Qualitative Analysis

Federal and Statewide Coverage for Opioid-Sparing Chronic Pain Treatments

Monroe McKay, BS[1], Margaret M. Gorvine, PhD[2], Nickolas Zaller, PhD[2], Vinita Singh, MD[3], and Johnathan Goree, MD[4]

From: [1]University of Arkansas for Medical Sciences, College of Medicine, Little Rock, AR; [2]University of Arkansas for Medical Sciences, Fay W. Boozman College of Public Health, Little Rock, AR; [3]Department of Anesthesiology, Emory University, Atlanta, GA; [4]Department of Anesthesiology, University of Arkansas for Medical Sciences, Little Rock, AR

Address Correspondence:
Monroe McKay, BS
University of Arkansas for Medical Sciences, College of Medicine
4301 W Markham Street
Little Rock, AR 72205
E-mail: mpmckay@uams.edu

Disclaimer: There was no external funding in the preparation of this manuscript.

Conflict of interest: VS received salary support as a KL2 scholar (mentored career development award) from 08/18 to 07/20 at Georgia Clinical and Translational Science Alliance, supported in part by the National Center for Advancing Translational Sciences of the National Institutes of Health under Award number UL1TR002378 and KL2TR002381. VS served on the Scientific Advisory Board, Releviate LLC 2020-2021. JG is a consultant for Abbott Neuromodulation and Stratus Medical. JG also receives research support from SPR Therapeutics and Mainstay Medical.JG, NZ, and MG receive funds from the UAMS Translational Research Institute

Manuscript received: 05-28-2022
Revised manuscript received: 09-01-2022
Accepted for publication: 10-10-2022

Free full manuscript: www.painphysicianjournal.com

Background: With increased hospitalizations and deaths related to opioid use disorder, there is an impetus for federal and private insurance companies to provide coverage for integrative treatments that address pain. The Centers for Disease Control and Prevention (CDC) and the current literature recommend that nonpharmacological and nonopioid treatments must be considered for chronic pain management. The continued examination of potential coverage and cost-effectiveness for opioid-sparing alternatives with proven efficacy is critical for physicians who treat chronic pain.

Study Design: Qualitative analysis of coverage policies for 10 alternative chronic back pain therapies was completed using the most up-to-date publicly available information from federal and state databases until September 2021.

Objectives: To determine coverage for opioid-sparing treatments for chronic back pain across federal and state healthcare systems.

Methods: We selected the alternative therapies from the National Institute of Health's National Center for Complementary and Integrative Health (NCCIH) (www.nccih.nih.gov). We then collected and analyzed coverage policies for federal and state healthcare plans, including Medicare, Veterans Health Administration (VHA), Indian Health Services (IHS), and Medicaid, by accessing federal databases and state policy databases via the department of health and human services (HHS).

Results: The 2 most commonly covered nonpharmacologic therapies for chronic back pain are physical therapy and cognitive behavioral therapy. Other more novel therapies have a heterogenous distribution among federal and state healthcare coverage. Assessment of regional differences determined that the median number of treatments in the Northeast and Midwest was 3, while in the South and West, it was 2.

Limitations: Several provider manuals included varying degrees of information regarding their services. Some states included all pertinent information, such as the definition of treatment, the exact number of service visits allowed annually, and whether prior authorization was necessary. Many manuals provided less information than this. Each state's Medicaid document contained inherent variability, especially with respect to when they were updated or published. Some states had updated information available for 2021, while the most updated policies for other states included documents that were last updated in 2008.

Conclusions: Integrative treatments for chronic back pain are currently available, yet coverage varies widely depending on the patient's Medicare or Medicaid status. Different states cover different therapies, which may lead to unequal healthcare outcomes for patients with chronic pain.

Key words: Chronic pain, Medicare/Medicaid coverage, integrative therapies, opioid sparing treatments, health policy.

Pain Physician 2022: 25:E1457-E1466

The opioid epidemic continues to be a critical public health issue and has received considerable research focus in the last decade. Its origin is linked to the wide availability of opioids and increased prescribing by physicians. The use of opioids to treat pain began as early as the 1800s; however, it wasn't until the 1980s that prescribing increased (1). More recently, the number of opioid prescriptions plateaued between 2010-2012, but the number of opioids prescribed in 2015 was 3 times greater than the amount prescribed in 1999 (2-3).

The overarching goal of this study was to identify Medicare and Medicaid coverage for opioid-sparing treatments in the context of chronic back pain. To determine which alternative therapies qualified for this study, we gathered an initial list from the National Institute of Health's National Center for Complementary and Integrative Health (NCCIH; www.nccih.nih.gov). The majority of these opioid-sparing treatments are discussed in depth and endorsed by the American College of Physicians (ACP) clinical guidelines for the noninvasive management of chronic low back pain (4). For patients with chronic back pain, the American College of Physicians (ACP) strongly recommends that clinicians begin treatment with nonpharmacologic interventions such as exercise and multidisciplinary rehabilitation (4). The mainstay of opioid-sparing therapies includes physical therapy, cognitive behavioral therapy, acupuncture, spinal manipulation, yoga, and mindfulness. For those for whom nonpharmacologic therapy has not worked, the ACP recommends therapy with nonsteroidal anti-inflammatory drugs (first line) or tramadol and/or duloxetine (second line). The ACP affirms that opioids ought to be considered only if the previously mentioned treatments do not provide lasting benefits (4).

