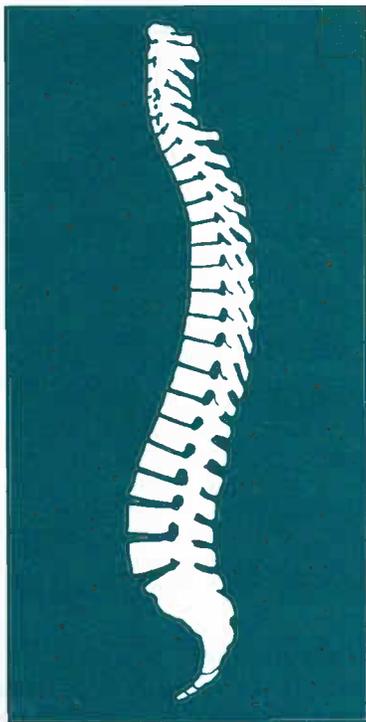


# THE CHIROPRACTIC REPORT

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

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## PROFESSIONAL NOTES

### U.S. Occupational Health - Breaking in and Lessons Learnt

Since 1988 Dr. Casey Terribilini of San Jose and a panel of chiropractors he has established have acted as primary care occupational health gatekeepers for American Medical Response (AMR), America's largest private ambulance company with 27,000 paramedics, emergency medical technicians (EMTs) and office staff as employees. This is for all musculoskeletal injuries, whether to the spine or extremities, other than 'blood and broken bones'.

Their results have been so impressive that, when the transportation giant Laidlaw bought AMR in 1996, it decided to retain and expand the panel of chiropractors nationally to serve all its 90,000 employees in three divisions - ambulance services, school bus services and fixed route transit services (Greyhound, tours, city bus services, etc.) As a result the chiropractic panel is currently expanding from 200 to 400 doctors of chiropractic.

U.S. chiropractors familiar with the standard pattern of discounting fees in man-

*continued on page 4*

## CHRONIC BACK AND NECK PAIN

### New Evidence Confirms the Effectiveness of Chiropractic Manipulation

#### A. INTRODUCTION

**C**HIROPRACTIC management combines various treatments - manual therapies, electrotherapies education, exercise programs, orthotics/pelvic belts/ other supports - but places primary emphasis on joint adjustment or manipulation.

The effectiveness of chiropractic management generally, and manipulation specifically, is now firmly established for most patients with acute low-back pain<sup>1,2</sup> but what about chronic pain patients - those who have suffered for several months or years? These patients have particular economic significance because, although they represent under 10% of back pain patients, they generate approximately 80% of the cost incurred by patients, their employers and society in general.<sup>3</sup>

Is chiropractic manipulation, in itself and isolated from other aspects of chiropractic management, effective? Until recently the evidence was inconclusive:

a) Major clinical research, such as that of Kirkaldy-Willis and Cassidy in Canada<sup>4</sup> and Meade et al. in the U.K.,<sup>5</sup> reported effectiveness. However patients in these studies received not only manipulation but also other treatments such as back school, exercises and adjunctive therapies.

b) Other trials, such as those by Waagen et al.<sup>6</sup> and Triano et al.<sup>7</sup> in the U.S. also reported the effectiveness of chiropractic manipulation but, according to strict standards of evidence, are too limited in size, design, results, and number to be conclusive.

c) Critics point to the psychosocial aspects of chronic pain - 50% of such patients, for example, have clinical depression<sup>8</sup> and many are influenced by job dissatisfaction and other employment factors - and have suggested that manipu-

lation is inappropriate once a patient has been disabled by pain for 3 months or more. Chiropractors have answered that treatment of underlying biomechanical pathology in joints and muscles remains important and frequently brings relief, and that clinical experience and research, such as the studies mentioned above, support that view.

2. It can safely be said that the debate has now been settled for chronic back pain, and largely settled for chronic neck pain. Compelling new evidence from interdisciplinary research teams in Europe, North America, and most recently Australia, means that there is now strong evidence of the effectiveness of chiropractic manipulation for most patients with chronic back and neck pain - those with objective biomechanical and/or neurological signs.

a) With respect to back pain, a recent systematic review of all the trials up to September 1995, performed by the Dutch epidemiologists Maurits van Tulder PhD, Bart Koes, PhD, and Lex Bouter, PhD and published in *Spine* concludes that there is now "strong evidence of the effectiveness of manipulation for patients with chronic low-back pain".<sup>9</sup>

b) With respect to neck pain, systematic reviews by Americans Hurwitz et al. in *Spine*<sup>10</sup> and Canadians Aker et al. in the *British Medical Journal*<sup>11</sup> both published in 1996 and considering the research up to December 1994, conclude that there is better evidence for the effectiveness of manipulation than any other treatment for chronic neck pain. This evidence is not as strong as that for back pain. However, subsequent to their analyses two new studies, one from Khan and Cook in the U.K.<sup>12</sup> and most recently one from Giles and Müller in Australia<sup>13</sup> have strengthened that evidence - both strongly confirm the effectiveness of chiropractic manipulation for patients with chronic neck pain.

