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Criminalisation of Malpractice

Holbrook J. The criminalisation of fatal medical mistakes. *Bmj* 2003;327 (7424):1118-9.

Holbrook is a barrister (lawyer) in England. His editorial deals with the apparent rise in cases where medical malpractice cases are treated as criminal, as opposed to civil causes of action. According to Holbrook the standard for determining whether negligence becomes medical homicide in the U.K. is if the negligence rises to the level that the accused shows disregard for the life and safety of the patient. Thus, as Holbrook continues, an accident which occurs while one is attempting to help a patient should not rise to this level. However, it appears that more and more cases are being treated as if the doctor has wantonly disregarded the safety of the patient. According to Van Grunsven (1) this trend seen in England is also occurring in United States.

This is a disturbing trend as at one time physicians were thought to be immune from criminal punishment for fatal mistakes and clinical negligence. (2) It is conceivable that members of the ACCC might be called upon as expert witnesses in criminal courts in addition to the usual civil courtroom. Keep this in mind when a prosecutor or defendant's attorney calls.

1. Van Grunsven PR. Medical malpractice or criminal mistake? - an analysis of past and current criminal prosecutions for clinical mistakes and fatal errors. *DePaul J Health Care Law* 1997;2:48-9

2. Bell AT. Criminal law/medical malpractice: Court strikes down murder conviction of physician where inappropriate care led to patient's death. *J Law Med Ethics* 2000;28(2):194.



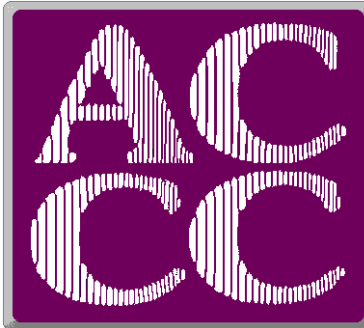
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PICO is big when searching the literature

Evidence-based practice is a combination of the judicious use of the best external evidence, doctor's expertise and patient's wishes and desires. External evidence means retrieving and evaluating published scientific studies. The first part in finding the evidence is to formulate a searchable question that one will use when searching an appropriate database.

What question one constructs depends on if one is searching for what Sackett et al (1) call "background" information or "foreground" information. Background information is general information about a condition. Background questions are more common when one is newer in practice. However, there are always times throughout a professional career where background information is needed. For example, a patient reports that they were just diagnosed with Gaucher's Disease and of the innumerable conditions that one learns in chiropractic college this is one whose details may not be readily available and demands a background question.

A background question has two basic parts:

1. Who, what, where, when, how, or why and a verb. 2. The disorder or some aspect of it. Using the Gaucher's Disease example, an appropriate background question might be: What effect does Gaucher's Disease have upon the joints? Or what treatments are typically used with Gaucher's Disease?

"Foreground" information is more detailed information that should inform ones clinical decisions. Generally, as one is in practice a longer time the greater the percentage of questions one will search will be of the foreground type. A foreground question for the example above might be: For a 50 year old female with Gaucher's Disease is chiropractic manipulation a better treatment for the alleviation of joint pain than NSAIDs?

(Continued from page 1) **RISK FACTORS**

Questions of this type, foreground questions, are commonly comprised of four parts. We are reminded of the four parts of a foreground question with the acronym PICO. PICO stands for Patient, Intervention, Comparison and Outcome.

P - Patient

The question should start with some general information about the type of patient. How detailed the description of the patient needs to be is dependent upon the amount of literature there is on the intervention in question. Thus, a very well researched condition or diagnostic method might mandate one define the patient's gender, age group, or occupation. For example if one were searching about spondylolysis in an adolescent athlete, one would want to include details such as, adolescent and athlete when constructing the searchable question.

I - Intervention

The most obvious meaning of intervention is a treatment. However, for the purposes of asking a searchable clinical question there is also a much broader meaning for this word. Intervention can mean diagnostic test, prognostic factor, a patient perception even the exposure to some environmental factor.

C - Comparison (if relevant)

The comparison is an alternative intervention. Keep in mind that one does not always need to have a comparison intervention in mind when developing a searchable question. Examples might be to compare the diagnostic utility of MRI vs. SPECT in diagnosing a femoral stress fracture.

