

Synopsis of Cost Effectiveness Research

Sarnat, Richard; Winterstein, James. "Clinical and Cost Outcomes of an Integrative Medicine IPA." *Journal of Manipulative and Physiological Therapeutics* 2004; 27: 336-347

In 1999, a large Chicago HMO began to utilize Doctors of Chiropractic (DCs) in a primary care provider role. The DCs focused on assessment and evaluation of risk factors and practiced non-pharmaceutical/non-surgical prevention. Insurance claims and patient surveys were analyzed to compare clinical outcomes, costs and member satisfaction with a normative control group. During the 4-year study, this integrative medical approach, emphasizing a variety of Complimentary and Alternative Medical (CAM) therapies, realized lower patient costs and improved clinical outcomes for patients. The patients who used DCs as their primary care providers had 43 percent decreases in hospital admissions, 52 percent reductions in pharmaceutical costs and 43 percent less outpatient surgeries and procedures.

Legorreta A, Metz D, Nelson C, Ray S, Chernicoff H, DiNubile N. "Comparative Analysis of Individuals With and Without Chiropractic Coverage." *Archives of Internal Medicine* 2004; 164: 1985-1992.

A 4-year retrospective review of claims from 1.7 million health plan members analyzed the cost effects of having a chiropractic benefit in their HMO insurance plan. The data revealed that members with the chiropractic benefit had lower overall total annual health care costs. Back pain patients with chiropractic coverage also realized lower utilization of plain radiographs, low back surgery, hospitalizations and MRI's. Back pain episode-related costs were also 25 percent lower for those with chiropractic coverage (\$289 vs. \$399).

Metz D, Nelson C, LaBrot T, Pelletier K. "Chiropractic Care: Is It Substitution Care or Add-on Care In Corporate Medical Plans?" *Journal of Occupational and Environmental Medicine* 2004; 46: 847-855.

In a 4-year study period, the claims of 8 million members insured by a managed health plan were evaluated to determine how patients utilize chiropractic treatment when they have a chiropractic benefit. They found that patients use chiropractic as a direct substitution for medical care, choosing chiropractic 34 percent of the time. Having a chiropractic benefit rider did not increase the number of patients seeking care for neuromusculoskeletal complaints.

UK BEAM Trial Team "United Kingdom Back Pain, Exercise and Manipulation Randomized Trial: Cost Effectiveness of Physical Treatments for Back Pain in Primary Care." *British Medical Journal* doi:10.1136/bmj.3828.607859.ae (published Nov. 19, 2004).

This study compared the benefits of spinal manipulation and exercise to "best care" in general practice for patients consulting for back pain. 1,287 patients were recruited, divided into treatment groups and followed for more than one year. Patients receiving manipulation and exercise had lower relative treatment costs and received more treatment benefits than those treated with general medical care. The authors believe that this study was able to show convincingly that manipulation alone and manipulation followed by exercise provided cost-effective additions to general practice.

Korthals-de Bos I, Hoving J, Van Tulder M, Van Molken R, Ader H, De Vet H, Koes B, Vondeling H, Bouter L. "Primary Care - Cost Effectiveness of Physiotherapy, Manual Therapy and General Practitioner Care for Neck pain: Economic Evaluation Alongside a Randomized Controlled Trial." *British Medical Journal* 2003; 326: 911.

Patients who saw general practitioners for neck pain were randomly allocated to manual therapy (spinal mobilization), physiotherapy (mainly exercise) or general practitioner care (counseling, education and drugs). Throughout this 52-week study, patients rated their perceived recovery, intensity of pain and functional disability. Manual therapy proved to be the most effective treatment for neck pain. The clinical outcome measures showed that manual therapy resulted in faster recovery than physiotherapy and general practitioner care. While achieving this superior outcome, the total costs of the manual therapy-treated patients were about one third of the costs of physiotherapy or general practitioner care.

Pelletier K, Astin J. "Integration and Reimbursement of Complementary and Alternative Medicine by Managed Care and Insurance Providers: 2000 Update and Cohort Analysis." *Alternative Therapies in Health and Medicine* 2002; 8(1): 38-48.

Consumer demand for complementary and alternative medicine (CAM) is motivation for more managed care organizations (MCO's) and insurance companies to assess the clinical and cost benefits of incorporating CAM. Providers identified "consumer demand" as the most critical factor underlying their decision to offer CAM coverage. Companies surveyed in the present study tended to rate "retaining existing enrollees" as being more important than in previous years. It is equally certain that there is a rapidly growing consumer demand for CAM. Market demand is one of the primary motivators for offering coverage of CAM, with consumer interest similarly cited as a key factor. Emphasis on what is validated by sound clinical and cost outcomes research rather than what is considered "alternative" versus "conventional" will be critical for reducing excessive medical utilization and containing rising medical care costs.

