The Chiropractic Report

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Professional Notes

SMT Effective for Shoulder Dysfunction and Pain

A new trial from The Netherlands published in the US in the *Annals of Internal Medicine*, reports that when spinal manipulative therapy (SMT) of the cervical and upper thoracic spine is added to usual medical care this gives more rapid and better results for patients with shoulder dysfunction and pain. Details include:

a) 150 patients from general medical practices in Groningen, experiencing shoulder pain and dysfunction (symptoms between the neck and elbow at rest or during upper arm movement, though pain could also radiate into the neck and lower arm) and with no contraindications for SMT, were randomly assigned into one of two groups:

• Group 1 – usual medical care according to Dutch general practice guidelines, comprising advice and analgesics and/or NSAIDs initially, then corticosteroid injections, then referral for physical therapy after six weeks if necessary; or

• Group 2 – usual medical care plus

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California Study Confirms Cost-Effectiveness.

Introduction

HEALTH ECONOMISTS AGREE that there is now a convincing body of evidence demonstrating major savings in health care and compensation costs when back pain patients receive chiropractic rather than medical management.[1,2]

Savings vary between 20% and 60% depending upon the structure of the health care system and the type of study. The evidence, reviewed below, comes from workers compensation studies, clinical trials, individual employer experience and, more recently in the US, sophisticated analysis of health insurance data by health economists and others.

Most analysis of the cost-effectiveness of chiropractic care has been in the field of back pain, partly because back pain is by far the most common presenting complaint in chiropractic practice but also because of its vast impact on individuals and society. In North America for example:

• Back pain accounts for more than $100 billion in annual health costs.[3]

• It is the second leading cause of physician visits and is second only to childbirth for hospitalizations.[4]

• It is the most prevalent chronic medical problem and the number one cause of long-term disability.[5]

• It is the second most common cause of restricted activity and use of prescription and non-prescription drugs.[2]

2. Few would argue against the fact that chiropractic care, by itself, has been demonstrated to be the most cost-effective treatment approach for back pain patients. The issues for third party payors – the governments, employers, insurers and managed care corporations who pay for and manage care – are:

a) If a chiropractic benefit is given to patients, will it be an 'add-on' cost, similar for example to a dental benefit and most other benefits, and therefore increasing overall costs even though it is cost-effective in itself, or will chiropractic services given under the benefit truly 'substitute' for more expensive medical care?

b) In the real health care world, will it work? Will many or most patients be willing to consult a chiropractor? Will structural barriers limit access to chiropractic services – for example geographical availability, interprofessional referral problems, administrative features such as higher co-payments that hinder access to chiropractic services.

3. Last month, on October 11, 2004, the *Archives of Internal Medicine*, a respected journal of the American Medical Association, published results from a major new study that addresses these questions.[3] This four-year study of comprehensive data from 1.7 million members of a managed care network in California, providing medical services only for 1 million members but the same medical services plus chiropractic services for 700,000 members, reports:

a) Virtually all chiropractic services used by plan members with access to them were used in direct substitution for medical services.

b) This applied not only for back pain but for all conditions seen by chiropractors – over a range of 654 ICD-9 Codes covering neuromusculoskeletal (NMS) disorders such as spinal pain, rib disorders, headache, extremity problems and myalgias or arthralgias.

c) A large number of those with access to medical and chiropractic benefits were willing to choose, and did choose, chiropractic care. Of those with NMS complaints, 34.4% or approximately 1 in 3 used chiropractic care. For back pain,

both uncomplicated and complicated, 45.9% or nearly half chose chiropractic care. (These figures come from a second paper on the study published in the *Journal of Occupational and Environmental Medicine*[6]).

d) The 700,000 patients with the added chiropractic benefit had significantly lower claims costs per person than the other 1 million not only for back pain and NMS problems but also for total health care costs. At the most conservative estimate the overall annual saving was $16 million.

With back pain, for example, the savings in the 700,000 cohort with chiropractic care available were:

- Overall cost reduced by 28%.
- Reduced hospitalization of 41%.
- Reduced back surgeries of 32%.
- Reduced cost of medical imaging, such as x-rays or MRIs, of 37%.

All of these figures were reported on October 12 on the well-known website WebMD under the by-line 'Cost Down, Patient Satisfaction up with Chiropractic Care'.

