

RESEARCH SUMMARY

Summary of research on insurance coverage of acupuncture and other complementary and alternative therapies from Washington state and New York

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Key points

- Acupuncture has a broad application to many medical conditions.
- CAM therapies such as acupuncture do not replace high quality conventional medical care for conditions such as diabetes and cancer.
- Acupuncture is considered by many physicians, especially in the greater Boston area, as a modality for chronic pain treatment and lack of insurance reimbursement is a barrier to referrals.
- The addition of mandated insurance coverage for CAM therapies such as acupuncture in Washington state did not significantly escalate health care costs since they were a small percentage of expenditures. Costs decreased for CAM users in high disease burden groups from reduction of more expensive conventional care.
- Acupuncture may be a substitute for some medical services and pharmaceuticals from New York insurance research. Expenditures on acupuncture may be offset by reductions in other healthcare utilization.

As health care reform in Massachusetts moves towards Accountable Care Organizations (ACO), a system of global payments to reward access and high quality care similar to the previous risk-adjusted capitation form of reimbursement (Steinbrook, 2009), research studies from Washington and New York state on insurance reimbursement indicate that acupuncture treatment as a covered service may add little to health care expenditures and decrease costs for those patients with the heaviest disease burden.

Introduction

This document summarizes the impact of insurance coverage on the utilization by consumers of insurance products, and the costs to insurers for acupuncture and other complementary and alternative therapies (CAM). Information from a study on physicians' views of acupuncture treatment for pain patients was included since a significant proportion of the study surveys were sent to physicians in the greater Boston area of Massachusetts.

Findings of Research

Washington state research from multiple articles (see table)

The authors of the studies from Washington state note that their research has national significance as insurance companies respond to consumer demand for CAM benefits (Lafferty et al, 2006, p. 403). “The state of Washington provides an important laboratory to assess the magnitude of economic risk when a third-party payer covers CAM providers” (Lafferty et al, 2006, p. 397) and provides a window to view consumer behavior for the effect of mandated insurance coverage for CAM on health expenditures. Each article has a unique perspective of the effect of mandated insurance coverage for CAM. [Three articles analyze the effect of CAM on: risk claims adjustment; health care expenditures for three conditions (by cost minimization analysis); and the utilization of CAM providers when those services are covered by insurance. One article describes the effect of mandating CAM services on insurance benefits in Washington state. A single article examines the frequency, predictors and expenditures for pediatric insurance claims. Four articles evaluate CAM use for specific conditions: back pain; cancer; diabetes; and fibromyalgia.]

The “Every Category of Provider” (ECOP) RCW 48.43.045(1) law was passed in 1995. Thus Washington state became the first “to require that commercial insurance companies extend coverage to all categories of providers licensed to treat medical conditions that the policy covers” (Watts et al, 2004, p. 1001). The law affected 75% of insured Washington state residents. Public programs such as Medicare and Medicaid, workmen’s compensation, state supplemental programs, and self-insured plans were exempt from the law.

Elements unique to Washington state studies

- In addition to acupuncture, CAM therapies were chiropractic, naturopathic medicine, and massage therapy.
- Study data was derived from the period of 2002 – 2003 unless otherwise indicated (in table).
- Study subjects’ ages were 18 – 64 years of age, with the exception of the pediatric study.
- High use of naturopathic physicians is probably regional phenomenon related to the number of naturopathic physicians (422) in western WA state (Lafferty et al, 2006, p.401), and location of 2 of 5 recognized schools of naturopathy in the Pacific Northwest (AANMC website) .
- High use of chiropractic care is related to a long history of inclusion of chiropractic services in insurance coverage (Lind et al. 2007, p. 75) with legislation for self-referral since 2000 (Lind et al, 2005, p. 368).

Conclusions:

- Overall percentage of insurance expenditures for CAM was small even after 6 years. (Lafferty et al, 2006, p. 403).

- Acupuncture was the least utilized of the CAM therapies in most of these studies, but covered a broad range of diagnoses, second only to naturopathic medicine.
- Use of acupuncture and CAM therapies did not replace high quality conventional medical care for cancer or diabetes.
- Although there was an increase in CAM service use with passage of the bill, this represented a small percentage of medical expenditures, especially compared to the cost of conventional care.
- For patients with the heaviest disease burden, CAM users had lower mean costs than nonusers of CAM therapies (Lind et al, 2010, p.415).