The new Australian trial, from Townsville General Hospital in Queensland, included patients with chronic neck and/or back pain, and compared the effectiveness of three interventions for chronic pain patients - chiropractic manipulation, standard anti-inflammatory medication, and acupuncture. It found that only chiropractic manipulation was effective.

This Report now looks at the new evidence in more detail, with a special focus on the Australian trial because of its thoroughness, its setting, its comparison of three treatments commonly used in medical and chiropractic practice and the decisiveness of the results. Conclusions are then made concerning the overall management of chronic back and neck pain patients, and the complementary roles of manipulation, exercise, and patient education.

### B. THE NEW AUSTRALIAN TRIAL<sup>13</sup>

3. The principal investigator, Lynton Giles, DC PhD, Director, National Unit for Multidisciplinary Studies of Spinal Pain, Townsville General Hospital, Queensland, is a prominent researcher and the principal editor of the impressive new series of three texts from Butterworth-Heinemann on the clinical anatomy and management of low-back, thoracic and cervical spine pain. His co-investigator is Reinhold Müller, PhD and the trial was performed at Townsville General Hospital's out-patient Spinal Pain Unit from July 1995 to June 1998.

In their introduction Giles and Müller refer to the often-quoted Meade et al. trial published in 1990 in the *British Medical Journal*.<sup>5</sup> This compared chiropractic and physiotherapy hospital out-patient management of patients with acute and chronic low-back pain, and reported that chiropractic patients had significantly better results. It was a 'pragmatic' trial which "tested what happens in day-to-day practice and in which details of the type, frequency and duration of intervention were at the discretion of the treating physician." Such trials are important, say Giles and Müller, but do not identify the exact component of treatment that was responsible for the improvement.

In their trial they adopted a 'fastidious' trial approach in order to test the effectiveness of specific treatments. Patients were randomly assigned to one of the following three "separate and clearly defined intervention protocols":

- Needle acupuncture alone or in conjunction with low-voltage electrical stimulation (depending on patient tolerance), given by experienced medical acupuncturists;
- High-velocity low-amplitude chiropractic manipulation at the level of spinal involvement only, given by experienced chiropractors; and
- Non-steroidal anti-inflammatory medication - tenoxicam with ranitidine.

In the acupuncture and chiropractic manipulation groups 6 treatments were given in a 3-4 week period. Patients treated with medication were given pills for the same period. Treatment times were standardized to 15-20 minutes for each visit "to eliminate a potential placebo effect from different lengths of exposure" to clinicians.

4. The purpose of the trial was to compare the above treatments for adult patients (18 years or more) suffering from chronic spinal pain (experienced for at least 13 weeks). Pain was in the low-back and/or upper back and/or neck. In fact patients had experienced pain on average for approximately 6 years - this was a truly chronic population. Summary details are:

- a) A total of 875 patients were seen, mostly referred from medical practitioners in the community, but only 77 patients finally entered the trial because of strict exclusion criteria. Reasons for exclusion included nerve root involvement, spinal anomalies, pathology other than mild to moderate osteoarthritis, previous spinal surgery, and leg length inequality of more than 9 mm with postural scoliosis. (The largest number of patients, 360, were excluded because of other pathology). A further 153 were excluded for medico-legal reasons or because they wanted to choose their form of treatment.
- b) Patients were randomly assigned to chiropractic manipulation (36 patients or 47%), acupuncture (20, 26%) and medication (21, 27%). Baseline data showed that, in terms of pain, function and socioeconomic background, patients in each of the groups were comparable.
- c) Primary results or outcomes, as is now usual, were based on standardized patient self-assessments - visual analog scales for pain, the Oswestry Questionnaire for low-back and thoracic spinal pain, and the Neck Disability Index for neck pain. Pain scales and disability questionnaires were completed by patients before treatment

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and at the end of the four week treatment period. A final important outcome measure was fitness for discharge from care.

Patients in the acupuncture and medication groups had no significant improvement during the trial on any of the outcome measures, whereas patients in the chiropractic manipulation group received a statistically significant improvement on all outcome measures. This improvement, which was approximately a 30% improvement in disability as measured by the Oswestry and Neck Disability Questionnaires, meant that 39% (4 out of 10) of the chiropractic patients could be discharged following the treatment received in the trial. For acupuncture (10%) and medication (14.3%) the discharge rates were much lower.