It is important to appreciate, however, that the above figures underestimate the actual and potential savings. These study results just published in the *Archives* address the consequences of adding a chiropractic benefit – whether or not it is used. They compare total costs for the 700,000 cohort with medical and chiropractic benefits (Cohort M+ C) with those in the 1 million medical benefits only cohort (Cohort M) – not just the patients in Cohort M+ C who used chiropractic care. The majority of those in the 700,000 Cohort M+ C who made a claim for back pain actually saw a medical doctor on the same basis as those in Cohort M– and those medical costs are included in the above figures.

A separate paper being submitted to JMPT will address the actual cost comparison for those with the same ICD-9 Codes given chiropractic or medical care. Other factors influencing costs are discussed below in paragraph 10.

4. This issue of *The Chiropractic Report* now provides a summary overview of cost-effectiveness issues and evidence, and then a more detailed discussion of the new California study – extremely important because of its quality, its size and the real life questions it answers more completely than any previous research.

B. Cost-Effectiveness

5. In the 1990s Manga and Angus, health economists from the University of Ottawa in Canada funded by the government to review all relevant evidence, concluded that "there is an overwhelming body of evidence indicating that chiropractic management of low-back pain is more cost-effective than medical management" and that "there would be highly significant cost savings if more management of low-back pain was transferred from physicians to chiropractors."[7]

Most studies relative to cost-effectiveness, Manga and Angus point out, are by medical and other health science researchers without expertise in this field, and they fail to capture all the relevant costs which include:

a) Direct costs of care – including, in the present case, all health care costs generated as a result of the chiropractic or medical management (e.g. diagnostic tests, medications, treatments on referral, etc.)

b) Costs arising from harm from treatment. These can be very significant in the area of back pain – for example subsequent surgeries and/or long-term reliance on medications after an initial failed surgery.

c) Compensation costs for disability and time off work. For example a medical treatment that costs $300 inclusive of tests and medications, but leads to compensation costs of $1000 for time off work, is not as cost-effective as chiropractic treatment that costs $400 but that avoids any compensation costs for lost time at work.

d) Other indirect costs – to patients, their families and employers – e.g. lost production.

6. Among the numerous studies that now exist there are only two that suggest chiropractic care is not more cost-effective than medical care. These are by Carey, Garrett et al.[8] and Shekelle, Markovich et al.[9] Neither of these is authored by health economists. They have been reviewed by Manga and Angus who note that the studies "have significant design problems from an economist's point of view".[2] Problems include poor matching of patients, failure to include all costs, invalid attribution of costs and inadequate sample size.

7. Turning now to summarize the overall evidence on cost-effectiveness:

a) **Total Savings**. There is a 20-60% savings in total costs (direct costs for health care, and indirect costs for disability and time off work) when a matched group of patients receives chiropractic care rather than medical care for back pain.[2] The actual primary treatment costs in the acute or initial stage are typically higher for chiropractic care, because there is more intensive intervention. But this results in substantial savings in secondary health care costs (fewer specialist services, surgeries, hospitalizations – this is confirmed again in the new California study) and compensation costs.

b) **Direct Costs**. When a patient attends a medical doctor, the doctor's fees are only 23% of total health care cost – the other 77% is the cost of other diagnostic tests, and therapy, specialist and hospital services. With chiropractic care 80% is the cost of chiropractic fees – only 20% is secondary health care costs.[2]

The best comparative evidence on direct and complete health care costs appears in two studies by Stano and Smith,[10,11] US health economists, analyzing records

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from the Michigan health benefits consulting firm MedStat Systems Inc. which then monitored coverage for 2 million patients across the US. Their analyses are for the 2 year period July 1988 to June 1990. In summary:

i) The studies look at chiropractic and medical use and costs for 208 ICD-9 code diagnoses for various conditions in patients who were equally free to choose medical or chiropractic care for these conditions under the terms of their employment health benefits plans. The entire claims history and all costs for these patients were known.

ii) After regression analysis to ensure matching populations in all material respects (e.g. severity of complaints, age, sex, location, relation to insurance plan – employee or dependent, insurance plan type, similar access to, and similar deductibles for chiropractic and medical care, etc.), the study group was 7,077 patients.

iii) Medical care costs were significantly higher. For the 9 high-frequency ICD-9 codes most typically used by both chiropractic and medical doctors, mostly involving back and sacroiliac disorders including disc degeneration and sciatica, medical payments were 47% higher for outpatient care, 61% higher for total care.

