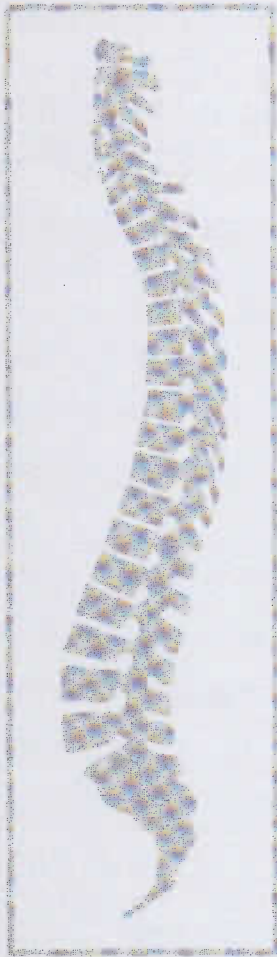


THE CHIROPRACTIC REPORT

An international review of professional and research issues, published bimonthly
Editor: David Chapman-Smith, LL.B. (Hons.), FICC (Hon.) July 1996 Vol. 10 No. 4



Professional Notes

AHCPR Blown Away

The US government Agency for Health Care Policy and Research has been unceremoniously kicked out of the clinical practice guidelines business. Its headache guideline - even though in final draft form after years of work - will not be published, and its annual budget of \$163 million has been shredded to \$3 million.

This is the price one pays for offending the big boys. This tale of health care, business, and politics goes like this:

- In 1989 the AHCPR was created to enhance the quality and appropriateness of US health care services, primarily through development of national evidence-based clinical practice guidelines by multidisciplinary expert panels. Its first several guidelines, in areas such as gastric ulcer, drew wide praise and cemented its reputation.

- Things began to 'go wrong' in 1993 when the AHCPR developed a draft final guideline in the more sensitive multidisciplinary area of low-back pain. The panel, comprised principally of medical doctors, made recommendations against

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Rehabilitation and Chiropractic Practice

A. Introduction

1. To many people the word *rehabilitation* conjures up images of hospitals, the seriously disabled, vocational training and months of full time work to rebuild physical and mental skills. Chiropractic practice has little to do with that.

But the word rehabilitation is now being used in a different way. Firstly sports stars with relatively minor injuries that kept them out of training and competition for a few weeks "went to rehab" to regain their competitive form. Next, in arguably the biggest about face in any area of medical practice in the past 10 years, this sports medicine approach is now being applied to the average patient with back pain.

The prescription of rest and passive therapies is being replaced with early exercise and functional restoration. To meet this need *spinal rehabilitation* facilities run by orthopedists, physiatrists and physical therapists have sprung up like mushrooms. These offer everything from rather crude and non-specific general cardiovascular and muscle strengthening exercises to vastly expensive high tech and multidisciplinary care.

In North America this has led to calls for accreditation of these rehabilitation facilities. Governments, employers and insurers want to establish fee schedules to control cost. Governments are studying manpower or health human resources plans for rehabilitation services.

2. Suddenly there is a broader concept of rehabilitation that is distinctly relevant to the average chiropractic practice, and chiropractors need to be aware of developments inside and outside their profession. This Report looks at the role of the chiropractic profession in spinal rehabilitation and new sources of continuing education. In North America these lead to postgraduate qualifications recognized by the American Chiropractic Rehabilitation Board, an affiliate of the American Chiropractic Association, and

the College of Chiropractic Rehabilitation Sciences, an affiliate of the Canadian Chiropractic Association.

There is also reference to the impressive new multidisciplinary text *Rehabilitation of the Spine: A Practitioner's Manual* edited by Craig Liebenson DC, Director of the Los Angeles College of Chiropractic diplomate program in rehabilitation.¹ This book is reviewed in some detail because it is the first published as a comprehensive practical text integrating current rehabilitation assessment and treatment methods into a standard private chiropractic practice. Liebenson's central messages are:

- a) High tech testing and training facilities, although they have an important role with some chronically disabled patients, are expensive and inappropriate for most patients requiring spinal rehabilitation.
- b) The partnership of manipulation and exercise gives chiropractors a central and leading role in spinal rehabilitation.
- c) "Practitioners in small private practices who assess and treat functional pathologic problems while training and educating the patient in how to prevent recurrences represent the cost-effective frontline against today's soaring costs for caring for individuals with low-back pain," and will dominate the management of neuromusculoskeletal disorders in the next decade.

