



# Florida State Oriental Medical Association

## Acupuncture: Essential to Floridians

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## Summary of Contents

As providers of primary health care services under F.S. 457.102(2), licensed Acupuncturists, have a direct role in treating Floridians health care needs. Licensed Acupuncturists are essential in treating pain, reducing the symptoms of stress and the need for potentially addictive medications. They are routinely found working in hospitals, VA health systems, oncology centers, other specialty care facilities, and private practices throughout Florida.

In recent years Licensed Acupuncturists have been called upon in increasing ways to assist the healthcare needs of our patients, whether in combating the opioid crisis or in assisting underserved communities. Our services are included in many insurance plans, Medicaid, and now Medicare for the treatment of chronic low back pain.

Studies show acupuncture services:

- are safe
- are effective
- can reduce costs by 27% compared to usual care without acupuncture

FSOMA and licensed acupuncturists in Florida are working hard to ensure that patients have access to the effective healthcare of their choice. Acupuncture is an effective non opioid treatment for pain and many other conditions and has a demonstrated cost savings benefit.

FSOMA would like to be a resource for you and your office when questions arise on healthcare policy needs and changes in Florida. Please feel free to reach out with any and all questions.

Thank you

Ellen Teeter, AP  
Executive Director  
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## About Acupuncture in Florida and FSOMA

- 1981 Acupuncture was legalized in Florida. An apprentice process was established which required working under MD licenses.
- 1982 The Florida State Acupuncture Association (FSAA) was established in 1982 for the fledgling profession.
- 1984 The practice of acupuncture was established to certify acupuncturists; a Board of Acupuncture was established within the Department of Health.
- 1994 The FSAA was renamed to the Florida State Oriental Medical Association and established as a 501c6 not for profit.

Chapter 457 definition: "Acupuncture" means a form of **primary health care**, based on traditional Chinese medical concepts and modern oriental medical techniques, that employs acupuncture diagnosis and treatment, as well as adjunctive therapies and diagnostic techniques, for the promotion, maintenance, and restoration of health and the prevention of disease. Acupuncture shall include, but not be limited to, the insertion of acupuncture needles and the application of moxibustion to specific areas of the human body and the use of electroacupuncture, Qi Gong, oriental massage, herbal therapy, dietary guidelines, and other adjunctive therapies, as defined by board rule.

(2) "Acupuncturist" means any person licensed as provided in this chapter to practice acupuncture as a **primary health care provider**.

Current Training to be licensed in Florida includes completion of at least a 4-year Master's Degree level program or foreign equivalent in oriental medicine, there are Doctoral level programs also available in Florida and elsewhere.

According to the Accreditation Commission for Acupuncture and Oriental Medicine professional acupuncture programs with a Chinese herbal medicine specialization must:

1. be at least four (4) academic years in length
2. be a minimum of 146 semester credits of instruction, including at least:
  - a) 705 clock hours of instruction in Oriental medical theory, diagnosis and treatment techniques in acupuncture, and related studies.
  - b) 450 clock hours of instruction in didactic AOM-related herbal studies.
  - c) 870 clock hours of instruction in integrated acupuncture and herbal clinical training, comprised of at least 150 hours in clinical observation and 700 clock hours of instruction in clinical internship.
  - d) 510 clock hours of instruction in biomedical clinical sciences.
  - e) 90 clock hours of instruction in counseling, communication, ethics, and practice management.

FSOMA members are committed to improving the health and wellbeing of Floridians by advancing the practice of Oriental Medicine and Acupuncture.

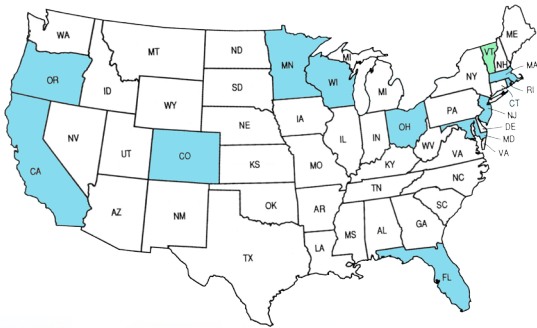
- FSOMA exhibits at medical conferences like the Workers Compensation Institute educating about our scope of practice and ability to help.
- We host a health fair in Tallahassee yearly called Acupuncture Education Day and work to publicize the benefits of our medicine to the public
- FSOMA offers practitioners continuing education classes as well as classes on building better business.

# Pain Free Florida

## ACUPUNCTURE SAVINGS

Cost savings of **27%** compared to usual care without acupuncture

Cost savings of more than **\$3600** per participant per year



Emergency Room visits reduced by **61%**

Overall prescriptions reduced by **63%**

Opioid Prescriptions reduced by **86%**

Every **\$1.00** spent on CAM saves **\$2.41** in medical expenses

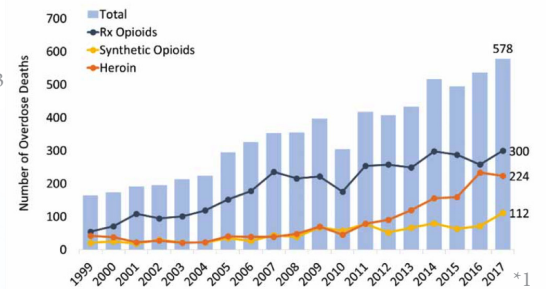
AMI of Rhode Island's ongoing Integrated Chronic Pain Program

## ACUPUNCTURE SAFETY

Acupuncture Deaths **0 / 100,000** <sup>\*2,3</sup>

Opioid Deaths **10 / 100,000** <sup>\*1</sup>

NSAID Deaths **83 / 100,000** <sup>\*4</sup>



1. <https://www.drugabuse.gov/drugs-abuse/opioids/opioid-summaries-by-state/colorado-opioid-summary>. Published 2019. Accessed May 6, 2019.

2. White. Acupunct Med 2004;22(1):34-39

3. Witt et al. Forsch Komplementmed 2009;16(2):91-97

4. Tramèr et al. Pain 2000;85:169-182

## ACUPUNCTURE EFFICACY

**25%** more effective than usual care when treating pain

**90%** of the benefits are retained at **12 months**

MacPherson et al. Pain 2017;158(5):784-793

## **Links to Studies Cited**

### **Cost Savings**

Rhode Island Medicaid Savings - <https://bit.ly/3551phb>

### **Safety**

1. Colorado Opioid Summary - <https://bit.ly/39tWulb>
2. A Cumulative Review of the Range and Incidence of Significant Adverse Events Associated with Acupuncture - <http://bit.ly/35k9GxF>
3. Safety of Acupuncture: Results of a Prospective Observational Study with 229,230 Patients and Introduction of a Medical Information and Consent Form - <http://bit.ly/3nszeiy>
4. Quantitative Estimation of Rare Adverse Events Which Follow a Biological Progression: a New Model Applied to Chronic NSAID Use - <http://bit.ly/3s9X1qS>

### **Efficacy**

The Persistence of the Effects of Acupuncture after a Course of Treatment: A Meta-analysis of Patients with Chronic Pain - <http://bit.ly/2LzZdXW>

# Rhode Island Medicaid Integrated Chronic Pain Program: Summary of Results Advanced Medicine Integration, December 2016



Advanced Medicine Integration Group, L.P.

**AMI of Rhode Island** managed its Integrated Chronic Pain Program for the state's Medicaid program from 2012-2015. This clinical program was organized for plan beneficiaries dealing with the most difficult and complex conditions that were also most costly. The plan paid for the use of integrative therapies not usually covered by Medicaid, including acupuncture and massage and extended case management. Results were released by AMI

in December of 2016 showing significant impact in clinical outcomes, reduction in utilization and overall costs of care.

**There was a 27% decrease in total average medical costs.**

**Every \$1 spent on complementary and integrative services (including management fees) resulted in \$2.41 of medical expense savings.**

The following pages have the **RI Medicaid Pilot Summary** or you can download it here - <https://bit.ly/3551phb>

## **ARTICLES (PDF):**

Stopping the Pain — Community Stories, May 2015: United Healthcare RI - <https://bit.ly/3hHw89g>

Solving the Problem of Pain — Community Stories, Dec. 2015: United Healthcare RI - <https://bit.ly/35nbypN>



Advanced Medicine Integration Group, L.P.

