The Chiropractic Report

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Professional Notes

Low-Back Pain: Harvard Special Health Report

The Harvard Medical School has just published a 40-page booklet for the public titled *Low-Back Pain: Healing your Aching Back* which will be influential with both the public and medical doctors in North America and beyond.

Published in Harvard's Special Health Reports series, this impressive booklet is edited by Dr Jeffrey Katz, Professor of Medicine and Orthopedic Surgery at Harvard. It describes and illustrates the anatomy of the back, and then addresses the questions of how back problems develop, why backs hurt, diagnosis and options for treatment and self-management.

In the 1990s chiropractic healthcare was described as "unconventional" and "alternative" in studies from Harvard University. However under the leadership of Dr David Eisenberg chiropractic services were then introduced into the Harvard hospital system. In marked contrast to earlier times, in this new Harvard

continued on page 4

Current Status of the Profession

The World Federation of Chiropractic (WFC), members of which are national associations of chiropractors in 90 countries, is a non-governmental organization or NGO in official relations with the World Health Organization (WHO).

At WHO's request the WFC recently prepared and filed a December 2012 summary report titled The Current Status of the Chiropractic Profession. *This is reprinted below. For more information on the WFC, go to wfc.org.*

A. Introduction

CHIROPRACTIC (GREEK: DONE by hand) is a health care profession concerned with the diagnosis, treatment and prevention of disorders of the neuromusculoskeletal system and the effects of these disorders on general health. There is an emphasis on manual techniques, including joint adjustment and/or manipulation, with a particular focus on joint subluxation/dysfunction.

Chiropractic arose as a separate profession in the United States in the 1890s. Today, approximately 120 years later, there are chiropractic educational institutions in many countries and chiropractors practicing in over 100 countries in all world regions. Ninety of these countries have national associations of chiropractors that are members of the World Federation of Chiropractic (WFC) which has been a non-governmental organization in official relations with the World Health Organization (WHO) since 1997. Much of the available demographic information on the status of the profession and its practice comes from surveys by the WFC and its member associations.

B. Distribution, Size and Regulation

The largest numbers of chiropractors are found in the United States of America (75,000), Canada (7,250), Australia (4,250), and the United Kingdom (3,000), which were the first countries to establish chiropractic schools. Other countries with more than 250 chiropractors are Brazil (700), Denmark (550), France (450), Italy (400), Japan (400), the Netherlands (400), New Zealand (400), Norway (600), South Africa (400), Spain (300), Sweden (400), and Switzerland (275).

There are smaller numbers of qualified chiropractors in other countries. However where practice is not yet regulated by law, such as in Germany and Japan, many hundreds or even thousands of other health providers claim to offer chiropractic services.

Current growth of the profession is largest in countries with the 41 recognized educational programs, which are found in Australia (4), Brazil (2), Canada (2), Chile, Denmark, France, Japan, Malaysia, Mexico (2), New Zealand, South Africa (2), South Korea, Spain (2), Switzerland, the UK (3), and the USA (17).

Table 1 gives the legal status of the chiropractic profession by country. There is legislation to recognize and regulate the profession in 48 countries, usually on a national basis but sometimes by state or region within the country (e.g. Canada, Switzerland, and USA).

Different approaches to legislation include a separate chiropractic act (e.g. Cyprus, Denmark, Hong Kong SAR China, Israel, most Canadian provinces and USA states), a chiropractic act under an umbrella law for various mainstream health care disciplines (e.g. Cayman Islands, Iran, Switzerland, some Canadian provinces and USA states), and a chiropractic act under an umbrella law for complementary and alternative health care disciplines (e.g. Belgium, France, the Philippines, and South Africa).

