

# THE CHIROPRACTIC REPORT

www.chiropracticreport.com

Editor: David Chapman-Smith LL.B. (Hons.)

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## PROFESSIONAL NOTES

### ODG Treatment

When you have to justify your care to third party payors, what are the most authoritative sources and guidelines you can use? There are now thousands of sets of clinical guidelines. However, the great majority have been produced by interested parties and are therefore suspect to others.

Leading the pack in the US, and available for use anywhere, are the Official Disability Guidelines (ODG) produced by the Work Loss Data Institute, an independent company, rather than a professional association or organization representing insurers. But this is where most insurance companies now send their chiropractic and medical consultants for the most current and credible evidence-based recommendations on claims.

The ODG began in 1996 as disability guidelines for occupational health. They have since been joined by ODG Treatment, available online at [www.disabilitydurations.com](http://www.disabilitydurations.com) for \$325.00 annually. There is a print version too. No clinician

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## THE CHICAGO PRIMARY CARE STUDY

### High Satisfaction and Large Cost Savings: What More Do Patients and Third Parties Want?

#### A. INTRODUCTION

"I'M A BIG BELIEVER IN CHIROPRACTIC," says Professor William Lauerman, Chief of Spine Surgery at Georgetown University in Washington DC, in a recent article in the *Washington Post*.<sup>1</sup> The July 17 article is by writer Buzz McClain, who was referred by his neurologist for successful chiropractic treatment for a chronic neck and shoulder pain problem following three surgeries.

The trigger for the article, however, is a new study from Chicago by Richard Sarnat, MD, a managed care executive, James Winterstein, DC, and Jerrilyn Cambron, DC PhD, that reports on seven years of data from Blue Cross/Blue Shield Illinois' Chicago-based health maintenance organization, the largest in the state with over 600,000 enrolled members or patients.<sup>2</sup> The HMO has the usual independent provider associations (IPAs) or networks, where medical doctors are the gatekeepers or primary care providers (PCPs), but another IPA in which doctors of chiropractic and CAM-oriented MDs are the PCPs.

Over a seven year period, and in comparison with the conventional medicine IPAs in the HMO serving similar patients with similar disease profiles in the same geographic area in Metropolitan Chicago, the CAM-oriented IPA reported:

- a) Reductions of 60.2% in hospital admissions, 59% in hospital days, 62% in outpatient surgeries and procedures, and a remarkable 85% in pharmaceutical costs.
- b) Consistently higher patient satisfaction rates.

What more do patients and payors want? The classic response by naysayers is that a different type of person enrolls for a CAM-oriented health care plan, and that these results simply reflect "patient pref-

erence". First, these results are far too good to be explained by that. Second, perhaps the health care system better start persuading patients to prefer – to develop a patient preference for – CAM-oriented care. If such care emphasizes prevention, healthy lifestyles, avoidance of reliance on medications and surgery where possible, and costs much less and leaves patients more satisfied, why not?

The Chicago study is only the most recent of many demonstrating the cost-effectiveness of integrating medical and complementary care generally, and medical and chiropractic care specifically. Typically initial treatment costs are higher but are recovered many times over by the reduced diagnostic, pharmaceutical, surgical and hospital costs.

Partly because of this evidence, but also because of the increasing and now majority public use of chiropractic and CAM disciplines for the lifestyle and chronic problems that are today the major burden of illness in western health care, there are many new programs integrating chiropractic and medical care. Notable examples in the USA are in the veterans' administration and military hospital systems, and in the Harvard University medical system.

However, the integrated model of care in the new Chicago study gives doctors of chiropractic a wider primary care role than in previously reported studies. Accordingly this issue of *The Chiropractic Report* reviews the Chicago study in some detail. We then summarize other major cost-effectiveness evidence, and finally look at the importance of allowing for patient choice and preference in designing health care delivery systems that achieve good clinical results.

#### B. CHICAGO HMO STUDY

**2. Background.** In the late 1990s, even under managed care, American health

care costs were experiencing double-digit annual increases. 50% of the cost increase was for pharmaceuticals, which actually represented much higher overall cost increase than that because of the add-on cost of higher morbidity and mortality rates from errors and side effects.