The current manuscript examines 10 nonpharmacologic modalities to address chronic back pain lasting more than 12 weeks. The authors will provide a discussion of coverage for these modalities across federal and state payer systems.

Methods

We gathered an initial catalog of alternative therapies from the National Institute of Health's National Center for Complementary and Integrative Health (NCCIH). The NCCIH has furnished a list of complementary health approaches for chronic back pain based on recommendations from the American College of Physicians, the American College of Rheumatology, and other professional organizations (www.nccih.nih.gov). The NCCIH interface provides an in-depth analysis of different types of chronic pain and alternative treatments. We also included neuromodulation due to the large amount of literature demonstrating benefit for that treatment over the past 5 years.

We gathered Medicare information from the Centers for Medicare and Medicaid Services (CMS; www.cms.gov; www.medicare.gov). Data collection from other federal healthcare agencies, such as Veterans Health Administration (VHA) and Indian Health Services (IHS), was amassed from their respective databases (www.va.gov; www.ihs.gov). We furnished Medicaid coverage data by locating the provider manuals from the Department of Health and Human Services or the state's Medicaid database for all 50 states and the District of Columbia. These Medicaid provider manuals are the most up-to-date publicly available information that is readily accessible to physicians and patients. We examined manuals that discussed each of the 10 alternative treatment modalities and identified the extent of state and federal healthcare coverage and its limitations. When one of our alternative services was not found in the provider manuals, we conducted a keyword search through each state's Medicaid website/portal to uncover additional information that was not found within the provider manuals. These results are depicted in Table 1.

Results

In order to assess Medicare and Medicaid coverage across the US, we organized coverage for each treatment modality by state and by 4 regions (Northeast, Midwest, South, West; Supplementary Table 1). We sought to simplify the data for each treatment modality by organizing the covered services into a binary "yes" or "no" category. Treatments listed as "yes" in Table 1 were included in the state's Medicaid provider and were covered services for beneficiaries who qualified for Medicaid in the respective state. For treatments listed as "no," the provider manuals stated that the therapy was not a covered service, or the therapy was not mentioned in the state's manuals or could not be found by using the state's Medicaid search portal. Several of the listed treatments had different coverage limitations (e.g., 6 weeks, 12 weeks, 20 visits annually, etc.), which varied by state. A comprehensive list of these limitations was compiled (see methods) but not included in the manuscript. Due to the inherent variability present in the existing data, we sought to compare coverage across states descriptively since we were

Table 1. *Federal healthcare, (Medicare, VHA, IHS) & Medicaid coverage for alternative treatments to chronic pain.*

	Physical Therapy	Cognitive Behavioral Therapy	Spinal Cord Stimulation	Acupuncture	Message Therapy	Meditation	Mindfulness	Spinal Manipulation	Tai Chi/Qi Gong	Yoga
Federal (Medicare)	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No
Federal (VHA)	Yes	Yes	Yes	Yes	No	Yes[4]	Yes[4]	Yes	Yes[4]	Yes[4]
Indian health services (IHS)	Yes	Yes (see text)	No1	Yes[1]	Yes (see text)	No[1]	No[1]	Undefined	No[1]	No[1]
Alabama	Yes	Yes	Undefined	No	No	No	No	No	No	No
Alaska	Yes	Yes	Undefined	No	Yes[2]	No	No	No[3]	No[1]	No
Arizona	Yes	Yes	Yes	Yes[5]	Undefined	No	No	No	No	No
Arkansas	No[3]	Yes	Undefined	No	No	No	No	No[3]	No	No
California	Yes	Yes	Yes (conditional)	Yes	Yes[2]	No[1]	No[1]	Yes	No	No
Colorado	Yes	Yes	Undefined	Yes[5]	Yes[5]	No	No	Yes[5]	No	No
Connecticut	Yes	Yes	Undefined	Yes	No	No	No	No[3]	No	No
Delaware	Yes	Yes	Undefined	No[+]	No[+]	No[1]	No[1]	Yes	No	No[1]
Florida	Yes	Yes	Undefined	Yes*	No	No[1]	No	Yes	No	No[1]
Georgia	No	Yes	Undefined	No	No[2]	No	No	No	No	No
Hawaii	Yes	Yes	Undefined	No	No	No	No	Undefined	No	No
Idaho	Yes	Yes	Undefined	No[1]	No[1]	No	No	Yes	No	No
Illinois	Yes	Yes	Yes	No	No	Yes[4]	Yes[4]	No[3]	Yes[4]	Yes[4]
Indiana	Yes	Yes	Yes	No	No	No	No	Yes	No	No
Iowa	Yes	Yes	Undefined	No	No	No[1]	No[1]	Yes5	No[1]	No[1]
Kansas	No	Yes	Undefined	No	Yes[2]	No	No	No	No	No
Kentucky	Yes	Yes	Undefined	No	No	No	No[1]	Yes	No[1]	Yes[4]
Louisiana	Yes	Yes	Undefined	No	No	Yes[4]	Yes[4]	No3	No[1]	No[1]
Maine	Yes	Yes	Yes	No	No	No[1]	No[1]	Yes	No[1]	No[1]
Maryland	Yes	Yes	Yes*	No[3]	Yes[2]	Yes[5]	Yes[5]	No3*	No	No
Massachusetts	Yes	Yes	Yes	Yes	No	Yes[4]	Yes[4]	Yes	Yes[2]	No[1]
Michigan	Yes	Yes	Undefined	No	No[3]	Yes[2]	Yes[2]	Yes5	No	No
Minnesota	Yes	Yes	Undefined	Yes	Yes[2]	No	No[5]	Yes	No	No
Mississippi	Yes	Yes	Undefined	No	Yes[2]	No	No	Yes	No	No
Missouri	Yes	Yes	Undefined	Yes	Yes[2]	No	No	Yes	No	No
Montana	Yes	Yes	Undefined	No	No	Yes[4]	No[4]	No3	No[1]	No[1]
Nebraska	Repealed (see text)	Yes	Undefined	No	Undefined[1]	Yes[4]	Yes[4]	Yes	Yes[4]	Yes[4]