## Integrated Chronic Pain Program (ICPP): Summary of Results

AMI of Rhode Island's ongoing Integrated Chronic Pain Program reduced per member per year (PMPY) total average medical costs by 27%, decreased the average number of ER visits by 61%, lowered the number of average total prescriptions by 63% and reduced the average number of opioid scripts by 86% for enrolled Community of Care (CoC) Medicaid members with chronic pain conditions. Client validated, these reductions exceeded by 2 to 3 times those reported for a non-enrolled control group of conventionally managed CoC chronic pain patients. Every \$1 spent on CAM services and AMI program fees resulted in \$2.41 of medical expense savings.

### Background

- At the direction of the State of Rhode Island's legislature, AMI contracted with two health plans to identify and manage their Medicaid eligible members suffering from chronic pain through AMI's Integrated Chronic Pain Program (ICPP).
- The target Medicaid population for this program is the Community of Care (CoC) segment, high utilizers of ER visits and opioids/pharmaceuticals. In addition to chronic pain conditions, these members have significant economic challenges as well as bio-psycho-social disorders.
- The objectives of the ICPP are to reduce pain levels (and opioid use), improve function and overall health outcomes, reduce emergency room costs, and through a holistic approach and behavioral change models, educate members in self-care and accountability.
- The design of the program for this patient population features holistic nurse case management with directed use of patient education, community services and CAM modalities including massage, acupuncture and chiropractic treatments.
- Individuals with chronic pain conditions are identified using AMI's proprietary predictive modeling algorithms applied to paid claims data to determine opportunity for reducing chronic pain related utilization and costs.
- **Based upon AMI's performance to date and confident in our ability to deliver similar savings results for all payers, AMI is offering to conduct an opportunity analysis for any interested organization at its own expense.**



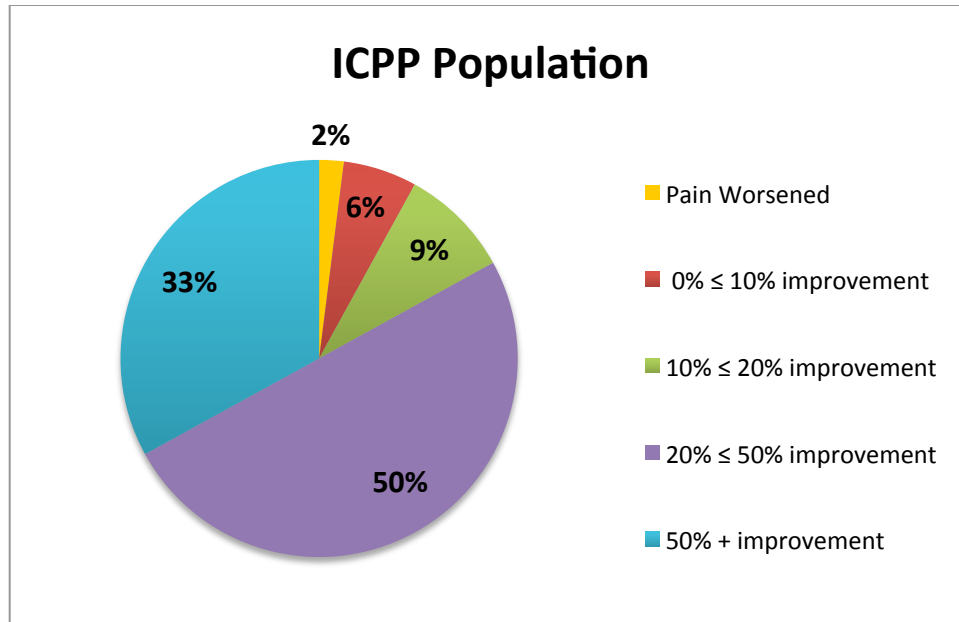
## Results

- Please see the chart below. Per member per month (PMPM) health care expenses, by category, for those members enrolled in the ICPP versus those members who were referred, but not enrolled. Both the members engaged in the ICPP and the control group has compared data at 12 months pre-referral and 12 months post-referral.

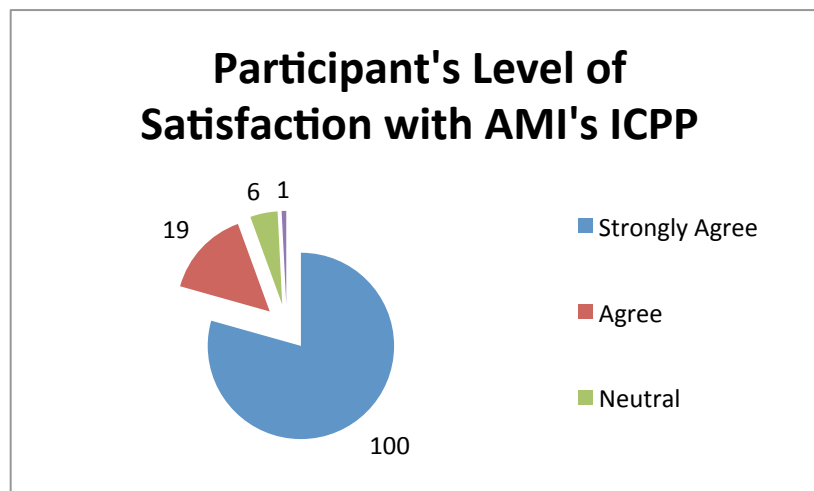
| <b>Chronic Pain Population (PMPY)</b>                    | Average Total Claims | Average # ER Visits | Average # RX Scripts | Average # Opioid Scripts |
|----------------------------------------------------------|----------------------|---------------------|----------------------|--------------------------|
| Total for members with at least 24 months of claims data | \$18,775.61          | 7.31                | 67.96                | 7.42                     |

| <b>AMI Data (PMPY)</b>                                                      | Average Total Claims | Average # ER Visits | Average # RX Scripts | Average # Opioid Scripts |
|-----------------------------------------------------------------------------|----------------------|---------------------|----------------------|--------------------------|
| Engaged Members in AMI's ICPP (CAM Expense Included)                        | \$13,655.48          | 2.88                | 25.06                | 1.06                     |
| Percentage Changes for Above Data                                           | -27%                 | -61%                | -63%                 | -86%                     |
| Non-Engaged Members (Control Group)                                         | \$18,765.50          | 5.66                | 46.99                | 4.18                     |
| Percentage Changes for Above Data                                           | 0%                   | -22%                | -31%                 | -44%                     |
| <b>Savings PMPY (as compared between Engaged Members and Control Group)</b> | \$5,110.02           | 2.78                | 21.93                | 3.12                     |