Although the conventional medical system was handling acute and crisis care well, it was failing to address chronic lifestyle illnesses adequately – frequently caused by unhealthy lifestyle habits such as smoking, alcohol abuse, lack of exercise, improper diet and excessive stress. These chronic illnesses were and are giving rise to the greatest burden of disease, the highest cost. By this time a large segment of the US population had demonstrated its preference for or willingness to try complementary and alternative medicine (CAM) for these chronic problems.

These are the reasons given by Sarnat and Winterstein in their first publication in 2004<sup>3</sup> for approaching Blue Cross/Blue Shield Illinois in 1996 to suggest addition to its HMO of a new form of independent providers' association (IPA). In this IPA the patient's primary contact provider (PCP) would be a CAM-oriented provider licensed to deliver primary care in the State of Illinois.<sup>3</sup> There would be a focus on re-education on lifestyle, on wellness and prevention.

The initial plan was to have chiropractic, medical and osteopathic doctors as PCPs. The HMO, with over 600,000 members and open only to employees of companies with at least 100 employees, had all the conventional HMO structures – patients enrolled to receive all their care through IPAs with physician primary contact providers (PCPs), contracted networks of associated medical specialists and hospitals, and highly-developed databases and cost and quality controls.

The HMO agreed to add a CAM-oriented IPA and Alternative Medicine Inc. (AMI) was formed to provide it. Services commenced in 1999. What happened was that AMI actually commenced its IPA with only 16 doctors of chiropractic as PCPs, having been unable to attract CAM-oriented MDs or DOs for practical reasons – their discomfort with managed care rules and reimbursement rates. (MDs and DOs did sign on from 2003, and one advantage of this delay is that

early statistics and results relate to a network with chiropractic PCPs only).

Although the AMI IPA had patients seeing DCs as their primary provider, everything else about the CAM-oriented IPA was the same. There were the same quality standards as in conventional IPAs in the HMO, and the same availability of contracted medical specialists and regional hospitals for referral for all necessary standard medical services.

**3. Working Arrangements.** As the AMI IPA began in January 1999 the goal was to combine chiropractic and medical care in this way:

- a) The chiropractic PCPs, like medical PCPs in other IPAs, provided in-house examinations, evaluations and treatments at their discretion. There was a focus on standard risk factors such as diet, exercise, posture/structural problems, behavioral/emotional problems, diagnosis of physiological disease.
- b) Ancillary testing or treatment outside the chiropractic PCP's office required approval from IPA MDs. One inpatient-oriented MD and two outpatient-oriented MDs were always available. Over 3,000 MDs in 18 hospitals were under contract to AMI and its IPA.
- c) Registered nurses specializing in utilization management coordinated care.
- d) Visit patterns reflected the philosophy of health care, with its emphasis on prevention and wellbeing. For example, new AMI members typically had an average of two visits a month in initial months to review lifestyle choices. In conventional IPAs there are typically less frequent visits – and they are to address specific symptoms rather than overall health.

Chiropractic PCPs also referred more frequently to other CAM providers credentialed by the HMO – providing for example acupuncture, massage and stress management techniques such as meditation and yoga. It was anticipated – correctly as we will see – that this increased intensity of prevention-oriented visits “would reduce the utilization of high-cost, high-technology conventional medicine downstream.”<sup>3</sup>

**4. Results – 1999 to 2002.** Results for the first four years to December 31, 2002 were reported in a 2004 paper in the *Journal of Manipulative and Physiologic Therapeutics* (JMPT).<sup>3</sup> Because the HMO was not willing to release confidential data on direct costs, results

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were expressed as percentage savings for AMI enrolled members in comparison with members in other networks in the HMO.

For 21,743 member months in 1999 to 2002, AMI reductions in utilization and cost compared with conventional care networks per 1000 members were:

- 43% in hospital admissions
- 58.4% in hospital days
- 43.2% in out-patient surgeries and procedures
- 51.8% in pharmaceutical costs

A fundamental question in interpreting these results, of course, is whether the patient populations and disease profiles in the AMI network and the HMOs conventional networks were comparable. Generally they were. This was looked at closely using two conventional IPAs in the HMO that had patients in the same areas of Chicago. Particulars are:

a) **Patient Population.** Age, sex and other demographic characteristics (e.g. smoking) were all similar. The one significant exception was that AMI had a

**Figure 1. Comparison of ICD-9 diagnostic profile by percentage of member enrollment AMI versus comparison group I in the year 2000**