"Utilization, Cost, and Effects of Chiropractic Care on Medicare Program Costs." Muse and Associates. American Chiropractic Association 2001.

This study examines cost, utilization and effects of chiropractic services on Medicare costs. The study compared program payments and service utilization for Medicare beneficiaries who visited DCs and those who visited other types of physicians. The results indicated that chiropractic care could reduce Medicare costs. Medicare beneficiaries who had chiropractic care had an average Medicare payment of \$4,426 for all Medicare services. Those who had other types of care had an average of \$8,103 Medicare payment for all Medicare services. The per claim average payment was also lower with chiropractic patients, having an average of \$133 per claim compared to \$210 per claim for individuals who did not have chiropractic care.

Pran, Manga. "Economic Case for the Integration of Chiropractic Services Into the Health Care System." *Journal of Manipulative and Physiological Therapeutics* 2000; 23: 118-22.

This paper, written by Ontario Health Economist Pran Manga, PhD, makes the case that chiropractic is a safe, cost-effective treatment alternative. If further integrated into the health care system, he predicts reduced costs and improved outcomes. He points to the extensive body of literature which demonstrates that chiropractic is effective for neuromusculoskeletal disorders and the repeated evidence that patients often prefer chiropractic care over a medical approach. Evidence of effectiveness for medical care is not nearly as convincing for management of neuromusculoskeletal conditions.

Branson, Richard. "Cost Comparison of Chiropractic and Medical Treatment of Common Musculoskeletal Disorders: A Review of the Literature after 1980." *Topics in Clinical Chiropractic* 1999; 6(2): 57-68.

A cost comparisons study between DC-provided care and care provided by general and specialist MDs for individuals with musculoskeletal conditions found that the majority of retrospective studies had positive results for chiropractic care.

Manga, Pran. "Enhanced chiropractic coverage under OHIP (Ontario Health Insurance Plan) as a means for reducing health care costs, attaining better health outcomes and achieving equitable access to health services." Report to the Ontario Ministry of Health, 1998.

This study demonstrates the ways in which individuals in Ontario are deterred from the use of chiropractic care because it is not covered under OHIP. Greater chiropractic coverage under OHIP would result in a greater number of individuals visiting chiropractors and going more often. The study shows that despite increased visits to DCs, this would result in net savings in both direct and indirect costs. It is very costly to manage neuromusculoskeletal disorders using traditional medicine. If individuals were able to visit chiropractors under OHIP a great amount of money would be saved by the government. Direct savings for Ontario's healthcare system could be as much as \$770 million and at the very least \$380 million.

Smith, M; Stano, M. "Costs and Recurrences of Chiropractic and Medical Episodes of Low Back Care." *Journal of Manipulative and Physiological Therapeutics* 1997; 20(1): 5-12.

This study compared the health insurance payments and patient utilization patterns of individuals suffering from recurring low back pain visiting doctors of chiropractic to those visiting medical doctors. Insurance payments were higher for medically initiated episodes. Those who visited chiropractors paid a lower cost and were also more satisfied with the care given. Because of this, the study suggests that chiropractic care should be given careful attention by employers when using gate-keeper strategies.

Stano M, Smith M "Chiropractic and Medical Costs of Low Back Care." Medical Care 1996; 34(3): 191-204.

This study compares health insurance payments and patient utilization patterns for episodes of care for common lumbar and low back conditions treated by chiropractic and medical providers. Using 2 years of insurance claims data, this study examines 6,183 patients who had episodes with medical or chiropractic first-contact providers. Multiple regression analysis, to control for differences in patient, clinical, and insurance characteristics, indicates that total insurance payments were substantially greater for episodes with a medical first-contact provider. The mean total payment when DCs were the first providers was \$518, whereas the mean payment for cases in which an MD was the first provider was \$1,020.

Stano, Miron. "The Economic Role of Chiropractic Further Analysis of Relative Insurance Costs for Low Back Care." Journal of the Neuromusculoskeletal System 1995; 3(3): 139-144.