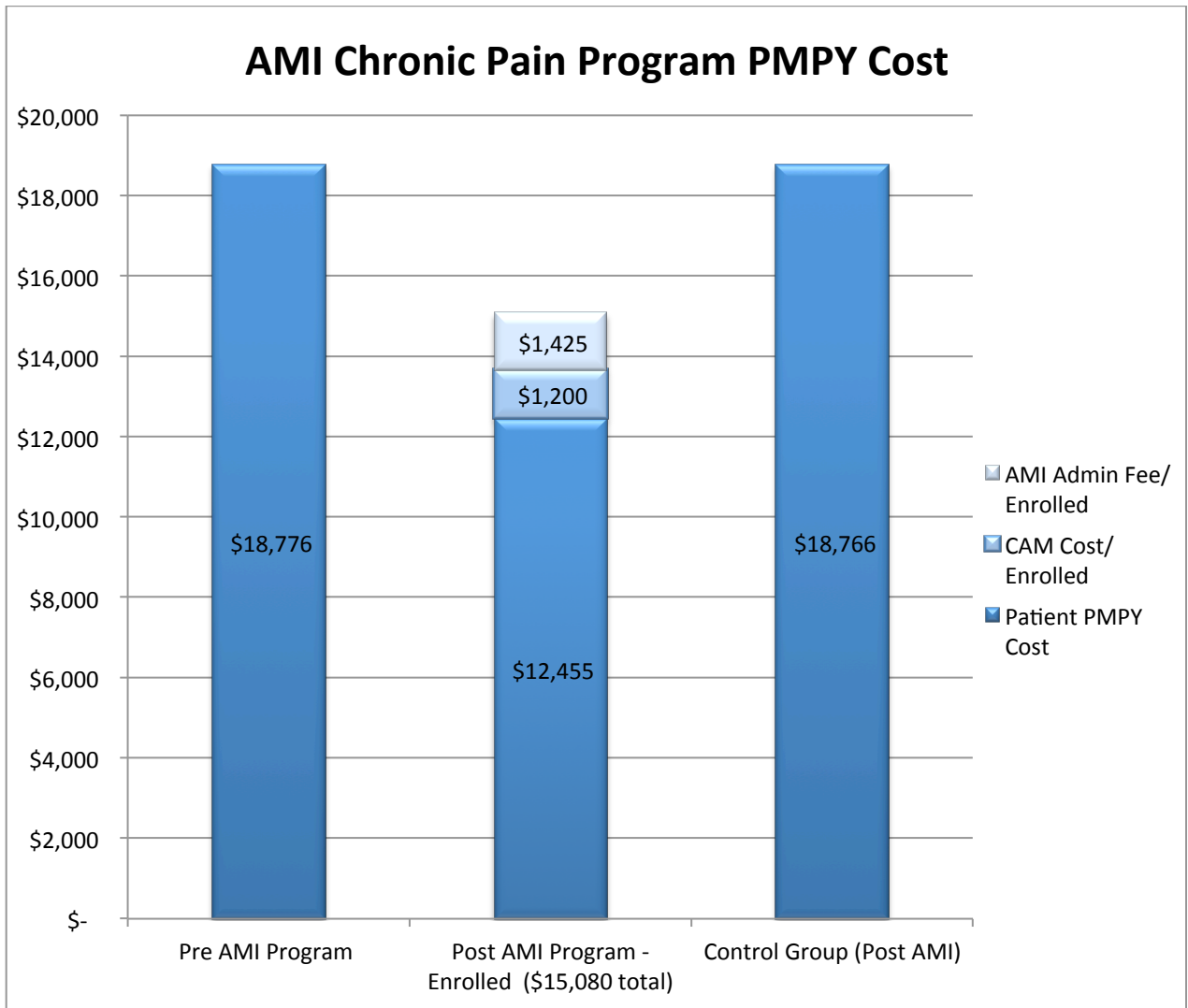
- The program demonstrated a positive influence on members by **improving physical and mental function, reducing pain, fatigue, and depression.**
- Pain levels measured on a pre and post treatment basis improved by an average of 42%** based on a study of 345 patients with an average of 11 encounters/visits per year. A breakdown is presented in the chart below:



- A Patient Satisfaction Survey conducted by an independent third party revealed the following results:
  - 92% Agree or Strongly Agree their CAM provider reduced their pain level.
  - 82% believe the quality of daily life has improved by participating.
  - 96% would recommend the program to friends or family suffering from chronic pain or fatigue.
- Under this same study, 126 people were asked if they were satisfied with AMI's ICPP. Here are those results:



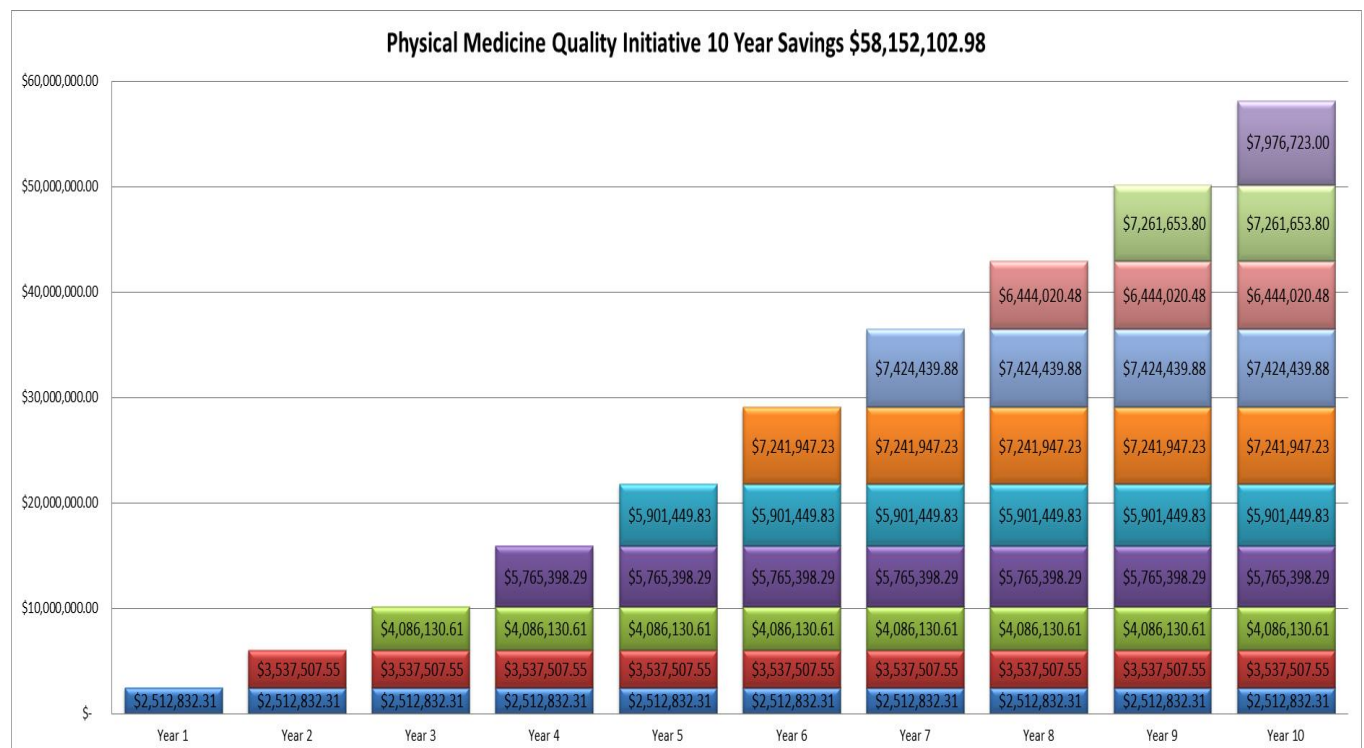
- AMI only receives compensation for those patients actively engaged in the ICPP. There is no economic risk to the client as AMI places 100% of its administrative fee at risk based on program savings. In its 20 year history of managing at risk programs, AMI has met or exceeded its performance and savings targets for every client and has never had to refund a single dollar of administrative fees.



- The chart above is a side by side comparison of total paid claims costs for CoC members identified with chronic pain conditions prior to enrolling in the ICPP (Column 1), post enrollment and participation in the ICPP (Column 2), and non-enrolled in the ICPP/conventionally managed (Column 3) during the same measurement period.
- **Please note:** Paid claims totals in Columns 1 & 3 include paid claims data **ONLY** and do not include client administrative fees; the paid claim total in Column 2 includes the cost of CAM services AND AMI administrative fees.

## Physical Medicine Quality Initiatives

- The Physical Medicine Quality Initiatives are supported by AMI's proprietary web-enabled analytics engine **IMDIS®** (*Integrated Medical Data Information System®*).
- Evaluating point-of-service data collected from patients, network providers and payers, IMDIS® calculates the resulting patient and provider specific outcomes in real time and compares them to recommended standards established by the Occupational Disability Guidelines (ODG) and the Council on Chiropractic Guidelines for Practice Parameters (CCGPP).
- Through detailed provider performance reporting capabilities, on-line access to physical medicine guidelines, best practices and other quality improvement tools, AMI programs facilitate positive, non-punitive provider behavior change.
- In addition to tracking therapies against best practices, IMDIS® also includes an optional component to provide health plans with a customizable preauthorization feature.
- AMI manages a Physical Medicine Quality Initiative for a multi-state plan client with the following results over a ten year period:



# Comparison of Health Care Expenditures Among Insured Users and Nonusers of Complementary and Alternative Medicine in Washington State: A Cost Minimization Analysis

Bonnie K. Lind, Ph.D.,<sup>1,2</sup> William E. Lafferty, M.D.,<sup>3</sup> Patrick T. Tyree, A.A.,<sup>1</sup> and Paula K. Diehr, Ph.D.<sup>1,4</sup>

## Abstract

**Objectives:** The purpose of this analysis was to compare health care expenditures between insured patients with back pain, fibromyalgia syndrome, or menopause symptoms who used complementary and alternative medical (CAM) providers for some of their care to a matched group of patients who did not use any CAM care. Insurance coverage was equivalent for both conventional and CAM providers.