Table 1 (continued). *Federal healthcare, (Medicare, VHA, IHS) & Medicaid coverage for alternative treatments to chronic pain.*

	Physical Therapy	Cognitive Behavioral Therapy	Spinal Cord Stimulation	Acupuncture	Message Therapy	Meditation	Mindfulness	Spinal Manipulation	Tai Chi/Qi Gong	Yoga
Nevada	Yes	Yes	Undefined	No	Yes[2]	Yes[4]	No	Yes5	Yes[4]	Yes[4]
New Hampshire	Yes	Yes	Undefined	No	Undefined	No[1]	No[1]	Yes	No[1]	Yes[4]
New Jersey	Yes	Yes	Undefined	No	No	No[1]	Yes[4]	Yes	Yes[4]	Yes[4]
New Mexico	Yes	Yes	Undefined	No	No	No	No	No	Yes[4]	No
New York	Yes	Yes	Undefined	Yes	No	No	Yes[4]	Yes	Yes[4]	Yes[4]
North Carolina	Yes	Yes	Yes	No+	No+	Yes[4]	Yes[4]	Yes	No	Yes[4]
North Dakota	Yes	Yes	Undefined	No	No	Yes[4]	Yes[4]	Yes	No	Yes[4]
Ohio	Yes	Yes	Undefined	Yes5	No	No	No	Yes	No	No
Oklahoma	Yes	Yes	Undefined	No	Yes[2]	No[1]	No	No	No	No
Oregon	Yes	Yes	Undefined	Yes	Yes	No	Yes	Yes	Yes[4]	Yes[4]
Pennsylvania	Yes	Yes	Undefined	No	Yes[2]	Yes[4]	Yes[4]	Yes	No	No[1]
Rhode Island	Yes	Yes	Undefined	No	No	No	No	Undefined	No	No
South Carolina	No	No	Yes	No	No	No	No	Yes	No	No
South Dakota	Yes	No	Yes	No	No	Yes[4]	No	Yes	No[1]	No[1]
Tennessee	Yes	Yes	Undefined	Yes	No	Yes[1,4]	No	No	No	No[1]
Texas	Yes	Yes	Undefined	No	Yes[5]	No[1]	No[1]	Yes	No[1]	No[1]
Utah	Yes	Yes	Undefined	No	No	No	No	Yes	No	No
Vermont	Yes	Yes	Undefined	No	No	Yes[4]	Yes[4]	Yes	No	Yes[4]
Virginia	Yes	Yes	Undefined	No	No	Yes[4]	No[4,5]	No	No	No[1]
Washington	Yes	Yes	No	No+	Yes[2]	Yes[4]	Yes[2]	No[3,+]	No	No[1]
West Virginia	Yes	Yes	Undefined	No	Yes[2]	No[1]	No	Yes	No	No
Wisconsin	Yes	Yes	Undefined	No	Yes[2]	No	No	Yes	No	No
Wyoming	Yes	Yes	Undefined	No	No	Yes[4]	No	No	Yes[5]	No
Washington D.C.	Yes	Yes	Undefined	No	No	No	No	No	No	No

1. These states recommended the treatment as an alternative treatment for chronic pain or improvement of general health and well-being.
2. Treatment was listed under another coverage limit (e.g., massage therapy was listed as a component of treatment for physical therapy, or meditation/mindfulness was covered under behavioral health services)
3. Treatment was only covered for those under 20 or 21 years old
4. Treatment included public online resources through the state's Medicaid website
5. Requires diagnosis other than chronic pain
* Only covered via Managed Care Organization (MCO)
+ Recent legislation requesting coverage or documentation exploring potential options
Treatments listed as undefined indicated unclear language regarding service coverage

unable to quantify differences in coverage within the same treatment categories. Additionally, the variability in each state's coverage and limit to services are further discussed in our limitations section.

Physical therapy (PT) constitutes the primary nonpharmacological pain treatment, and this is reflected in federal and state healthcare coverage. Federal coverage, including Medicare, VHA, and IHS, provides PT for all qualifying members. All states except Kansas and South Carolina cover physical therapy services for chronic conditions under Medicaid. The Kansas Medicaid Rehabilitative Therapy Manual states that PT services are allowed for acute illness or injury for 6 months but not for chronic conditions. South Carolina's Hospital Services Provider Manual states that physical therapy cannot be compensated by Medicaid when prescribed for pain management. Lastly, Nebraska's current physical therapy services coverage is listed as repealed on its Medicaid website. Some Medicaid plans, such as Illinois', are more generous and provide physical therapy services with no limitations as long as the treatment is deemed medically necessary and measures are taken to document the frequency and duration of treatment.