Summarizing these results Giles and Müller say that "the most remarkable feature" of these results "is the absolute consistency: over all outcome measures, the manipulation group displayed . . . substantial improvements that were uniformly found to be significant. In the two other intervention groups, not a single

significant improvement could be found in any of the outcome measures.”

a) No patient was made worse or experienced side effects because of acupuncture or manipulation - three medication patients had significant gastric problems as side effects.

b) The authors note that there are a number of political and clinical obstacles to performing comparative research like this - indeed this is the first trial with a straight comparison of specific treatment protocols for chronic spinal pain in a community setting - but this trial shows that these obstacles can now be overcome.

c) With respect to the region of chronic pain, 50% (18 patients) of patients in the chiropractic manipulation group had neck pain, 36% (13) upper back pain and 86% (31) low-back pain.

d) The major limitation in this trial, acknowledged by the authors, is the lack of long term follow-up. Were these improvements from chiropractic manipulation maintained one year or more later? Discharge from care does not imply permanent relief from symptoms. Giles and Müller call for further well-funded trials based on their design but with 12 month follow-up questionnaires over a three year period at least. In this connection, though, it should be noted that Meade et al. did do such follow-up studies in their trial, and later reported that early benefits were maintained by chiropractic patients at 2 and 3 years follow-up.<sup>14</sup>

### C. CHRONIC LOW-BACK PAIN

5. The first authoritative, systematic review of the clinical trials for treatment of patients with chronic back pain has been that of van Tulder et al. from Vrije University, Amsterdam, The Netherlands, published in 1997.<sup>9</sup> This review, funded by the Dutch Health Insurance Board, is particularly impressive because it includes a review of the trials for all common non-surgical treatments - not only spinal manipulation but also exercise therapy, back schools, bed rest, analgesics, NSAIDS, muscle relaxants, anti-depressants, epidural steroid injections, TENS, traction, behavior therapy, orthoses, electromyographic biofeedback and acupuncture.

van Tulder et al. conclude that there is “strong evidence” that manipulation is effective and that there is “moderate evidence” that manipulation is more effective

for chronic low-back pain than “usual care by the general practitioner, bed rest, analgesics and massage.” Other treatments with strong evidence of effectiveness are “intensive back school programs in an occupational setting” and exercise therapy. As yet there is no clear evidence favoring one form of exercise program over another (e.g. stretching for flexibility versus trunk muscle strengthening). The following points concerning van Tulder et al’s review are noted:

a) Very strict standards were adopted. Firstly, only randomized controlled trials (RCTs) were considered. This means that much important evidence, including the landmark prospective study by Kirkaldy-Willis and Cassidy, was excluded. Secondly the quality of RCTs was assessed according to a list of trial design criteria, trials were then ranked for quality, and higher weight was given to the higher quality trials. Finally the overall strength of the evidence was rated according to the rating system used in the US government-sponsored Clinical Practice Guideline for Acute Low-Back Problems in Adults.<sup>1</sup> The four levels according to this rating system are:

i) Strong evidence - multiple, relevant, high-quality RCTs.

ii) Moderate evidence - one relevant, high-quality RCT and one or more relevant low-quality RCTs.

iii) Limited evidence - one relevant, high-quality RCT or multiple, relevant, low-quality RCTs.

iv) No evidence - only one relevant low-quality RCT, no relevant RCTs or contradictory outcomes.

b) For the purposes of this review chronic pain was defined as “pain persisting for 12 weeks or more.” This is similar to the 13 weeks or more adopted by Giles and Müller in their trial, is consistent with U.S. and U.K. clinical guidelines,<sup>1,2</sup> and can probably now be regarded as the standard current definition of chronic pain.

c) Extra weight was given to trials with “the most important outcome measures” - patient self-assessments of “pain intensity, overall improvement and functional status”. In other words, the primary outcome measures used in both the Meade et al. and Giles and Müller trials. (This is a noteworthy about face from 15 years ago when practitioner measurements, such as degrees of rotation or straight-leg raise,

were regarded as hard science and most important, whereas pain scales and patient questionnaires were discounted as soft science.)

d) All trials of chronic back pain published up to September 1995 were considered. Note, however, that trials which included both acute and chronic patients, and in which separate data for the chronic patients could not be identified were excluded. This means that the Meade et al. trial was excluded - in other words there was a finding of strong evidence for the effectiveness of spinal manipulation in the absence of the trial that arguably provides the best evidence. The Giles and Müller trial now increases the evidence again.

e) How valid is the decision by van Tulder et al. to exclude all evidence except RCTs? This strict standard is consistent with the current approach in the Cochrane Collaboration, but there is currently a fierce debate between epidemiologists worldwide on whether or not reviews should be restricted to RCTs. Problems are that well-designed prospective studies, even though lacking a comparison group of patients, offer much valuable evidence that is excluded by limiting reviews to RCTs; that many treatments have well-designed prospective studies but few if any RCTs; and that many RCTs are of poor quality - in other words they have what is in theory a better research design but in practice are more flawed and weaker than competing evidence from prospective studies. Many experts predict that Cochrane Collaboration reviews will soon be broadened to include prospective studies.