**Design:** Insurance claims data for 2000–2003 from Washington State, which mandates coverage of CAM providers, were analyzed. CAM-using patients were matched to CAM-nonusing patients based on age group, gender, index medical condition, overall disease burden, and prior-year expenditures.

**Results:** Both unadjusted tests and linear regression models indicated that CAM users had lower average expenditures than nonusers. (Unadjusted: \$3,797 versus \$4,153,  $p = 0.0001$ ;  $\beta$  from linear regression  $-\$367$  for CAM users.) CAM users had higher outpatient expenditures that which were offset by lower inpatient and imaging expenditures. The largest difference was seen in the patients with the heaviest disease burdens among whom CAM users averaged \$1,420 less than nonusers,  $p < 0.0001$ , which more than offset slightly higher average expenditures of \$158 among CAM users with lower disease burdens.

**Conclusions:** This analysis indicates that among insured patients with back pain, fibromyalgia, and menopause symptoms, after minimizing selection bias by matching patients who use CAM providers to those who do not, those who use CAM will have lower insurance expenditures than those who do not use CAM.

## Introduction

THE USE OF COMPLEMENTARY AND ALTERNATIVE medicine (CAM) has grown in recent decades,<sup>1,2</sup> and as a result insurance coverage for various types of CAM providers has become more prevalent.<sup>1,3–5</sup> But due to concern over ever-increasing health care costs, increasing emphasis is being given to cost-effectiveness of care. Patients desire choices in sources of health care, but if CAM providers are to be added to insurance coverage, their care must be cost effective.

One researcher noted that CAM therapies may be good candidates not only for cost-effective care but even cost savings, because “they avoid high technology, offer inexpensive remedies, and harness the power of *vis medicatrix*

*naturae* (the body’s natural ability to heal itself)”<sup>6</sup>. However, several difficulties have hindered the assessment of CAM’s cost effectiveness. One of the biggest challenges in evaluating the effect of CAM use on health care costs is the selection bias inherent in patients’ self-selection into CAM using and non-CAM using groups.<sup>7</sup> Researchers have consistently reported that CAM users have poorer health status, more visits to conventional providers, and/or higher rates of hospitalization than nonusers.<sup>8–14</sup> Thus, it has been difficult to find or create comparable groups of CAM users and nonusers for which costs can be compared.

In the early 1990s, a Swiss group conducted a randomized clinical trial offering free insurance coverage of CAM providers to half of a group of insured individuals. They

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<sup>2</sup>Research Department, St. Luke’s Health System, Boise, ID.

<sup>3</sup>Department of Informatics, University of Missouri School of Medicine, Kansas City, MO.

<sup>4</sup>Department of Biostatistics, University of Washington, Seattle, WA.

reported that covering CAM care did not lead to an increase in costs for the insurance company because CAM utilization comprised only a tiny percentage of overall expenditures.<sup>15</sup> Given the increase in CAM use since the early 1990s in the United States,<sup>12</sup> the cost of CAM coverage today might be larger than that found in the Swiss study. However, data from Washington State, which mandates private insurance coverage of all licensed CAM providers,<sup>16</sup> found a similar tiny percentage of expenditures devoted to CAM care based on data from 2002.<sup>17</sup> The Washington State data reflect self-selection of patients into CAM-using and nonusing groups and thus may reflect a more “real-world” experience for insurance companies than the Swiss randomized study.

Another difficulty in performing economic analyses of CAM use occurs because many CAM providers are not covered by insurance, and patients pay for their services out of pocket. As a result, data on CAM utilization and expenditures are not available in administrative databases and must be collected through primary data collection,<sup>6</sup> which may be subject to recall bias and response bias. Washington State provides a unique environment in which to perform an economic analysis of CAM use because of the state-mandated insurance coverage referenced above. As a result, administrative claims data from Washington State include data on CAM utilization and expenditure that are consistent with data for conventional care.

A final difficulty in performing a cost-benefit evaluation of CAM involves measuring outcomes of care. Data on outcomes of care are not available in the administrative claims databases often used to provide data on expenditures. With CAM care, a further difficulty lies in how to quantify what Hollinghurst refers to as “the wider benefits of CAM,” some of which may appear over long periods of time or be based more on a patient’s sense of well-being than a measurable clinical outcome.<sup>7,18</sup> To avoid these problems in measuring outcomes, this analysis takes a cost-minimization approach,<sup>6</sup> analyzing which of two approaches to care is associated with lower overall expenditures, assuming comparable health outcomes between the two approaches.

The purpose of this article is to compare insurance expenditures for matched groups of CAM users and nonusers with selected health conditions, to evaluate whether use of CAM for some care is associated with higher or lower overall health care expenditures.

## Materials and Methods

### Population

This research was approved by the institutional review boards of the University of Washington and Boise State University. The study sample was constructed using 2000–2003 enrollment and claims data from two large insurance companies in Washington State that offer a variety of product types. The analysis was restricted to insured individuals covered by the law requiring coverage of CAM providers, which excluded enrollees funded through Medicare, Medicaid, or other state or federal programs. The data acquisition process, data cleaning, and the creation of analytic variables have been previously described.<sup>19</sup> The analyses presented here were limited to adults aged 18–64 who had at least 2 continuous years of coverage and at least one visit that

contained a diagnosis for one of the index conditions defined below.

**Index conditions.** Three health conditions were chosen for study: back pain, fibromyalgia syndrome (FMS), and menopause symptoms. These index conditions were selected because a substantial proportion of associated patients use CAM for at least part of their care.<sup>17,20,21</sup> FMS was defined as at least one visit containing ICD-9 code 729.1. Low back pain and menopause symptoms were defined using the Johns Hopkins Adjusted Clinical Group (ACG) software, Version 8,<sup>22</sup> which groups ICD-9 codes per visit into expanded diagnosis clusters (EDC). Low back pain was defined as EDC MUS14 (Low Back Pain) and menopause symptoms was defined as EDC FRE11 (Menopausal Symptoms).

**Time frame.** Two (2) time periods of interest were created. The “study year” for each patient started on the day of the first visit for an index condition and continued for 365 days; and the “prior year” for each patient was defined as the 365 days preceding the first visit for the index condition. All data were derived from calendar years 2000–2003.

Patients included in the analysis had at least one provider visit containing an ICD-9 code/EDC for an index condition during the study year and no visits containing an ICD-9 code/EDC for the index condition during the prior year.

**Provider types.** CAM providers were defined as chiropractors, licensed massage therapists, acupuncturists, and naturopathic physicians. Conventional providers were defined as physicians (including osteopaths and specialists), advanced registered nurse practitioners, and physician assistants.

**Dependent variables.** Dependent variables were total allowed expenditures in the study year, outpatient expenditures, expenditures related to the index condition, and expenditures related to imaging procedures (back pain patients only). Data for each visit included the dollar amount the insurance company allowed for that visit. These amounts were totaled over the study year to create total allowed expenditures. For some analyses, these totals are broken out into allowed expenditures for CAM visits versus allowed expenditures for conventional visits. Imaging expenditures were divided into expenditures for plain radiographs and expenditures for all other types of imaging (e.g., magnetic resonance imaging [MRI], computed tomography). Imaging expenditures were further divided into those that occurred within 28 days of the initial diagnosis (called “early” imaging) and those that occurred more than 28 days after initial diagnosis. This division was based on the Healthcare Effectiveness Data and Information Set recommendation that no imaging should be performed within the first 28 days after an initial diagnosis of back pain.<sup>23</sup>

**Independent variables.** Age, gender, and zip code were included in the claims information along with ICD-9 diagnosis codes, dates and types of visits, and providers seen. County population was calculated based on 2000 census data and then categorized as <100,000; 100,000–400,000; and >400,000.

CAM users were defined as patients with at least one visit to a CAM provider for the index condition during the study year. Most also had at least one visit to a conventional provider for the index condition. CAM nonusers were those with no visits to a CAM provider for any reason during the study year and at least one visit to a conventional provider for the index condition during the study year.