Cognitive behavioral therapy (CBT) is another evidence-based treatment covered by all federal programs (Medicare, VHA, and IHS) and 48 out of 50 states. The only exceptions to federal insurance are some regions within IHS, such as Alaska, California, and Tucson, AZ, which do not have "federally-operated mental health programs" (www.ihs.gov). South Carolina Medicaid does not reimburse behavior modification or psychiatric services for pain management (South Carolina's Hospital Services Provider Manual). South Dakota does not cover outpatient psychiatric services as listed in its billing and policy manual: Outpatient Hospital Services. All other states and the District of Columbia provide Medicaid coverage for some form of mental health treatment for patients. There are a wide variety of mental health services that may be offered, including well-defined therapies like CBT and psychotherapy, among others.

Spinal Cord stimulation (SCS) is one of the treatments that had significant variability across all states. SCS is a covered service under Medicare and VHA but not IHS coverage plans. At least 10 states (AZ, CA, IL, IN, MA, MD, MN, NC, SC, SD) and the District of Columbia mentioned coverage for spinal cord stimulators, neurostimulators, or implantable electrical devices. States such as California require strict documentation with prior authorization for the procedure. In California, the patient must have intractable back pain for at least 6 months. Additionally, he/she must have failed pharmacologic and nonpharmacologic treatments prior to the insertion of a neurostimulator. (CA Medicaid Part 2—Surgery: Nervous System). Thirty-nine states and Washington DC are listed as undefined and had Medicaid plans covering outpatient procedures in ambulatory surgical centers, but there was no direct mention of SCS as a covered service. The Washington State Health Care Authority Health Technology Clinical Committee explicitly states that SCS is not a covered benefit for chronic neuropathic pain. The policy manual for Washington, D.C. stated that implantable neuromuscular stimulators were covered, but again, there was no clear indication regarding the status of SCS. Some states, such as Michigan, had language describing coverage for electrical stimulator devices; however, it appeared to only include transcutaneous electrical nerve stimulation devices (TENS) rather than SCS (MI Medicaid Provider Manual). Though it was not a component of our initial analysis, at least 13 other states provided TENS coverage for pain relief (IA, KS, KY, MN, NC, ND, OH, OR, RI, VA, WV, WI, WY), but this is not an exhaustive list.

Acupuncture therapy is covered under federal Medicare and VHA for low back pain. IHS indicates that it has partnered with VHA to implement a similar acupuncture protocol for integrative pain treatments for pain. A total of 11 states (AZ, CA, CO, CT, FL, MA, MN, MO, NY, OH, TN) defined coverage for this treatment; however, the qualifications and limitations of these services were highly variable. Some states, such as Arizona and Colorado, provide this service only if patients have a concomitant diagnosis of substance use disorder or had a documented spinal cord injury respectively. Florida Medicaid listed acupuncture as an available service only when the plan is contracted through private insurance companies like United or Sunshine Health (FL Managed Medicaid Assistance & Long-Term Care—Expanded benefits). Other states' Medicaid plans only pay for acupuncture if patients meet certain requirements, such as being under 20 years of age (Maryland) or having neck pain as another diagnosis (Ohio). The state of Iowa does not provide coverage for acupuncture, yet in order for patients to be eligible for long-acting opioids as treatment, they must have failed at least 2 alternative therapies, with acupuncture being listed as one (Iowa Prescribed Drugs Manual Transmittal No. 16-2).

Massage therapy was not listed as a covered service under Medicare or VHA for chronic back pain services, and IHS reports that it is available in some areas (Okla-

homa City, OK) but not all locations. Sixteen states in total listed massage therapy as a covered service in their provider manuals, with 13 of these states (AK, CA, KS, MD, MN, MS, MO, NV, OK, PN, WA, WV, WI) classifying it as a service under physical therapy. Arizona and New Hampshire had insufficient information regarding this treatment option. Both states had documents stating that massage therapy services could be reimbursed, but there was no language elsewhere that mentioned the circumstances for which these services were reimbursable. Considering that 13 of 16 states have massage therapy listed as a treatment option under physical therapy (Colorado, Oregon, and Texas were the 3 states that listed them as separate services), our analysis suggests that the majority of states do not cover massage therapy as its own separate treatment for patients, but as an adjunct to physical therapy. Colorado and Texas provide Medicaid coverage for massage therapy only if the patient has a previously diagnosed spinal cord injury. Additionally, the limits for massage therapy in Oregon and Texas were included in the limits for physical therapy treatment. Therefore, if a patient living in Texas qualifies for non-interventional pain treatment, he/she has a limit of 120 hours for physical therapy and massage therapy combined. Other states that do not appear to provide explicit coverage, such as Nebraska, discuss massage therapy in their Pain Management Manual and have extensive information about massage therapists but no information regarding coverage. It is also worth noting that the legislature of Delaware and North Carolina are currently exploring acupuncture and massage therapy as 2 additional services to be provided as set forth in the state's opioid action plan. Their respective lawmakers are working with public health officials to address the opioid epidemic and find ways to offer alternative treatments for patients.