O - Outcome

The outcome is what one wants the intervention to do. Obviously when the intervention is a diagnosis the outcome is about the reliability or validity of the test. With prognosis or treatment as the intervention, the outcome would be some specific morbidity.

Examples of PICO style clinical questions - with the part of PICO in parentheses

1. In adolescent athletes with spondylolysis (P) does rest for six weeks (I) reduce SPECT hot spots (O)?
2. In adults with whiplash associated disorder (P) does the timing of initial symptoms (I) predict prognosis (O)?
3. In athletes (P) does stretching (I) in preventing athletic injuries (O)?
4. In adults with neck pain (P) does manipulation alone (I) or manipulation combined with exercise (C) result greater long as a reduction in pain (O)?

Finding Searchable Clinical Questions

Given both the continual advancement of the scientific knowledge base and everyone's entropy of knowledge the reality of clinical practice is that there are more stimuli for searchable clinical questions than one ever has the time of the actually search. In fact, there may be so many questions that we come to just accept our current knowledge as is and have suppressed the urge we had as students to actually ask the question. But continual clinical improvement

means one needs to create these questions and I believe in particular question those "facts" we are most certain of. A good example of the later is the importance of stretching in preventing athletic injuries. Systematic reviews (2, 3) have consistently found that stretching on the average is ineffective in preventing injuries.

In particular areas where questions arise are the following:

1. Looking for the etiology of disorders
2. What the meaning of clinical findings are

3. Determining the validity and reliability of diagnostic tests
4. What are the clinical manifestations of a disorder
5. Determining the likely differential diagnoses
6. How to estimate a prognosis.
7. Determining what is the best course of treatment
8. Finding out how to prevent significant disease or recurrence of a disorder just treated.
9. Finally, self improvement. How to keep up to date and improve ones clinical skills.

1. Sackett DL, Straus SE, Richardson WS, Rosenberg W, Haynes RB. Evidence-based medicine: How to practice and teach ebm. 2nd ed. New York: Churchill Livingstone; 2000.

2. Herbert RD, Gabriel M. Effects of stretching before and after exercising on muscle soreness and risk of injury: Systematic review. *Bmj* 2002;325(7362):468.

3. Weldon SM, Hill RH. The efficacy of stretching for prevention of exercise-related injury: A systematic review of the literature. *Man Ther* 2003;8(3):141-50.



Systematic reviews have consistently found that stretching on the average is ineffective in preventing injuries.

Hypersensitivity in Chronic Pain

Banic B, Petersen-Felix S, Andersen OK, Radanov BP, Villiger PM, Arndt-Nielsen L, et al. Evidence for spinal cord hypersensitivity in chronic pain after whiplash injury and in fibromyalgia. *Pain* 2004;107(1-2):7-15.

Previous research has suggested that cases with chronic pain have essentially mediated hypersensitivity. The problem

with this type of research is that it is based on patient's subjective assessment of pain levels. Banic et al. have conducted an interesting experiment to test, in an objective way, whether chronic pain patients have spinal cord hypersensitivity sensitivity. This study uses a procedure involving what is called nociceptive withdrawal reflex, which is a spinal reflex in the lower extremity that can be elicited by stimulation of sensory nerves. The reflex is measured by determining the minimal intensity of the stimulus that is needed to elicit the reflex which is measured by the evoked potential in the biceps femoris using EMG. This method can be used an electrophysiological measure of the excitability of spinal neurons.

The study is a sample of people with chronic neck pain after whiplash and fibromyalgia patients. The conditions were selected because the pains involved were not specific to the area tested. In fact those with neck pain obviously did not have pain in the leg. The study found that there was hypersensitivity in spinal cord from stimulation in the leg even though the whiplash patients did not have leg pain, although the fibromyalgia patients may have. The authors contend that since there is spinal cord hypersensitivity in these two very different pain syndromes that it is likely that spinal cord hypersensitivity may be seen in other musculoskeletal pain states.

Studies in animals have shown that tissue damage induces plasticity in the spinal cord which results in hypersensitivity to peripheral stimulation. This might explain why the hypersensitivity occurred in their subjects. Especially given the fact that the injured tissues were distant from the site of pain. From animal studies it is known that inflammation producing cyclooxygenase in the spinal cord ultimately leads to spinal hyperexcitability. Interestingly, the cyclooxygenase is not localized to the area in the cord near the injury.