Overall disease burden for each patient was constructed using the Resource Utilization Band (RUB) index created by the Johns Hopkins ACG software described above. RUBs estimate the overall disease burden and expected resource use for each individual, and are created by grouping individuals with similar levels of expected resource use based on the ACG index. Lower RUBs included individuals with less expected resource use and higher RUBs included those with greater expected resource use. Throughout the Results and Tables, the term “Low disease burden” refers to patients in RUBs 1 and 2; “Moderate disease burden” refers to patients in RUB 3; and “High disease burden” refers to patients in RUBs 4 and 5. For the regression analysis, disease burden was dichotomized into high versus moderate or low.

**Matching.** Because patients were not randomly assigned to use CAM but rather self-selected into CAM users and nonusers, we used a matching process to create groups that were as comparable as possible, using a frequency matching process. That is, each CAM user was placed into a stratum based on index condition, gender, 10-year age group, total allowed expenditures during the prior year (matched within \$1,000 up to \$9,999; all expenditures \$10,000 or above were grouped), and disease burden categorized as high, medium, or low during the study year. The number of CAM users in each stratum was determined and half that number of CAM nonusers in each stratum was randomly identified, resulting in a 2:1 match. The 2:1 matching process was necessary because there were too few CAM nonusers in many strata to create a 1:1 match. There were 1330 potential strata, of which 770 contained at least one CAM user. In 256 strata there were an odd number of CAM users, creating the need for a de facto 3:1 match for these individuals. In addition, there were 125 CAM users who could not be matched due to too few controls in the stratum. All CAM users were included in the analysis, including the total of 381 (1.4%) described above who could not be placed in a 2:1 match. Characteristics of unmatched CAM users are described in the Results section.

**Statistical analysis.** Independent samples *t* tests were used for unadjusted comparisons of expenditures (total, outpatient, and expenditures related to index condition) between CAM users and nonusers, also to compare mean age. Chi-square tests were used to compare distributions of gender, disease burden, county population, and insurance companies between CAM users and nonusers.

Linear regression analysis was used to perform adjusted comparisons of total expenditures between CAM users and nonusers after adjustment for age, gender, disease burden, county population, and insurance company. Disease burden was dichotomized as high disease burden versus low or moderate disease burden, and an interaction term between CAM use status and disease burden was included in the model. Beta estimates for the interaction terms were calcu-

lated using the *lincom* function in Stata (Stata Corp., College Station, TX).<sup>24</sup> Models were constructed for all patients combined and then separately for those with each index condition.

Although expenditure data are highly skewed, leading to a violation of the requirement for constant variance and for normally distributed residuals from the model, the large sample size available here ensures that estimates will be accurate, based on the Central Limit Theorem (CLT).<sup>25</sup> However, it was not apparent whether the groups with FMS ( $n = 5508$ ) or menopause ( $n = 6566$ ) were large enough for the CLT to apply for the two models created from these smaller samples. Two (2) simulation analyses were performed to determine this, one analysis for the FMS group and the other for the menopause group. In each case, 1000 bootstrap samples were created from the original sample and regression analyses were performed. If the CLT is applicable, 95% of the  $\beta$  estimates from these 1000 models should fall in the 95% confidence interval based on the entire group. Results of the analysis showed that for the FMS group, 97.2% of the  $\beta$  estimates fell into the 95% confidence interval, and for the menopause group, 96.8% of the  $\beta$  estimates fell into the 95% confidence interval. Based on these results, we were confident that the linear regression models would give us accurate estimates in spite of the skewed nature of the dependent variable. To ensure accurate inference, “robust” standard errors were used.<sup>26</sup> Stata version 10 was used for all analyses.<sup>27</sup>

## Results

A total of 26,466 CAM users were identified for this analysis: 18,343 with back pain, 3722 with FMS, and 4401 with menopause. These were matched to 13,025 CAM nonusers on a 2:1 basis. There were 381 (1.4%) CAM users who were not matched in this process; 125 due to having no matching controls available and the remaining 256 due to having an odd number of CAM users in some strata. All CAM users were included in the analysis. Those who were unmatched were younger (mean 42.4 versus 45.2 years,  $p < 0.0001$ ); had higher average total expenditures in the study year (\$5,902 versus \$3,766,  $p < 0.0001$ ), and had heavier disease burdens in the study year (46% in highest category versus 33% among matched CAM users,  $p < 0.0001$ ). To the extent the inclusion of these unmatched CAM users may lead to bias, it will make CAM users look more expensive than the matched controls. However, because the unmatched CAM users are only 1.4% of all CAM users, any bias will be small. For example, as stated above, the mean total expenditure was \$3766 for matched CAM users. When the 381 unmatched CAM users were included, mean expenditure for all CAM users was \$3,797.

Table 1 displays the comparison of the CAM users and nonusers. The groups did not differ on average age, average allowed expenditures in the prior year, percent female, or disease burden in the study year; that is, as expected, users and nonusers did not differ on any of the matching criteria. CAM users and nonusers were not matched on county population or insurance company, and CAM users were less likely to live in urban counties than nonusers, also more likely to be from insurance company B.

Table 2 displays the results of unadjusted *t*-tests which showed that CAM users had lower overall average

TABLE 1. COMPARISON OF COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM) USERS AND NONUSERS<sup>a</sup> MATCHED ON AGE GROUP, GENDER, ALLOWED EXPENDITURES IN PRIOR YEAR, AND DISEASE BURDEN IN STUDY YEAR

|                                                 | CAM users<br>(n = 26,466) | CAM nonusers<br>(n = 13,025) | p-value |
|-------------------------------------------------|---------------------------|------------------------------|---------|
| Average age (SD)                                | 45.2 (10.5)               | 45.4 (10.6)                  | 0.14    |
| Average allowed expenditures in prior year (SD) | \$2,494 (6351)            | \$2,454 (6114)               | 0.55    |
| Percent female                                  | 66.6%                     | 66.7%                        | 0.80    |
| Disease burden in study year                    |                           |                              |         |
| Low                                             | 8.3%                      | 8.1%                         | 0.72    |
| Moderate                                        | 58.3                      | 58.7                         |         |
| High                                            | 33.4                      | 33.2                         |         |
| County population                               |                           |                              |         |
| <100,000                                        | 11.9                      | 8.4                          | <0.001  |
| 100,000–400,000                                 | 15.2                      | 11.0                         |         |
| >400,000                                        | 72.9                      | 80.6                         |         |
| Insurance company                               |                           |                              |         |
| A                                               | 90.8                      | 92.6                         | <0.001  |
| B                                               | 9.2                       | 7.4                          |         |

<sup>a</sup>CAM users, those with at least one visit to a CAM provider related to index condition during study year; nonusers, no visit to a CAM provider for any reason during study year.

SD, standard deviation.

expenditures than nonusers in the study year (\$3,797 versus \$4,153,  $p = 0.0001$ ). The distribution of expenditures for outpatient, inpatient, and other expenditures differed between the two groups; CAM users had higher average outpatient expenditures (\$1,848 versus \$1,502,  $p < 0.0001$ ) but lower inpatient expenses and lower expenses for other types of claims not linked to a specific provider visit such as imaging and lab claims (Fig. 1). Among CAM users, expenditures for conventional outpatient care were lower than among CAM nonusers (\$1,219 versus \$1,502,  $p < 0.0001$ ), but this was offset by CAM expenditures, which averaged \$630 per user.

TABLE 2. COMPARISON OF EXPENDITURES BETWEEN COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM) USERS AND NONUSERS IN STUDY YEAR

|                                             | CAM users<br>(n = 26,466) | CAM nonusers<br>(n = 13,025) | p value |
|---------------------------------------------|---------------------------|------------------------------|---------|
| Average allowed expenditures in study year: | Mean (SD)                 | Mean (SD)                    |         |
| Total                                       | \$3,797 (7623)            | \$4,153 (9505)               | 0.0001  |
| Outpatient: Total                           | \$1,848 (2370)            | \$1,502 (3027)               | <0.0001 |
| Conventional                                | \$1,219 (2214)            | \$1,502 (3027)               | <0.0001 |
| CAM                                         | \$630 (746)               | 0                            |         |
| Total related to index condition            | \$588 (1280)              | \$554 (1947)                 | 0.04    |
| Outpatient related to index condition       | 445 (594)                 | 231 (438)                    | <0.0001 |

SD, standard deviation.