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New York state research on acupuncture utilization from insurance data

Bonafede et al. (2008). The effect of acupuncture utilization on healthcare utilization. *Medical Care*, 46(1); 41 – 48.

Purpose of the study was to determine the degree to which acupuncture is a substitute for, or a complement to other medical services (p. 41).

Results were from claims data of a large insurance company in New York state which insures over 80% of a midsize metropolitan market (from year 2002 over a one year period). There was an identical 50% copayment for acupuncture across all the five managed care plans (p. 42).

Study participants were older than 18 years of age, but without restriction on the upper age limit. Acupuncture users were older with mean age of 46.8 years compared to nonusers at age 42.1 years.

Diagnostic prevalence in order of use (from Table 1, p. 44):

Musculoskeletal disorders	88%	Circulatory disorders	27 %
Pain	58.9%	Cancer	24.8%
Digestive disorders	48.4%	Headaches	24.2%
Respiratory disorders	41.5%	Infectious diseases	12.7%

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Medications:

- There was a significant substitution of GI medications by acupuncture. Authors theorize that could be due to acupuncture, or by the dietary and lifestyle recommendations which are included in the practice of Traditional Chinese Medicine (p. 47).
- “Isolating the effect of acupuncture and controlling for unobservable characteristics indicates that acupuncture is a statistically significant substitute for pain medications with a decrease predicted probability at 18%” (p. 47).

Results:

- Acupuncture is a statistically significant substitute for some medical services such as primary care, all outpatient services, pathology services, all surgery, and some pharmaceuticals (p. 41).
- Insurance-covered acupuncture users are substantially sicker than insurance-covered non-acupuncture users. They had higher member and plan expenditures and prescription expenditures (p. 44).
- Expenditures on acupuncture may be offset by reductions in other healthcare utilization (p. 47).
- Reluctance by insurance companies to cover acupuncture for fear of increased costs is unfounded (p. 47).
- Acupuncture use was also correlated to the distance to the nearest acupuncturist.

Conclusions:

“Acupuncture is an economic substitute for some medical services and pharmaceuticals, a finding of some importance to insurers, healthcare practitioners, and policy makers” (p. 41).

Research on physicians’ views (primarily in greater Boston area) of acupuncture for pain patients

Chen, L., Houghton, M., Seefeld, L., Malarick, C., Mao, J. (2010) A survey of selected physicians views on acupuncture in pain management. *Pain Medicine*, 11; 530 – 534.

Authors of this study from MGH Center for Translational Pain Research, Department of Anesthesia, Critical Care and Pain Medicine, Massachusetts General Hospital, Harvard Medical School, Boston, MA

Objective of study: “To collect information on role of acupuncture in pain management from pain and referring physicians managing pain conditions” (p. 530).

Survey was conducted by nationwide direct mail or e-mails, conducted between 2007 & 2008. Survey participants were from membership directory of American Pain Society, Partners Healthcare directory, Massachusetts General Hospital (MGH) physician’s group e-mail list. A significant proportion of surveys were sent to physicians in the greater Boston area. Only one

mail or e-mail request made. Response rate was 18.2% (197 responders of 1,083 potential participants). Nearly one-half of survey responders were primary care or internists; one-fourth were pain specialists with majority from teaching hospitals (68%); practices in city or urban areas (91%).

- 97% (191 of 197) considered acupuncture a somewhat effective or very effective treatment modality in pain management.
- 79.2% also viewed other alternative medicine modalities to be useful in pain management.
- 74% of responders have made acupuncture referrals for pain management. Of these responders, 51% have referred pain patients for acupuncture at least once every 1 – 3 months.

“With regards to insurance coverage, 73% of the survey responders think that insurance should at least partially cover the cost of acupuncture and nearly one-third of responders (30%) think that insurance should fully cover the treatment. Regardless of insurance coverage, nearly 50% of the responders indicate that they will keep the same referral pattern for acupuncture treatment and 34% will increase acupuncture referrals for their patients. ” (p. 533)

Clinical rationales for referral	Pain conditions for referral
As adjuvant to conventional pain treatment (60%)	Low back pain (56%)
Use when failed conventional pain treatment (48%)	Fibromyalgia (46%)
Lack of effective therapy for certain pain conditions (39%)	Neuropathic pain (42%)
Reducing side effects from other treatments (22%)	Myofascial pain (45%)
Known efficacy for certain pain conditions (19%)	Pelvic pain (18%)
At request of patients (54%)	Abdominal pain (16%)
At request of other physicians (9%)	Complex regional pain syndrome (15%)
	Others (16%)

Results: “An overwhelming majority of survey responders have a positive attitude and favorable experience using acupuncture as an alternative modality for chronic pain management....The

lack of insurance coverage and facility for acupuncture treatment are two primary barriers to making acupuncture referrals” (p. 530).