3. The quickest chiropractic response to the new evidence and market realities has probably been in Denmark. For the past five years the Danish Chiropractors' Association has promoted continuing education and practice in the area of rehabilitation, 20% of chiropractors have rehabilitation equipment and facilities in their offices, and fees negotiated by the DCA with the government's national health program include reimbursement for specific rehabilitation services for a period of up to three months.

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International Meetings: FCER's International Conference on Spinal Manipulation, October 17 - 19, 1996, Bournemouth, England. Contact: Emma Davis, FCER, 1701 Clarendon Boulevard, Arlington, VA 22209 U.S.A. Tel: 703-276-7445. World Federation of Chiropractic, Cervical Spine Symposium and World Congress, June 4-8, 1997, Tokyo, Japan. Contact: Maria Patino WFC, 3080 Yonge Street, Suite 3002, Toronto, Ontario, Canada M4N 3N1, Tel: 416-484-9601, Fax: 416-484-9665.

In popular press articles Danish chiropractors Alan Jordan DC and Keld Ostergaard DC MD have presented a compelling case for incorporating modern but low-tech rehabilitation in chiropractic practice for patients with chronic and recurring back pain. They have drawn attention to the recent evidence that a combination of manipulation and specific muscle strengthening exercise is superior to exercise alone.^{2,3}

B. Rehabilitation - Definitions

4. Dorland's has two definitions of rehabilitation:

a) The restoration of an ill or injured patient to self-sufficiency or to gainful employment at his highest attainable skill in the shortest possible time. (This places an emphasis on vocational rehabilitation).

b) The restoration of normal form and function after injury or illness.

5. From the point of view of logic there is no need to have a specific injury or illness as a prerequisite for rehabilitation. With back pain, for example, many patients have no overt injury but a combination of subluxation/joint dysfunction, muscle weakness, muscle imbalance and poor posture. Surely their management involves rehabilitation?

Under the current concept of spinal rehabilitation experts agree. Neurologist Karel Lewit MD defines rehabilitation simply as "the restoration of function in the motor system".⁴ Liebenson writes: "Rehabilitation is concerned with restoring musculoskeletal function in patients with subacute, chronic, and recurrent conditions. Rehabilitation attempts to prevent or manage disability through functional restoration, work hardening, and psychosocial intervention.

Historically this approach was appropriate for physically exceptional (athletes) and physically impaired (handicapped) individuals. Today, it is necessary for most pain patients.⁵

C. Integrating Rehabilitation with Acute Care

6. Liebenson summarizes the respective roles of acute care and rehabilitation in chiropractic practice in the opening two chapters of his book. "Manipulation and exercise are the two methods that have become the standard of care ... in the delivery of high quality neuromusculoskeletal health care," he writes, and the challenge is combining them. This is the correct approach:

a) Biopsychosocial Model.

Management must be on Waddell's biopsychosocial model⁶ with the practitioner alert to physical, social and psychological causes and emphasizing return to work and activities of daily living as soon as possible.

b) **Primary Conservative Care.** This has a goal of reduction of pain and inflammation during the first three days using passive treatments, support and rest.

c) Secondary Functional Restoration.

A blend of passive and active care from the subacute stage, with the goals of avoiding further deconditioning, restoring function and preventing disability. Most patients will have returned to activities of daily living within six weeks. Management involves:

i) *Functional capacity evaluation.* Valid baseline measurements of function, then re-measurement to demonstrate results (outcomes).

ii) *Rehabilitation of the motor system.* This comprises:

- Restoring normal joint mobility
- Inhibiting over-reactive musculature (including trigger points)
- Improving muscular flexibility, coordination, strength and endurance
- Stretching retracted soft tissues
- Proprioceptive re-education
- Cardiovascular training
- Postural re-education

Assessment must identify the "links in

Table 1:

Negative Effects of Immobilization

Joints

- Shrinks joint capsules
- Increases compressive loading
- Leads to joint contracture
- Increases synthesis rate of glycosaminoglycans
- Increase in periarticular fibrosis
- Irreversible changes after 8 weeks immobilization

Ligament

- Lowers failure or yield point
- Decreased thickness of collagen fibers

Disc biochemistry

- Decreases oxygen
- Decreases glucose
- Decreases sulfate
- Increases lactate concentration
- Decreases proteoglycan content