Figure 1. Average Cost per Patient Under Workers' Compensation, Victoria, Australia, 1990-1991.

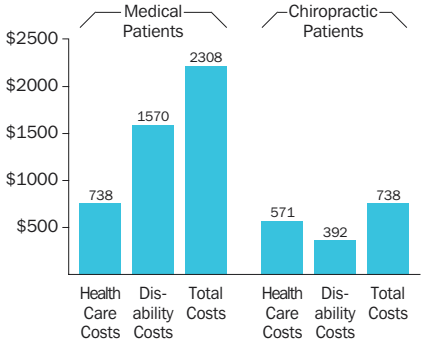
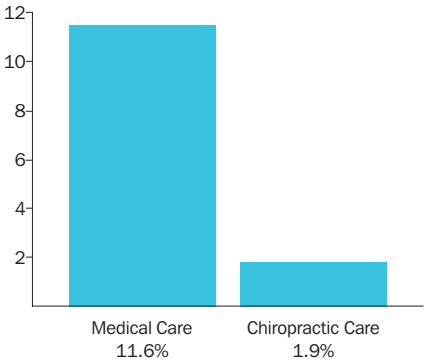


Figure 2. Patients Developing Chronic Pain from Workplace Injuries, Victoria, Australia, 1990-1991.



Ebrall P, CJA, 1992.

c) **Indirect Costs – Compensation**. An additional significant area of cost savings under chiropractic care is compensation. Because of better earlier results, far fewer patients experience long-term (chronic) pain, time off work and disability under chiropractic care than under medical care. The better designed workers' compensation studies show this quite dramatically.

Jarvis[12] reported that workers in Utah with similar back injuries (identical ICD-9 codes) had approximately 10 times the number of days off work on average (20.7 versus 2.4) and compensation costs ($668.39 vs $68.38) if they chose medical rather than chiropractic care.

Ebrall, looking at comparable injured workers in the State of Victoria, Australia in the 1990-91 compensation year, reported average payments per claimant of $963.47 for chiropractic patients (health care cost $571.45, compensation cost $392.02) and $2,308.10 for medical patients (health care cost $738.17, compensation $1,569.93).[13] The higher compensation costs for medical patients reflected the fact that more medical patients developed chronic pain (11.6%) than chiropractic patients (1.9%). These results are illustrated in Figure 1 and 2.

US health economists Johnson and Baldwin, in a study for the Zenith National Insurance Company of 850 California workers who completed an episode of back pain in the years 1991-1993, also concluded that substantial savings were possible from shifting the care of workers compensation back patients to chiropractors.[14] Total claim costs were reduced by approximately 20% ($1,526 for chiropractic patients and $1,875 for medical patients) when workers with equivalent injuries chose chiropractic care. Most of the savings came from earlier return to work and lower indemnity costs.

d) **A Workplace Study – Advantage to Individual Employers.** In a real life trial of the cost benefits of introducing chiropractic services in the workplace in the UK[15], two companies with 750 employees referred employees complaining of neck/arm or back/leg pain for chiropractic treatment over a period of two years in 1994/95. The companies subsidized the cost of care in the expectation of better effectiveness, patient satisfaction and overall cost savings. The results were rewarding – extremely high self-rated improvement and patient satisfaction, and an 18% net saving of costs in the first year (30% saving in disability/sickness payments, less 12% for the treatment costs subsidized). There was about a 40% net saving in the second year.

e) **Savings under Managed Care**. Even in a US managed care environment, where there are protocols to control all costs carefully, there may be substantial savings with chiropractic care for back and neck pain patients. Mosley[16] analyzed claims over 12 months in a Louisiana HMO in which patients were permitted direct access to either a primary gatekeeper MD or a participating doctor of chiropractic. Direct health care costs per chiropractic patient were only 70% of costs per medical patient over a range of identical ICD-9 diagnoses – in other words a saving of 30%. Clinical results were equivalent. Surgical rates were similar in this instance, but medical patients incurred much higher imaging and medication costs.