Diagnosis	AMI	Comparison group I
Wellness	28.5%	34.7%
Orthopedic	23.5%	8.0%
Other medical	11.7%	17.0%
Mental health	8.1%	1.3%
Gyn (non-OB)	6.7%	9.4%
Sinus/chronic allergy	6.0%	2.8%
Cardiac/hypertension	4.6%	9.4%
Headache (all variants)	2.7%	0.7%
Neoplastic (all)	1.5%	1.1%
URI	1.5%	10.4%
Asthma	1.4%	1.3%
GI	1.3%	0.9%
Diabetes	1.2%	3.4%
Thyroid disease (all)	1.2%	1.4%

AMI, Alternative Medicine, Inc.; GYN, gynecology; OB, obstetrics; URI, upper respiratory infection; GI, gastrointestinal.

From Sarnat RI, Winterstein J, JMPT 2004.

**Figure 2. Disease profile of AMI's IPA as percentage of diagnosis in the years 2000 (n = 491) and 2005 (n = 1511)**

Diagnosis	In 2000	In 2005
Wellness	28.5%	23.4%
Orthopedic	23.5%	16.7%
Other medical	11.7%	5.6%
Mental health <sup>a</sup>	8.1%	3.4%
Gynecologic	6.7%	7.3%
Sinus/Allergy	6.0%	3.4%
Cardiac/Hypertension	4.6%	3.3%
Headaches (all variations)	2.7%	2.7%
Neoplastic	1.5%	1.4%
Upper respiratory tract infection	1.5%	14.6%
Asthma	1.4%	1.4%
Gastrointestinal	1.3%	5.0%
Thyroid disease	1.2%	0.7%
Diabetes	1.2%	0.7%
Dermatology	Not available	5.6%
Genital/Urinary	Not available	1.4%
Ocular	Not available	1.4%
Chronic fatigue syndrome	Not available	1.0%
Trauma	Not available	1.0%

<sup>a</sup> Patients requiring a referral to a mental health specialist.

From Sarnat RI, Winterstein J, Cambron J, JMPT 2007.

much lower child (under age 20) enrollment – 11.9% vs 19% and 32.8% in the other two IPAs. This was because only chiropractors enrolled as PCPs, their scope of practice was limited for children (e.g. no right to administer immunizations) and the HMO discouraged child membership. (This problem and imbalance was resolved in the later three years covered by the second study – see below).

**b) Disease Profile.** Figure 1 compares ICD-9 (WHO's International Classification of Diseases – 9th Revision) Code diagnoses with one of the comparison conventional IPAs. These are fairly similar, but it is noted:

- There is increased morbidity in some categories in the medical IPA comparison group, which would justify some higher utilization in services – for example cardiac/hypertension (9.4% vs 4.6%), diabetes (3.4% vs 1.2%), URI or upper respiratory infection (10.4% vs 1.5% – significantly different because of its relation to children who were under represented in the AMI network), and other medical (17% vs 11.7%).
- However, 'wellness' goes the other way. This was defined to include not only members having visits where no ICD-9 Code diagnosis was given, but also members having no visit within the

calendar year. The medical IPA comparison group was higher here (34.7% vs 28.5%) and this would offset some of the higher utilization and cost just mentioned.

Sarnat and Winterstein conclude that the first four years of the AMI experience indicate that “a non-pharmaceutical/non-surgical orientation can reduce overall health care costs significantly and yet deliver high quality care” and that the AMI model demonstrates “the potential superiority of an integrated health system in which chiropractic and CAM therapies play a significant primary care role.” The reported savings are so large that they are “difficult to dismiss as purely coincidental to population bias and nothing more”.

One interesting statistic is that 40% of AMI patients required/received referral to medical specialists, and for them there was a very high agreement (93%) on ICD-9 diagnoses between referring chiropractors and the medical specialists. The reverse side of this 40% referral rate statistic is that 60% of patients were able to be managed by their chiropractic PCP alone.

Finally, the HMO kept patient satisfaction scores. AMI patients had satisfaction rates consistently at approximately 90%. This was higher than elsewhere in

the HMO – for proprietary reasons precise satisfaction figures elsewhere in the HMO are not available.