6. Reviewing evidence is a tricky process, and a number of other important questions arise from the van Tulder et al. review. What about different sub-groups of patients with chronic pain, what about the difference between high-velocity and low-velocity techniques - both of which fall within their definition of spinal manipulation, and what about the different levels of training and skill of those performing the manual assessment and treatment? This final point is illustrated by recent trials reporting that chiropractic manipulation is effective (Giles and Müller, Australia<sup>13</sup>), but osteopathic manipulation is not (Anderson et al., U.S.<sup>15</sup>) for chronic pain patients.

*continued on page 6*

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aged care panels and networks will be particularly impressed by the fact that AMR/Laidlaw DCs are not asked to discount their fees - they receive full fees according to the fee schedule mandated by state workers' compensation laws. Their results are so good that Laidlaw and its insurers carry the administrative costs.

Dr. Terribilini, a 1986 Palmer-West graduate who understands paramedics because he formerly was one, says there were many who told him that the gatekeeper role of occupational medicine physicians could not be broken. He has proved them wrong - now on a national basis for a major corporation. In a recent interview *The Chiropractic Report* asked him what lessons he had learnt during the past 12 years, in which his practice at the San Jose Chiropractic Center has expanded to six DCs and clinical and administrative work for Laidlaw occupies 50% of his practice. Core lessons are:

1. Chiropractors have to have the right skills and attitudes. These include:

- A thorough understanding and experience of state workers' compensation procedures.
- Clinical skills, and ideally formal postgraduate training, in all aspects of chiropractic rehabilitation. (Terribilini, as with other AMR/Laidlaw panel DCs, is a Fellow of the Academy of Forensic Industrial Chiropractic Consultants (FAFICC).
- Training in rapid return to work - "work must be seen as part of the treatment program".
- "Communicate, communicate, communicate" - information, especially on outcomes, drives the whole system. See below.
- "Check your ego at the door". DCs are in a team serving a specific market with agreed protocols and targets and "you have to reach out and look at it from the employer's perspective."

2. The keys to breaking into the system were:

- Starting in a small way, with a local employer and patients who saw the health and cost savings. Expansion came later, on the strength of proven results.
- Measuring and reporting all the important outcomes to patients and AMR - function, average lost work days, average duration of case, percent of cases closed, recurrence rates, litigation rates, patient satisfaction rates, etc. (For the first three quarters of 1999 the national panel of DCs serving Laidlaw had highly competitive statistics - for example the rate of patients proceeding to litigation was 1.6%, which compares with a California workers' comp average of 14.1%. Mean lost days from work was 0.8 (i.e. less than one day), mean case duration 28.9 days, average number of visits 7.6 and average total health care costs \$649.00. Patient satisfaction rate was 92.7%. Part of the reason these results have been possible is that patients are seeing chiropractors at a more acute stage of their injury. This is the major argument in favor of giving DCs a primary care role.)
- Being completely reliable and ethical - creating a reputation in this regard.

There are recent signs that the achievements of Dr. Terribilini and

his team at AMR/Laidlaw may now become more widespread. Recently Kaiser Permanente has approached a chiropractic group that operates the second largest occupational health clinic in Fresno, California to arrange for primary occupational health care services. This was under pressure from local employers, who had been impressed with chiropractic results and threatened to pull their employees out of Kaiser's HMO unless appropriate arrangements were made.

More detail on the AMR/Laidlaw program appears in a recent article by Craig Morris, DC in the *California Workers' Compensation Inquirer* (May-June 1999, 27-29). Morris, who is President of the AFICC and also on the AMR/Laidlaw panel, currently performs 15-20 pre-employment exams and sees 5-10 new patients monthly for the company, and is enthusiastic about the program - especially the fact that the supervising DCs in each region are all practising doctors who understand the reality of every day practice. He and other treating DCs view them "as valued consultants" rather than managed care watchdogs.

In his article Morris quotes Mr. Chris Schmidt, Director of Safety and Risk Management at AMR/Laidlaw on why Laidlaw took the AMR chiropractic program national after the 1996 merger. Quite simply:

"We were watching (the) program for a while before the purchase and realized that the cost savings of Dr. Terribilini's program could be instituted on a larger scale." AMR/Laidlaw's insurance carrier, Crawford and Company, were soon persuaded to agree when they saw the figures. No one has been disappointed. Schmidt confirms that overall company workers comp costs initially dropped by more than 50% and then levelled off at 30% savings as panel chiropractors were referred a wider range of more complex cases.

Are there any diagnostic or scope of practice problems?

Terribilini and Schmidt confirm that there has not been a single incident of a red flag condition (severe disc injury, fracture, tumor, hemorrhage or infection) being missed by a panel chiropractor throughout the program to date.