Main Article *continued from page 1*

Table 1 Legal Status of Chiropractic by Country

August 2012

Legend:
[a] Legal pursuant to legislation to accept and regulate chiropractic practice
[b] Legal pursuant to general law.
[c] Legal status unclear, but de facto recognition.
[d] Legal status unclear and risk of prosecution

African Region
Botswana[a]
Ethiopia[b]
Ghana[b]
Kenya[b]
Lesotho[a]
Mauritius[b]
Namibia[a]
Nigeria[a]
South Africa[a]
Swaziland[a]
Zimbabwe[a]

Asian Region
China[c]
Hong Kong – SAR China[a]
Indonesia[c]
Japan[b]
Malaysia[b]
Philippines[a]
Singapore[b]
South Korea[d]
Taiwan[d]
Thailand[a]
Vietnam[c]

Eastern Mediterranean Region
Cyprus[a]
Egypt[b]
Iran[a]
Israel[a]
Jordan[b]
Lebanon[b]
Libya[b]
Morocco[c]
Qatar[a]
Saudi Arabia[a]
Syria[c]
Turkey[c]
United Arab Emirates[a]

European Region
Belgium[a]
Croatia[b]
Denmark[a]
Estonia[b]
Finland[a]
France[a]
Germany[b]
Greece[c]
Hungary[c]
Iceland[a]
Ireland[b]
Italy[a]
Liechtenstein[a]
Luxembourg[b]
Malta[a]
Netherlands[b]
Norway[a]
Portugal[a]
Russian Federation[b]
Serbia[a]
Slovakia[b]
Spain[c]
Sweden[a]
Switzerland[a]
United Kingdom[a]

Latin American Region
Argentina[b]
Bolivia[a]
Brazil[b]
Chile[b]
Colombia[b]
Costa Rica[a]
Ecuador[b]
Guatemala[a]
Honduras[b]
Mexico[a]
Panama[a]
Peru[b]
Venezuela[b]

North American Region
Bahamas[a]
Barbados[a]
Belize[b]
Bermuda[b]
British Virgin Islands[b]
Canada[a]
Cayman Islands[a]
Jamaica[b]
Leeward Islands[a]
Puerto Rico[a]
Trinidad & Tobago[b]
Turks & Caicos[a]
United States[a]
US Virgin Islands[b]

Pacific Region
Australia[a]
Fiji[b]
Guam[a]
New Caledonia[a]
New Zealand[a]
Papua New Guinea[b]
Tahiti[a]

Source: World Federation of Chiropractic

Legislation varies but typically provides for direct patient contact without medical referral, defines a scope of practice which includes the duty to diagnose, establishes a regulatory body, and restricts use of the title *chiropractor* to persons who meet specific educational requirements and are registered or licensed pursuant to the legislation.

A WFC survey of the legal status of chiropractic in 2011, with responses from national associations of chiropractors in 49 countries, reported that use of the title *doctor* was authorized in 14 countries and the title *physician* in 4. Rights to perform or order diagnostic tests, such as spinal imaging and laboratory tests, vary by country. With respect to responses in the WFC survey from countries with chiropractic legislation, the majority authorized the taking or ordering of plain film imaging (20 of 29 or 69%) and laboratory tests (18 of 29 or 62%), and about a third authorized the ordering and reading of magnetic resonance imaging (11 of 29 or 38%).

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C. Education

Common international standards of education have been achieved through a network of international accrediting agencies that began with the US Council on Chiropractic Education (CCE), recognized by the US Office of Education since 1974. These standards have been adopted by WHO in its *Guidelines on Basic Training and Safety in Chiropractic (2005).*[1]

Entrance requirements vary according to country, but are a minimum of three years university credits in qualifying subjects in North America. The chiropractic college undergraduate program has a minimum of 4 full-time academic years and is followed by mandatory postgraduate clinical training and/or licensing exams in many countries. Table 2 summarizes the subjects taught in a typical chiropractic undergraduate education program.

Table 2 WHO Guidelines – Sample four-year, accredited chiropractic education

Category I (A) Subjects taught in a typical semester-based chiropractic program, by year and number of hours