The study's major limitation was the limited number of patients enrolled in AMI. Its new IPA had been made available by the HMO but not marketed strongly – there were no incentives given to members/patients to join it. That problem is partly overcome in the new second study with its updated results for seven years.

**5. Results – 1999 to 2005.** These results appear in the new paper by Sarnat, Winterstein and Cambron published in the May 2007 issue of JMPT.<sup>2</sup> Major changes during the three year period of 2002 to 2005 were that enrolment doubled to 1535 and that the panel of primary care providers (PCPs) expanded from DCs only to include CAM-oriented MDs and DOs – as originally planned. AMI's PCP mix at the time of writing was 7 MDs/DOs and 14 DCs. And this addition of CAM-oriented MDs and DOs, some of whom specialized in obstetrics and pediatrics, increased AMI's child enrollment to at least equivalent levels with the comparison IPAs. This was reflected in the disease profiles. Comparisons between 2000 and 2005 are shown in Figure 2. It can be seen that childhood

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## ODG Treatment

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finds guidelines a pleasure, but attractive aspects of ODG treatment are:

- They are constantly updated to keep current with the literature
- Back-up research studies are hyperlinked so you can print out the actual papers relied upon.
- Clear and comprehensive treatment protocols are given for conditions according to specific ICD-9 Codes and CPT Codes.
- Under Low Back, for example, all likely treatments are listed alphabetically with evidence summaries and recommendations.

With respect to manipulation, guidelines for medical associations are the most conservative. For example the ACOEM (American College of Occupational and Environmental Medicine) Guidelines used by California for workers' comp list 8 to 12 treatments over 4 weeks as a maximum. This is for patients with acute and sub-acute pain only. Manipulation is not recommended for patients with chronic pain and is regarded as a passive therapy. Under ODG Treatment, "on the basis of objective improvement during the first six visits" there is a recommendation of up to 18 visits over 6 to 8 weeks and manipulation is viewed more positively and accurately as "facilitating return to normal functional activities".

- There is a more open philosophy of treatments and management in general. For example yoga is recommended "when requested by a motivated patient because there is some evidence of efficacy of mind-body therapies (for) chronic low-back pain".

Because of their now wide acceptance the ODG have become a powerful force in evidence-based health care.

**Back Pain after Physical Injury – Factors/Reasons.** Apparently predictors of back pain after major accidental injury have not previously been reported. A study of 1,156 consecutive adult major trauma patients admitted over a five year period to the Liverpool Hospital Orthopaedic Department, Liverpool, New South Wales, Australia, a "major metropolitan trauma centre" reports:

In patients surveyed between 1 and 6 years post-injury (mean or average of 41 months), the presence of symptomatic back pain was not associated with any of the measures of original injury severity, including the presence of a spinal fracture.

Back pain was also not associated with patient-specific factors such as age, gender or occupation.

Back pain was significantly associated with "the presence of post-traumatic stress disorder, the use of a lawyer, the presence of chronic illnesses, and lower education levels."

(Harris IA, Young JM et al. (2007) *Factors Associated with Back Pain After Physical Injury: A Survey of Consecutive Major Trauma Patients*, Spine 32(14):1561-1566).

## WFC'S PORTUGAL CONGRESS – MORE NEW RESEARCH

The last issue of *The Chiropractic Report* summarized some of the 120 new original research projects accepted for presentation at the World Federation of Chiropractic's 9th Biennial Congress held in Vilamoura, Portugal in May. Here are more.

### 1. Australia – Chronic Temporomandibular Disorder.

Temporomandibular pain and dysfunction (TMD) is common (experienced by 10-40% of the population), ranges across the whole socioeconomic, ethnic and age spectrum, and has been found to be associated with conditions such as tension headache, whiplash, fibromyalgia, vertigo and hearing problems. Chiropractic treatment is frequently given for TMD and Kalamir, Pollard et al. performed a pilot trial as follows:

a) 30 subjects with chronic TMD were randomly allocated to one of three groups – Control Group (number 10) receiving no intervention during the study but wait-listed; Craniomandibular Group (n=10) receiving Diversified chiropractic manipulation to the TMJs and muscle-release techniques as described; and the Therapy/Educational Group which received the treatments just mentioned plus education on TMD and its effects together with self-care isometric and range of motion exercises for the TMJs.

b) Each subject was seen/treated during 10 visits, twice per week over a five week period by a single practitioner who was blinded to assessment outcomes.

c) Outcome measures included patient perception of resting pain (using a metal sliding VAS), interincisal opening range (measured with Vernier calipers), maximal opening pain and clenching pain. Reassessment of participants occurred at 6 weeks after commencement of treatment (i.e. one week after treatment ended) and at 6 months by a research assistant blinded as to any treatments given.

d) Results were that both treatment groups showed clinically significant and statistically significant improvement compared with control group patients after 6 weeks and 6 months. There was no statistical difference in outcomes between patients in the two treatment groups. No patients were worse.