Conclusion: “The survey results indicate that acupuncture is considered by many physicians to be a useful alternative modality for chronic pain management” (p. 530).

Conclusions of Finding from Research Articles

CAM use in Washington state was 16% higher than rest of the nation (Bellas et al, 2005, p. 371). Certain factors in Washington state which are not present in Massachusetts heavily influence the use of CAM services. One factor is the 5 times greater prevalence of naturopathic physicians due to the proximity of two schools (Lafferty, 2006, p. 401). The predominant use of chiropractic services, especially for musculoskeletal conditions, may be a reflection of WA legislation allowing self-referral to chiropractors. Chiropractors also play a role in rural primary care where there are fewer physicians (Bellas et al, 2005, p. 370). Thus, acupuncture was generally a lesser utilized therapy than chiropractic or naturopathic care. It could be theorized that the percentage of healthcare expenditures in Massachusetts for acupuncture if an insurance-covered service would be lower than overall CAM costs in Washington state.

The Washington state research results point to acupuncture and other CAM therapies as consuming a small percentage of healthcare expenditures. These researchers do point out that even this small percentage does represent a significant amount of health care dollars. Despite the increased CAM use from the mandatory insurance coverage requirement, the overall percentage of CAM insurance expenditures remained small after 6 years (Lafferty et al, 2006, p. 403). However, as expressed by both WA and NY researchers, for those patients with the heaviest disease burden – the sickest or potentially those with more chronic conditions – the use of CAM or acupuncture actually decreased costs to the insurance companies by less utilization of the more expensive conventional medical care. These study results are similar to a Swiss study in the early 1990's that reported CAM did not lead to increased costs to insurance companies they because comprised a small percentage of overall expenditures (Lind et al, 2010, p. 412).

Acupuncture and CAM users tend to be older and have more disease burden (or be sicker) than nonusers of CAM. This finding correlates with the results of CAM use for chronic pain at a multidisciplinary pain center from Michigan researchers Ndao-Brumley and Green (2010) who found that aging and a negative perception of pain care were associated with greater odds of acupuncture use (p. 18). These researchers also found pain patients with the most severe presentation were more likely to have used CAM services (p. 22).

Key points

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- The addition of mandated insurance coverage for CAM therapies such as acupuncture in Washington state did not significantly escalate health care costs since they were a small percentage of expenditures. Costs decreased for CAM users in high disease burden groups from reduction of more expensive conventional care.
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As health care reform in Massachusetts moves towards Accountable Care Organizations (ACO), a system of global payments to reward access and high quality care similar to the previous risk-adjusted capitation form of reimbursement (Steinbrook, 2009), research studies from Washington and New York state on insurance reimbursement indicate that acupuncture treatment as a covered service may add little to health care expenditures and decrease costs for those patients with the heaviest disease burden.

Table summary of articles on Washington state mandatory insurance coverage for Complementary and Alternative Medicine (CAM).

The “Every Category of Provider” (ECOP) RCW 48.43.045(1) law was passed in 1995; formal date for implementation was Jan 1, 2000.

Washington state legislation			
Authors/ Journal	Article focus	Conclusion (from abstracts)	Comments
Watts et al.(2004) <i>J of Alt & Compl Med</i>	Effect of mandating CAM services on insurance benefits in WA state Study used literature and document review, as well as interviews from key informants to detail history of ECOP law in Washington state in 1995; responses of 3 largest health care companies affected; actions of stakeholders to these responses; likely future impact of ECOP on CAM utilization.	“CAM providers face scientific tests of measurable efficacy and market tests of consumer value. in this economic environment, CAM stakeholders will have to work hard to maintain their political gains” (p. 1001).	- Impact of the law on utilization and expenditures was not yet dramatic. - Utilization of CAM increased, but CAM expenditures were a small part percentage of premium dollar and did not prompt action (p. 1007).