Division	*First year (hours)*	*Second year (hours)*	*Third year (hours)*	*Fourth year (hours)*
Biological Sciences	Human Anatomy (180) Microscopic Anatomy (140) Neuroanatomy (72) Neuroscience I (32) Biochemistry (112) Physiology (36)	Pathology (174) Lab Diagnosis (40) Microbiology & Infectious Disease (100) Neuroscience II (85) Nutrition (60) Immunology (15)	Lab Diagnosis (32) Toxicology (12)	Clinical Nutrition (26) Community Health (40)
Clinical Sciences	Normal Radiographic Anatomy (16) Radiation Biophysics and Protection (44)	Intro. Diagnosis (85) Intro Bone Pathology (48) Normal Roentgen, Variants & Roentgenometrics (40)	Orthopaedics & Rheumatology (90) Neuro. Diagnosis (40) Diagnosis & Symptomatology (120) Differential Diagnosis (30) Radiological Technology (40) Arthritis & Trauma (48)	Clinical Psychology (46) Emergency Care (50) Child Care (20) Female Care (30) Geriatrics (20) Abdomen, Chest & Special Radiographic Procedures (40)
Chiropractic Sciences	Chiropractic Principles I (56) Basic Body Mechanics (96) Chiropractic Skills I (100)	Chiropractic Principles II (60) Chiropractic Skills II (145) Spinal Mechanics (40)	Chiropractic Principles III (42) Clinical Biomechanics (100) Chiropractic Skills III (145) Auxiliary Chiropractic Therapy (60) Introduction to Jurisprudence & Practice Development (16)	Integrated Chiropractic Practice (90) Jurisprudence & Practical Development (50)
Clinical Practicum	Observation I (30)	Observation II (70)	Observation III (400)	Internship (750) Clerkships: Auxiliary Therapy (30); Clinical Lab (20) Clinical X-ray: Technology (70); Interpretation (70) Observer IV (30)
Research			Applied Research & Biometrics (32)	Research Investigative Project
Totals	914	962	1207	1382

Total hours of full-time study over four years: **4465 plus research project**

Whereas most chiropractic schools in the USA are in private colleges, most of the newer schools internationally are within the national university system (e.g. Australia, Brazil, Canada, Chile, Denmark, Japan, South Korea, Malaysia, Mexico, South Africa, Spain, Switzerland, and the UK).

In some of these programs, for example, at the University of Southern Denmark in Odense and the University of Zurich in Switzerland, chiropractic and medical students take the same basic science courses together for three years before entering separate programs for clinical training.

For a number of reasons, which include the popularity of chiropractic health care with patients and much new research on safety and cost-effectiveness, the past generation has seen significant international growth of the profession and chiropractic education. In 1990 there were only four recognized programs outside the USA, one each in Australia, Canada, South Africa, and the United Kingdom. As already mentioned there are now 41 programs in 16 countries. New schools are currently being planned in other countries in all world regions.

D. Practice and Research

Chiropractic practice emphasizes the conservative management of disorders of the neuromusculoskeletal system without the use of medicines and surgery. Management includes joint and soft-tissue manual treatments, rehabilitation exercises, patient education and lifestyle modification, and the use of physical therapy modalities and orthotics and other supports.

Surveys demonstrate that the primary reasons patients consult chiropractors are back pain (approximately 60%), other musculoskeletal pain such as pain in the neck, shoulder, extremities, and arthritic pain (20%) and headaches including migraine (10%). About 1 in 10 (10%) present with a wide variety of conditions caused or aggravated by neuromusculoskeletal disorders (e.g. pseudo-angina, dysmennorhea, respiratory and digestive dysfunctions, infant colic/irritable baby syndrome.)

Low-Back Pain. Low-back pain (LBP) is the single largest cause of disability worldwide.[2] Since the 1990s national and international evidence-based clinical guidelines have endorsed the chiropractic approach to management by recommending spinal manipulation, NSAIDs, patient education and motivation, and early return to activity as the appropriate first lines of management for patients with acute or chronic mechanical LBP.[3-6] Spinal manipulation is also recommended in recent practice guidelines from the American College of Physicians and American Pain Society.[7]

Recent randomized controlled trials in Canada[8] and the UK[9] have reported that chiropractic management in accordance with the above guidelines, and the addition of spinal manipulation to medical care, are more effective and cost-effective than usual medical care.

Neck Pain and Headache. There are now similar studies and evidence-based guidelines supporting the safety and effectiveness of chiropractic management of patients with neck pain and cervicogenic headache.

The report of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and its Associated Disorders, published in Spine and the European Spine Journal in 2008,[10,11] was described in editorials as a "major milestone for musculoskeletal science" having "a significant impact on the way in which neck pain is perceived, treated and studied around the world." The Task Force, an international panel of experts, recommended spinal manipulation and mobilization as safe and effective treatments for most patients, and overall management similar to that for patients with LBP.