In summary, as might be expected given the chiropractic profession's more conservative approach to management – encouraging patients to keep active and maintain normal lifestyle rather than stop, rest and rely upon medication, the research confirms the superior cost-effectiveness of chiropractic management of common neuromusculoskeletal disorders in traditional and managed care practice settings.

C. The New California Study[6]

8. This is a four-year claims-data analysis (April 1997 to March 2001) for approximately 1.7 million members of a large regional managed-care network in California. It is the work of an impressive multidisciplinary team led by Antonio Legorreta, MD MPH, from the Department of Health Services, School of Public Health, University of California at Los Angeles (UCLA) and researchers from American Specialty Health Plans (ASHP). ASHP, which provided the chiropractic benefit for this network, is

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SMT Effective for Shoulder Dysfunction and Pain

continued from page 1

SMT, comprising up to 6 sessions over 12 weeks of joint manipulation and mobilization in the cervical and upper thoracic spine, but without SMT for the shoulder joint or massage or exercises, provided by specialized and experienced PT manual therapists.

b) The primary outcome measured was "patient-perceived recovery" ("completely recovered" or "very much improved" on a 7 point ordinal scale). Secondary outcomes were severity of complaint, shoulder pain, shoulder disability and general health. Measurements were taken at 6 weeks, 12 weeks (end of treatment period) 26 weeks and 52 weeks or one year.

c) Results were:

• The Group 2 patients had better recovery and reduced pain and disability throughout, though this had not reached statistical significance at 6 weeks.

• At 12 weeks there were statistically significant differences in favour of Group 2 patients on overall recovery and severity of pain.

• Reduced disability for Group 2 patients was significant by 26 weeks, and the significant advantage on all measures was maintained at 52 weeks follow-up.

The editors of the *Annals of Internal Medicine*, in an editorial note, conclude that " manipulative therapy appears to be an effective treatment option for patients with shoulder pain and shoulder girdle dysfunction that are not due to trauma, fracture, rupture, or dislocation."

(Bergman GJD, Winters JC et al. (2004) *Manipulative Therapy in Addition to Usual Medical Care for Patients with Shoulder Dysfunction and Pain: A Randomized, Controlled Trial*, Ann Intern Med 141:432-439).

WFC/ACC Conference – A New Consensus on Chiropractic Diagnosis

An international conference held in Toronto last month, and attended by over 100 leaders in chiropractic education from 29 schools in 11 countries, reached consensus on the importance for the profession of a more unified and distinctive approach to chiropractic patient assessment and diagnosis. Relative to this, there was agreement that the PARTS model presented at the conference by Dr. Tom Bergmann of Northwestern University of Health Sciences, Minneapolis, was a sound unifying model for chiropractic education and practice internationally.

This was the third joint conference held by the World Federation of Chiropractic (WFC) and the Association of Chiropractic Colleges (ACC). It had a chosen theme of assessment and diagnosis because of concerns about the unacceptable variation in practice, a variation that confuses patients and limits the growth, unity and success of the profession.

It was acknowledged that all individual assessment methods used by chiropractors in patient examination and diagnosis have limited evidence of validity and reliability and, as a result, it was agreed that a 'multi-dimensional' approach should be taught and used in practice. The PARTS model, first advanced by Dr. Bergmann in the 1980s and now adopted at other schools and accepted by the US Federal Government's Medicare program as a basis for chiropractic management and reimbursement, lists five components to be considered in the assessment of each patient:

P – pain/tenderness

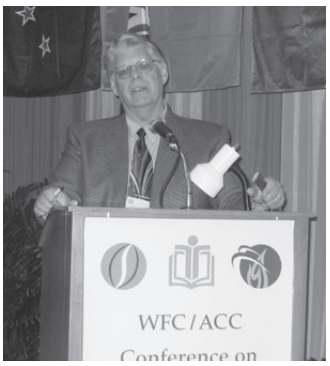
A – Asymmetry/alignment

R – Range of motion abnormality

T – Tone/texture/temperature of soft tissues

S – Special tests (e.g. imaging and laboratory tests).

Each component can of course be assessed by various methods (e.g. range of motion by motion palpation, SLR tests, functional imaging), but objective information on each component should be considered and recorded, conference participants agreed, to support specific diagnoses made.



