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The U.S. Health Care Crisis

Abstract

A decade ago, U.S. health administration costs greatly exceeded Canada's. Have the computerization of billing and the adoption of a more business-like approach to care cut administrative costs? For the United States and Canada, the authors calculated the 1999 administrative costs of health insurers, employers' health benefit programs, hospitals, practitioners' offices, nursing homes, and home care agencies; they analyzed published data, surveys of physicians, employment data, and detailed cost reports filed by hospitals, nursing homes, and home care agencies; they used census surveys to explore time trends in administrative employment in health care settings. Health administration costs totaled at least \$294.3 billion, \$1,059 per capita, in the United States vs. \$9.4 billion, \$307 per capita, in Canada. After exclusions, health administration accounted for 31.0 percent of U.S. health expenditures vs. 16.7 percent of Canadian. Canada's national health insurance program had an overhead of 1.3 percent, but overhead among Canada's private insurers was higher than in the U.S.: 13.2 vs. 11.7 percent. Providers' administrative costs were far lower in Canada. Between 1969 and 1999 administrative workers' share of the U.S. health labor force grew from 18.2 to 27.3 percent; in Canada it grew from 16.0 percent in 1971 to 19.1 percent in 1996. Reducing U.S. administrative costs to Canadian levels would save at least \$209 billion annually, enough to fund universal coverage.

HEALTH CARE ADMINISTRATION IN THE UNITED STATES AND CANADA: MICROMANAGEMENT, MACRO COSTS
Steffie Woolhandler, Terry Campbell, and David U. Himmelstein International Journal of Health Services, Volume 34, Number 1, Pages 65-78, 2004

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Wall Paper Or Toilet Paper

In the last issue of the ACCC Newsletter I discussed how to conduct a search for the literature. In this article I'll deal with the next step in evidence based care - evaluation of the quality of the papers retrieved.

Having now completed your search, the next task is to determine the quality of the papers you have received (wall paper or toilet paper). There are many variables that might lead you to believe that this is a very difficult or relatively easy process.

Self assessment

If one reads the textbook Evidence-Based Medicine (1) (which I highly recommend) the last chapter is titled, "Evaluation." What is to be evaluated is oneself and in particular ones skill and consistency in using the process called evidence based practice. It reminds me of the phrase associated with former NYC Mayor Ed Koch, "how my doing?" There is a problem with self assessment as Kruger and Dunning (2) found out. People who are unskilled at some task lack the ability to determine that they are unskilled. They called this the metacognitive skill. Thus, they have an over-inflated self-assessment of their ability. This might lead the cynic to opine that the only person you can believe is the person who says that they do not know.

I discovered how over-inflated self-assessments can be a big problem. Over ten years ago I made a recommendation to the president of a chiropractic organization that the organization should have a panel of experts evaluate the validity of the organization's press releases. I

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was told in no uncertain terms that “we are chiropractors, we can do that.”

About month later that organization put out a press release that touted the RAND report (3) as validation for chiropractic when in fact it was about spinal manipulation not chiropractic. I then called the president and informed him that Dr. Shekelle (the lead author of the RAND) report had found the propensity of chiropractors to misconstrue the report very disturbing. (4) The embarrassment still did not motivate the organization to tap into some of the academic minds. Subsequent studies have confirmed that chiropractic colleges, organizations and research organizations have made unsubstantiated claims about chiropractic. (5, 6)

Validity of critical evaluation of the literature

Assuming that you accept my thesis that all of us, (myself included) suffer from over inflated self assessments you might decide to only use pre-evaluated literature sources such as Cochrane Collaboration, or ACP Journal Club. This might work for those domains that have been subjected to outside evaluation but what about a new study that you decide to read before the “experts” get to tear it apart. I would hope you would decide that you will try to study the process of critical evaluation of the literature so that you can “tear it apart.” However, I have another caveat. Juni et al (7) found that using standardized methods of literature evaluation can result in diametrically opposed judgments of how robust a study is. The pessimist might just throw their hands up in disgust and lament I can’t do the evaluation and neither can anyone else. Still we can’t just sit back and say the literature doesn’t matter. Nor can we judge a paper based upon our bias, if it finds something good about chiropractic then the paper must be good. An evaluation must be done but how to do it?