A recent large trial funded by the US National Institutes of Health reports that each of chiropractic management and a regime of exercises are more effective than usual medical care for patients with acute and sub-acute neck pain.[12] There is now a clear anatomical basis for headache arising from dys-

continued on page 6

Low-Back Pain: Harvard Special Health Report

continued from page 1

booklet chiropractic care is endorsed as a "complementary" form of treatment that people often turn to with success when back-pain strikes. Points made in a quite lengthy section on chiropractic include:

- "Spinal manipulation has long been used as a therapy for back pain" and "is most often performed by chiropractors."
- "When treating people with low-back pain, chiropractors commonly also use a variety of other interventions, including massage, heat and cold therapies, and electrotherapies, as well as advice about nutrition, exercise, and other lifestyle choices."
- "A 2010 review of 12 different studies involving 2,887 people with low-back pain concluded that combined chiropractic care improved short- and medium-term pain more than other treatments, including exercise, physical therapy, and medication.""People who saw chiropractors also reported being less disabled over the short term (one month) compared with people who received other treatments such as standard medical therapy."
- "The best candidates for chiropractic manipulation are people who have no sign of nerve impairment" and "for them chiropractic care tends to be satisfying and effective for acute low-back pain."
- Advice then given is to go to "an experienced practitioner", to start with a short course of treatments, and "if you don't experience considerable improvement after about six spinal manipulations additional treatments are not likely to be of much benefit."

(Harvard Special Health Report (2012) *Low-Back Pain: Healing your Aching Back*. Order at www.health.harvard.edu.)

Spine Surgery Examined – Predictive Factors, Adverse Events, Cost and Concerns

Many recent papers, predominantly in North America, are challenging spine surgery on the grounds of over-use, adverse events and cost – and the first study discussed below shows the wisdom of spine-care pathways or protocols that have a patient first seeing a primary healthcare provider, especially chiropractors.

Predictive Factors. In a major new US study of factors that predict whether or not an injured worker will receive spine surgery, by Keeney et al. and published in *Spine*, the authors report:

a) In 1,885 Washington State workers temporarily off work and disabled because of occupational back injuries 174 or 9.2% had lumbar spinal surgery within a 3 year follow-up period.

b) Of these 1,885 workers "42.7% who first saw a surgeon had surgery." They were nine times more likely to receive surgery than patients *with injuries of similar severity* who first saw "primary care providers." If the primary care provider was a chiropractor the odds of surgery were much lower again – "only 1.5% of those who first saw a chiropractor" had surgery within three years.

c) The purpose of the study was to find early predictors of lumbar spine surgery after occupational back injury – and the main independent early predictors found were higher Roland Morris Disability Questionnaire scores, greater injury severity and "surgeon as first provider seen for the injury." Main predictors of reduced odds of surgery were under age 35, women, Hispanics, "and those whose first provider was a chiropractor."

d) The introduction to the paper is frank in its criticisms of spine surgery in saying:

"Back pain is the most costly and prevalent occupational health condition among the US working population. Costs relating to occupational back pain increased over 65% from 1996 through 2002, after adjustment for medical and general inflation. Spine surgeries after occupational back injury represent approximately 21% of these costs and face increasing scrutiny regarding effectiveness and efficacy.

"There is little evidence spine surgery is associated with improved population outcomes, yet surgery rates have increased dramatically since the 1990s. Reducing unnecessary spine surgery is important for improving patient safety and outcomes and reducing surgery complications and health care costs."

(Keeney BJ, Fulton-Kehoe D et al. (December 12, 2012) *Early Predictors of Lumbar Spine Surgery after Occupational Back Injury: Results from a Prospective Study of Workers in Washington State.* Spine Online Ahead of Print DOI: 10.1097/BRS.0b013e3182814ed5)

Seeing a non-surgical medical specialist also reduces surgical rates, though not as much, according to a further study just published in *Spine.* Fox, Haig et al. report data from Priority Health, a managed care organization in Michigan, which decided to address high surgical rates and costs by the simple requirement that all spine-pain patients who were otherwise heading for a "non-urgent surgical consultation" must first have one consultation with a physiatrist. When surgical rates and costs were then compared for the period before this new requirement (2006-2007) and after (2008-2010) it was found:

a) Surgical referrals decreased by 48% and the total number of spine operations dropped by 25%.

b) Surgical costs decreased by 25.1%. After increased physiatry and other costs, the net decrease in total cost of spine care was 12.1% - which represented more than $14 million in savings in the first year after this new requirement was put in place.