Do DCs find it onerous to complete and provide all the outcome measures, and have their performance watched so closely?

Terribilini says, and Morris confirms, that DCs "love these outcomes measures because they feel that they can compete with anyone and welcome the opportunity to show what they can do."

This program, then, is another example of the increasing authority of employers and payors in health care, and the new opportunities this gives to chiropractors and other non-medical providers if they can produce and demonstrate results. As Schmidt says, summarizing all of this, "I don't care about the initials at the end of the practitioner's name. I care about the number on the bottom line."

*To contact Dr. Terribilini and learn more about his organization Chiropractic Occupational Health Management Inc., visit his website [www.cohm.org](http://www.cohm.org) or e-mail him at [Drcasey@cohm.org](mailto:Drcasey@cohm.org).*

*For more information on AFICC visit its website [www.members.tripod.com/aficc](http://www.members.tripod.com/aficc) or e-mail Dr. Morris at [rehabdoc@att.net](mailto:rehabdoc@att.net).*

## NORTH AMERICA

**1. U.S. - Blue Cross/Blue Shield of Illinois Patients May Choose AMI DCs for their Primary Care.** HMOs and other managed care organizations have generally given the primary care 'gatekeeper' role to medical doctors and/or nurses, relegating chiropractors to a specialist status and making access more difficult for patients. Alternative Medicine Inc. (AMI) of Chicago, founded in 1997 by Dr. Richard Sarnat, an MD, and Mr. James Zechman, a former VP at Merrill Lynch, is changing that by offering patients the choice of a chiropractic 'gatekeeper' in a large HMO in the Chicago area. And AMI has now announced a contract with Blue Cross/Blue Shield of Illinois which gives all covered patients this choice, particularly significant because Blue Cross/Blue Shield operates the state's largest managed care plan with over 700,000 members.

Sarnat, an ophthalmologist and AMI President, spoke of AMI's goals and achievements at the National Managed Health Care Congress in Los Angeles last October attended by 3,000 people from the managed care world. He explained that AMI's goal was to shift the focus from treating illness to promoting wellness and disease prevention, both to improve health care and achieve significant cost savings. AMI is in a good position to measure costs because it operates within an HMO. Preliminary data from the first year indicates "significant savings overall—50% savings of hospital utilizations, pharmaceutical costs and diagnostic and laboratory costs." AMI has plans to go nationwide in the U.S. (Source: *Dynamic Chiropractic*).

**2. U.S. - Washington State Insurance Law Protection for Chiropractic Services Upheld.** In 1996 Washington State passed law requiring insurance policies to offer coverage for treatments by every category of licensed health care provider in the state, including chiropractors, acupuncturists, massage therapists and naturopaths. There have been four years of legal challenges by health insurers, saying the law would result in higher costs for carriers and, ultimately, consumers. On January 13 the Washington Supreme Court ruled to uphold the state law. Washington Insurance Commissioner, Deborah Senn, supporting the decision, said "choice of provider is the biggest single issue in health care." (Source: *Reuters*).

**3. U.S. - Chiropractic Services for the Military Extended.** The American Chiropractic Association (ACA) has been successful in its campaign with the Association of Chiropractic Colleges (ACC) to extend the provision of chiropractic services within the Department of Defense (DoD) healthcare system. Under a three-year pilot program, originally to expire in 1998, but now extended for a second time until the end of 2000, chiropractic care is being given to members of the armed forces and their families at 13 military treatment facilities across the US. Even more significantly, language in the FY 2000 Defense Authorization Act requires the DoD to make recommendations by March 31, 2000 that could lead to the full integration of chiropractic in the military healthcare system on a permanent basis. The DoD's report to Congress on the pilot program is due this month.

## EUROPE

**1. ECU Convention - Athens, June 1-3, 2000.** The European

Chiropractors' Union (ECU), in conjunction with the Ellenic Chiropractors' Association (ECA), has announced that this year's ECU Convention will be held in Athens, Greece from June 1-3, 2000. The hotel is on the beach, and this may be your perfect excuse for a trip to Greece in summer. Dr. Vassilis Maltezosopoulos of Athens, President of the ECA which has 12 members, advises that chiropractic is now well-established in Greece but that, because of the small size of the profession, legislative recognition is unlikely until Greece receives a firm directive from the European Union to all member countries. Contact for more information: Anne Kemp, Executive Secretary, ECU, 9 Cross Deep Gardens, Twickenham, Middlesex, TW1 4QZ, England. Tel: 44-0181-891-2546, Fax: 44-0181-744-2902, E-mail: [ecuanne@saqnet.co.uk](mailto:ecuanne@saqnet.co.uk).