Critical evaluation

There is no way in a column as brief as this is that I could hope to really teach the process of critical evaluation so instead I am going to suggest some

books and other sources for self directed education.

Again as I did at the beginning of this article I recommend Evidence-Based Medicine (1). CMCC’s Carol Hagino’s (8) textbook is specific to chiropractic. As opposed to Straus, Hagino has reproductions of actual published research. The papers she uses are germane to the practice of chiropractic with questions used to evaluate these papers and the answers at the end of each chapter. There are many web based sources of information on critical evaluation.

- The user guides were papers originally published in JAMA - <http://www.cche.net/usersguides/main.asp>
- As might be expected, Cochrane Collaboration has information on how to do a systematic review - <http://www.cochrane.org/resources/handbook/index.htm>
- The Centre for Evidence Based Medicine has a some practice exercises in critical evaluation - <http://www.cebm.utoronto.ca/practise/ca/> - <http://www.wisdomnet.co.uk/ebpsem2.html>

1. Straus SE, Richardson WS, Glasziou P, Haynes RB. Evidence-based medicine: How to practice and teach EBM. 3rd ed. New York: Elsevier Churchill Livingstone; 2005.
2. Kruger J, Dunning D. Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *J Pers Sociol Psychol.* 1999;77(6):1121-34.
3. Shekelle PG, Adams AH, Chassin MR, Hurwitz EL, Phillips RB, Brook RH. The Appropriateness of Spinal Manipulation for Low-Back Pain: Indications and Ratings by a Multidisciplinary Expert Panel R-4025/2-CCR/FCER. Santa Monica, CA: RAND Corp; 1991.
4. Shekelle PG. Misinterpretation of RAND Study Undermines Chiropractic's Credibility: RAND Misquoted. *J Am Chiropr Assoc.* 1993;30(7):59-63.
5. Sikorski D, Grod JP. Unsubstantiated web site claims of chiropractic colleges in Canada and the United States. *J Chiropr Ed.* 2003;17(2):113-19.
6. Grod JP, Sikorski D, Keating JC, Jr. Unsubstantiated claims in patient brochures from the largest state, provincial, and national chiropractic associations and research agencies. *J Manipulative Physiol Ther.* 2001 Oct;24(8):514-9.
7. Juni P, Witschi A, Bloch R, Egger M. The hazards of scoring the quality of clinical trials for meta-analysis [see comments]. *JAMA.*

1999;282(11):1054-60.

8. Hagino C. How to appraise research: A guide for chiropractic students and practitioners. London: Churchill Livingstone; 2003.

Entrez

Some new features have been added to Entrez. You are probably asking what is Entrez. Entrez the software that one uses to search PubMed and other databases,

The first is the ability to do searches via hand-held web enabled devices (Palm, Pocket PC, phones etc.). Pubmed for Handhelds also has a built in PICO search with fields for each part of the acronym and a few others. <http://pubmedhh.nlm.nih.gov/nlm/>

One need not use a handheld to use this PICO feature. While I cannot yet find this as part of the standard Entrez interface I suspect that will appear soon.

Another feature of the Pubmed for Handhelds is the ability to see abstracts for a single journal. In a drop down menu there are listed the “big” medical journals and one can put in the journal name for other journals that are in what is called the “core collection”. Sorry no chiropractic journals in that collection

There is also software that can be downloaded (for free) for handhelds to ease searching with those devices. See: <http://mdot.nlm.nih.gov/proj/mdot/mdot.php>

Another new feature is the ability to search the CAM literature only. If one clicks on Limits and the drop down menu that says subsets one of the choices is Complementary Medicine

My favorite of the new features is My NCBI. NCBI is the National Center for Biotechnical Information, the people that wrote and maintain Entrez. My NCBI allows one to save searches, have them run on a regular basis with the results sent to you. My favorite feature is that one can add tabs to the Entrez search window to allow one to quickly look at certain limits of ones

search. I have mine set up to show me clinical trials, reviews and free full text. Thus if I want to get some information quickly I can see what is available for free. These are great new features and I suggest giving them a try. For anyone who tells me that the government cannot do something right I say look at Entrez, a great search engine that is only getting better.