The importance of the study is that it provides evidence that people who have chronic pain may have hypersensitivity to pain elsewhere in the body. The major problem with the study is

that it is possible for malingerers to use the knowledge obtained from the study to imply greater impairment. On the other hand, the nociceptive withdrawal reflex if it is used in clinical practice can confirm that the patient has cord hyperexcitability and thus probably is suffering from a chronic pain syndrome.

1. Sackett DL, Straus SE, Richardson WS, Rosenberg W, Haynes RB. Evidence-based medicine: How to practice and teach ebm. 2nd ed. New York: Churchill Livingstone; 2000.
2. Herbert RD, Gabriel M. Effects of stretching before and after exercising on muscle soreness and risk of injury: Systematic review. *Bmj* 2002;325(7362):468.
3. Weldon SM, Hill RH. The efficacy of stretching for prevention of exercise-related injury: A systematic review of the literature. *Man Ther* 2003;8(3):141-50.



Whiplash

Sterling M, Kenardy J, Jull G, Vicenzino B. The development of psychological changes following whiplash injury. *Pain* 2003;106(3):481-9.

There have been various theories suggested about psychological impact of whiplash. Given our knowledge of fear avoidance beliefs in chronic lower back pain, it is reasonable to assume a similar process occurs in whiplash. However to date there are no data that document this.

Sterling et al in this prospective study have attempted to determine what the psychological sequella of whiplash are. Subjects in this study were stratified after the fact into three groups those that recovered, those with mild continuing symptoms and those with moderate to severe continuing symptoms. At intake, two months, three months and six months post injury the following psychological instruments were used: the General Health Questionnaire 28 (which is used to measure emotional distress), the TAMPA Scale of Kinesophobia (which is used to measure fear of reinjury due to movement), the Impact of Events Scale (which is used to meas-

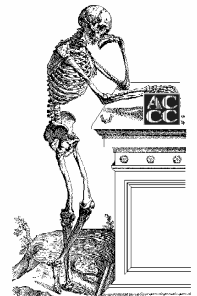
ure current stress related to a specific life events) and SF 36 (measuring general health). The Neck Disability Index (NDI) and Visual Analog Scale (VAS) were used to determine the degree of symptoms associated with the whiplash.

The study found that despite the patient's outcome, all subjects exhibited some degree of psychological distress. However, in all measures but the TAMPA scale the moderate to severe group had higher scores at intake. This is an interesting finding as the degree of fear avoidance is not necessarily related to the severity of the condition at discharge. Thus neck pain patients did not exhibit the same type of fear avoidance behaviors as seen in low back pain patients.

Further, psychological distress decreased in all whiplash groups over the course of the study. The moderate to severe group, however, maintained and normal scores on that the GHQ 28 and SF 36 at the conclusion of the study. In addition this group is the only group which showed elevated scores on IES questionnaire. And elevated IES score suggests some measure of post-traumatic stress disorder. Although these patients do exhibit stress disorder, it does decrease as their condition improves.

... psychological consult might be advantageous in patients with whiplash associated disorders ...

The results of the study suggest that psychological consult might be advantageous in patients with whiplash associated disorders early in the treatment as there is no good prognostic indicator of the eventual development of stress disorders.



Back Pain Trends Costs and Utilization

Luo X, Pietrobon R, Sun SX, Liu GG, Hey L. Estimates and patterns of direct health care expenditures among individuals with back pain in the United States. *Spine* 2004;29(1):79-86.

Feuerstein M, Marcus SC, Huang GD. National trends in nonoperative care for nonspecific back pain. *Spine J* 2004;4(1):56-63.

Lou et al noted that the previous estimates of costs for back pain are traced back to data from 1977 in 1984 and 1994 adjusted estimates were made based on this 1977 data. Thus, the validity of these estimates is dependent on the assumptions made in making the estimates. Hence, this 1998 data are the most current available to determine cost of back pain to the U.S. economy. With total health care expenditures reaching \$1.2 trillion and accounting for 13.6 of the gross domestic product, understanding the proportion of this astronomical sum that comes from back pain is important for health policy decisions.

