visits	Emergency Department visits
Bezdjian (29)	2022													
Harwood (5)	2022													
Jin (36)	2022													
Whedon (9)	2022													
Anderson (27)	2021													
Anderson (28)	2021													
Davis (30)	2021													
Whedon (42)	2021													
Louis (39)	2020													
Davis (31)	2019													
Kazis (37)	2019													
Rhon (12)	2019													
Hong (33)	2017													
Fritz (32)	2016													
Hurwitz (35)	2016													
Leininger (52)	2016													
Weeks (40)	2016													
Weeks (41)	2016													
Keeney (26)	2013													
Graves (25)	2012													
Liliedahl (38)	2010													
Grievess (47)	2009													
Haas (48)	2005													
Nelson (54)	2005													
Legorreta (51)	2004													
Phelan (55)	2004													
Stano (61)	2002													
Smith (57)	1997													
Mosely (53)	1996													
Stano (62)	1996													
Carey (23)	1995													
Shekelle (56)	1995													





## Types of Costs

- o Total Costs
- o Costs per episode of care
- o Insurance/compensation costs
- o Long-term healthcare costs
- o Office visits costs





# Types of services

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Less use of advanced diagnostic imaging

---

Less opioid use

---

Fewer surgeries

---

Less hospitalizations

---

Fewer injection procedures

---

Fewer specialist visits including surgeon referrals

---

Fewer emergency department visits

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**Less downstream costs when chiropractor is 1st provider seen**





In the **Carey** study DCs had higher costs per episode, but “why”?

Answer:

- DC serves as both the diagnostician + treating provider or therapist

## "A" IS JUST THE TIP OF THE MEDICAL ICEBERG



The PCP visit is just the tip of the medical iceberg!

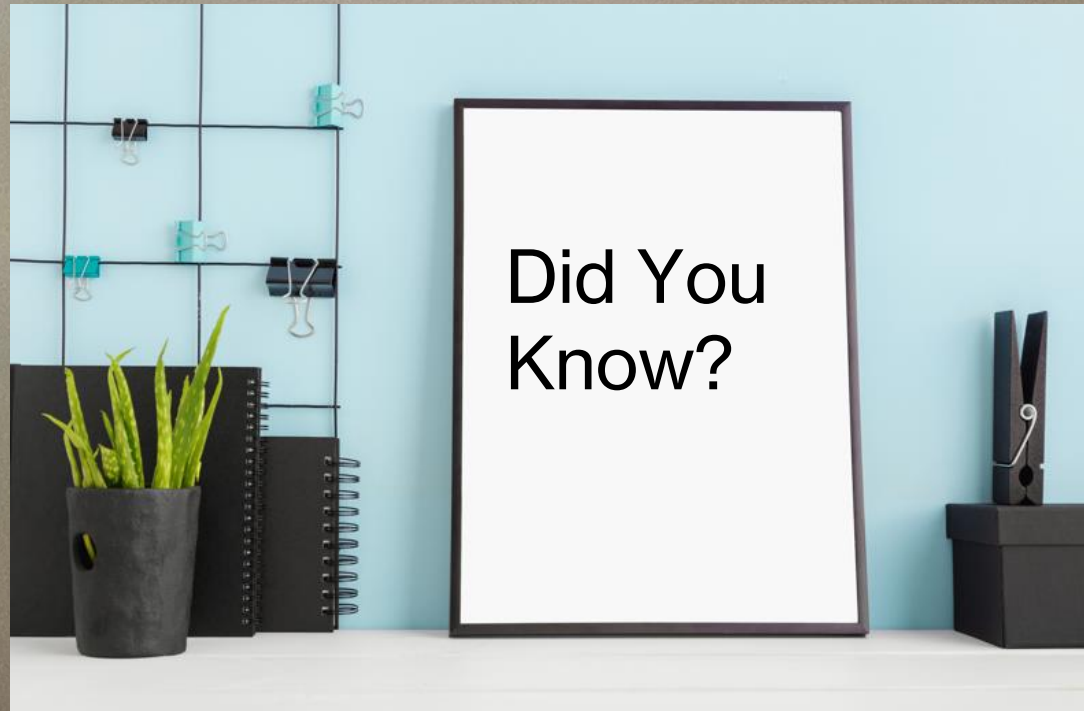


What is the biggest mistake made by those concerned about costs (ex. Payors, entities which takes risk?)

**Concepts:**  
*Single vs dynamic forecasting!*











Did You Know??

**Kazis 2019:**  
***Chiropractic can  
lower use of  
opioids!***





Did you  
Know?