(Fox J, Andrew HJ et al. (2013) *The Effect of Required Physiatrist Consultation on Surgery Rates for Back Pain*. Spine (2013) 38(3):E178-E184)

Adverse Events and Costs. In a study just published in *The Spine Journal*, and awarded a 2010 Outstanding Paper Award by the North American Spine Society, Hellsten, Hanbidge et al. look at the costs of adverse events (AEs) in a population of 1,815 patients who received spinal surgery in the four years

2007-2010 from six spine surgeons at the Toronto Western Hospital. They report:

a) For these 1,815 patients there were AEs in 316 or 17.4% of cases.

b) These AEs contributed an estimated cost of $8.38 million, which was 16% of the total hospital costs for all 1,815 patients. This included an additional 4,684 additional bed days over the study period. (Hospital costs in Canada do not include fee-for-service physician/surgeon billings, which are paid separately by the government, so total costs will have been significantly higher.)

Hellsten et al. note that the US Institute of Medicine's 1999 watershed report *To Err is Human,* which reported that preventable medical errors had an estimated total cost of between $17 billion and $29 billion per year in US hospitals nationwide, alerted administrators, policy makers and clinicians to "the staggering economic impact of medical errors on health system costs and resources," and have led to "an emerging branch of the health services literature" focusing on the economic evaluation of adverse events.

(Hellsten EK, Hanbidge MA et al. (2013) *An Economic Evaluation of Perioperative Adverse Events Associated with Spinal Surgery.* The Spine Journal 13:44-53)

Lee, Konodi et al. from the University of Washington Medical Center and Harborview Medical Center in Seattle, Washington, have just reported a prospective study of complication rates in all patients undergoing cervical spine surgery at these two academic hospitals in 2003-2004. All 582 adult patients meeting the inclusion criteria were followed for complications for a two-year period after surgery with these results:

a) More than 1 in 3 (39%) had complications, severity not given, but for 17 individuals or 3% these resulted in death.

b) Complication rate per organ system was cardiac, 8.4%; pulmonary, 13%; gastrointestinal, 3.9%; neurological, 7.4%; hematological, 10.8%; and urologic complications, 9.2%.

c) The relative risk of death was increased most significantly in the presence of a cardiac or pulmonary complication – respectively 4.32 – to 6.43 – fold.

Accordingly complication rates are high. Lee, Konodi et al. note that there has been little work on risk factors for complications, and that their study represents "a first step towards developing a predictive model for complications after spine surgery. Such a model, which would account for patient demographic background, patient comorbidity data, and invasiveness of surgery, would provide a percent likelihood for complication."

(Lee MJ, Konodi MA et al. (2013) *Risk Factors for Medical Complication After Cervical Spine Surgery.* Spine 38(3):223-228)

Australia – National Cost Estimates of Spinal Disorders

In the past decade an increasing amount of research has looked at both the direct (e.g. healthcare services, hospital costs, medications) and indirect (e.g. lost wages, expenses of

continued on page 8

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function in the cervical spine (cervicogenic headache), this being direct connective tissue bridges between the dura and the muscles and ligaments in the upper cervical spine[13] and good-quality trials reporting the effectiveness of chiropractic management.[14-16]

Cost Effectiveness. Cost-effectiveness and patient satisfaction are areas of growing research and importance to government and private health care plans because of rapidly increasing costs and limited resources for health care. Comprehensive new studies in North America report the cost-effectiveness of chiropractic services compared with medical services with respect to LBP and neck pain[17] and all neuromusculoskeletal (NMS) disorders.[18-20]

In a 2004 study of four years' data from a large California HMO published in the American Medical Association's *Archives of Internal Medicine,* the 700,000 plan members with chiropractic and medical benefits had lower overall costs per person than the 1 million plan members with identical medical benefits – but medical benefits only. The members with a chiropractic benefit elected to choose and substitute chiropractic care for a wide range of 654 ICD-9 codes covering NMS disorders such as spinal pain, rib disorders, neck pain and headache, extremity problems and myalgias and arthralgias. Adding a chiropractic benefit reduced overall healthcare cost.