From the I could have predicted that department

The fact that the outcome of some research is predictable does not make the study valueless or unworthy of having ever been conducted. Anyone who has interviewed a patient about their chiropractic care, whether for an IME or just asking a new patient about previous chiropractic care would agree that patient's descriptions of what was actually done is not very illuminating and at times seems almost fanciful or surreal.

Lewkovich and Haneline conducted a very important study that documents what we all knew but did not have the evidence for; that patients only poorly recall what manipulative procedure was performed on them. Ninety-four patients in a private practice were asked within ten minutes of receiving a cervical manipulation to fill out a questionnaire about that manipulative procedure they had just experienced. Over 70% of the patients reported that the manipulation involved rotation when in fact lateral flexion without rotation (a lateral break) was the treatment provided. There was no association between age, education or number of previous cervical manipulations and the inaccurate reporting of the method of manipulation.

Again poor patient recall of their treatment is not particularly surprising to the practicing DC; what is surprising was that the patients could not recall what position their body was in during the manipulation within ten minutes of experiencing the treatment. In motor learning it is sometimes said that some people are motor morons.

While that appellation might not be kind, it appears to be valid when it comes to the laity's ability to report immediately after the fact how their cervical spine was manipulated.

From a medicolegal stand point this is a very important study. Were a patient claiming that they were injured by a chiropractor because of a rotational manipulation of the cervical spine and the doctor claims that rotation was not done. This study might be dispositive for the defense.

Lewkovich GN, Haneline MT. Patient recall of the mechanics of cervical spine manipulation. *J Manipulative Physiol Ther.* 2005 Nov-Dec;28(9):708-12.

Low Back Pain Epidemiology

One still hears that low back pain is a self limiting condition. I often suspect that those who say this have not actually had much clinical experience with those suffering with LBP. Cassidy et al present one year follow-up data from a random sample of the population of the province of Saskatchewan. This is a statistically dense paper and thus not easily summarized. Simply put, the study shows that LBP is actually very common with 18.6% of the population affected. However 28.7% of cases were of a recurrent nature but 80% of those cases were mild. It is chronic problem for adults with 40.2% having persistent LBP. Thus when someone says LBP is self limiting, show them this paper. Cassidy JD, Cote P, Carroll LJ, Kristman V. Incidence and course of low back pain episodes in the general population. *Spine.* 2005 Dec 15;30(24):2817-23.

Wasiak et al have looked at the costs associated with reoccurrence of LBP (Cassidy et al did not look at any economic parameters). This study looked at worker's compensation claims in New Hampshire. A reoccurrence of health care was defined as even a single related office visit after a minimum 45 day gap in treatment. A recurrence of work disability was defined as a resumption in payments for total work

disability after a minimum 3 day break in payments. The rate of reoccurrence of health care usage was 33.9% while work disability recurrence rate was only 17.2%. A recurrence of both was seen in 20.7% while most people with a recurrence of disability sought health care (13.1%). But as one would anticipate many more sought health care (20.7%) who did not also have disability. Very few with recurrent disability did not seek health care (4.1%). The median indemnity and health care costs for those with recurrent health care and/or disability was higher than for those without recurrence. However the mean indemnity, health care costs and disability days were not that different in the recurrence of disability group.

Thus these data showed substantial amount of skewness implying that the costs were driven up by outliers. The authors note that their findings are at odds with other studies that have suggested that as the condition becomes chronic the workers come to sort of suffer in silence. Wasiak say that their data shows this not to be true and that recurrences are usually longer and more costly. With 84% of the total costs for those with recurrent disability coming from both indemnity and health care expenditures coming during recurrent bouts of LBP.