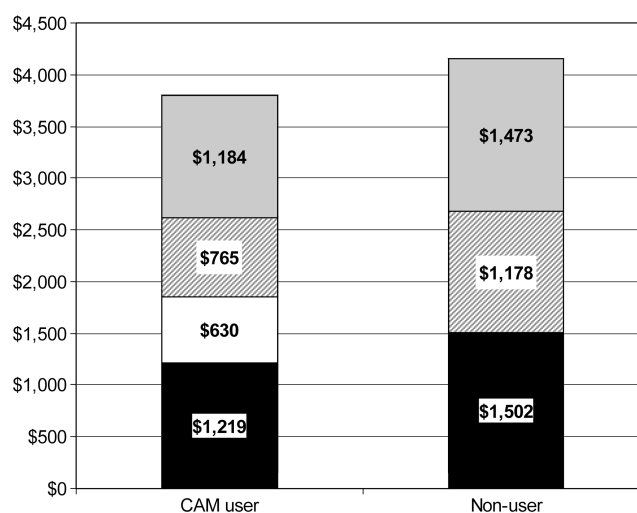


FIG. 1. Average annual allowed expenditures by complementary and alternative medicine (CAM) use status. Solid black, outpatient expenditures from conventional providers; solid white, outpatient expenditures from CAM providers; gray stripe, inpatient expenditures; solid gray, other expenditures not related to a provider visit, such as imaging and lab work.

When analyses were restricted to visits related to the index condition, total average expenditures were slightly higher among CAM users (\$588 versus \$554,  $p = 0.04$ ), while average outpatient expenditures related to the index condition were much higher among CAM users (\$445 versus \$231,  $p < 0.0001$ ) (Table 2). The expenditure patterns were similar within each condition (Table 3).

The linear regression analysis revealed a significant interaction between CAM use and disease burden. Among those in the low or moderate disease burden category, CAM users were predicted to have mean total expenditures \$160 higher than nonusers. However, among those with high disease burden, predicted mean expenditures for CAM users were \$1,421 lower than for nonusers ( $\beta$ : \$6,726 for nonusers compared to \$5,305 for CAM users,  $p < 0.001$ ) (Table 4). When a model was fit excluding the interaction term, the  $\beta$  coefficient for CAM use was -\$367 (standard error = \$90,  $p < 0.001$ ), confirming that overall, after adjustment, CAM users as a group have lower average total expenditures than nonusers. Similar results were seen in regression models restricted to each index condition.

The next set of analysis was aimed at identifying where the differences in expenditures between CAM users and nonusers occurred. Expenditures were analyzed by gender, and results showed that among males, CAM users had significantly lower expenditures than nonusers (\$2,863 versus \$3,634,  $p < 0.0001$ ), while among females average expenditures did not differ significantly between CAM users and nonusers (\$4,266 versus \$4,412,  $p = 0.19$ ). CAM users were less likely to be hospitalized (5.2% versus 7.5%,  $p < 0.001$ ), and among those with menopause symptoms, CAM users were less likely to get a hysterectomy within 1 year of diagnosis (1.3% versus 2.9%,  $p < 0.001$ ). Next we looked at the contribution of imaging to expenditures among back pain patients. CAM users were more likely than nonusers to have some type of imaging done (42.6% versus 38.3%,  $p < 0.001$ ) and were also more likely to



TABLE 3. EXPENDITURES BY DISEASE CONDITION AND CAM USE STATUS

|                                         | <i>Back pain</i> |                | <i>FMS</i>  |                | <i>Menopause</i> |                |
|-----------------------------------------|------------------|----------------|-------------|----------------|------------------|----------------|
|                                         | <i>User</i>      | <i>Nonuser</i> | <i>User</i> | <i>Nonuser</i> | <i>User</i>      | <i>Nonuser</i> |
| <i>N</i>                                | 18,343           | 9074           | 3722        | 1786           | 4401             | 2165           |
| Mean allowed expenditures in study year |                  |                |             |                |                  |                |
| Total                                   | \$3,410***       | \$3,739        | \$4,830*    | \$5,449        | \$4,535          | \$4,818        |
| Outpatient                              | \$1,637***       | \$1,312        | \$2,374***  | \$1,840        | \$2,285**        | \$2,019        |
| Total related to index condition        | \$677            | \$660          | \$554***    | \$412          | \$249**          | \$223          |
| Outpatient related to index condition   | \$511***         | \$259          | \$407***    | \$170          | \$207**          | \$166          |

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

FMS, fibromyalgia syndrome.

have imaging done “early” (within 28 days of diagnosis): 12.5% versus 9.8%,  $p < 0.001$ . However, overall expenditures related to imaging were higher among nonusers, averaging (standard deviation) \$197 (\$485) compared to \$140 (\$388) among CAM users ( $p < 0.0001$ ). This apparently contradictory finding is explained in that CAM users are more likely than nonusers to have plain radiographs (39% versus 28%,  $p < 0.001$ ), and CAM users are less likely to have the other, more expensive types of imaging such as MRIs (11.4% versus 19.4%,  $p < 0.001$ ).

Because CAM users were more likely to be covered by Company B and less likely to live in urban counties than nonusers, analyses were then performed to ensure that the differences in imaging were not due to differences in coverage between companies or differences in access to imaging between rural and urban residents. There was no significant difference in the percentage of back pain patients from Company A versus Company B who had MRI or other “high tech” imaging (all imaging other than plain x-ray). Rates were 14.0% for Company A and 14.7% for Company B ( $p = 0.35$ ). Looking at the issue of access to high-tech imaging in rural areas, Table 5 shows that use of high-tech imaging was substantially lower for CAM users than nonusers for all three categories of county size. Furthermore, for nonusers,

rates of high-tech imaging were very similar in the smallest counties (18%) and most urban counties (19%), indicating that lack of access in more rural areas does not explain the difference between CAM users and nonusers.

## Discussion

The results of this analysis indicated that among patients with back pain, FMS, or menopause symptoms, those who used CAM providers for at least part of their care had slightly lower overall average expenditures than matched patients who saw conventional providers exclusively. The largest difference was seen among the patients with the heaviest disease burden, who tend to be the most expensive patients. Among patients with the lightest disease burden, CAM users tended to be slightly more expensive than nonusers. The majority of patients fall into the low and moderate disease categories, so this is not an inconsequential finding. However, the size of the cost saving among those with heavy disease burdens more than compensated for this; both the unadjusted results and the regression model omitting the interaction term showed that overall, CAM users had lower mean expenditures than nonusers. In fact, given the expected \$356 lower expenditure for each CAM user, we

TABLE 4. RESULTS OF LINEAR REGRESSION MODEL<sup>a</sup>

|                                            | <i>All conditions</i><br>( <i>n</i> = 39,491) |       | <i>Back pain</i><br>( <i>n</i> = 27,417) |       | <i>FMS</i><br>( <i>n</i> = 5508) |         | <i>Menopause</i><br>( <i>n</i> = 6566) |       |
|--------------------------------------------|-----------------------------------------------|-------|------------------------------------------|-------|----------------------------------|---------|----------------------------------------|-------|
|                                            | $\beta$                                       | SE    | $\beta$                                  | SE    | $\beta$                          | SE      | $\beta$                                | SE    |
| Interaction of CAM use and disease burden: |                                               |       |                                          |       |                                  |         |                                        |       |
| Low disease burden, CAM nonuser            |                                               |       |                                          |       | Reference category               |         |                                        |       |
| Low disease burden, CAM user               | \$160***                                      | \$37  | \$93*                                    | \$41  | \$392***                         | \$114   | \$322**                                | \$108 |
| High disease burden, CAM nonuser           | \$6,726***                                    | \$230 | \$6526***                                | \$267 | \$7,973***                       | \$747   | \$6468***                              | \$476 |
| High disease burden, CAM user              | \$5305***                                     | \$129 | \$5,196***                               | \$164 | \$5,849***                       | \$302   | \$5,335***                             | \$287 |
| Other covariates in the model:             |                                               |       |                                          |       |                                  |         |                                        |       |
| Age                                        | \$28***                                       | \$4   | \$31***                                  | \$4   | \$11                             | \$17    | \$22                                   | \$19  |
| Sex                                        | \$478***                                      | \$88  | \$452***                                 | \$87  | \$615                            | \$333   | —                                      | —     |
| County pop 100k–400k <sup>b</sup>          | \$166                                         | \$150 | \$267                                    | \$168 | \$-98                            | \$469   | \$-45                                  | \$408 |
| County pop >400k <sup>b</sup>              | \$239*                                        | \$121 | \$294*                                   | \$127 | \$96                             | \$418   | \$127                                  | \$349 |
| Insurance co.                              | \$716***                                      | \$167 | \$771***                                 | \$204 | \$1,068*                         | \$530   | \$416                                  | \$337 |
| Constant                                   | \$-1,223                                      | \$280 | \$-1,362                                 | \$312 | \$-651                           | \$1,001 | \$433                                  | \$952 |

<sup>a</sup>Outcome = total allowed expenditures in study year.