**2. Research. Changes in Vertebral Artery Flow After Cervical Manipulation.** Peter Licht, MD, Henrik Christensen, DC MD et al. from the University of Southern Denmark have recently developed a sophisticated animal model, using pigs, to research the relationship between the vertebral arteries and spinal adjustment. In a study just published 8 pigs were given cervical adjustment by an experienced chiropractor at the first three cervical joint levels. Vertebral arteries of the animals were surgically exposed so the effects on blood flow could be measured. It was found that effects were minimal. There was a 20% average increase in vertebral artery blood flow occurring 20-40 seconds after the adjustment was delivered, with a return to baseline values within three minutes. Maximum temporary increase in blood flow was approximately 50%. It was concluded that changes of this magnitude in humans would have "very little clinical consequence". The researchers will now use their model to test other aspects of vertebral artery hemodynamics and the effects of different techniques of adjustment. (Licht PB, Christensen HW et al. *Vertebral Artery Flow and Cervical Manipulation: An Experimental Study*. J Manipulative Physiol Ther. 1999;22(7):431-435.)

## LATIN AMERICA

**1. Brazil - A Second Chiropractic Program, in Sao Paulo.** Dr. Sira Borges, President of the Brazilian Chiropractors' Association (BCA), reports that Brazil's second chiropractic school will commence classes at the Anhembi Morumbi University (UAM) in Sao Paulo in March this year. This will be a five year undergraduate program. It is being developed jointly by UAM and the BCA, with consulting services provided by three U.S. chiropractic colleges - LACC, National, and Northwestern. BCA coordinator is Eduardo Bracher, DC MD who practises in Sao Paulo.

Brazil's other chiropractic program, also promoted by the BCA, is at Feevale Central University in Novo Hamburgo in the south of Brazil, and operates under a formal partnership with Palmer College. Feevale graduates its first class, from a two year transitional course for health professionals, in April. At the same time it commences a five year undergraduate program with an initial class of 60 students already selected from 150 applicants.

**2. Costa Rica - Chiropractic Legislation.** On September 27, 1999 Costa Rica became the most recent country to pass legisla-

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However, despite these questions, the current, overall position is that there is strong evidence that chiropractic manipulation is effective for patients with chronic mechanical or non-specific low-back pain. Manipulation should often be combined with patient education and exercise programs, the other interventions with strong evidence of effectiveness, and this can be either in a chiropractic or an interdisciplinary setting.

### C. CHRONIC NECK PAIN

7. The most comprehensive and thorough systematic review of the evidence of the effectiveness of manipulation for chronic neck pain, published in *Spine* in 1996, was by an interdisciplinary research team led by RAND epidemiologists Eric Hurwitz, DC PhD and Paul Shekelle, MD PhD.<sup>10</sup> This covered the scientific literature to 1994 and features of the review are:

a) It looked at the evidence with respect to both manipulation, defined as the use of a high-velocity thrust directed to one or more of the joints of the cervical spine, and mobilization, defined as any manual therapy not involving the use of a high-velocity thrust.

b) It assessed the randomized controlled trials (RCTs), of which there are 6 - five for manipulation and 1 for mobilization. As in the back pain review by van Tulder et al. the RCTs were graded and more weight was given to the better designed trials. Additionally, however, Hurwitz et al. considered and gave some weight to studies other than RCTs - quality case series and case reports, of which there were 26 for manipulation and 4 for mobilization.

c) It was concluded:

i) Manipulation and mobilization are both "more effective than muscle relaxants or usual medical care in producing short-term pain relief among some patients for sub-acute or chronic neck pain."

The reason that no conclusion could be made concerning the long-term effectiveness of manipulation for patients with chronic neck pain was that this has only been studied in one trial. That trial, by Dutch researchers Koes et al.<sup>16</sup> compared manipulation and mobilization with physical therapy, placebo and usual general practitioner care. It included both short-term (3 and 12 weeks) and long-term (12 months) results and did report that the manipulation and mobilization patients had significantly better long-term results, measured in terms of functional outcomes. However further studies are needed.

ii) "Manipulation probably is slightly more effective than mobilization or physical therapy."

iii) Although there is evidence favoring manipulation and mobilization over other common methods of treatment, much more high-quality research needs to be done in this field.

Aker et al., in their systematic review of all conservative treatments for both acute and chronic mechanical neck pain (manual treatments; physical medicine methods such as acupuncture, traction, exercise, TENS, other electrotherapies and spray and stretch; drug treatments and patient education) agree.<sup>11</sup>

d) Hurwitz et al.'s review also deals with the effectiveness of manipulation for acute neck pain and for headache, and risk rates for vertebral artery injury and stroke—which are estimated at 1 per 1-2 million manipulations. Their review was part of a RAND project that led to an expert panel report titled *The Appropriate-*

*ness of Manipulation and Mobilization of the Cervical Spine*,<sup>17</sup> which concluded that both treatments were appropriate for patients with many common categories of neck pain and headache.