We grouped meditation and mindfulness together as one treatment option due to significant overlap in coverage determination language. From a federal standpoint, Medicare does not provide any form of these services to beneficiaries. Conversely, VHA has an ample number of online resources regarding meditation services, which can be accessed by the public (www.va.gov). IHS recommends meditation and mindfulness as ways to mitigate stress and improve overall health, citing several published studies in a presentation available at www.ihs.gov. While IHS explains in detail the basic science and effects of meditation on multiple organ systems, IHS does not appear to offer any online resources for patients to learn how to meditate. Nineteen states in total mention some form of mindfulness-based therapy that is available to Medicaid recipients. Most of the services included online links to instructional videos for guided meditation rather than hosting in-person classes for patients (www.warrelatedillness.va.gov/WARRELATEDILLNESS/meditation/default.asp). Michigan and Washington provide mindfulness-based therapy as one service under their behavioral services treatment, while Maryland only offers meditation and/or mindfulness services to patients who have a diagnosis of substance use disorder (Table 1). We identified 10 states that do not provide resources for these modalities but do actively encourage patients to participate in meditation and mindfulness therapy to address their pain. Tennessee and Illinois both recommend relaxation and stress reduction techniques, especially in light of the COVID-19 pandemic. Illinois has gone so far as to host online classes known as "Virtual Day Services" that seek to develop patients' hobbies or interests, which include virtual meditation groups and yoga classes (Appendix K: Emergency Preparedness and Response and COVID-19 Addendum).

Spinal manipulation is a covered service for recipients under Medicare and VHA. IHS indicates that some institutions offer this as a treatment, but it does not specify the locations of these programs. Medicare indicated that a chiropractor or other qualified provider (i.e., an osteopathic physician or qualified physical therapists) may administer spinal manipulation if all requirements are met. However, most state policies listed chiropractors when discussing spinal manipulation with no mention of osteopathic physicians. Thirty-eight states definitively offer some form of chiropractic treatment, such as spinal manipulation for chronic back pain. Seven of these states cover these services only if the individual is under the age of 21. Two states (Hawaii and Rhode Island) listed chiropractors as providers who can bill Medicaid, but there was no explicit description of their services in the provider manuals. As of June 2021, Wyoming is the only state that is transitioning to rescind its coverage for visits to a chiropractor in 2020. It is now only covered under special circumstances for patients enrolled under Medicare and those under 21 years old (CMS 1500 ICD-10 Manual). There are 9 other states other than Wyoming that do not cover spinal manipulation or visits to a chiropractor. Washington state Medicaid does cover spinal manipulation for individuals under 21 years of age, and the Washington State Health Care Authority published a document in January 2010 which requested chiropractic services for

adults to assist with pain management (Apple Health Nonpharmacological Pain Treatment Coverage).

The practice of yoga was listed as a covered modality under VHA but not Medicare. VHA provides ample online resources for veterans, including online classes led by experienced instructors (www.va.gov/WHOLEHEALTH/professional-resources/Yoga.asp). IHS recommends yoga for patients with chronic pain, but www.ihs.gov does not directly provide related online resources. Most states do not technically "provide services" for yoga. At least 11 states (IL, KY, NE, NV, NH, NJ, NY, NC, ND, OR, VT) have established online resources through their Medicaid portal, which may include online classes, video-guided practices, or links to information about yoga and chronic pain management. Oregon lists yoga as an evidence-based service specifically for patients with chronic pain (Minutes from April 2018 Chronic Pain Taskforce). Eleven states recommend some form of yoga to improve overall health and well-being, and the majority of these include online resources for beneficiaries. The remaining 39 states and Washington, D.C. do not mention yoga in their provider manuals or on their Medicaid website. Two states (Nevada and Nebraska) that share online information about yoga for Medicaid recipients even offer in-person classes at state parks and other public opportunities to participate in yoga. More information can be found by searching "yoga" at www.dhhs.ne.gov and www.nv.gov.

Tai chi and qi gong were the final modalities in our list of treatments. From a federal standpoint, VHA provides online information for these practices, while Medicare does not, and IHS only recommends them without offering resources. Only 9 states (IL, MA, NE, NV, NJ, NM, NY, OR, WY) offer some form of online guidance with information about tai chi or qi gong. Nine states recommend either or both for pain management, and the remaining 32 states and Washington DC do not mention either of these modalities in their Medicaid documents.

Regional Differences

To assess regional variation, states were categorized into 4 regions: Northeast, Midwest, South, and West (Supplementary Table 1). All states in the 4 regions except South Carolina covered physical therapy for chronic back pain. States in the Northeast and West regions fully covered CBT services for Medicaid recipients. South Carolina (South region) and South Dakota (Midwest region) were the 2 outliers that did not provide clear coverage for CBT.

All other treatments beyond physical therapy and cognitive behavioral therapy demonstrated a heterogeneous distribution with no discernable trends by region. The median number of treatments for the Northeast and Midwest regions was 3, whereas the median for the South and West was 2 treatments.

Discussion

The 2016 CDC guidelines for the prescription of opioids for chronic pain indicate that 3% to 4% of the United States adult population is currently receiving long-term opioid therapy (5). Recent studies show that deaths from opioid overdose continue to increase across the United States (1,2). Integrative treatments for chronic pain may help mitigate opioid usage and should be approached from an evidence-based perspective and assessed independently for each patient. Our results demonstrate that significant heterogeneity exists among federal and state healthcare coverage for alternative chronic back pain treatments. Differences in coverage may inadvertently exacerbate inequalities in healthcare among patients seeking treatment for chronic pain.