Noted technique instructor and author Dr. Tom Bergmann from the Northwestern Health Sciences University presents the PARTS assessment method.

A Conference panel featuring* (l to r) *Dr. Gerard Clum, World Federation of Chiropractic 1st Vice-President and President, Life Chiropractic College West, Hayward, California; Program Directors Dr. Barry Lewis, Lead Clinical Tutor, Anglo-European College of Chiropractic, UK and President, British Chiropractic Association, and Dr. Frank Zolli, Dean, University of Bridgeport College of Chiropractic, US; Professor Stefan Pallister, Program Leader, University of Murdoch, Perth, Australia, Dr. Ricardo Fujikawa, Program Leader, Feevale University, Novo Hamburgo, Brazil and Dr. Charmaine Korporaal, Senior Lecturer, Durban Institute of Technology, South Africa.

The conference, led by Program Directors Dr. Frank Zolli, Dean University of Bridgeport College of Chiropractic, Connecticut, USA and Dr. Barry Lewis, Lead Clinical Tutor, Anglo-European College of Chiropractic, Bournemouth, UK and President, British Chiropractic Association, reached consensus on a number of other important issues for the profession, including:

• **Language**. Opening a panel discussion on diagnosis, Dr. David Koch, Past President, Sherman College of Straight Chiropractic and currently Vice-President for International Relations, Palmer College, stated that previous concerns with the use of this term in chiropractic practice were legal rather than clinical and are now history, and the conference agreed. There was also consensus on the fact that today's students, in preparation for chiropractic practice in a more integrated health care system, should have respect for and make appropriate use of both traditional chiropractic language (subluxation/adjustment) and common health science language (NMS lesion/joint dysfunction/manipulation/mobilization).

• **Soft-tissue assessment**. After hearing from educational and clinical leaders such as Dr. Warren Hammer, Dr. Craig Liebenson and Dr. Craig Morris, and discussion of new knowledge relevant to spinal stability and NMS dysfunction, it was agreed that soft-tissue assessment and treatment should be an integral part of all chiropractic education programs.

Books – Haldeman's Third Edition is Here.

(*Principles and Practice of Chiropractic*, ed Haldeman S, 3rd Edition, McGraw-Hill, 2005, 1223 pages).

The first edition of Scott Haldeman's *Principles and Practice of Chiropractic*, published in 1980, was the first chiropractic textbook published by a major medical publishing company (Appleton-Century-Crofts) and many of the basic science chapters were written by non-chiropractors. The third edition, now available and the most comprehensive and impressive general text the profession has produced to date, has nearly all of its basic science chapters written by chiropractic scientists with graduate degrees in subjects such as biomechanics, epidemiology, neurophysiology, radiology, and public health to mention just a few.

Haldeman himself co-authors an excellent chapter on cervicogenic headache, only recognized and acknowledged by neurologists in 1983 but now "fully established" – though still with conflicting views on causation which are reviewed.

Before the commencement of nearly 50 chapters on basic and clinical science subjects, there are very impressive opening chapters on the history of spinal manipulation (by two noted historians from Palmer College, Glenda Wiese, PhD, and Alana Callender, MS); the history of the profession (by Joe Keating, PhD, the most published and knowledgeable historian of the profession writing today), vitalism, materialism and their impact on philosophy in chiropractic, (Reed Phillips, DC PhD, President, Southern California University of Health Sciences) the central importance of communication in the chiropractic health encounter (Ian Coulter, PhD, sociologist and former CMCC President), and the current integration of chiropractic in health care (William Meeker, DC MPH, Director, Palmer Center for Chiropractic Research and Robert Mootz, DC, Associate Medical Director for Chiropractic, State of Washington, Department of Labor and Industries).

The history of spinal manipulation, Wiese and Callender explain, demonstrates that both chiropractic and osteopathy were part of a natural evolution rather than a sudden new discovery, manipulation having been widely associated with the nervous system and general health since ancient times. The concept of spinal irritation affecting general health was alive in mid 19th century medical practice, and "many early osteopaths subscribed to the nerve pressure theory".

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a large managed-care plan that provides chiropractic, acupuncture and massage therapy services.