This retrospective study of 7077 patients compared costs of care for treatment of common low back conditions when a chiropractor was the first provider versus when an MD was the first provider. Total payments for inpatient procedures were higher for MD initiated treatment and especially episodes that lasted longer than a single day. Outpatient payments were much higher for MD initiated treatments as well. Payments were nearly twice as great for the medically initiated cases and their outpatient payments were nearly 50% higher. Their statistical estimates indicate that the costs of care for common low back disorders using a chiropractor as first-contact provider are substantially lower than episodes in which a medical physician is the first-contact provider. The author concluded that "when our results are considered together with the recognition by the Agency for Health Care Policy and Research of the clinical efficacy of chiropractic for low back problems, it is clear that chiropractic deserves careful consideration in the strategies adopted by employers and third-party payers to control health care spending".

Stano, Miron. "A Comparison of Health Care Costs for Chiropractic and Medical patients." Journal of Manipulative and Physiological Therapeutics 1993; 16(5): 291-299.

Comparison of cost for patients who received chiropractic care for neuromusculoskeletal problems to those who received medical and osteopathic care. One quarter of patients analyzed were treated by chiropractors. These patients had lower health care costs. "Total cost differences on the order of \$1000 over the two year period were found in the total sample of patients as well as in sub-samples of patients with specific disorders." Lower costs are attributed to lower inpatient utilization.

Manga, Pran; Angus, Doug; Papadopoulos, Costa; Swan, William. "The Effectiveness and Cost-Effectiveness of Chiropractic Management of Low-Back Pain." Richmond Hill, Ontario: Kenilworth Publishing, 1993.

This study reveals that if management of low back pain was shifted to chiropractors there could be a potential savings of millions of dollars every year. The study also revealed that spinal manipulation is both safe and more effective than drugs, bed rest, analgesics, and general practice medical care for managing low back pain.

Dean, David; Schmidt, Robert. "A comparison of the cost of chiropractors versus Alternative Medical Practitioners." Richmond, VA: Virginia Chiropractic Association, 1992.

This study is an assessment of the difference in cost of treatment between chiropractors and other practitioners in dealing with individuals who have similar back-related problems. This study analyzed individuals who had medical visits in 1980 and had a combination of eleven health problems including arthritis, disc disorders, bursitis, low back pain, spinal related sprains, strains and dislocations. Chiropractic care had a lower cost option for many back ailments.

State Specific Workers Compensation Studies

"Chiropractic Treatment of Workers' Compensation Claimants in the State of Texas." Executive Summary. MGT of America Feb 2003.

This retrospective study of workers' compensation claims from 1996 to 2001 was conducted to determine the use and efficacy of chiropractic care in Texas. The researchers reviewed 900,000 claims during that time period to determine if chiropractic was cost-effective compared to medical treatment. They found that chiropractor treatment costs were the lowest of all providers. Their data clearly demonstrated that increased utilization of chiropractic care would lead to declining costs relative to lower back injuries.

Folsom BL, Holloway RW "Chiropractic care of Florida workers' compensation claimants: Access, costs, and administrative outcome trends from 1994 to 1999." Topics in Clinical Chiropractic 2002; 9(4): 33-53.

This retrospective study of Florida workers' compensation claims from 1994-1999 found that the average total cost for low-back cases treated medically was \$16,998 while chiropractic care was only \$7,309. Patients treated primarily by chiropractors were found to reach maximum medical improvement almost 28 days sooner than if treated medically. Findings from this analysis of the Florida Claims and medical files indicate that considerable cost savings and more efficient claims resolution may be possible with greater involvement of chiropractic treatment in specific low back cases and other specific musculoskeletal cases.

Jarvis KB, Phillips RB, Danielson C. "Managed Care Pre-approval and Its Effect on the Cost of Utah Worker Compensation Claims." Journal of Manipulative and Physiological Therapeutics 1997; 20(6): 372-376.

5000 claims from 1986 and 5000 from 1989 were examined for injured individuals in the Utah Worker Compensation Fund. The study compared cost for those who received chiropractic care and those who received medical care. From 1986 to 1989 the cost of care for chiropractic increased 12% while medical care increased 71%. The replacement of wages increased 21% for those receiving chiropractic care and 114% for those receiving medical care.

Tuchin PJ, Bonello R. "Preliminary Findings of Analysis of Chiropractic Utilization in the Workers' Compensation System of New South Wales, Australia." Journal of Manipulative and Physiological Therapeutics 1995; 18(8): 503-511.