**Initial SMT:**

**30% decrease in  
risk of imaging,  
injections or back  
surgery vs no SMT**

**Anderson** BR, McClellan SW. Three Patterns of Spinal Manipulative Therapy for Back Pain and Their Association With Imaging Studies, Injection Procedures, and Surgery: A Cohort Study of Insurance Claims. J Manipulative Physiol Ther. 2021;44(9):683-9.



The background of the entire slide is a dense, overlapping collage of colorful sticky notes. The colors include light blue, light green, light pink, and light yellow. Each sticky note has a large, dark grey question mark printed on it. The notes are scattered across the frame, creating a textured, busy appearance.

# **Did You Know....?**

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**Research and Education brought to you by**

**The Clinical Compass**

**Respectfully submitted by Dr. Ronald J. Farabaugh**



# — Did You Know....?

That according to a 2021 paper by Anderson et al, that.....

Care for **back pain** initially using spinal manipulative was associated with an approximately 30% **decrease in the risk of imaging studies, injections, or back surgery** compared to patients who did not receive spinal adjustments?

NOTE: In the US 90% of all spinal manipulation performed is done so by Doctors of Chiropractic!

*Who you go to first matters!  
Share this info with your friends!!*

# — Did You Know....?

That according to a 2021 paper by Anderson et al, that.....

Among episodes of care associated with **neck pain** diagnoses, those associated with **other care had twice the risk of any treatment escalation compared with those associated with spinal manipulation.**

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NOTE: Spinal manipulation works and reduces the need for opioids and other dangerous drugs!

*Who you go to first matters!  
Share this info with your friends!!*



# — Did You Know....?

That according to a 2022 paper by Jin et al, that.....

Early **conservative therapy** was independently associated with **24.8% lower health care costs.**

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Share this info with your friends!!*

# — Did You Know....?

That according to a 2019 paper by Kazis et al, that.....

Initial visits to chiropractors or physical therapists is associated with substantially **decreased early and long-term use of opioids.**

Incentivizing use of conservative therapists may be a strategy to reduce risks of early and long-term opioid use.

***Who you go to first matters!  
Share this info with your friends!!***



# — Did You Know....?

That according to a 2013 paper by Keeney et al, that.....

**Chiropractic reduces the odds of surgery!**

***“Approximately 42.7% of workers who first saw a surgeon had surgery, in contrast to only 1.5% of those who saw a chiropractor.”***

***Who you go to first matters!  
Share this info with your friends!!***

# — Did You Know....?

That according to a 2010 paper by Liliedahl et al. that.....

Patients had **lower overall episode costs** for treatment of low back pain if they initiated care with a DC, when compared to those who initiated care with an MD.

*Who you go to first matters!  
Share this info with your friends!!*



# — Did You Know....?

That according to a 2020 paper by Louis et al, that.....

A patient's initial clinical contact for neck pain may be an important opportunity to influence subsequent opioid use. The use of conservative therapists like chiropractors may be key in unlocking new ways to **lessen the burden of opioid use in the United States.**

***Who you go to first matters!  
Share this info with your friends!!***

# — Did You Know....?

**[The Chatgpt version!!]**

That according to a 2020 paper by Louis et al, that.....

*Seeing a chiropractor or another conservative care provider first for neck pain might help people avoid using opioids later on. Choosing this kind of care early could play a big role in reducing the opioid problem in the U.S.*

**Who you go to first matters!  
Share this info with your friends!!**



# — Did You Know....?

That according to a 2019 paper by Rhon et al....

Most, if not all, guidelines for musculoskeletal pain, recommend less invasive or risky evidence-based intervention, such as manual therapy (MT= hands-on treatment, such as that provided by chiropractors), before more aggressive interventions such as opioid prescriptions.

**Manual therapy alone resulted in lower downstream costs than with opioid prescriptions.**

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***If you want to reduce the use of  
opioids AND lower costs...go to a  
chiropractor!***

***Share this info with your friends!!***

# — Did You Know....?

That according to a 2018 paper by Whedon et al, that.....

Among adults with noncancer low-back pain, the likelihood of filling a prescription for an opioid was **significantly lower when care was delivered by doctors of chiropractic.**

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*Who you go to first matters!  
Share this info with your friends!!*

# — Did You Know....?

That according to a 2021 paper by Whedon et al, that.....

The adjusted rate of adverse drug events was more than **42 times higher for initial choice of opioid assisted therapy** vs. initial choice of spinal manipulation.