Wasiak R, Kim J, Pransky G. Work disability and costs caused by recurrence of low back pain: longer and more costly than in first episodes. *Spine.* 2006 Jan 15;31(2):219-25.

Fear Avoidance Beliefs

At this point in time most chiropractors know that patients who exhibit fear avoidance beliefs are more likely to progress to chronic pain than to recovery. Having identified that a patient has significance fear avoidance beliefs, the question is how to modify this behavior. One method is to educate the patient that hurt is not harm. De Jong et al investigated the effect of adding to education one of two different treatment methods on fear avoidance behaviors. One treatment was

called graded exposure in vivo which provided individually developed exposures to tasks that evoke fear in the subjects. The other treatment, an operant graded activity program, increased healthy behaviors in particular activity while decreasing pain behaviors, inactivity.

Their first finding was that a single session of education was very effective in reducing fear of movement/ (re) injury, pain catastrophizing, and fear of pain. However education was not effective in reducing self rated problems with ADLs. Thus, education changes beliefs but not behaviors. Only graded exposure was effective in changing the fear avoidance behaviors. One important caveat about this study; it was very small only 6 subjects!

De Jong JR, Vlaeyen JW, Onghena P, Goossens ME, Geilen M, Mulder H. Fear of movement/ (re)injury in chronic low back pain: education or exposure in vivo as mediator to fear reduction? *Clin J Pain*. 2005 Jan-Feb;21(1):9-17; discussion 69-72.

Thoracic Manipulation For Cervical Pain

Manipulation of the thoracic spine appears to be the real orphan from a research perspective, there are so few studies looking at thoracic manipulation. There are even fewer studies of the effects of manipulation in one spinal region on pain in another region. This study investigated the effectiveness of thoracic manipulation on cervical pain.

This study was conducted by physical therapists. Their method of HVLA manipulation was a supine thrust on segments that the therapist palpated as restricted. There is an interesting discussion on the lack of specificity of palpation and of manipulation. Two attempts were made to cause a cavitation of each restricted segment. Placebo manipulation was conducted in a similar manner but without any HVLA. Subjects had to have been naïve to manipulation and the evaluators were blinded to the treatment given.

This study only investigated immediate changes in symptoms. The manipulation group experienced an improvement in pain (measured with VAS) of 15.5 mm on average compared to a change of 4.2mm in the placebo group. Cleland et al hypothesize how thoracic manipulation aids cervical pain but their rationale for using this procedure was to avoid the controversy of using cervical manipulation. Further research is planned.

Cleland JA, Childs JD, McRae M, Palmer JA, Stowell T. Immediate effects of thoracic manipulation in patients with neck pain: a randomized clinical trial. *Man Ther*. 2005 May;10(2):127-35.

Comparing Techniques

One problem that my co-investigators and I found when trying to find the literature that compares different techniques is that it was non-existent. (1) In fact in letters to the editor we complained about the rhetoric without the data. (2, 3) Finally, our challenge has been met with more than a pilot study in Shearar et al's (4) direct comparison of the Activator instrument and side posture HVLA manipulation for the treatment of sacroiliac joint syndrome. This study had 60 subjects so much larger than any of the previous studies but only four total treatments to subjects in each group. There were statistically significant improvements in both groups that were not different between groups. Of course lacking a control treatment there is no way to determine if the results are due to natural history of both groups. However, this is like I said the first reasonable sized study to compare two different chiropractic treatment methods. I know that other comparison studies are currently underway and the profession is only benefited by more data which can allow one to make an informed decision about which treatment method one should employ.