In this study researchers analyzed WorkCover Authority data from New South Wales. Of 1289 cases reviewed 30% had back problems. 12% employed chiropractic care for spinal injury workers' compensation claims. The total payments for all cases using chiropractic and physiotherapy care were \$25.2 million, which was 2.4% of the total payments. When 20 claims were chosen at random the average chiropractic cost of care was \$299.65, while the average medical cost was \$647.20. A trend in data collected indicated that when greater than 60% of total cost of treatment came from chiropractic care the number of days missed from work was 9.5. When less than 60% of total cost of treatment came from chiropractic care the number of days missed from work was 50.3.

Ebrall PS. "Mechanical Low Back Pain: A Comparison of Medical and Chiropractic Management within the Victorian Workcare Scheme." Chiropractic Journal of Australia 1992; 22(2): 47-53.

This study reviewed claims made in a twelve-month period involving work related mechanical low-back pain. Management by chiropractic care and medical care were compared. 39% of claims reviewed for individuals visiting chiropractors required compensation days while 78% of claims for those visiting medical doctors required compensation days. The average number of compensation days needed for those visiting chiropractors was 6.26 days and 25.56 days for those visiting medical practitioners.

Jarvis KB, Phillips RB, Morris EK "Cost Per Case Comparison of Back Injury Claims of Chiropractic Versus Medical Management for Conditions With Identical Diagnostic Codes" Journal of Occupational Medicine 1991; 33(8): 847-852.

This workers' compensation study conducted in Utah compared the cost of chiropractic care to the costs of medical care for conditions with identical diagnostic codes. The study indicated that costs were significantly higher for medical claims than for chiropractic claims. The sample consisted of 3062 claims or 40.6% of the 7551 estimated back injury claims from the 1986 Workers' Compensation Fund of Utah. For the total data set, cost for care was significantly more for medical claims, and compensation costs were 10-fold less for chiropractic claims.

Nyiendo, Joanne. "Disabling Low Back Oregon Workers' Compensation Claims. Part II: Time Loss." Journal of Manipulative and Physiological Therapeutics 1991; 14(4): 231-239.

This report focused on time lost for individuals who visited DCs versus those who visited MDs for treatment of low back pain. Median missed days of work for individuals with similar severity of injury was 9.0 days for those visiting DCs and 11.5 for individuals visiting MDs. Individuals visiting chiropractors more often returned to work having missed one week or less of work days. There was no difference in time lost for individuals visiting DCs and MDs with no previous history of low back pain. For claimants with a history of chronic low back problems, the median time loss days for MD cases was 34.5 days, compared to 9 days for DC cases. It is suggested that chiropractors are better able to manage injured workers with a history of chronic low back problems and to return them more quickly to productive employment.

Nyiendo, Joanne, Lamm, Lester. "Disabling Low Back Oregon Workers' Compensation Claims. Part I: Methodology and Clinical Categorization of Chiropractic and Medical Cases." Journal of Manipulative and Physiological Therapeutics 1991; 14(3): 177-184.

This study examined 201 randomly selected workers' compensation cases that involved low back injuries that were disabling. The study found individuals who visited DCs less often initially had more trips to the hospital for their injuries than those visiting MDs.

Johnson MR, Schultz MK, Ferguson AC. "A Comparison of Chiropractic, Medical and Osteopathic Care for Work-Related Sprains/Strains." Journal of Manipulative and Physiological Therapeutics 1989; 12(5): 335-344.

This study analyzed data on Iowa state record from individuals in Iowa who filed claims for back or neck injuries in 1984. The study compared benefits and the cost of care received by individuals from MDs, DCs and DOs. There was a focus on individuals who missed days of work and were compensated because of their injuries. Individuals who visited DCs missed on average at least 2.3 days less than individuals who visited MDs and 3.8 days less than individuals who saw DOs. Less money was dispersed as employment compensation on average for individuals who visited DCs. On average, the disability compensation paid to workers for those who visited DCs was \$263.66, \$617.85 for those who visited MDs, and was \$1565.05 for those who visited DOs.

Wolk, Steve. "An Analysis of Florida Workers' Compensation Medical Claims for Back-Related Injuries." Journal of the American Chiropractic Association 1988; 27(7): 50-59.

This study is an analysis of worker's compensation claims in Florida from June through December of 1987. All of the claims analyzed were related to back injuries. The greater purpose of this study was to compare the cost of osteopathic, medical and chiropractic doctors. The cost of drugs was not included in the analysis. The results of the study lead to the finding that individuals who had compensable injuries and were treated by chiropractors often times were not forced to be hospitalized. It also revealed that chiropractic care is a "relatively cost-effective approach to the management of work-related injuries."