Conclusion: Among older patients who received long-term care for chronic low back pain, the odds of experiencing an adverse event was substantially higher for patients who initially chose opioid compared to those who initially chose spinal manipulation.

*Who you go to first matters!  
Share this info with your friends!!*



# — Did You Know....?

That according to a 2022 paper by Whedon et al. that.....

Chiropractic can reduce the episodes of ongoing chronic low back pain compared to those patients treated with opioids.

**Simply stated: Spinal manipulation was associated with lower rates of escalation of care as compared to opioid assisted therapy.**

*Who you go to first matters!  
Share this info with your friends!!*

# — Did You Know....?

That according to a 2022 paper by Harwood et al, that.....

The frequency of early **opioid prescription was significantly lower when care began with an acupuncturist or chiropractor**, and highest for those who began with an emergency medicine physician or advanced practice registered nurse (APRN).

*Who you go to first matters!  
Share this info with your friends!!*




**Initial visits to chiropractors are associated with substantially decreased early and long-term use of opioids.**

**Incentivizing use of conservative therapists may be a strategy to reduce risks of early and long-term opioid use.**

- **Kazis** LE, Ameli O, Rothendler J, Garrity B, Cabral H, McDonough C, et al. 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*. 2019;9(9):e028633.






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## **Risk for filling opioid prescription 56% lower for DC (hazard ratio 0.44)**

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- **Whedon** JM, Uptmor S, Toler AWJ, Bezdjian S, MacKenzie TA, Kazal LA, Jr. Association between chiropractic care and use of prescription opioids among older medicare beneficiaries with spinal pain: a retrospective observational study. *Chiropr Man Therap.* 2022;30(1):5.






Cost of episodes with initial DC, adjusted for risk, were 20% less than with initial MD.

- **Liliedahl** RL, Finch MD, Axene DV, Goertz CM. Cost of care for common back pain conditions initiated with chiropractic doctor vs medical doctor/doctor of osteopathy as first physician: experience of one Tennessee-based general health insurer. J Manipulative Physiol Ther. 2010;33(9):640-3.





Mean LBP care long-term costs with OAT 58% lower than SMT.



Total long-term costs 1.87 times higher for OAT

**Whedon** JM, Kizhakkeveetil A, Toler A, MacKenzie TA, Lurie JD, Bezdjian S, et al. Long-Term Medicare Costs Associated With Opioid Analgesic Therapy vs Spinal Manipulative Therapy for Chronic Low Back Pain in a Cohort of Older Adults. J Manipulative Physiol Ther. 2021;44(7):519-26.



## Recommendations:

- When considering this evidence, it may be in society's best interest for U.S. healthcare organizations and governmental agencies to consider **modifying benefit designs to reduce barriers** to access to chiropractic providers.
- Modifying or eliminating pre-authorization requirements, medical doctor gatekeepers, arbitrary visit limits, **co-pays and deductibles** may all be considered.
- Eliminating these barriers would allow easier access to chiropractic services, which based on currently available evidence consistently demonstrate **reduced downstream services and associated costs**.

## Conclusions

- Patients with spine-related musculoskeletal pain who consulted a **chiropractor as their initial provider incurred substantially decreased downstream healthcare services, and associated costs**, resulting in lower overall healthcare costs compared with medical management.
- A primary limitation was related to the heterogeneity and sample sizes of the populations and retrospective data sets.
- While observational studies cannot prove causation, the recurrent theme of the data seems to **support the utilization of chiropractors as the initial provider for an episode of spine-related musculoskeletal pain**.
- Future studies using randomized designs will be helpful in clarifying and validating this trend.





## What are main take-aways from the Cost Effectiveness paper?

**#1:**

When patients use doctors of chiropractic, downstream services and associated costs are significantly reduced

**#2:**

**Who the patient visits first matters!**  
Using chiropractic from the onset of an episode will reduce costs overall, not just costs related to chiropractic!!