8. The trial by Giles and Müller,<sup>13</sup> as we have seen, now strengthens the evidence in favor of manipulation. Fifty percent (50%) of the patients in this trial receiving chiropractic manipulation had chronic neck pain. So does further new interdisciplinary research from the U.K. Khan et al., from the Department of Orthopaedic Surgery at the University of Bristol, report on 100 consecutive patients with chronic neck pain from road traffic whiplash injuries who were referred for chiropractic manipulation, and conclude that "chiropractic is the only proven effective treatment" for patients with these chronic problems.<sup>12</sup> Details are:

a) All patients had chronic symptoms, with an average of 12.7 months between the time of injury and referral for chiropractic manipulation. On the basis of symptoms patients were classified into 1 of 3 groups:

- *Group 1* (number 50) - with a coat-hanger distribution of pain, and with restricted range of neck movement, but with no neurological deficit.

- *Group 2* (n 32) - as above, but also with neurological signs and/or symptoms.

- *Group 3* (n 11) - with severe neck pain, but with full range of neck movement and no neurological symptoms or signs. These patients commonly described an unusual complex of symptoms, indicating psychosocial factors.

b) Treatment comprised spinal manipulation, defined as "a high-velocity, low-amplitude thrust to a specific vertebral segment", by an experienced chiropractor at his independent chiropractic clinic. Patients received an average of 19.3 treatments (range—1 to 53 treatments) over an average period of 4.1 months (range—1 to 48 months).

c) Measurement of results was by patient self-assessment of improvement on the Gargan and Bannister classification of whiplash symptoms—namely *disabling* (Grade D), *intrusive* (Grade C), *a nuisance* (Grade B) and *absent* (Grade A). Initial assessments were made by the patient prior to treatment. Final assessments were made a period of months or years after treatment (complete details are not given) in structured telephone interviews conducted by an independent orthopedic surgeon.

There was significant improvement in patients in Groups 1 and 2 - that is to say the patients who had objective signs - but not those in Group 3. In particular:

i) In Group 1, 36 of 50 patients (72%) gained some benefit from chiropractic manipulation, with 12 (24%) improving by two grades on the Gargan and Bannister scale, and another 12 (24%) becoming asymptomatic.

ii) In Group 2, the patients with musculoskeletal and neurological signs/symptoms, 30 of 32 patients (94%) benefited, with 13 (43%) improving by two grades and another 12 (38%) becoming asymptomatic.

d) On one hand this study was only a retrospective review, rather than a prospective study or RCT, but on the other hand it involved independent assessment by a university-based orthopedic surgeon and was consistent with earlier research published by this research team. The study is also important in identifying a sub-group of patients which does not respond to chiropractic ma-

nipulation and, as Khan, Cook et al. say, this "highlights the need for a careful history and physical examination before treatment."

#### D. CONCLUSION

9. Many major journals, such as the *British Medical Journal*, now include a 'key messages' summary with reviews of evidence. Key messages from this review are:

##### a) For Health Professionals:

i) Patients with chronic neck and back pain require a thorough history and examination. This should include orthopedic, neurological and palpation tests as are standard in chiropractic practice.

ii) Patients with objective musculoskeletal signs of restricted range of movement, and many of those with such restrictions and neurological signs, will generally have one or more spinal functional lesions/chiropractic subluxations and will respond well to skilled manipulation at the appropriate vertebral levels. Those with no objective signs are much less likely to have a mechanical problem that will benefit from spinal manipulation.

iii) For chronic pain patients manipulation should often be part of an overall management approach that includes other forms of interventions with proven effectiveness - principally exercise programs and patient education.

iv) Chronic spinal pain is a biopsychosocial problem - treating professionals must be aware of non-physical factors (e.g. depression, anxiety, job dissatisfaction, employer restrictions on return to modified or full-time work) and address these also.

##### b) For Employers, Insurers, Payors

i) Many patients with chronic spinal pain for 12 weeks or more, who have been disabled for many weeks or months despite various forms of care and are suspected of having permanent long-term degenerative problems or psychological sources of pain, may in fact have had inadequate examination and treatment. The real sources of their pain have not been diagnosed or treated.

ii) Many such patients will respond well to effective diagnosis and treatment, and current scientific evidence suggests that important components of this include:

- Specialized assessment of restricted range of motion in the musculoskeletal system, especially in the joints of the spine and pelvis.

- Spinal manipulation.

- Exercise programs - these should be ongoing for a period of months, monitored closely at first then more generally by the chiropractor or other health professional, and give benefit for both physical and psychological reasons. (For a detailed review of exercise programs see the November 1997 issue of this Report).