<sup>b</sup>Compared to counties with population <100k.

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

CAM, complementary and alternative medicine; FMS, fibromyalgia syndrome; SE, standard error.

TABLE 5. PERCENT OF BACK PAIN PATIENTS RECEIVING MAGNETIC RESONANCE IMAGING OR OTHER "HIGH-TECH" IMAGING BY COUNTY POPULATION AMONG COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM) USERS AND NONUSERS

| County population | CAM nonusers | CAM users | Total |
|-------------------|--------------|-----------|-------|
| <100k             | 18%          | 9%        | 11%   |
| 100–400k          | 21           | 10        | 13    |
| >400k             | 19           | 12        | 15    |
| Total             | 19           | 11        | 14    |

would expect an overall \$9.4 million lower expenditure in a group of 26,466 CAM patients with these medical conditions compared to a similar group of CAM nonusers of equal size. CAM users actually had higher outpatient expenditures and more outpatient visits than nonusers, but this was offset by lower inpatient and other expenditures (such as high-tech imaging) among CAM users.

Both Nelson et al.<sup>28</sup> and Legorreta<sup>29</sup> et al. compared insured back pain patients with chiropractic insurance coverage to those without chiropractic insurance coverage and found that those with chiropractic coverage had lower average back pain episode-related costs as well as lower rates of both MR and radiographic imaging. Our findings extend these analyses in finding that among those with chiropractic insurance coverage, those who actually use this benefit have lower costs than those who do not. Our findings also confirm the findings of Sarnat<sup>30</sup> that use of CAM-oriented primary care providers was associated with lower costs than conventional primary care providers.

This analysis has several limitations. First, although CAM users and nonusers were matched as closely as possible, the results may reflect differences between the groups that were unaccounted for in the matching process. Demographic information available in claims data is quite limited and does not include potentially important factors such as income, education, or race. Earlier regression analyses with these data used zip code-level income, education, and race to attempt to adjust for these factors, but none were significant. This likely indicates that the zip code-level aggregation was not sensitive enough to model the effects of these variables in this instance (unpublished data). Due to the correlation between health status and income, matching by disease burden provided limited matching on income.

A second limitation is that claims data are collected primarily for billing reasons and as such may not reflect all diagnosis codes with ideal accuracy. Third, cost minimization assumes that health outcomes are equivalent between groups. We did not have appropriate data available to test this assumption. Finally, we do not know how CAM-using patients would have behaved if insurance coverage was not available for these visits; if they had substituted conventional care in place of CAM care, costs to the insurance company would likely have been higher, while if they had paid out-of-pocket for CAM care, costs to the insurance company would have been lower.

## Conclusions

The conclusion of this analysis is that in a large group of insured individuals, patients who use CAM providers for

some of their care have lower expenditures as a group than a matched group of patients who do not use CAM, and the difference in expenditures is related in large part to less inpatient care and less use of high-tech imaging.

## Acknowledgments

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## Disclosure Statement

No competing financial interests exist.

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# Evidence-Based Nonpharmacologic Strategies for Comprehensive Pain Care: The Consortium Pain Task Force White Paper

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## Abstract

Medical pain management is in crisis, from the pervasiveness of pain to inadequate pain treatment, from the escalation of prescription opioids to an epidemic in addiction, diversion and overdose deaths. The rising costs of pain care and managing adverse effects of that care have prompted action from state and federal agencies including the DOD, VHA, NIH, FDA and CDC. There is pressure for pain medicine to shift away from reliance on opioids, ineffective procedures and surgeries toward comprehensive pain management that includes evidence-based nonpharmacologic options. This White Paper details the historical context and magnitude of the current pain problem including individual, social and economic impacts as well as the challenges of pain management for patients and a healthcare workforce engaging prevalent strategies not entirely based in current evidence. Detailed here is the evidence-base for nonpharmacologic therapies effective in postsurgical pain with opioid sparing, acute non-surgical pain, cancer pain and chronic pain. Therapies reviewed include acupuncture therapy, massage therapy, osteopathic and chiropractic manipulation, meditative movement therapies Tai chi and yoga, mind body behavioral interventions, dietary components and self-care/self-efficacy strategies. Transforming the system of pain care to a responsive comprehensive model necessitates that options for treatment and collaborative care must be evidence-based and include effective nonpharmacologic strategies that have the advantage of reduced risks of adverse events and addiction liability. The evidence demands a call to action to increase awareness of effective nonpharmacologic treatments for pain, to train healthcare practitioners and administrators in the evidence base of effective nonpharmacologic practice, to advocate for policy initiatives that remedy system and reimbursement barriers to evidence-informed comprehensive pain care, and to promote ongoing research and dissemination of the role of effective nonpharmacologic treatments in pain, focused on the short- and long-term therapeutic and economic impact of comprehensive care practices.

**Keywords:** Acute Pain Management; Chronic Pain Management; Evidence-Based Practice in Health Care System; Integrative Medicine; Non-Surgical Pain Management; Public Health.

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*Read the full White Paper at this link <https://bit.ly/3n9Sj97>*

# Expanding Access To Non-Opioid Management Of Chronic Pain

*This report synthesizes the existing evidence base for non-opioid therapies, examines Medicaid coverage policies, and identifies barriers and opportunities for scaling evidence-based integrated pain management delivery systems.*

## Executive Summary

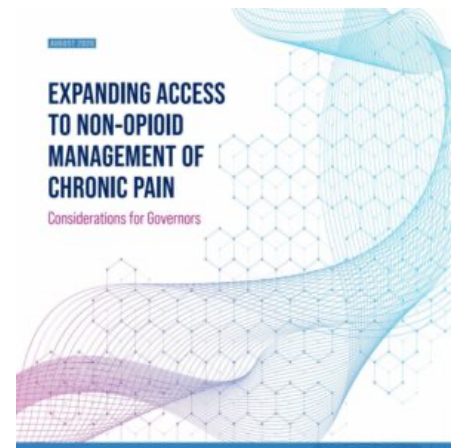
The U.S. Centers for Disease Control and Prevention **estimates** that 70,980 Americans died of a drug-related overdose in 2019, an increase of 4.6% compared to 2018. At the same time, nearly 100 million Americans experience chronic pain and are often prescribed opioid painkillers. There is little evidence to support the long-term use of prescription opioids for noncancer-related chronic pain. In addition, long-term opioid therapy has **known risks**, such as opioid use disorder and overdose, particularly with high doses. Further, **evidence exists** that non-opioid therapies can be effective with less harm. Given the clear risks that opioids pose, reducing unnecessary prescriptions and increasing access to effective non-opioid\* forms of pain management are important strategies states can use to confront the opioid overdose epidemic.

Governors are well situated to establish a vision for changes to pain management. They can direct their public health and Medicaid agencies to collaborate and design an approach to expand access to therapies such as physical and occupational therapy, behavioral health interventions or integrative and complementary approaches to manage common musculoskeletal conditions, such as low back pain, alongside prescription opioids. For patients with more complex, high-impact pain, scaling coordinated, interdisciplinary care management delivery models can promote cost-effective management of the biological, social and psychological drivers of pain.

To help states advance these approaches, in June 2018, the National Governors Association Center for Best Practices Health Division convened an expert roundtable with five states (Arizona, Delaware, Indiana, Oregon and Washington), federal officials, industry representatives and national pain specialists to discuss the opportunities for and challenges in improving access to non-opioid pain management through the Medicaid program.