Reasons why the new study is important include "the sheer magnitude of the sample investigated", as Ness and Nisly acknowledge in an editorial accompanying publication in the *Archives*.[17] and the evident quality of the study design. It also addresses very important practical issues facing patients and the health care system – coordination of health care to provide better patient choice and outcomes at less cost. Finally there are significant findings, and these are published in a highly influential journal.

Here we have an editorial in the *Archives,* published by the American Medical Association, asking "is chiropractic the answer" to the problem of back pain, and plainly suggesting it may well be, with "possible large-scale economic benefits obtained through access to chiropractic coverage by large groups of insured patients." [17]

This California project is yielding several papers, with later ones providing more detail on precise costs and substitution effects as between chiropractic and medical care.

9. **Design.** This is a study of patient demographics and utilization patterns in a real life or natural setting, a form of research which is common in health services research – as distinct, for example, from clinical effectiveness research – because the results more readily reflect, and can therefore better be generalized to, the actual health care system. The results have more 'external validity'. Features of the study design were:

a) **Comparison groups**. One group was comprised of one million members of a medical plan with no access to chiropractic services (Group M), a second of 700,000 or approximately 40% of the members of the same plan who also had an employee benefit giving them access to chiropractic services (Group M + C). Importantly, all 1.7 million had equal access to the same medical network – the same physicians, covered medical benefits, rules on referral to diagnostic tests, guidelines on specialty care and hospital and surgical approval, and with the same limitations.

Demographically the groups proved to be very similar, though there was slightly higher age (mean 36 years vs 33 years) and comorbidity in Group M + C, for which there was adjustment when the results were analyzed.

b) **Outcomes studied**. The two groups were studied at various cost points including:

i) *Total health costs*. The cost of all health care claims.

ii) *NMS claims costs*. A panel of chiropractic and medical doctors identified 654 codes under the International Classification of Diseases, Ninth Revision (ICD-9), and grouped them into 11 neuromusculoskeletal (NMS) categories – namely neck pain, neck pain (complicated), back pain, back pain (complicated), thoracic spine and rib disorders, headache, upper extremity, lower extremity, myalgias or arthralgias, latent effects, and other.

All claims for chiropractic services rendered under the plan during the four year study period fell within these NMS categories.

Cost was looked at globally (all NMS claims) and individually (e.g. back pain, back pain (complicated), neck pain, etc.)

It is important to emphasize, in analysis of costs, there was not a comparison of chiropractic and medical claims costs, or patients receiving chiropractic or medical care. Rather there was a comparison of NMS patients in Group M, all of which had medical care by definition, and NMS patients in Group M + C, some of whom chose chiropractic care but the majority of whom chose the same medical care accessed by patients in Group M.

10. **Results**.

a) **Total Health Costs**. The per-member-per-year (PMPY) cost in Group M was $1671, in Group M + C $1463, representing a reduction of $208 or 12% for those with chiropractic coverage. This means that the addition of a chiropractic benefit did not increase costs – instead it produced significant savings. That finding held true after an adjustment for the slightly higher age/comorbidity in Group M + C. After that adjustment and on what the authors describe as a "conservative estimate", there was a 1.6% or $16 million saving per year for the Group M + C. If the one million in Group M had had chiropractic coverage, and used it on a similar basis, that estimate of the annual savings would be $38.9 million.

There are compelling arguments why the exact amount saved will have been considerably higher, such as the non-inclusion of pharmaceutical and other costs as discussed below under the NMS claims results.

b) **NMS Claims Costs**.

i) *Number*. Over a four year period 141,616 plan members in Group M + C, and 189,923 in Group M, made claims for treatment of NMS conditions.

ii) *NMS cost savings*. The per-member-per-year (PMPY) total cost of NMS patients in Group M + C was 13% lower ($2345 vs $2706). The PMPY hospital cost was 15% lower, and the ambulatory care cost was 12% lower.

iii) *Back pain cost savings*. Cost per episode of care (defined as 45 days or more since a previous service) were 28% lower in Group M + C, those with chiropractic coverage. There were significant reductions in hospitalizations (41%), back surgeries (32%) and diagnostic imaging (37%) as already mentioned, and as shown in Figure 3. Because of more episodes of care in Group M + C, however, overall savings were lower at 8%.