1. Cooperstein R, Perle SM, Gatterman MI, Lantz C, Schneider MJ. Chiropractic technique procedures for specific low back conditions: Characterizing the literature. *J Manipulative Physiol Ther*. 2001 Jul-Aug;24(6):407-24.
2. Perle SM, Cooperstein R, Lantz C, Schneider MJ. Rating specific chiropractic technique procedures for common low back conditions. *J Manipu-*

lative Physiol Ther. 2003;26(1):60-2.
3. Cooperstein R, Lantz C, Perle SM, Schneider MJ. Growing Pains? We Don't Think So! *Dynamic Chiropractic*. 2002;20(19):32-5.
4. Shearar KA, Colloca CJ, White HL. A randomized clinical trial of manual versus mechanical force manipulation in the treatment of sacroiliac joint syndrome. *J Manipulative Physiol Ther*. 2005 Sep;28(7):493-501.

Vertebral Artery

There has been a recent flurry of papers concerning vertebral artery injury from cervical manipulation. Thiel and Rix (1) have done an excellent job of making the case that premanipulative provocative arterial testing should be abandoned. Their argument is that these tests have such low sensitivity that they are useless in all but those at risk. However, in those at risk for a dissection the testing they suggest might precipitate the dissection. Some may not know this as it seems to have been done without significant fanfare but the chief executive officers of the Association of Chiropractic Colleges affiliated chiropractic colleges have voted to discontinue teaching these maneuvers in their respective colleges.

Pezzini who has been discussed in the newsletter before concerning homocysteinemia has new data of import to chiropractors. In their new study Pezzini et al (2) have found that a history of a migraine without aura shows increased risk for spontaneous cervical artery dissection. Thus, a patient who may have appeared to develop a vertebral artery dissection as a result of chiropractic care may in fact have just presented to the chiropractor with symptoms of an unrecognized early stage dissection.

1. Thiel H, Rix G. Is it time to stop functional pre-manipulation testing of the cervical spine? *Man Ther*. 2005 May;10(2):154-8.
2. Pezzini A, Granella F, Grassi M, Bertolino C, Del Zotto E, Immovilli P, et al. History of migraine and the risk of spontaneous cervical artery dissection. *Cephalalgia*. 2005 Aug;25(8):575-80.



Evidence Based?

Given the ACCC's acceptance of evidence based methods in chiropractic I would like to recommend that everyone read Villanueva-Russell's (1) excellent paper on the topic.

On the other hand McCluskey and Lovarini (2) found that changes in actual practice behavior do not result from education on evidence based practice amongst occupational therapists. Schwartz (3) found that medical students also do not necessarily follow the evidence after learning evidence based practice. These might be manifestations of what Kruger and Dunning (4) found; that those who are unskilled lack the metacognitive ability to know that they do not know. My co-investigator and I (5) found that it can be a positive for students to learn that a task they thought was easy and they were skilled at is instead difficult and that they are not skilled after all.

One wonders if the attempts to get the profession to move towards a more evidence based approach is a fool's errand. However, I for one would rather to continue what may be a quixotic quest than to accept the *status quo ante*.

1. Villanueva-Russell Y. Evidence-based medicine and its implications for the profession of chiropractic. *Soc Sci Med*. 2005 Feb;60(3):545-61.
2. McCluskey A, Lovarini M. Providing education on evidence-based practice improved knowledge but did not change behaviour: A before and after study. *BMC Med Educ*. 2005 Dec 19;5(1):40.
3. Schwartz A, Hupert J. Medical students' application of published evidence: randomised trial. *Bmj*. 2003 Mar 8;326(7388):536-8.
4. Kruger J, Dunning D. Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *J Pers Social Psychol*. 1999;77(6):1121-34.
5. Perle SM, Speck AM. The Effects of the Mock Technique System: Teaching Students Technique Evaluation. *J Chiropr Ed*. 1999;13(2):100-9.



Reasoning

Along the same vein Fagerlin et al (1) investigated ways to reduce draw of anecdotal reasoning on laypeople's health care decisions. They found that presenting effectiveness data using pictographs are most effective at reducing the influence of anecdotal reasoning.

