Cost Minimization Analysis of Low Back Pain Claims Data for Chiropractic Vs Medicine in a Managed Care Organization

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Abstract

Objective: A managed care organization (MCO) examined differences in allowed cost for managing low back pain by medical providers vs chiropractors in an integrated care environment. The purpose of this study is to provide a retrospective cost analysis of administrative data of chiropractic vs medical management of low back pain in a managed care setting.

Methods: All patients with a low back pain–related diagnosis presenting for health care from January 2004 to June 2004 who were insured by an MCO in northeast Wisconsin were tracked. The cumulative health care costs incurred by this MCO during the 2-year period from January 2004 to December 2005 related to these back pain diagnoses were collected.

Results: Allowed costs of chiropractic treatment were 12% greater than medical primary care and 60% less per case than other types of medical care combined, on a per-case basis: median cost of medical primary care was $365.00, chiropractic care was $417.00, and medical nonprimary care was $669.00.

Conclusion: This study of an MCO's low back pain allowed costs may be better redirected to primary care or chiropractic, given equivalent levels of case complexity. This study suggests chiropractic management as less expensive compared with medical management of back pain when care extends beyond primary care. Primary care management alone is virtually indistinguishable from chiropractic management in terms of costs. (J Manipulative Physiol Ther 2009;32:734-739)

Key Indexing Terms: *Chiropractic; Low Back Pain; Cost Savings; Managed Care Program, Delivery of Health Care, Integrated*

Low back pain (LBP) is a highly prevalent condition in the United States, with approximately 80% of Americans experiencing at least one episode of back pain in their lifetime. The high prevalence of LBP makes it a leading reason for physician visits, hospitalization, and utilization of other health care services.[1] An efficient health care system should direct patients with LBP to the most cost-effective type of health care for their specific condition.

Other studies' methodologies have examined the differences in health care costs for patients treated with chiropractic management vs medical management for lower back pain. In examining patterns in the costs of treating LBP, and similar to findings in previous studies, Luo et al[2] found that a small percentage of individuals with back pain accounted for a majority of the expenditures. Per capita expenditures were generally higher for individuals who were older, were female, were white, were insured, or had disk disorders. Data from the 2003 Medical Expenditure Panel Survey showed that outpatient and office-based medical provider visits accounted for 55.4% of the total costs for back problems. In the same survey, prescription drug costs comprised 11.3% of expenditures for back problems.

Chiropractic management of LBP differs from medical management in that it typically involves more in-office treatment, whereas medical management may be more complex and involve more prescription drugs, referrals to specialists and physical therapy, diagnostic imaging, and hospitalization.[3,4] Direct payments to chiropractors for services rendered constituted more than 80% of treatment costs per episode, whereas payments to medical doctors constituted only 23% of treatment costs per episode.[5]

Nelson et al[4] found that in employer groups whose plan included a chiropractic benefit, the use of surgery, plain film radiography, advanced imaging, and inpatient care was significantly reduced compared with employer groups who

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did not have a chiropractic benefit. They concluded that access to managed chiropractic care may reduce overall health care expenditures through several mechanisms: (1) positive risk selection; (2) substitution of chiropractic for traditional medical care, particularly for spine conditions; (3) more conservative, less invasive treatment profiles; and (4) lower health service costs associated with managed chiropractic access. In contrast, Shekelle et al[6] found that the low chiropractic costs per visit, low imaging costs, and low hospital costs were offset by the relatively large number of chiropractic visits per episode.

In a review of insurance data claims, Stano[7] looked at the total cost of episodes of care based on whether a chiropractor or medical physician was the first-contact provider. He found that insurance payments were substantially greater for medical physician–initiated cases, with most but not all of the cost difference being related to higher inpatient costs for such cases. In another review of insurance claims data, Legorretta et al[8] found that access to managed chiropractic care may reduce overall health care expenditures.

Rather than trying to define and look at specific "episodes" of LBP as many past studies have done, this study examined total claims for procedures incurred over a 2-year period with a back pain diagnosis as the primary and/or secondary diagnosis. Because of the chronic recurrent nature of back pain, a "total" figure for back pain–related claims might be a better estimate of overall costs. This partially overcomes the difficulty in working with only an insurance database by extending the follow-up period to at least 18 months. Without clinical information, it is not possible to accurately separate out claims related to a specific discrete episode of back pain. Based on prior literature, the hypothesis was that patients seeking chiropractic management would have less health care costs incurred for LBP compared with those seeking medical management for their LBP problem. The purpose of this study is to provide a retrospective cost analysis of administrative data of chiropractic vs medical management of LBP in a managed care setting and integrated health care environment.

Methods

The data are from an insurance claims database of a private health maintenance organization (HMO) plan in Northeast Wisconsin that insures approximately 30 000 individuals. The study was reviewed and granted exclusion from an institutional review board by the University of Massachusetts–Amherst School of Public Health and the HMO providing the "deidentified" database information. All providers were reimbursed by a discounted fee for service. This HMO did not restrict chiropractic management on the basis of total visits, costs, or procedures during the study duration. The study population was health plan members continuously enrolled from January 1, 2004, to December 31, 2005, and had at least one visit with a medical provider or chiropractor for a primary or secondary diagnosis of LBP and/or back-associated leg symptoms (Table 1) at some time between January 1, 2004, and June 30, 2004. A small number of patients who saw both types of providers during the initial 6-month period were excluded. The total study population included 896 members. Total direct costs allowed by the insurance company were then calculated for the 2-year period from January 2004 through December 2005. All procedures related to back pain diagnosis were included in calculation, such as imaging, hospital, physical therapy, and outpatient office charges. No data on medication costs were available, as the claims database used, as in other studies of claims data, cannot tie a diagnosis to pharmaceutical prescriptions.

Table 1. *Twelve International Classification of Diseases, Ninth Revision, Clinical Modification lumbar and lower back pain–related codes used to include patients in the data set*

Code	Description
722.10	Intervertebral disk disorder, displacement of thoracic or lumbar intervertebral disk without myelopathy
722.52	Intervertebral disk disorder, degeneration of thoracic, lumbar, or lumbosacral intervertebral disk
724.2	Lumbago, other and unspecified disorder of back
724.3	Sciatica, other and unspecified disorders of back
724.4	Lumbosacral radiculitis
724.5	Backache, unspecified
724.6	Disorders of sacrum
756.11	Congenital spondylolisthesis
738.4	Degenerative spondylolisthesis
839.2	Thoracic and lumbar vertebrae
846.0	Sprains and strains of the sacroiliac region, lumbosacral joint
847.2	Sprains and strains of the lumbar spine

The members' costs were then categorized according to those who saw either a chiropractor or medical provider (family practice, internal medicine, pediatrics, obstetrics/gynecology, physical medicine, neurology, neurosurgery, sports medicine, or orthopedics) during the initial 6-month period. The range of ages in the population was between 5 and 83 years, with an average age of 43 years.

Data files were received from the insurance company in Microsoft Excel (Microsoft Inc, Redmond, Wash) with a unique identifier assigned to patients meeting the above criteria. The files contained service dates; specialty of providers rendering service and whether they were participating providers with the network; primary and, if applicable, secondary diagnosis on the claim; procedure codes; and birth date and sex of the patient, as well as allowed amount by the insurance company. The allowed amount for each case is a good proxy for total cost per case.

Analysis

Mean total cost of care for the selected diagnosis was computed for each patient according by provider type for the initial 6-month period: doctor of chiropractic only and medical doctor only. Rather than trying to define and observe specific episodes of LBP as past studies have done, this study