Insurance implications			
Authors/ Journal	Article focus	Conclusions (from abstracts)	Comments
Lafferty et al. (2006) <i>Am J of Managed Care</i>	Insurance coverage and utilization of CAM providers Study data from 600,000 private insurance enrollees CAM services accounted for 17.6% of outpatient provider visits and 2.9% of total medical expenditures	“The number of people using CAM insurance benefits was substantial [13.7%]; the effect on insurance expenditures was modest. Because the long-term trajectory of CAM cost under third-party payment is unknown, utilization of these services should be followed” (p. 397). - CAM use (around 13%) was similar to NHIS (Nat Health Institute Survey data for period from 1997 – 2006). - CAM median per-visit expenditures were \$39 compared to \$74.40 for conventional care (p.399-400).	- Authors were surprised that CAM care accounted for such a small proportion (2.9%) of insurance expenditures. **CAM coverage contributed minimally to increasing health care expenditures and insurance premiums in WA state at time of study (p. 403). **Acupuncture used for majority of diagnosis categories; second only to naturopathy for CAM services **Acupuncture had highest usage in neurologic diagnosis category at 17.9% (p. 400).
Lind et al. (2006) <i>Medical Care</i>	Effect of CAM claims on risk adjustment Study population was over 337,000. Pharmacy claims not counted as visits.	“Inclusion of services from CAM providers under third-party payment increases risk scores for their patients, but expectations of costs for this group are lower than expected had costs been based only on services from traditional providers. Risk adjustment indices may need to be recalibration when adding services from provider groups not included in the development of the index (p. 1078).	- In the high-morbidity group, CAM users nearly \$2000 less expensive than non-CAM users [if claims from all providers define morbidity categories. When CAM providers omitted from calculation, CAM users and nonusers have similar expenditures.] (p. 1081). - CAM users in high disease burden groups cost less than nonusers. This may be because

		<p>New category of providers resulted in more diagnoses → higher scores, but coding practices of new providers may account for some of this.</p>	<p>CAM providers are reimbursed at lower rates than conventional providers, or they may manage sick patients more efficiently at lower costs (p. 1083).</p>
<p>Lind et al. (2010)</p> <p><i>J Alt & Compl Medicine</i></p>	<p>Comparison of health care expenditures among CAM users & nonusers in WA state: cost minimization analysis</p> <p>Study data for insured patients with back pain, fibromyalgia, and menopause.</p> <p>Conventional providers were physicians (including osteopaths), advanced practice nurses and physician assistants</p> <p>Selection bias minimized by matching CAM users & nonusers in 2:1 ratio. Insurance coverage was equivalent for conventional & CAM providers (p.411).</p>	<p>“This analysis indicates that among insured patients with back pain, fibromyalgia, and menopause symptoms... [after minimizing for bias], those who use CAM will have lower insurance expenditures than those who do not use CAM” (p. 411).</p> <p>**Among those with high disease burden, predicted mean expenditures for CAM users were \$1421 lower than for non-users (p. 414).</p> <p>CAM users had had higher outpatient expenses and visits, but this was offset by lower <i>inpatient</i> and other expenditures (p. 416).</p>	<p>For patients with lightest disease burden (the majority of patients), CAM users tended to be more expensive.</p> <p>**But for those patients with heavy disease burden, CAM users had lower mean expenditures than nonusers (p. 415).</p> <p>- CAM users less likely to be hospitalized; female CAM users less likely to have a hysterectomy within a year of diagnosis (p. 414).</p> <p>Overall expenditures related to imaging procedures and more expensive imaging (such as MRIs) were lower among CAM users.</p>