Legorreta, Metz, Nelson et al. note confounding factors which mean that the precise amount of savings could be less or more. On one hand, there was the slightly higher age and comorbidity in Group M + C patients already noted. Allowance for this would tend to minimize savings. Elsewhere, however, several of the investigators have concluded that "it is very unlikely" that the "very minor differences . . . of demographic and comorbid states" have influenced the results at all.[6]

On the other hand, major cost areas associated with medical care that would enhance the savings in Group M + C for the members electing chiropractic care were omitted from this data analysis. These include all pharmacy costs, all costs of physical therapy on referral, and all costs of post-surgical patients – three very significant cost centers.

Additionally – and it is important to re-emphasize this – the majority of NMS patients in Group M + C still elected to consult a medical doctor, and their medical costs are included in the Group M + C costs. If a greater number had utilized chiropractic services the savings would have been greater.

iv) *Substitution*. The cost savings suggest, as a matter of logic, that chiropractic services were principally used by patients as a substitute for medical services, not as additional services. This

Figure 3.

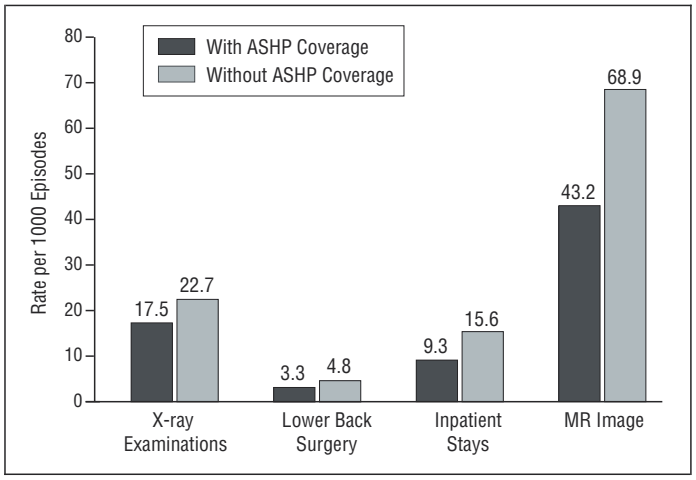

Figure 3. Breakdown by high-cost items. Access to chiropractic care was associated with lower rates of high resource-utilizing components of neuromusculoskeletal care ($P<.001$). ASHP indicates American Specialty Health Plans; MR, magnetic resonance.

Figure 4.

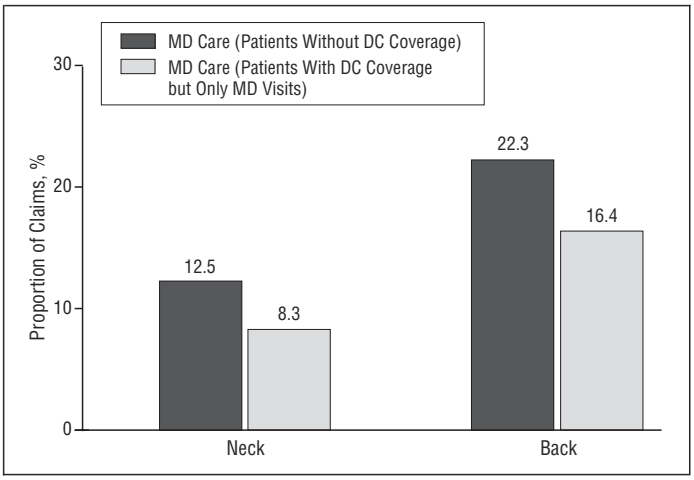

Figure 4. Medical care substitution. Presence of chiropractic coverage was associated with a shift in the case distribution away from medical doctors (MDs) to doctors of chiropractic care (DCs) for neck and back problems, indicating a substitution of chiropractic for physician care. All proportional differences are statistically significant at the $P<.001$ level.

Legorreta et al., Arch Int Med (2004).

was confirmed by the data. Figure 4 illustrates this with respect to neck and back pain patients. A second paper from this study, prepared later with additional data but published in the *Journal of Occupational and Environmental Medicine* in August, strengthens the conclusion that virtually all chiropractic care was a direct substitution for medical care.[6]

v) *Controls on Access*. Many managed care organizations have sought to control the costs of chiropractic care by restricting access, through methods such as high patient co-payments and limitation on the number of treatments and the fees that can be charged. In this California plan and study there was an identical patient co-payment or user fee for each of medical and chiropractic care, and Group M + C patients had plan coverage for up to 40 chiropractic visits per annum.