**So, we now have the ammo to  
fight against an unjust system!  
The question is, where do point  
our cannons?**



**Who will lead this fight for  
services expansion?**

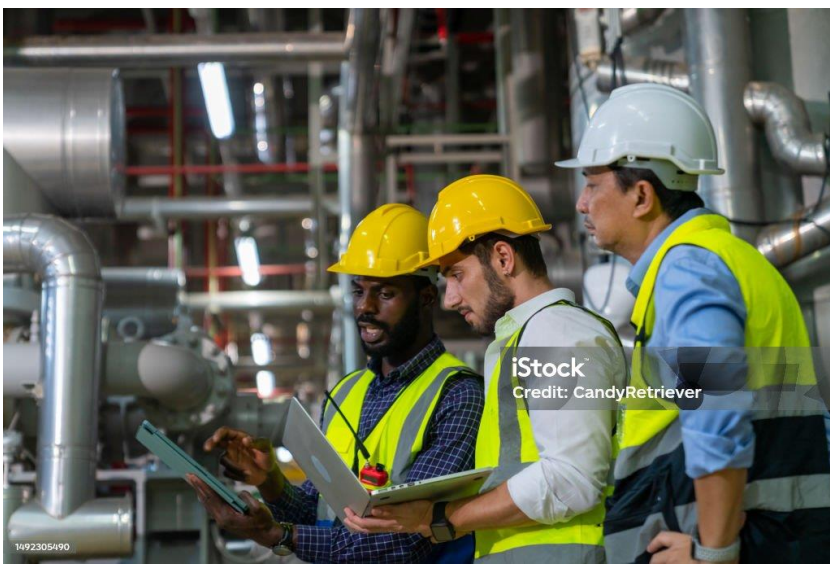




## Any entity who is taking RISK!

1. Unions
2. Employers
3. Medicaid and MCOs who take risk.
4. Payors-Who is taking the financial risk?
  - a) Medical director (little influence on plan design)
  - b) Chief financial officer
  - c) Actuarial companies/consultants providing the payors advice on benefit structure.
  - d) Sales force.
  - e) Payor clients (ex. Large self-insured employers, hospital systems, etc.)
5. Legislators: local, state and federal





**Unions**

**Employers/Business  
Leaders**

**Insurance Carriers**





6. The VA
7. DoD
8. The Media, local, state, federal.
9. Large medical groups who also take risk.
10. Medicare
11. Foundation for Chiropractic Progress  
(Sherry McAllister)

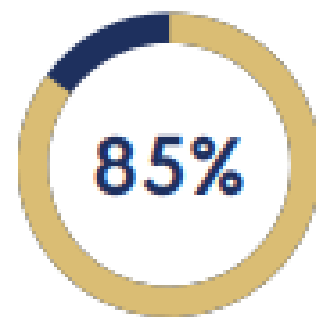


- Imagine adding a benefit that never existed! Further, imagine a world in which not only can DCs continue to treat severe chronic pain Medicaid patients, but also get paid well for doing so!!

## Integrative Chronic Pain Program (ICPP)

Advanced Medicine Integration Group, L.P.

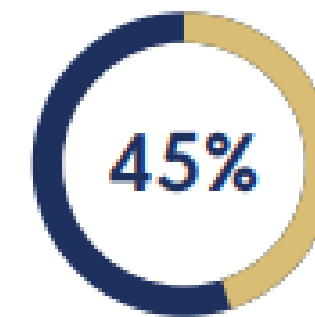
### Program Results Include



Reduction in Opioid Scripts



Reduction in Inpatient Admissions



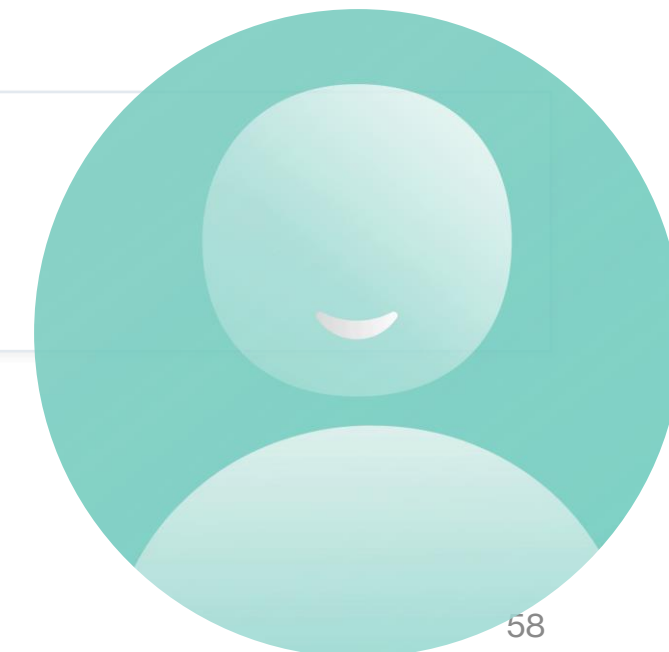
Reduction in ER Visits



**I WILL!!**  
**DONE!!**



# Discussion





# How will you use this information?

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