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\* “Non-opioid therapies” refers to both nonpharmacologic therapies (e.g., physical and occupational therapy, acupuncture, spinal manipulation) and non-opioid pharmacologic therapies (e.g., nonsteroidal anti-inflammatory drugs)



**Talk to your health care provider about how to treat your pain.  
Create a safe and effective treatment plan that is right for you.**

## Alternatives to Opioids: Medications

### ADVANTAGES:

- Can control and alleviate mild to moderate pain with few side effects.
- Can reduce exposure to opioids and dependency.

### DISADVANTAGES:

- May not be covered by insurance.
- May not be effective for severe pain.

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| NON-OPIOID MEDICATIONS                                                                                                                                                 | DESCRIPTIONS, ADDITIONAL ADVANTAGES & DISADVANTAGES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Acetaminophen (Tylenol)</b>                                                                                                                                         | Relieves mild-moderate pain, and treats headache, muscle aches, arthritis, backache, toothaches, colds and fevers. <i>Overdoses can cause liver damage.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Non-steroidal<br/>Anti-inflammatory Drugs (NSAIDs):</b><br>Aspirin, Ibuprofen (Advil, Motrin), Naproxen (Aleve, Naprosyn)                                           | Relieve mild-moderate pain, and reduce swelling and inflammation. <i>Risk of stomach problems increases for people who take NSAIDs regularly. Can increase risk of bleeding.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Nerve Pain Medications:</b><br>Gabapentin (Neurontin), Pregabalin (Lyrica)                                                                                          | Relieve mild-moderate nerve pain (shooting and burning pain). <i>Can cause drowsiness, dizziness, loss of coordination, tiredness and blurred vision.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Antidepressants:</b><br>Effexor XR, Cymbalta, Savella                                                                                                               | Relieve mild-moderate chronic pain, nerve pain (shooting and burning pain) and headaches. <i>Depending on medication, side effects can include: drowsiness, dizziness, tiredness, constipation, weight loss or gain.</i>                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Medicated Creams, Foams, Gels, Lotions,<br/>Ointments, Sprays and Patches:</b><br>Anesthetics (Lidocaine), NSAIDs, Muscle Relaxers, Capsaicin,<br>Compound Topicals | Can be safer to relieve mild-moderate pain because medication is applied where the pain is. Anesthetics relieve nerve pain (shooting and burning pain) by numbing an area; NSAIDs relieve the pain of osteoarthritis, sprains, strains and overuse injuries; muscle relaxers reduce pain by causing muscles to become less tense or stiff; and capsaicin relieves musculoskeletal and neuropathic pain. Compounded topicals prepared by a pharmacist can be customized to meet a patient's specific needs. <i>Skin irritation is the most common side effect. Capsaicin can cause warmth, stinging or burning on the skin.</i> |
| <b>Interventional Pain Management</b>                                                                                                                                  | Includes anesthetic or steroid injections around nerves, tendons, joints or muscles; spinal cord stimulation; drug delivery systems; or permanent or temporary nerve blocks. Medicates specific areas of the body. Can provide short-term and long-term relief from pain. <i>Certain medical conditions and allergies can cause complications.</i>                                                                                                                                                                                                                                                                             |
| <b>Non-opioid Anesthesia</b>                                                                                                                                           | Opioids can be replaced with safer medications that block pain during and after surgery. A health care provider or an anesthesiologist can provide options and discuss side effects.                                                                                                                                                                                                                                                                                                                                                                                                                                           |



# Alternatives to Opioids: Therapies

## ADVANTAGES:

- Can control and alleviate mild to moderate pain with few side effects.
- Can reduce exposure to opioids and dependency.
- Treatment targets the area of pain—not systemic.
- Providers are licensed and regulated by the State of Florida.\* ([apps.mqa.doh.state.fl.us/MQASearchServices](http://apps.mqa.doh.state.fl.us/MQASearchServices))

## DISADVANTAGES:

- May not be covered by insurance.
- Relief from pain may not be immediate.
- May not be effective for severe pain.

Sources: American College of Surgeons, Centers for Disease Control and Prevention, National Institutes of Health, the Food and Drug Administration, Harvard Health and Wexner Medical Center (Ohio State University)

| THERAPIES                                     | DESCRIPTIONS, ADDITIONAL ADVANTAGES & DISADVANTAGES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Self-care</b>                              | <p><b>Cold and heat:</b> Ice relieves pain and reduces inflammation and swelling of intense injuries; heat reduces muscle pain and stiffness. Can provide short-term and long-term relief from pain. <i>Too much heat can increase swelling and inflammation.</i></p> <p><b>Exercise and movement:</b> Regular exercise and physical activity can relieve pain. Simply walking has benefits. Mind-body practices like yoga and tai chi incorporate breath control, meditation and movements to stretch and strengthen muscles. <i>Maintaining daily exercise and overcoming barriers to exercise can be a challenge.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Complementary Therapies</b>                | <p><b>Acupuncture:</b> Acupuncturists* insert thin needles into the body to stimulate specific points to relieve pain and promote healing. Can help ease some types of chronic pain: low-back, neck and knee pain, and osteoarthritis pain. Can reduce the frequency of tension headaches. <i>Bleeding, bruising and soreness may occur at insertion sites.</i></p> <p><b>Chiropractic:</b> Chiropractic physicians* practice a hands-on approach to treat pain including manual, mechanical, electrical and natural methods, and nutrition guidance. Can help with pain management and improve general health. <i>Aching or soreness in the spinal joints or muscles sometimes happens—usually within the first few hours after treatment.</i></p> <p><b>Osteopathic Manipulative Treatment (OMT):</b> Osteopathic physicians* use OMT—a hands-on technique applied to muscles, joints and other tissues—to treat pain. Clinically-proven to relieve low-back pain. <i>Soreness or stiffness in the first few days after treatment is possible.</i></p> <p><b>Massage therapy:</b> Massage therapists* manually manipulate muscle, connective tissue, tendons and ligaments. Can relieve pain by relaxing painful muscles, tendons and joints. Can relieve stress and anxiety—possibly slowing pain messages to and from the brain. <i>At certain points during a massage, there may be some discomfort—especially during deep tissue massage.</i></p> <p><b>Transcutaneous electrical nerve stimulation (TENS):</b> TENS is the application of electrical current through electrodes placed on the skin with varying frequencies. Studies have shown that TENS is effective for a variety of painful conditions. The intensity of TENS is described as a strong but comfortable sensation. <i>Allergic reactions to adhesive pads are possible.</i></p> |
| <b>Rehabilitation Therapies</b>               | <p><b>Occupational therapy:</b> Occupational therapists* treat pain through the therapeutic use of everyday activities. Can relieve pain associated with dressing, bathing, eating and working. Therapy includes activities that increase coordination, balance, flexibility and range of motion. <i>Therapy interventions and recommendations will not help if the patient does not practice as instructed.</i></p> <p><b>Physical therapy:</b> Physical therapists* treat pain by restoring, enhancing and maintaining physical and functional abilities. <i>Therapy interventions and recommendations will not help if the patient does not practice as instructed.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Behavioral and Mental Health Therapies</b> | <p><b>Psychiatrists*, clinical social workers*, marriage and family therapists* and mental health counselors*</b> provide therapies that identify and treat mental disorders or substance abuse problems that may be roadblocks to pain management. <i>When used to manage pain, these therapies can take time.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## Additional Research Resources

### Pain Management

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VA Whole Health 10/15 call referenced docs:

Whole Health System of Care Evaluation –A Progress Report on Outcomes of the WHS Pilot at 18 Flagship Sites (Feb 18, 2020)

Appendices: Whole Health System of Care Evaluation –A Progress Report on Outcomes of the WHS Pilot at 18 Flagship Sites (Feb 18, 2020)

Resources such as videos, info sheets about Whole Health can be found here (with practitioner & patient resources encouraged for use by everyone)

<https://www.va.gov/WHOLEHEALTH/>

The September 2020 Medical Care Supplement titled “The Implementation of Complementary and Integrative Health Therapies in the Veterans Health Administration,” includes 11 papers and commentaries on VA’s progress in implementing and evaluating the impact of CIH approaches on Veterans.

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