11. **Conclusion**. Here, as a direct quote, are the conclusions made by Legorreta, Metz, Nelson et al. in the abstract of their paper as published in the *Archives of Internal Medicine*.

"Access to managed chiropractic care may reduce overall health care expenditures through several effects, including (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 care. Systematic access to managed chiropractic care not only may prove to be clinically beneficial but also may reduce overall health care costs."[3]

D. Conclusion

12. Legorreta, Metz, Nelson et al., authors of the California study, note that the burden of back pain is "a major area of public health concern" and suggest their study has important implications for patients, the managed care industry and the increasing integration of chiropractic and medical care.

They note that "the increasing acceptance of chiropractic care as a source of comprehensive complementary care for NMS problems" is reflected by the fact that "the chiropractic field is the fastest growing among all doctoral-level health professions."

"Businesses are getting the message", says George DeVries, President of American Specialty Health Plans, noting that thousands of employers throughout the US, including top-10 businesses, offer chiropractic coverage.

Peer leaders in medical spine care understand the message also. For example, Dr. Scott Boden, Director, Emory Orthopedic and Spine Center, Professor of Orthopedics at University of Emory School of Medicine, Atlanta, Georgia and Deputy Editor of the leading journal *Spine*, interviewed by WebMD because of the California study, explains that his institution is now offering patients chiropractic and medical services. And, important as cost is, health professionals agree that the ultimate benefit is improved patient care. TCR

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Keating provides a wonderful analysis of the profession's origins, growth, strengths and weaknesses – you should purchase the book for this chapter alone. There is real scholarship – (for example a table charting DD Palmer's changing theories of disease and principles of chiropractic in various publications from 1886 to 1914) previously unpublished photos and much interesting historical detail. Did you know that the German immigrant who founded naturopathy in North America, Benedict Lust, MD ND DC, was also a chiropractor who founded the American School of Chiropractic in New York in 1905?

Vitalism, which sees life as a force that exists in a field separate from matter, has been heavily battered by reductionistic thinking and scientific method in recent centuries. In his chapter Reed Phillips, DC PhD, who holds postgraduate qualifications in radiology and medical sociology, traces the history of vitalism – from its strong support in classical Greek philosophy, to its decline in recent centuries under the weight of mechanistic thinking, and now its re-emergence with tentative scientific acceptability under experts such as Pischinger and Pert. On the issue that the flow of information within the body belongs to neither mind nor body but touches both, he quotes Candace Pert in her book *Molecules of Emotion* (1999):

> "So, if the flow of our molecules is not directed by the brain, and the brain is just another nodal point in the network, then we must ask – where does the intelligence, the information that runs our body mind, come from? We know that information has an infinite capability to expand and increase, and that it is beyond time and place, matter, and energy. Therefore, it cannot belong to the material world we apprehend with our senses, but must belong to its own realm, one that we can experience as emotion, the mind, the spirit – an *inforealm*! This is the term I prefer, because it has a scientific ring to it, but others mean the same thing when they say field of intelligence, innate intelligence, the wisdom of the body. Still others call it God."

Phillips' appealing bottom line, unifying for the profession, is that chiropractic should occupy the large and credible middle space between absolute vitalism and materialism, rather than being dogmatic for or against the absolute importance of either. The profession must espouse and explore reductionistic and holistic principles in its research and practice.

Coulter, as a sociologist, argues that *quantitative* research (i.e. research focusing on specific objective items or variables, and using methods that tend to focus on the researcher's priorities) fails to capture the total chiropractic health encounter, its meaning for the patient, and ultimately the effectiveness of chiropractic care.

Echoing a point made strongly in recent years by Dr. Cheryl Hawk and other chiropractic research leaders, he argues for at least equal emphasis on *qualitative* research (i.e. research focusing on overall context and placing main value on the perspective of the individuals subject to research - in chiropractic research, patients.) This is what will address "the totality of the chiropractic health encounter". At the heart of this encounter, and therefore the history of success of chiropractic, is very effective communication – in three distinct areas - explanation of the health problem, explanation of the treatment, and explanation of chiropractic. TCR