New Practice Options and Spine Care Pathways. As a result of two developments since the 1990s, the chiropractic profession's greatly strengthened evidence base and the continuing move by mainstream and complementary professions to adopt evidence-based practice, there are now expanded opportunities for practice for chiropractors in all world regions. These are found in different forms of collaborative and fully integrated care in primary practice and hospital settings.

Chiropractors are found in multidisciplinary spine care clinics, for example, in the Middle East (e.g. Saudi Arabia and the United Arab Emirates) and Latin America (e.g. Brazil and Chile). In Denmark chiropractors are fully integrated into spine care hospital departments and their services there and in primary care are viewed by the government and health authorities as mainstream.[21] In the USA chiropractors have been integrated into the federally funded veterans administration and military hospital systems since 2000. Chiropractors were an integral part of the host medical services for each of the Vancouver Winter Olympic Games (2010) and the London Summer Olympic Games (2012).

This new level of integration is currently resulting in chiropractic participation in the development of the new multidisciplinary spine care pathways that will direct spine care in the future.[22,23] The limitation with *clinical guidelines* is that they are frequently ignored by practitioners who continue to follow their traditional patterns of practice. *Spine care pathways* go further in classifying patients into clinical subgroups, directing evidence-based management, providing incentives and structures to support the use and efficient operation of the pathways, and build in on-going measurement of results. Results assessed are not only safety and effectiveness, but also cost-effectiveness and patient satisfaction and the value of care.

E. Achievements and Challenges

Achievements since 2000

1. *International Growth.* Until the 1990s the profession was established mainly in North America, the UK and its Commonwealth countries. Since 2000 it has become established in all world regions for reasons that include new educational programs and legislation to regulate the profession in many countries, and publication of the WHO Guidelines.

2. *Maintenance of Common Standards and Identity.* During this period of international growth the profession has been largely successful in maintaining common international minimum educational standards, a consistent approach to legislative scope of practice and an agreed and common identity within national health care systems.

This has been achieved through now established and well-supported international structures such as the Association of Chiropractic Colleges and the Councils on Chiropractic Education International (education), and the World Federation of Chiropractic and regional bodies such as the European Chiropractors' Union, the Latin-American Federation of Chiropractic and the Asia-Pacific Chiropractic Doctors' Federation (professional direction and representation).

3. *Development of Research Capacity and Output.* Although the profession's research capacity remains modest compared with the medical and allied professions, the past 10 years have seen greatly increased research capacity as a result of more graduates with post-graduate degrees and university appointments, and first significant public funding for research, particularly in Europe and North America. This has resulted in the publication of good-quality clinical research that has provided a much stronger evidence-base supporting chiropractic health care.

4. *Acceptance, Collaboration and Integration.* Historically the profession has grown because of public support, often in the face of opposition or exclusion from national health systems. The past decade has seen the first significant level of collaboration between the chiropractic and medical professions in research, development of clinical guidelines, and practice based upon an increasingly common approach to the prevention and treatment of non-specific spinal pain and disability. This new level of mutual cooperation, both in informal collaboration and formal integration of practices, is seen not only in countries where the profession is long-established but also where it is relatively new.

Challenges

1. *Lack of Funding for Education and Research.* There is still only modest public funding for chiropractic education and research, most of this activity being funded by the profession itself. With respect to education, results are high student debt for those graduating from private colleges, small class sizes in government-funded universities, and delays in the opening of new programs. With respect to research, there is increasing competition for research grants in most countries.

2. *Financial Barriers to Patient Access.* In most countries patients continue to experience financial barriers to access when choosing to consult a chiropractor. This may be because of exclusion from government and private health plans or, where most plans include some coverage for chiropractic services as in North America, because of co-payments and limits

that are more restrictive than for other providers. Achieving parity in this area is a continuing challenge.

3. *More Policy Input and Research.* Chiropractors are beginning to be appointed to senior advisory and policy positions in healthcare systems in some countries, but a current challenge is to build successfully upon recent gains contributing to health policy, public health, and research. This will provide the necessary foundation for more complete integration in health systems in the management of spinal health and wellness. Research priorities include:

• Back Pain – e.g. identifying subgroups that respond to care; back pain and disability as a public health issue in pediatric, working age, and senior populations.