Bone

- Decreases bone density
- Eburnation

Muscle

- Decreased thickening of collagen fibers
- Decreased oxidative potential
- Decreased muscle mass
- Decreased sarcomeres
- Decreased cross-sectional area
- Decreased mitochondrial content
- Increased connective tissue fibrosis
- Type 1 muscle atrophy
- Type 2 muscle atrophy
- 20% loss of muscle strength per week

Cardiopulmonary

- Increased maximal heart rate
- Decreased VO₂ max
- Decreased plasma volume

From Liebenson C, *Rehabilitation of the Spine: A Practitioner's Manual*, 1996. The author gives references for each negative effect.

the chain of functional pathologic processes". The weak link may be joint dysfunction/subluxation which requires adjustment, or muscle imbalance which requires retraining, or something in the patient's environment (posture, work, activity, etc). Low tech methods of assessment and management, easily incorporat-

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ed in chiropractic practice, are described throughout the rest of the book. (See para 7 below).

iii) *Patient education.* Primary elements of this are explaining:

- The negative effects of inactivity and immobilization. For the impressive list of these now demonstrated in the literature see Figure 1.
- The safety and benefits of early mobilization and controlled activity.

iv) *Identification of psychosocial factors.*

d) **Tertiary Multidisciplinary Functional Restoration.** This is the type of program pioneered by Mayer et al in Texas and shown to be effective in returning chronically disabled people to work.⁷ It is expensive, and only justified and cost-effective for the relatively few patients still disabled after six months.

D. Low Tech v High Tech

7. It is true that the most accurate measurements of specific functional deficits (e.g. isokinetic abdominal strength) can be made by equipment that is beyond the cost of the average field practitioner. This can lead to the perception that a credible spinal rehabilitation facility is an expensive proposition. This is not so. Two clear messages in Liebenson's new text are:

- a) The great majority of patients requiring spinal rehabilitation can receive it most effectively and cost-effectively in a single practitioner's private office.
- b) No sophisticated equipment is necessary if you have the psychomotor and other skills of a chiropractor - either for valid assessment or effective management.

8. Chapters 4-8 provide practical review of assessment methods, described by relevant experts, including:

- a) Pain and disability questionnaires by Canadian chiropractor Howard Vernon DC, one of the developers of the widely used Vernon-Mior Neck Disability Index.
- b) Range of motion tests using an inclinometer, by Liebenson and Jeff Oslance DC of California.
- c) Manual and other physical evaluation of muscle imbalance, by the leading authority in this field Vladimir Janda MD, a specialist in rehabilitation

Table 2

Muscle Imbalance - 5 Tests That May Change What You Do Monday Morning

Tests from Janda for use with subacute patients, adapted with permission from Liebenson C.

1. **Side lying hip abduction test** - Have patient abduct the thigh to 35 degrees. If it flexes then the tensor fascia latae (TFL) is substituting for the gluteus medius. *Treatment:* relax/stretch TFL and facilitate/strengthen gluteus medius. *Think of this test for sacroiliac syndrome, anterior knee pain and ankle instability patients.*
2. **Prone hip extension test** - Have patient extend the thigh 10 degrees. If the back arches then the iliopsoas is tight preventing normal hip extension. *Treatment:* relax/stretch iliopsoas. *Think of this test for facet syndrome patients.*
3. **Trunk curl up test** - Have supine patient raise the trunk up until the shoulder blades clear the table. If the feet rise then the hip flexors (iliopsoas, rectus femoris) are substituting for the rectus abdominus. *Treatment:* relax/stretch iliopsoas or rectus femoris and facilitate/strengthen rectus abdominus. *Think of this test for disc and forward drawn posture patients.*
4. **Spine chin tuck test** - Have patient tuck chin in maximally and raise head 1 cm off the table. If the head shifts up or down, or if the chin pokes, the sternocleidomastoid (SCM) is substituting for the deep neck flexors. *Treatment:* relax SCM and facilitate/strengthen the deep neck flexors. *Think of this test for headache and whiplash patients.*
5. **Scapulohumeral rhythm test** - Have seated patient abduct one arm 90 degrees. If the scapula moves cranially in the first 45 degrees then there is excessive scapulothoracic motion and limited glenohumeral motion due to weak or inhibited lower trapezius. *Treatment:* facilitate/strengthen lower trapezius and relax/stretch upper trapezius and levator scapula. *Think of this test for rotator cuff syndrome and neck/shoulder myofascial syndrome patients.*

medicine from Prague.

d) Visual inspection of muscle dysfunction by Russian physical medicine specialist Ludmila Vasileva MD and Czech neurologist Karel Lewit MD.

e) Evaluation of lifting by Leonard Matheson PhD, Director, Employment and Rehabilitation Institute of California.