(Kalamir A, Pollard H, Vitiello A et al. (2007) A Randomized Controlled Pilot Study of Chiropractic Craniomandibular Treatment for Chronic Temporomandibular Disorder, Abstract in Proceedings of WFC's 9th Biennial Congress, p.165-166).

**2. Australia – Shoulder Pain.** Shoulder pain is a frequent complaint, with soft-tissue structures including the rotator cuff representing the most common source of pain. Conservative medical management involves the use of anti-inflammatory NSAIDs to inhibit the synthesis of prostaglandin, reduce pain and suppress the inflammatory process.

There is little research on the effectiveness of chiropractic and manipulative management of shoulder disorders. Three recent publications suggest that manipulation produces good and quicker results when compared with exercise or other physical treatments, or when added to usual medical care. Pribicevic and Pollard report a new, randomized control trial to test two chiropractic management approaches.

a) 42 subjects with shoulder pain (age range 18-45) were randomized into three groups:

- Control group (n-12) – subjects received 10 minutes of ultrasound set at a zero setting.
- Manipulation group (n-15) – Diversified manipulation to the thoracic and/or cervical spine and/or the glenohumeral joint.
- Multimodal group (n-15) – chiropractic manipulation as above plus soft-tissue therapy (ischaemic compression/friction) and electrotherapy.

Subjects in all groups were treated for a total of 8 visits over a 4 week period.

b) Outcome measures were patient perception of pain (VAS scale), orthopedic range of motion (measured with pleurimeter and goniometer) and orthopedic tests (Hawkins and Neers, painful arc and Jobes). Assessments at baseline, 4 weeks and 4 months were by a blinded research assistant.

c) There was clinically and statistically significant improvement for subjects in both treatment groups on all outcome measures at 4 weeks and at 4 months, but not for those in the control group. Those in the multimodal group achieved superior results in pain reduction and on orthopedic outcomes.

For example pain in the multimodal group was decreased from 6.7 on a 10-point scale at onset to 1.8 after 4 weeks and 1.4 after 4 months; manipulation group changes were 4.9 to 2.3 then 2.6 at 4 months; control group pain levels were 4.4 initially, 3.8 after treatment and 4.2 after 4 months. Pribicevic and Pollard conclude that these two chiropractic treatment approaches have benefit in managing pain syndromes associated with dysfunction of synovial structures of the shoulder and/or the shoulder girdle, especially the multimodal chiropractic protocol.

(Pribicevic M, Pollard H (2007) *A Randomized Controlled Clinical Trial of Chiropractic Treatment for Shoulder Pain*, Abstract in Proceedings of WFC's 9th Biennial Congress, p.69-170).

**3. Brazil – Swing Performance in Golfers.** A randomized controlled trial by Bracher, Costa, Yumi et al. evaluated the effect of chiropractic manipulation on performance enhancement/range of swing in competitive golfers.

a) 43 golfers from two Sao Paulo golf clubs, all of whom had a handicap under 15 and practised golf for a four hour period at least once a week, were randomly assigned to either the experimental group (supervised, standardized stretching program plus chiropractic manipulation for spinal joint dysfunction) and a control group (stretching program only).

b) All subjects performed full swing assessment as recommended by the PGA (three full swing maneuvers with a driver, with full swing ball range considered as the average distance of the three trials) before and after treatment on each of four treatment days.

c) On each of the four days of treatment an improvement of average full swing performance was observed in the experimental group but not the control group, and by the fourth day the improvement had reached statistical significance. Bracher, Costa et al. conclude that improvement of full swing perfor-

mance by these competitive golfers was associated with chiropractic manipulation.