Articles on specific conditions: Cancer, back pain, diabetes, fibromyalgia

Authors/ Journal	Article focus	Conclusions (from abstracts)	Comments
<p>Lafferty et al. (2004)</p> <p><i>Cancer</i></p>	<p>Use of CAM by insured cancer patients in WA state</p> <p>Study data year: 2000</p>	<p>“A substantial number of insured cancer patients will use alternative providers if they are given the choice. The cost of this treatment is modest compared with conventional care charges. For individuals with cancer, CAM providers do not appear to be replacing conventional providers but instead are integrated into overall care” (p. 1522)</p>	<ul style="list-style-type: none"> - Use of chiropractors by cancer patients is likely correlated with background use by insured population (p. 1528)] - Use of acupuncture, naturopathy and massage therapy increased with diagnosis of metastasis (p. 1528). - Billed amounts for CAM services were \$600 or less than 2% of the overall medical bills for cancer patients (p. 1522 & 1527).
<p>Lind et al. (2005)</p> <p><i>Spine</i></p>	<p>Role of alternative medical providers for insured outpatients with back pain</p>	<p>“Many people with back pain use only CAM for their treatment. Although less expensive, this group also appears less severely ill. Because of the high prevalence of this condition, cost-effectiveness studies that include CAM therapies are still warranted” (p. 1454).</p>	<p>Key points:</p> <ul style="list-style-type: none"> - Use of CAM providers for back pain is common when covered by insurance. - Most patients chose either CAM or conventional care providers for treatment - Treatment of back pain by CAM providers involved more visits but not higher overall costs than conventional care (p. 1459)
<p>Lind et al. (2006)</p>	<p>CAM provider use by insured patients with diabetes</p>	<p>“CAM provider usage when covered by insurance is lower among diabetes patients than in adults without diabetes</p>	<ul style="list-style-type: none"> - Acupuncture had lowest usage by diabetes patients at 1.4%.

<p><i>J Alt & Compl Med</i></p>	<p>Diabetes diagnosed in 20,722 adult insurance enrollees. Type 2 diabetes in 79% (p. 73).</p> <p>Complications of diabetes included:</p> <p>cardiovascular disease (CVD), hypertension, renal disease, peripheral vascular disease (PVD), diabetic retinopathy, neuropathy, foot ulcers or amputation (p. 72).</p>	<p>and represents a small proportion of diabetes care costs. Very few CAM visits were directly related to diabetes care. CAM-using patients often have heavy disease burdens and high total expected resource use compared to those not using CAM” (p. 71).</p> <p>Expenditures for CAM services were only \$1.7 million of the \$99.8 million spent on diabetes care (p. 76).</p> <p>Among those in highest resource utilization bands (RUBs – expected resource use), annual expenditures nearly identical in CAM users and nonusers (p. 75).</p>	<p>**Acupuncturists, along with naturopathic physicians and massage therapists saw the subset of patients who had the heaviest disease burden based on extended diagnostic categories (RUBs), and hospitalization rates (p. 76).</p> <p>**CAM care is not replacing conventional care. It may be beneficial to some patients and increases their satisfaction with care they receive (p. 76).</p>
<p>Lind et al. (2007)</p> <p><i>Arthritis & Rheumatism (Arthritis Care & Research)</i></p>	<p>Use of CAM providers by fibromyalgia (FMS) patients under insurance coverage</p>	<p>“With insurance coverage, a majority of patients with FMS will visit CAM providers. The sickest patients use more CAM, leading to an increased number of healthcare visits. However, CAM use is not associated with higher overall expenditures. Until a cure for FMS is found, CAM providers may offer an economic alternative for patients with FMS seeking symptomatic relief” (p. 71)</p>	<p>- Despite more healthcare visits, CAM use was not associated with higher overall expenditures (p. 71). - This may be due to CAM users lower pharmacy claims (by \$432) than the average pharmacy expenditures for non-CAM users (p. 75).</p>

CAM insurance coverage for pediatrics			
Authors/ Journal	Article focus	Conclusion (from abstract)	Comments
Bellas et al. (2005) <i>Archives Pediatric & Adolesc Med</i>	Frequency, predictors & expenditures for pediatric insurance claims for CAM professional in WA state. Study population was over 156,000. Costs of pediatric care for the year was \$185 million; \$2.5 million (1.3%) was spent on CAM services (p. 369).	“Insured pediatric patients used CAM professional services, but this was a small part of the total insurance expenditures....Although use of chiropractic and massage was almost always for musculoskeletal complaints, acupuncture and naturopathic medicine filled a broader role”(p. 367) CAM use among children was related to their sex, age, medical conditions, and whether a family member used CAM (p. 367) Use of CAM services by an adult family member significantly increased pediatric utilization of CAM (p. 369).	**Acupuncture and naturopathic medicine filled broader roles in care than massage or chiropractic services (p. 367). Of the CAM therapies, acupuncture was second only to naturopathic physicians in the number of expanded diagnoses treated – 13 compared to 18 for naturopathic physicians (Table 3, p. 371). - Under the most generous reimbursement in the US, pediatric CAM services were a small part of total expenditures for insurance companies (p. 367 & 371).

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