Both of these studies use the 1998 Medical Expenditure Panel Survey (MEPS). MEPS is a survey conducted by AHRQ investigating various aspects of healthcare expenditures. There were a total of 32,636 participants in the study, of those 2,120 reported back pain sometime during 1998. Given the fact that this is a sampling survey these individuals ultimately represent a sample of 25.9 million adults having back pain in United States in 1998.

Lou et al identified individuals with back pain by looking for ICD 9 codes. The codes included more than 720, 721, 722, 723, 724, 805, 806, 839, 846, and 847. Feuerstein et al back pain was defined as those having ICD codes 724, 846 and 847. This difference and the

definition of what back pain is a may account for some of the startling findings found in Feuerstein et al.

Feuerstein et al compared data from this 1998 MEPS survey to 1987 data from the National Medical Expenditure Survey (NMES). The startling findings of this comparison are many in particular for doctors of chiropractic there was a significant decrease in percent of patients using chiropractic care over this decade. In 1987 40.5% of respondents used chiropractic care, while in 1997 the chiropractic utilization decreased to 30.6%! Feuerstein et al noted these are surprising results given the fact that previous studies shown that there are higher levels of patient satisfaction associate with chiropractic care and compared to allopathic care. Additionally, a recent survey showed that

**The startling findings ...
there was a significant decrease in percent of patients using chiropractic care over this decade.**

over 50% of those surveyed found chiropractic treatment "very helpful" for low back pain. The authors suggest that these findings mean that patient perception of effectiveness is not the contributor to the observed decline in chiropractic utilization. Other reasons suggested for the decrease in chiropractic care is an increased perception by physicians, health care organizations and patients that physical therapy is more effective for the management of nonspecific back pain. The authors admit that there are other potential reasons for this trend which cannot be determined from the data presented (e.g. perceived credibility of providers to employers and carriers, limitations on insurance reimbursement and various forms of disability compensation).

With the decrease in chiropractic use there was a concomitant increase in both the use of physical therapy and medical doctors in the treatment back pain. Physical therapy use went from 4.95% in 1987 to 9.33% in 1997. The vast majority of chiropractic's market

share went to medical management which went from 63.97% to 73.73 %. And likewise there is a significant increase in prescription drug use going from 2.0% to 3.9%. Increases were seen in the use of acetaminophen NSAIDs, muscle relaxants, narcotic analgesics and non narcotic analgesics. The other findings of interest include the fact that there was a significant decline in utilization of x-rays in the decade in question from 32.54 % to 21.54%. On the other hand there was a nonsignificant increase in utilization of MR/CT during the decade.

Lou et al found that 25.9 million adults reported back pain sometime 1998. The most prevalent diagnosis for low back was ICD9 724 which includes spinal stenosis, lumbago, sciatica and other unspecified back disorders. This accounted for 59.5% of all diagnoses. The next most common diagnosis was ICD9 847 (back sprains and strains) at 16.%, 14.2 % for ICD9 722 (disc disorders) and other disorders of the cervical spine, ICD9 723 with 9.6%. Expenditures for lower back pain were \$3498 compared with \$2177 for individuals without back pain. Thus, back pain suffers had on average 1.6 times higher expenditures than those without back pain. As has been determined many times in the past, it is a minority that accounts for the majority of costs. Out-patient expenditures for the top 10% accounted for 86.6% of all expenditure, while the top 25% accounted for 99.6%.



Exercise and LBP

Rainville J, Hartigan C, Martinez E, Limke J, Jouve C, Finno M. Exercise as a treatment for chronic low back pain. *Spine J* 2004;4(1):106-15.

In reading this paper I wondered how I would comment on it given the breadth of the review. Ultimately I am left with little to say other than recommend that everyone obtain a copy of this review. It should be noted that this is not a systematic review with effect sizes but appears to be a comprehensive review of the state of knowledge about exercise

and low back pain. The author's abstract follows:

Exercise is a widely prescribed treatment for chronic low back pain, with demonstrated effectiveness for improving function and work. The goal of this article is to review several key aspects about the safety and efficacy of exercise that may help clinicians understand its utility in treating chronic back pain.