These opioid-sparing therapies are backed by evidence-based guidelines from the ACP and the NCCIH (4). The NCCIH consistently updates the latest research for several modalities examined in this manuscript (www.nccih.nih.gov). The NCCIH database serves to offer physicians and patients the most up-to-date information regarding integrative treatments for a variety of health topics. In order to combat the risks of long-term opioid usage, physicians seeking to utilize non-pharmacological treatments for chronic back pain should follow the guidelines set forth by the ACP (4). This may require more collaboration between patients and physicians to reach a personalized treatment plan. Some patients may have no experience or knowledge regarding novel treatments, especially SCS, yoga, and tai chi/qigong. Fortunately, many online resources and smartphone applications (e.g., Headspace, Breethe, Calm, etc.) can be downloaded to teach patients how to meditate or mitigate stressors they may be experiencing. It is important for clinicians to be aware of these online resources for patients who are interested in beginning such practices. The same can be said for yoga as well. Most Medicaid plans do not provide coverage for yoga classes, but there are online resources and guided videos on several platforms across the internet. Patients interested in yoga can narrow their search by locating practices specific to their needs. Meditation

and mindfulness therapies target psychological and neural pathways related to pain rather than a physical approach (6). Some practices may involve mindfulness training, while others focus on pain reprocessing therapy (6,7). Both utilize unique strategies to target pain by honing different techniques with the goal of reducing pain from the inside out. These therapies contrast commonly practiced treatments such as physical therapy and spinal manipulation, which are focused on treating pain from the outside in.

In addition to a lack of education regarding novel treatments, another limitation restricting patients from receiving covered treatment is their age. As mentioned in the spinal manipulation section of the results, some services are only available for patients up to 21 years of age (Table 1).

A review by Meucci et al (8) determined that chronic low back pain is most common in those over 30 years old and increases until the age of 60. Thus, coverage for spinal manipulation and/or acupuncture services up to 21 years old may not apply to a large population of patients with chronic back pain.

Continued collaboration between physicians and patients experiencing chronic pain is paramount. If patients are encouraged to engage in integrative treatments, especially those that can be conducted from the comfort of their homes, this may begin to allow them more control of their treatment and provide them with a greater sense of autonomy. Empowering patients to mitigate their pain at home may improve their well-being without the need for continued visits to providers for medical services on a weekly or monthly basis.

Additional collaboration between physicians and public officials is critical to ensuring patients have access to opioid-sparing treatments with effective outcomes and strong safety profiles. Recently, the editor of the Journal of Alternative and Complementary Medicine issued a note reporting that CMS is working to include acupuncture treatments by licensed acupuncture therapists in federal payments (9). This further illustrates the need for research and exploration of acupuncture services to ensure physicians prescribing alternative treatments are engaging in evidence-based care. Other interventional treatments for chronic pain, such as spinal cord stimulation, have gained widespread use over the past decade, especially among Medicare recipients (10). While this paper does not address other forms of injection therapy, a comprehensive health policy review by Manchikanti and colleagues published in *Pain Physician* demonstrates the increased utilization of sacroiliac injection treatments since 2000 (11). There was a sharp increase in injections in the Medicare population from 2000-2009, followed by a minimal increase from 2009-2018 (11). Necessary trends in interventional pain procedures will help provide physicians and public officials with the tools necessary to continually examine coverage for chronic pain therapies.

Future research regarding opioid-sparing treatments for chronic pain should focus on the cost-effectiveness of integrative treatments versus long-term opioids. It is estimated that the total economic burden of pain currently costs our healthcare system over $500 billion annually, contributing to higher costs for the individual and the public as a whole (12). Studies that evaluate and compare the cost-effectiveness of opioid and nonopioid pharmacologic treatment to non-pharmacological therapy will allow physicians to make more informed decisions for patients while enabling lawmakers to generate healthcare plans and policies that address the issues discussed herein.

Limitations

It is worth reiterating that states listed as "no" in Table 1 do not necessarily deny coverage for these treatments, but the coverage may not have been listed in the available documents accessed through the state's Medicaid portal. Several provider manuals included varying degrees of information regarding their services. Some included all pertinent information, such as a definition of the treatment, the exact number of service visits allowed in a predetermined time period, whether or not the therapy requires prior authorization, and when the patient requires reevaluation if more services are needed. Most manuals provided less information than this and sometimes conflicting information. Each state's Medicaid documents contained inherent variability, especially with respect to when they were updated or published. Some states had updated information available for 2021, while the most updated documents for other states were last updated in 2008. Attempts to reach Medicaid representatives by phone were futile, preventing us from gathering specific data for states (such as Nebraska, whose PT services are listed as repealed). This relates to the frustration experienced by physicians and patients when seeking to obtain coverage or approval from Medicare, Medicaid, and other insurance companies.

Many states had nonspecific language regarding mental health services, leading to the subjective interpretation of coverage for therapies such as CBT.

While coverage for "behavioral health services" may be initially described as imprecise since it does not define which specific therapies are covered, this language may be interpreted as all-encompassing rather than limiting. Similarly, for spinal manipulation services, most insurance documents lacked specific language as to whether the treatment includes osteopathic manipulative treatment (OMT). This information is necessary for pain physicians who have completed OMT certification and wish to offer this treatment to patients.

Some states listed coverages and their limitations with clear parameters. Others provided incomplete or unclear information regarding their services. This makes the process laborious for researchers interested in public policy, physicians, supporting staff, and patients who may need access to determine which treatments are available. Additionally, Medicare and Medicaid policies are incredibly long, verbose legal documents that are difficult to sift through, even as an educated professional. Because many medical pamphlets and documents are printed at a reading level that is accessible to patients, we recommend that federal and private insurance companies offer recipients a list of covered and noncovered services that can be easily accessed and understood. This will improve physician and patient awareness of potential treatments they may be eligible to receive.