(Bracher ESB, Costa SMV, Yumi ET et al. (2007) *Effect of Spinal Manipulative Therapy on Full Swing Performance of Golf Players: A Randomized Controlled Trial*, Abstract in Proceedings of WFC's 9th Biennial Congress, p.240).

**4. South Africa – Chronic Ankle Instability.** Another small but well-designed trial from the Durban University of Technology, South Africa, reported that chiropractic manipulation of the talocrural or ankle joint improved both proprioception and range of motion in dorsiflexion, thereby assisting in the prevention of repeat ankle strains. Six treatments over a period of 5 weeks produced superior results to a single treatment.

a) 30 patients with chronic ankle instability (2 or more sprains in the past 2 years and at least 4 of the following symptoms – instability, pain, crepitus, weakness, stiffness or edema) and current Grade I or II ankle sprain for a minimum of 5 days were randomized into one group receiving one treatment session and a second group receiving 6 treatments sessions. The former group, however, had the same number of consultations and assessments as the latter.

b) Subjective data (pain on a Numerical Rating Scale) and objective data (algometer measurements for pain threshold over the lateral ankle ligaments and inclinometer measurements to assess errors in joint position sense in dorsiflexion, plantar flexion, and inversion, together with total range of motion for each of these motions) were taken prior to the first, fourth, sixth and later follow-up visits.

The treatment group (6 treatments) improved significantly better than the control group (1 treatment) on all measures of proprioception and range of motion and Price Kohne et al. report that “these findings support previous studies that found manipulation to be efficacious in the treatment of ankle sprains and chronic ankle instability.”

(Price JL, Köhne E et al. (2007) *A Prospective, Randomized Controlled Clinical Trial of the Effects of Manipulation on Proprioception and Ankle Dorsiflexion in Chronic Ankle Instability Syndrome*, Abstract in Proceedings of the WFC's 9th Biennial Congress, 171-173).

**5. UK – National Survey of Adverse Events.** Thiel, Bolton and Docherty from the Anglo-European College of Chiropractic, Bournemouth, England, reported the first national prospective study of adverse events following chiropractic cervical spine manipulation or adjustment. 377 members of the British and Scottish Chiropractic Associations recorded details on 100 consecutive adult patient visits in which at least one cervical manipulation was given during a prescribed six week period. This produced data on 19,722 patients and 50,276 cervical manipulations. Results were:

a) No significant adverse event was reported.

b) Invited to report on any side effects or adverse events from any treatments during the six week period, patients reported worsening of pain (most common being immediate worsening of neck pain after 1.7% of treatments, worsening at some

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**Figure 3. Comparison of well members, AMI versus comparison groups I and II**

	Members enrolled	Members with no or non-ICD-9 encounters	Percentage of members coded as wellness	Percentage of member coded for active disease
IPA				
AMI in year 2000	522	149	28.5%	71.5%
AMI in year 2005	1511	354	23.4%	76.6%
Comparison group I	7549	2618	34.7%	65.3%
Comparison group II	7723	3206	42.0%	58.0%

From Sarnat RI, Winterstein J, Cambron J, JMPT 2007.

disorders such as URI (14.6%), GI disorders (5%) and skin problems/dermatology (5.6%) are more prevalent.

Figure 3 demonstrates that the number of members coded 'wellness' and having no visit during the year or no ICD-9 diagnosis assigned remains significantly lower in AMI (23.4% in 2005) than in conventional networks (34.7% and 42%).

For 70,274 member months over 7 years, and in comparison with the HMO's other networks or IPAs, AMI members had:

- a) 60% fewer hospital admissions
- b) 59% fewer hospital days
- c) 62% fewer out-patient surgeries and procedures
- d) 85% savings in pharmaceutical costs.

This, as in the four year figures previously quoted, is for an equivalent number of members in conventional IPAs in the same HMO in the same areas of Metropolitan Chicago. In 2005, the final year, chiropractic PCPs continued to manage 60% of patients without need of medical referral and co-management. Satisfaction rates remained over 90% and higher than for other IPAs.

**6. Conclusion.** There is now considerable evidence – briefly noted below, that medical and chiropractic and other complementary care can be integrated to produce better and more satisfying results for patients and significant cost savings. The significant new feature with the Chicago study is that doctors of chiropractic have been integrated at the primary care or PCP level. We can be confident that the data produced is free from bias because it was all extracted and reported by independent third parties at Blue Cross/Blue Shield Illinois.