Chapters 9 and 10 deal with patient education and back school and include materials for direct use with patients.

Chapters 11-18 describe functional restoration methods including manipulation, McKenzie Methods, manual resistance techniques and self stretches, spinal stabilization exercises - requiring only rudimentary gym equipment, sensory motor stimulation and postural correction. As in the section on assessment, authors are experts from a variety of disciplines.

In the final chapters orthopedic authori-

ties William Kirkaldy-Willis MD, of Canada and Vert Mooney MD of the US, together with George Becker MD an orthopedic surgeon and psychiatrist, review psychosocial and other aspects of rehabilitation.

E. Muscle Imbalances

9. Many of the assessment and treatment chapters in Liebenson's book - which is a manual for clinicians - will change what you do next Monday morning. A good example is the chapter on muscle imbalances by Janda illustrating assessment techniques developed by the Czech school over the past 30-40 years.

See Table 2 which gives tests and treatment for five classic muscle imbalances that may be a cause or result of joint dysfunction/subluxation. Janda says:

- a) Many muscle imbalances are predictable - in the general population in

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our largely sedentary society, and in occupational groups with specific repetitive or constrained work tasks. Imbalances develop because of over-use and shortening of postural (anti-gravity) muscles, and inhibition, disuse and weakness of dynamic (phasic) muscles.

b) This produces a biomechanical imbalance, with the shortened muscle mechanically limiting the range of motion of its paired or antagonist muscle. Because of the principle of reciprocal inhibition of motor neurons in opposing muscles (e.g. as the biceps flexes the triceps automatically receives a message to relax), there is a neurophysiological aspect to muscle imbalance also.

c) These imbalances lead to altered movement patterns and motor control that are ignored in many standard muscle strength tests and exercises.

d) Imbalances must be identified by postural analysis, gait analysis, muscle length tests and evaluation of key movement patterns. Evaluation is made at the subacute stage because the signs of imbalance (tight muscles and altered movement patterns) are masked and confused by the muscle spasm associated with acute pain.

e) Treatment of the altered movement patterns arising from muscle imbalance is:

- Relax/stretch overactive/tight muscles.
- Mobilize/adjust stiff joints.
- Facilitate/strengthen weak muscles.
- Re-educate movement patterns on reflex subcortical basis.

10. The above analysis shows how logically and appropriately functional restoration techniques of spinal rehabilitation fall within the core skills and scope of chiropractic practice. They simply represent a more formal, structured approach to traditional aspects of chiropractic practice, incorporating recent advances. In the words of Liebenson:

“By understanding the relationship between specific muscles and joints, therapeutic shortcuts can often be uncovered. Finding a chain reaction between muscular imbalance, an altered movement pattern, and specific joint dysfunctions enables the clinician to find the key factors in the development of functional pathology, and thus catalyses the therapeutic program.”⁸

F. Postgraduate Education

11. In North America formal part-time postgraduate education in rehabilitation, expressly directed at hands-on evaluation and management skills, is now offered by many chiropractic colleges fulfilling course requirements established by the American Chiropractic Rehabilitation Board (ACRB - US) and the College of Chiropractic Rehabilitation Sciences (CCRS - Canada). These are available at many locations. The first year of the LACC course directed by Liebenson is currently offered in Sacramento, Denver, Las Vegas, Meriden Connecticut, and Salt Lake City. The second 100 hours is offered in Atlanta, Austin, Boston, Chicago, Los Angeles (LACC), Philadelphia, Phoenix, Portland, San Jose and Seattle.

Courses are in three annual 100 hour (10 weekends) segments. In the US the 100 hour national certification exam administered by the ACRB leads to the qualification Certified Chiropractic Rehabilitation Doctor (CCRD). Successful examination after three years leads to eligibility for the Diplomate of the ACRB. (In Canada it is a Fellowship in the CCRS).