A computerized literature search of MEDLINE was conducted using "exercise," "fitness," "back pain," "backache" and "rehabilitation" as search words. Identified abstracts were scanned, and useful articles were acquired for further review. Additional references were acquired through the personal collections of research papers possessed by the authors and by reviewing prior review articles on this subject. These final papers were scrutinized for data relevant to the key aspects about exercise covered in this article. For people with acute, subacute or chronic low back pain, there is no evidence that exercise increases the risk of additional back problems or work disability. To the contrary, current medical literature suggests that exercise has either a neutral effect or may slightly reduce risk of future back injuries. Exercise can be prescribed for patients with chronic low back pain with three distinct goals. The first and most obvious goal is to improve or eliminate impairments in back flexibility and strength, and improve performance of endurance activities. There is a large body of evidence confirming that this goal can be accomplished for a majority of patients with chronic low back pain. The second goal of exercise is to reduce the intensity of back pain. Most studies of exercise have noted overall reduction in back pain intensity that ranges from 10% to 50% after exercise treatment. The third goal of exercise is to reduce back pain-related disability through a process of desensitization of fears and concerns, altering pain attitudes and beliefs and improving affect. The mechanisms through which exercise can accomplish this goal have been the subject of substantial research. Exercise is safe for individuals with back

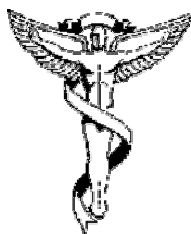
pain, because it does not increase the risk of future back injuries or work absence. Substantial evidence exists supporting the use of exercise as a therapeutic tool to improve impairments in back flexibility and strength. Most studies have observed improvements in global pain ratings after exercise programs, and many have observed that exercise can lessen the behavioral, cognitive, affect and disability aspects of back pain syndromes.



Patient Attitudes

Sharma R, Haas M, Stano M. Patient attitudes, insurance, and other determinants of self-referral to medical and chiropractic physicians. *Am J Public Health* 2003;93(12):2111-7.

This paper is another outstanding piece of health policy research coming out of Northwestern College of Chiropractic. The data was obtained from a large-scale study of 2872 patients who self-selected to one of 14 medical clinics or 51 chiropractic clinics between December 1994 in June 1996. Various parameters were analyzed to determine which predict the choice of going to the chiropractor or medical doctor for care. The regression analysis found those items that are most predictive of patients choosing care of a chiropractor. Items of importance are having less pain and disability, and that the treatment is not paid for by an insurance company. It appears that patients who do not have insurance are sensitive to the fact that costs in a chiropractor's office are generally lower than medical office. In those who do have insurance signed chiropractic care more expensive because of policy limits on chiropractic care. Patients selected chiropractic care if they trust chiropractors or they did not like prescription medications. It is interesting note that those who believe that



DCs and MDs are equally skilled in treating the back pain were more likely to seek medical care than chiropractic care.



Who is a chiropractor?

This is the 3rd rail question in chiropractic. The only way to step on the rail and not get electrocuted is if you have more power than the rail. The World Federation of Chiropractic, it appears has that power. They have assembled the WFC Task Force on Identity. The Task Force has 40 members (34 DCs, 5 lay persons and one student). They will be meeting late in February to develop a survey instrument to be sent to DCs worldwide to question them about our identity. This is not about what we do but about who we are. Of particular interest at this point in time is the abstract of Consultation on Identity "Abstracts of Previous Relevant Research." This is a 23 page PDF document with information about surveys of lay persons and chiropractors conducted in Australia, Canada, Ireland, Italy, Netherlands, New Zealand, Switzerland, United Kingdom and USA. In some cases detailed information about surveys are presented. In general, there is a discussion of the methods and findings to this document that should be of interest to all and is available at WFC's web site. For more details please go to WFC's web site www.wfc.org, after you choose your language, click on the link for Identity Consultation.



CCP guidelines removed from the National Guideline Clearinghouse

The Vertebral subluxation in chiropractic practice (AKA CCP) guidelines have been removed from the National Guideline Clearinghouse. Both the Mercy and CCP guidelines were withdrawn because they no longer meet the NGC inclusion criteria with respect to date. The NGC generally archives guidelines that are over 5 years old.

A 2001 study found the CCP guidelines unsuitable for use in clinical practice, while the Mercy guidelines were assessed as useable with proviso. (1)

1. Cates JR, Young DN, Guerriero DJ, et al. Evaluating the quality of clinical practice guidelines. *Journal of Manipulative and Physiological Therapeutics*. 2001;24(3):170-176.





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Message From the President

Jeffrey R. Cates, DC, MS, DABCO, DABCC

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