Because of copyright considerations cannot reproduce their pictographs here but I can give a similar example that I use in my classes on evidence based health care. These pictographs are from data I extracted and performed calculations on from Hides et al (2). Figure 1 shows the number of patients who would have a reoccurrence of their lower back pain if left untreated. In Figure 2 we see the same sample this time after learning to do abdominal hollowing. Those who statistically would not have had a reoccurrence are still shown as happy. However those whose reoccurrence has been prevented by the intervention (Better with Rx) are shown in the lighter happy face.

Images like these are what Fagerlin found useful. Likewise, I believe that they get across the point better (to both chiropractors and chiropractic students) than just saying that the abdominal hollowing has an NNT of 2 (which is what I calculated from Hides data). If you are interested in being able to create these kind of pictographs to use in patient education, the software is free and can be found here: <http://www.nntonline.net/>

1. Fagerlin A, Wang C, Ubel PA. Reducing the influence of anecdotal reasoning on people's health care decisions: is a picture worth a thousand statistics? *Med Decis Making*. 2005 Jul-Aug;25(4):398-405.
2. Hides JA, Jull GA, Richardson CA. Long-term effects of specific stabilizing exercises for first-episode low back pain. *Spine* 2001;26(11):E243-8.

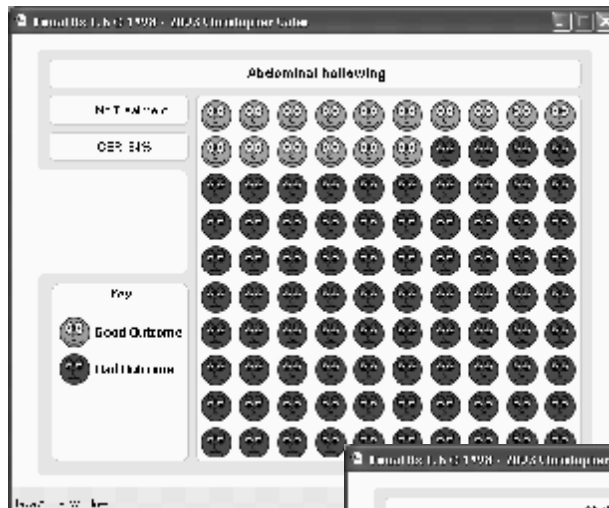
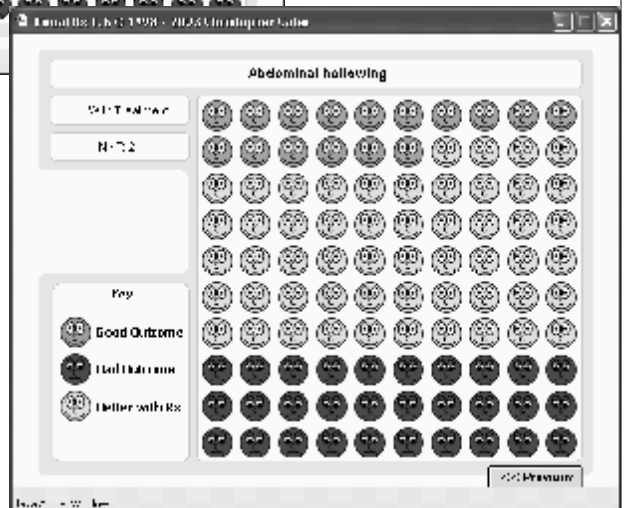
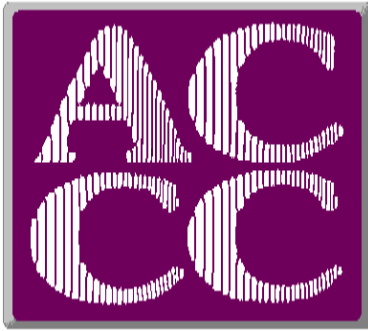


Figure 1
Reoccurrence of low back pain without exercise

Figure 2
Reoccurrence of low back pain with exercise





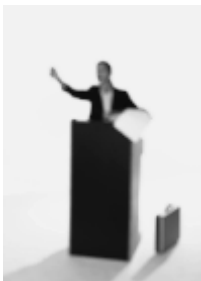
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