Conclusion

Our study elucidates the differences in federal healthcare coverage for certain opioid-sparing treatments for chronic back pain. Both the published literature and federal health insurance coverage demonstrate that integrative treatments are available for patients with chronic pain. However, when viewing this information from a statewide level, different states cover different therapies. Therein lies the reality that providers and patients must face. If our goal as a nation is to ensure patients across the country receive equal care, health insurance companies and CMS must be willing to provide coverage for alternative treatments. It is our duty as healthcare professionals to confront the opioid epidemic with patients and encourage them to practice different treatments that may help reduce their pain. By continuing to engage in evidence-based treatments, we may be able to slow the rise in opioid consumption and opioid use disorder within the population.

Future studies that examine whether states with less restrictive coverage for these treatment modalities have improved opioid-related outcomes would inform policy steps moving forward.

Disclaimer

These manuals and information are not exhaustive of Medicaid law and should not be relied upon as a legal authority. The provider should always rely on its own counsel to ensure compliance with Medicaid laws.

Author Contributions:

The study was designed by NZ and JG. MM collected the data and wrote the manuscript. All authors contributed to the preparation, revision, and approval of the final version.

References

1. Lyden J, Binswanger IA. The United States opioid epidemic. *Semin Perinatol* 2019; 43:123-131.
2. US Opioid Dispensing Rate Maps; Drug Overdose. *Centers for Disease Control and Prevention Injury Center*. Accessed December 27, 2021. https://www.cdc.gov/drugoverdose/rxrate-maps/index.html
3. Guy GP Jr, Zhang K, Bohm MK, et al. Vital Signs: Changes in opioid prescribing in the United States, 2006-2015. *MMWR Morb Mortal Wkly Rep* 2017; 66:697-704.
4. Qaseem A, Wilt TJ, McLean RM, et al. Noninvasive treatments for acute, subacute, and chronic low back pain: A clinical practice guideline from the American College of Physicians. *Ann Intern Med* 2017; 166:514-530.
5. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain--United States, 2016. *JAMA* 2016; 315:1624-1645.
6. Cherkin DC, Sherman KJ, Balderson BH, et al. Effect of mindfulness-based stress reduction vs cognitive behavioral therapy or usual care on back pain and functional limitations in adults with chronic low back pain: A randomized clinical trial. *JAMA* 2016; 3151240-1249.
7. Zgierska AE, Burzinski CA, Cox J, et al. Mindfulness meditation and cognitive behavioral therapy intervention reduces pain severity and sensitivity in opioid-treated chronic low back pain: pilot findings from a randomized controlled trial. *Pain Med* 2016; 17:1865-1881.
8. Meucci RD, Fassa AG, Faria NM. Prevalence of chronic low back pain: Systematic review. *Rev Saude Publica* 2015; 49:1.
9. Mao JJ, Davis RT, Coeytaux R, et al. Acupuncture for chronic low back pain: Recommendations to Medicare/Medicaid from the Society for Acupuncture Research. *J Altern Complement Med* 2019; 25:367-369.
10. Manchikanti L, Pampati V, Vangala BP, et al. Spinal cord stimulation trends of utilization and expenditures in fee-for-service (FFS) Medicare population from 2009 to 2018. *Pain Physician* 2021; 24:293-308.

11. Manchikanti L, Manchikanti MV, Vanaparthy R, Kosanovic R, Pampati V. Utilization patterns of sacroiliac joint injections from 2000 to 2018 in fee-for-service Medicare population. *Pain Physician* 2020; 23:439-450.
12. Hagemeier NE. Introduction to the opioid epidemic: the economic burden on the healthcare system and impact on quality of life. *Am J Manag Care* 2018; 24:S200-S206.

Supplemental Table 1. *Regional Medicaid Coverage for alternative chronic pain therapies.*