• Service Delivery – e.g. interdisciplinary spine care guidelines and pathways; patient demographics; models of care.

• Value of Preventive Care – e.g. measuring well-being and prevention of injuries and disability in specific populations (e.g. office workers, manual workers, elite athletes) and general populations.

• Cost Effectiveness and Value in Addressing Health System Problems – e.g. ability to reduce cost of spine care and wait times in primary care, for specialist services, and in hospital emergency departments.

4. *Lack of Growth and Availability.* Chiropractic services are well-accepted but difficult to locate in many countries because of small numbers of chiropractors in practice. There is a need for new chiropractic educational programs in all world regions other than in North America. TCR

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continued from page 5

other family members, expense of adverse events) costs of spinal disorders.

What is different about a new study from health economists Schofield, Shrestha et al. from the University of Sydney in Australia is assessment of "the cost to the state from lost income taxation, increased benefits payments, and lost gross domestic product (GDP) as a result of early retirement because of spinal disorders in Australians aged 45-64 years."

They report, not surprisingly, that those who have retired early because of spinal disorders have lower income (79% less), lower/no tax (100% less), and more in government support payments (21,000% more) than those employed full time without a health condition, but then this calculate huge national impact:

- $4.8 billion lost in annual individual earnings,
- $622 million paid in additional welfare payments,
- $497 million lost in taxation revenue for governments, and
- $2.9 billion in lost GDP.

Haldeman and Dagenais, writing an invited commentary on this study in *The Spine Journal,* explain that these Australian figures translate into a cost of $85 billion in the US. They note that most research on the cost of spinal disorders fails to express the true economic burden, and present the example of a 45-year old executive earning $1,000 per day who wakes up one morning with acute LBP. They detail the healthcare and other experiences which then give rise to total costs of $2,188,595, "including $108,345 (5%) in direct healthcare costs and $2,080,250 (95%) in lost productivity."

They welcome the fact that Schofield, Shrestha et al. go the extra distance to consider the impact of lost productivity on government revenue, and suggest that reduction of these economic consequences "may require fundamental change in how (disorders) are managed by spine clinicians currently focused on symptoms."

(Schofield DJ, Shrestha RN et al. (2012) *The Personal and National Costs of Early Retirement because of Spinal Disorders: Impacts on Income, Taxes, and Government Support Payments.* The Spine Journal; 12:1111-1118. Dagenais S, Haldeman S (2012) *Commentary: Laboring to Understand the Economic Impact of Spinal Disorders.* The Spine Journal; 12:1119-1121.)

International Chiropractic Research Network – Please Join Now

Greg Kawchuk, DC, PhD, Vice-Chair, WFC Research Council, Canada

The World Federation of Chiropractic is developing a new global resource for the chiropractic profession – the International Chiropractic Research Network (ICRN) and Database. There are two stages to the project:

- Development of the ICRN using LinkedIn technology – creating a network or community of researchers worldwide investigating scientific questions related to chiropractic. Individual researchers are now invited to join. See below. At this stage the network is not open to the public.
- Second, once the network is well established, providing general access so that the profession has a database of international researchers and their work.

This project is being administered by a Working Group chaired by me, and is supported with generous sponsorship from Standard Process.

All researchers are now invited to join the ICRN. To join, you must have authored at least one publication in a peer-reviewed journal. There is a short online video you can access that explains the process – **https://vimeo.com/46876658**.

How to join:

1. Join LinkedIn
2. Edit your LinkedIn profile to include your photo; a summary of your research (in summary section); publications (enter at least 1 peer-reviewed publication).
3. On the LinkedIn menu bar, go to Groups, search for the International Chiropractic Research Network, and then join.
4. Your request to join the ICRN will be processed shortly.
5. Check on the ICRN regularly to see the latest discussions, papers, job postings, and other activities from our research community!!

Questions/Comments on the ICRN or the registration process: contact me at **greg.kawchuk@ualberta.ca.**

If you are not a researcher, help populate the database by forwarding this notice to those you know in the chiropractic research community.