“The AMI network, which really began as a research project, has had continued success since 2005”, explains Jim Zachman, AMI Chairman, “with steady growth and similar excellent results”.<sup>4</sup> One challenge for IPAs, and HMOs that manage them and predict future performance, is that patients continually transfer in and out. There are various reasons – patients may be unsatisfied, a specialist they like may no longer be under contract to the network, the patient may move.

“One notable feature of the AMI IPA”, says Zachman, “is that the transfer out rate is less than normal”. This is a service that combines the best of chiropractic and medical care in a manner that patients like.

“HMOs have always been cautious about spending money on health services aimed at prevention and lifestyle change”, explains co-author Dr. James Winterstein. This is because of the perception that potential savings in utilization and cost can only be realized down the line and are uncertain. “With AMI there have always been significant savings for members in the first year of enrolment.”<sup>5</sup>

### C. COST-EFFECTIVENESS GENERALLY

**7. Back Pain.** Most of the early cost-effectiveness studies of chiropractic management were for patients with back pain. 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.”<sup>6</sup>

In studies in 1993 and 1998<sup>6,7</sup> they dealt with all the evidence to that time and concluded:

- a) **Total Savings.** There is a 20-60% savings in total costs (direct costs for health care, and indirect costs for disability) when a matched group of patients receives chiropractic care rather than medical care for back pain.
- b) **Direct Costs.** When a patient attends an MD medical fees are only 23% of the health care cost – the other 77% is the cost of other diagnostic tests, medications and specialist and hospital services. With chiropractic care 80% is the cost of chiropractic fees – only 20% is secondary health care costs.

More recent research is consistent with this. The British Medical Research Council's Back Pain, Exercise and Manipulation (BEAM) Trial published in 2004<sup>8</sup> followed an earlier large MRC trial by Meade et al. reporting cost-effectiveness of chiropractic management of acute and chronic back pain patients.<sup>9,10</sup> The 17 member multidisciplinary BEAM trial panel concluded that their trial “shows convincingly” that skilled manipulation is a cost-effective addition to best medical care in general practice – and that it should be made generally available to back pain patients through the British National Health Service (NHS).

**8. Full Scope of Practice.** Perhaps the best comparative evidence on medical and chiropractic health care costs for a full scope of chiropractic practice appears in two studies by Stano and Smith,<sup>11,12</sup> US health economists, analyzing records from the Michigan health benefits consulting firm MedStat Systems Inc. At that time MedStat monitored coverage for 2 million patients across the US. Analyses are for the 2 year period July 1988 to June 1990 and:

- a) 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.

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

c) 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.

9. In 2004 Antonio Legorreta, MD MPH, from the School of Public Health, University of California, Los Angeles and colleagues presented a four year claims data analysis for approximately 1.7 million members of a large regional managed care network in California.<sup>13</sup> This study, much larger than any previous one, addressed clearly for the first time the question of whether insured chiropractic benefits, even if potentially cost-effective, would actually be used as a substitute for medical services by patients who could choose either. Would there be substitution of services, or would chiropractic services simply end up as an addition to total services and costs? This could be determined because all 1.7 million members had a plan with identical medical services, but 700,000 members also had access to a chiropractic benefit. It was found:

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.<sup>14</sup>

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%.

These figures actually under-estimate the savings achieved. First of all overall cost does not include medications since that data was not captured. Second the above results compare total costs for the 700,000 cohort with medical and chiropractic benefits (Cohort M+C) with the one million Cohort with medical benefits only (Cohort M) – not just the patients in Cohort M and C who used chiropractic care. Most in Cohort M + C who made a claim for back pain (54.1%) actually saw an MD on the same basis as those in Cohort M – and those medical costs are included in the above figures.

The popular website WebMD reported these results under the byline ‘Cost Down, Patient Satisfaction Up with Chiropractic Care’ – the same byline that could be given to the new Chicago study. Legorreta et al. conclude:

“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.”

Peer leaders in the medical profession, particularly in spine care, accept this. Dr. Scott Boden, Deputy Editor of the leading journal *Spine*, and Director of the Emory Orthopedic and Spine Center, Atlanta, interviewed by WebMD as the California study was published, explained that his institution was now offering patients chiropractic and medical services.