	Physical Therapy	**Cognitive Behavioral Therapy**	**Spinal Cord Stimulation**	**Acupuncture**	**Message Therapy**	**Meditation**	**Mindfulness**	**Spinal Manipulation**	**Tai Chi/ Qi Gong**	**Yoga**
Northeast										
Connecticut	Yes	Yes	Undefined	Yes	No	No	No	No3	No	No
Delaware	Yes	Yes	Undefined	No[+]	No[+]	No[1]	No[1]	Yes	No	No[1]
Maine	Yes	Yes	Yes	No	No	No[1]	No[1]	Yes	No[1]	No[1]
Massachusetts	Yes	Yes	Yes	Yes	No	Yes[4]	Yes[4]	Yes	Yes[2]	No[1]
New Hampshire	Yes	Yes	Undefined	No	Undefined	No[1]	No[1]	Yes	No[1]	Yes[4]
New Jersey	Yes	Yes	Undefined	No	No	No[1]	Yes[4]	Yes	Yes[4]	Yes[4]
New York	Yes	Yes	Undefined	Yes	No	No	Yes[4]	Yes	Yes[4]	Yes[4]
Pennsylvania	Yes	Yes	Undefined	No	Yes[2]	Yes[4]	Yes[4]	Yes	No	No[1]
Rhode Island	Yes	Yes	Undefined	No	No	No	No	Undefined	No	No
Vermont	Yes	Yes	Undefined	No	No	Yes[4]	Yes[4]	Yes	No	Yes[4]
Midwest										
Illinois	Yes	Yes	Yes	No	No	Yes[4]	Yes[4]	No[3]	Yes[4]	Yes[4]
Indiana	Yes	Yes	Yes	No	No	No	No	Yes	No	No
Iowa	Yes	Yes	Undefined	No	No	No[1]	No[1]	Yes[5]	No[1]	No[1]
Kansas	No	Yes	Undefined	No	Yes[2]	No	No	No	No	No
Michigan	Yes	Yes	Undefined	No	No[3]	Yes[2]	Yes[2]	Yes[5]	No	No
Minnesota	Yes	Yes	Undefined	Yes	Yes[2]	No	No[5]	Yes	No	No
Missouri	Yes	Yes	Undefined	Yes	Yes[2]	No	No	Yes	No	No
Nebraska	Repealed	Yes	Undefined	No	Undefined[1]	Yes[4]	Yes[4]	Yes	Yes[4]	Yes[4]
North Dakota	Yes	Yes	Undefined	No	No	Yes[4]	Yes[4]	Yes	No	Yes[4]
Ohio	Yes	Yes	Undefined	Yes[5]	No	No	No	Yes	No	No
South Dakota	Yes	No	Yes	No	No	Yes[4]	No	Yes	No[1]	No[1]
Wisconsin	Yes	Yes	Undefined	No	Yes[2]	No	No	Yes	No	No
South										
Alabama	Yes	Yes	Undefined	No	No	No	No	No	No	No
Arkansas	No[3]	Yes	Undefined	No	No	No	No	No[3]	No	No
Florida	Yes	Yes	Undefined	Yes*	No	No[1]	No	Yes	No	No[1]
Georgia	No	Yes	Undefined	No	No[2]	No	No	No	No	No
Kentucky	Yes	Yes	Undefined	No	No	No	No[1]	Yes	No[1]	Yes[4]
Louisiana	Yes	Yes	Undefined	No	No	Yes[4]	Yes[4]	No[3]	No[1]	No[1]

Supplemental Table 2. *Regional Medicaid Coverage for alternative chronic pain therapies*.

	Physical Therapy	Cognitive Behavioral Therapy	Spinal Cord Stimulation	Acupuncture	Message Therapy	Meditation	Mindfulness	Spinal Manipulation	Tai Chi/ Qi Gong	Yoga
Maryland	Yes	Yes	Yes*	No3	Yes[2]	Yes[5]	Yes[5]	No[3+]	No	No
Mississippi	Yes	Yes	Undefined	No	Yes[2]	No	No	Yes	No	No
North Carolina	Yes	Yes	Yes	No[+]	No[+]	Yes[4]	Yes[4]	Yes	No	Yes[4]
Oklahoma	Yes	Yes	Undefined	No	Yes[2]	No[1]	No	No	No	No
South Carolina	No	No	Yes	No	No	No	No	Yes	No	No
Tennessee	Yes	Yes	Undefined	Yes	No	Yes[1,4]	No	No	No	No[1]
Texas	Yes	Yes	Undefined	No	Yes[5]	No[1]	No[1]	Yes	No[1]	No[1]
Virginia	Yes	Yes	Undefined	No	No	Yes[4]	No[4,5]	No	No	No[1]
West Virginia	Yes	Yes	Undefined	No	Yes[2]	No[1]	No	Yes	No	No
Washington D.C.	Yes	Yes	Undefined	No	No	No	No	No	No	No
West										
Alaska	Yes	Yes	Undefined	No	Yes[2]	No	No	No3	No[1]	No
Arizona	Yes	Yes	Yes	Yes[5]	Undefined	No	No	No	No	No
California	Yes	Yes	Yes (conditional)	Yes	Yes[2]	No[1]	No[1]	Yes	No	No
Colorado	Yes	Yes	Undefined	Yes[5]	Yes[5]	No	No	Yes[5]	No	No
Hawaii	Yes	Yes	Undefined	No	No	No	No	Undefined	No	No
Idaho	Yes	Yes	Undefined	No[1]	No[1]	No	No	Yes	No	No
Montana	Yes	Yes	Undefined	No	No	Yes[4]	No[4]	No[3]	No[1]	No[1]
Nevada	Yes	Yes	Undefined	No	Yes[2]	Yes[4]	No	Yes[5]	Yes[4]	Yes[4]
New Mexico	Yes	Yes	Undefined	No	No	No	No	No	Yes[4]	No
Oregon	Yes	Yes	Undefined	Yes	Yes	No	Yes	Yes	Yes[4]	Yes[4]
Utah	Yes	Yes	Undefined	No	No	No	No	Yes	No	No
Washington	Yes	Yes	No	No[+]	Yes[2]	Yes[4]	Yes[2]	No[3,+]	No	No[1]
Wyoming	Yes	Yes	Undefined	No	No	Yes[4]	No	No	Yes[5]	No

1. These states recommended the treatment as an alternative treatment for chronic pain or improvement of general health and well-being.
2. Treatment was listed under another coverage limit (e.g., massage therapy was listed as a component of treatment for physical therapy, or meditation/mindfulness was covered under behavioral health services)
3. Treatment was only covered for those under 20 or 21 years old
4. Treatment included public online resources through the state's Medicaid website
5. Requires diagnosis other than chronic pain
* Only covered via Managed Care Organization (MCO)
+ Recent legislation requesting coverage or documentation exploring potential options
Treatments listed as undefined indicated unclear language regarding service coverage