- Education - simple spinal anatomy, causes of the problem, good posture, spinal health in general, appropriate exercises and other forms of self-management and prevention.

iii) For employees one major factor delaying recovery may also be an inadequate plan for return to work - plans with appropriate modifications of work tasks and time, and with changes addressing issues of job satisfaction, can produce major changes in disability and cost with respect to individual patients and the total employee workforce. **TCR**

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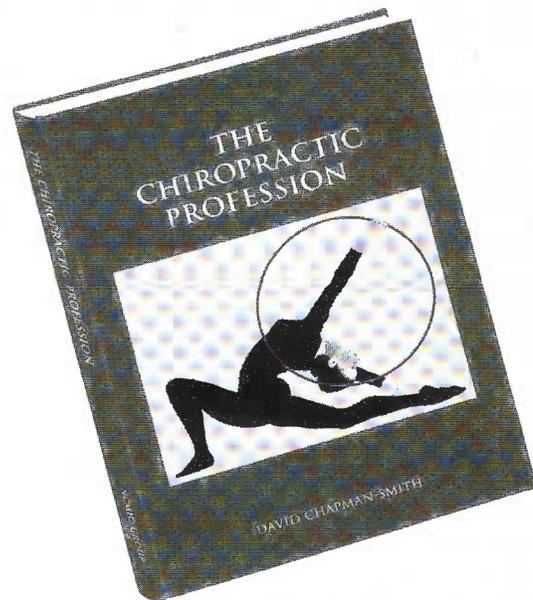
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tion to recognize and regulate the practice of chiropractic. This was a significant achievement by the Costa Rican Chiropractic Association and its leaders, Dr Shawn Dill, President, a Logan graduate and Dr Andrew Roberts, Vice-President, a Palmer graduate, as there are only 13 chiropractors practising in the country. The CRCA is now working to establish chiropractic education in Costa Rica. Contact: Dr. Andy Roberts, Tel: 506-256-5118; Fax: 506-258-2832; e-mail: andy@quiropacticamundial.com

**ASIA**

**1. Japan - Conference on Education, LACC Campus, April 1-2, 2000.** During the past year the Japanese Association of Chiropractors (JAC) has taken major steps to coordinate and upgrade chiropractic education in Japan, working with Japanese colleges and major U.S. colleges which have assisted in the country, such as the Los Angeles College of Chiropractic and Life West. The project involves upgrading several Japanese chiropractic colleges to the international standard, and providing university degree conversion courses for Japanese-trained practitioners with limited formal chiropractic education - of whom there are several thousand. A Japanese Council of Chiropractic Colleges, with four founding colleges, has been formed to coordinate this ambitious venture over the next decade.

The project has major implications for the future of chiropractic in Japan and internationally, and the JAC is encouraging all accredited chiropractic colleges to assist in this venture. It has recently announced that it will be holding information meetings for all interested parties at the LACC Campus on the weekend of April 1-2, 2000. Contact for further information: Hirofumi Nakatsuka, DC, JAC President and Brian Budgell, DC, JAC Vice-President, General Building No. 7-7F, 6-20-1 Shinbashi Minato-ku, Tokyo, 105-0004, Tel:81-3-3437-6907, Fax: 81-3-5401-0956, E-mail:budgell@center.tmig.or.jp.



*The Chiropractic Profession*, by David Chapman-Smith, NCMIC Group, West Des Moines, Iowa, 2000. 164 pages, hard back, single copy US\$49.95 plus shipping, 5 copies US\$100.00 plus shipping. NCMIC policyholders are entitled to one complimentary copy. *More information and orders:* NCMIC Group Inc., Tel: 1-877-291-7312, Fax: 1-515-282-3347.

Commissioned by the NCMIC Group under a grant administered by FCER, this is a major new book on chiropractic for others in the health care system, the media, patients, and the general public.

*"How often have you wanted a book that explains chiropractic in reasonable and rational language . . . that you could be proud to send to anyone? Well, that book is here now. Giving copies of this book to individuals and groups who 'need to know' can go a long way toward promoting a better understanding of . . . and support for . . . your personal practice and the entire chiropractic profession."* Lou Sportelli, DC, President NCMIC.

*"Unlike any other book . . . it provides a concise and informative review of all relevant information on the chiropractic profession in one volume. . . a well-balanced, clear and detailed description of the chiropractic profession today."* Wayne B. Jonas, MD, Director, NIH Office of Alternative Medicine (1995-1998).

*" . . . a balanced, authoritative, comprehensive picture of this important field of health care . . . essential reading for anyone involved in the regulation, oversight or evaluation of chiropractors or related health professions."* Clement Bezold, PhD, Consultant, World Health Organization, and President, Institute for Alternative Futures.

*" . . . gives an excellent snapshot of the profession at the turn of the century, which should help practicing chiropractors place their profession in perspective and understand the direction it is likely to take . . ."* Scott Haldeman, DC MD PhD, chiropractor and neurologist.

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