#### D. PATIENT PREFERENCE

10. A significant part of the good clinical and cost results in the Chicago study may come from the fact that patients in the AMI network actively chose it and preferred PCPs with a focus on less invasive care, prevention and wellness. There is nothing wrong with that – patient preference has long been known to be one of the powerful and important non-specific effects of all treatments.

A new multicenter, randomized, controlled trial from the UK demonstrates this very well. In this trial by Johnson RE, Jones GE et al.<sup>15</sup> 234 patients with continued disabling low-back pain three months after seeing their family practitioner were randomly assigned to 1 of 2 groups – a control group receiving an educational booklet and audio cassette offering advice and education on how to manage their problem, and a treatment group which got the booklet and audio cassette, but also eight 2-hour group exercise sessions over 6 weeks delivered by physiotherapists using a cognitive behavioral therapy (CBT) approach.

At 12 months follow-up there proved to be no significant benefit for the treatment group, either in reduced pain or reduced disability. However:

a) The 1 in 2 (49%) of patients in the treatment group who had expressed a prior preference for it, did have clinically important reductions in pain and disability.

b) The 8% of patients who had expressed a preference for the control group, and receiving the booklet and cassette only, had a poorer outcome if they received the intervention.

c) For the rest, who had expressed no preference one way or the other, “there was little effect of the intervention”.

Throughout the developed world it is now established that patients are shopping for health, wishing to combine best medical care, especially for acute and crisis conditions, with complementary approaches, especially to prevent and manage chronic lifestyle disorders. One of the many messages from the Chicago study is that respecting patient choice and preference can produce high satisfaction and lower costs. 

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*continued from page 6*

time during the six weeks in 7.3% of patients) and onset of new symptoms (within 7 days of treatment, headache (3.9% of visits), numbness/tingling in the upper limbs (1.3%) and fainting/dizziness (1.1%)).

c) These patient-reported side effects are lower than in previously reported studies, which Thiel et al. suggest may be in part because of their larger sample size and more rigorous prospective reporting mechanisms. The risk rates also “compare favorably to those linked to drugs routinely prescribed for musculoskeletal conditions in general practice” and are also “lower than those reported for acupuncture.”

It says much about the bias and unscientific posture of some medical researchers in the UK and North America that they are still suggesting that manipulation carries unacceptable risk of serious harm.

(Thiel HW, Bolton JE, Docherty S (2007) *Safety of Chiropractic Manipulation of the Cervical Spine: A Prospective National Survey*, Abstract in Proceedings of the WFC’s 9th Biennial Congress, 180-182.

## 6. US – Non-Surgical Management of Lumbar Radiculopathy.

Murphy, Hurwitz et al. have previously described a diagnosis-based clinical decision approach or rule (DBCDR) pursuant to which a series of patients with neck pain, cervical radiculopathy and clear evidence of spinal cord encroachment responded very positively to chiropractic cervical manipulation and with none having a significant adverse effect.

(Murphy DR, Hurwitz EL, Gregory AA (2006) *Manipulation in the Presence of Cervical Spinal Cord Compression: A Case Series*, J Manipulative Physiol Ther 29:236-244).

In Portugal Dr. Donald Murphy, from the Rhode Island Spine Center and Brown University Medical School in Rhode Island, presented a similar case series for 46 patients with lumbar radiculopathy, and an average period of disability of approximately one year (55.9 weeks). On an average number of 12.6 treatment visits, and with data collection at baseline and at the end of treatment:

- 89% of these chronically disabled patients self-rated their improvement as excellent (39%) or good (50%). Average self-rated improvement in disability was 77%.
- On the Bournemouth Back Disability Questionnaire (BDQ) improvement was 62%, with clinically significant improvement seen in more than 2 of 3 patients (70.5%).

Murphy et al. call for RCTs to confirm their findings, which suggest that patients with lumbar radiculopathy secondary to disc protrusion who are treated according to a strict DBCDR tend to have favorable outcome to treatment.

(Murphy DR, Hurwitz El, McGovern EE (2007) *A Non-Surgical Approach to the Management of Patients with Lumbar Radiculopathy Secondary to Disc Protrusion: A Prospective Observational Cohort Study*, Abstract in Proceedings of the WFC’s 9th Biennial Congress, 167-168).

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