12. ACRB examination topics for the first 100 hour course illustrate the range of the curriculum and appear in Table 3. For more information on curriculum and available courses contact:

a) ACRB: Frederick Deutsch, DC, Secretary Treasurer, 810 10th Street SW, Watertown, SD 57201-428 USA Tel. 605-886-8650 Fax. 605-886-8663.

b) ACA Council on Chiropractic Physiological Therapeutics and Rehabilitation: Carol Krol DC, Secretary/Treasurer, 4760 W. Atlantic Avenue, Del Ray Beach, FL 33445 USA Tel: 407-498-8005 Fax. 407-498-2222.

c) CCRS: Ed Shane DC, President, 112 N. Meadow Crescent, Thornhill, Ontario L4J 3C5, Canada, Tel. 905-764-2828 Fax. 905-764-2899. (CMCC courses are currently offered in Vancouver, Calgary, Ottawa and Toronto).

d) Postgraduate divisions of chiropractic colleges.

13. In Europe there are similar educational developments. The Anglo-European College of Chiropractic in England is now offering a Master's in Clinical Chiropractic Degree, a 12 week-end course plus dissertation over two and a half years, with a primary focus on “latest approaches to chiropractic rehabilitation of the spine”.

Multidisciplinary faculty includes European chiropractors, Liebenson, leading orthopedic surgeon and back pain researcher, Gordon Waddell MD, and osteopath Leon Chaitow MRO, a prominent author and lecturer on soft tissue and muscle energy techniques in the UK and the US. For further information contact the Postgraduate Division, AECC, Tel: 441-202-436275, Fax: 441-202-436312.

In Denmark the postgraduate seminars on rehabilitation offered by the Danish Chiropractors' Association are presently being restructured by the DCA, the Nordic Institute of Chiropractic and Clinical Biomechanics, and the Department of Sports Sciences, University of Odense into a formal postgraduate qualification. For further information on this program, which will be available either in September 1996 or next year, contact

continued on page 5

Table 3

FIRST 100 HOUR REHABILITATION COURSE - ACBR EXAMINATION TOPICS

1. **General.**
Functional pathology of the motor system; Functional restoration; Biopsychosocial approach; Case management (introduction to assessment/treatment protocols which integrate muscle and joint dysfunction); Facility development, practice management, legal issues; Cost containment.
2. **Basic Science**
Clinical biomechanics (stress/strain curve); Principles of human locomotion (arthrokinematic events, kinesiology), Exercise physiology; Motor learning; Behavior modification.
3. **Assessment**
Functional testing (physical performance of isolated muscles/joints); Objective measurement of soft tissue injury; Kinesiotherapy; Evaluation of muscle imbalance; Evaluation of cardiovascular system; Activities of daily living and health habits; Ergonomics; Psychosocial factors; Diagnosis; Strength; Endurance; Flexibility.
4. **Rehabilitation Treatment**
Stabilization exercises; Proprioceptive neuro-muscular facilitation; Strength, endurance training; Propriosensory training; McKenzie protocols; Patient education; Time limited passive modalities; Urgent care.

Christian Graesborg, Director, Nordic Institute, Tel. 45-065-913-020 Fax. 45-065-917-378.

G. Conclusion

14. Following the developments in the past 10 years, including nationally based literature reviews and clinical practice guidelines for back pain and neck pain in the US,⁹ UK¹⁰ and Canada,¹¹ it is now apparent that the cost-effective modern management of back pain and other neuromusculoskeletal disorders requires:

- a) Low technology assessment and management for the great majority of patients, ideally in a private office setting.
- b) The ability to diagnose and refer the small percentage of patients with relevant *structural* pathology.
- c) The ability to assess and treat each of the two components of *functional* pathology - dysfunction of the hardware (joints) and software (muscles, fascia) of the motor system.
- d) Management of psychosocial and educational aspects.

By virtue of their education and scope of practice chiropractors are uniquely placed to provide this care, now known for patients with subacute or chronic pain as spinal rehabilitation.

15. The chiropractic profession has some grounds for believing it will have an expanded role in spinal rehabilitation in the years ahead. This is its core field of practice, and there is compelling evidence that chiropractic management is more effective and cost-effective than alternatives, and provides markedly higher levels of patient satisfaction.¹²

The most recent evidence of comparative effectiveness and patient satisfaction appears in a large survey of acute, severe back pain patients in the US by Carey et al published in *Spine*.¹³ Study of a random sample of 8067 eligible adults found that 11.5% of North Carolina adults experienced severe low-back pain in a one year period, that 33% of those with acute, severe back pain who sought care consulted a chiropractor (63% consulted a medical practitioner, 5% another health care provider), and concluded:

"Compared to those who sought care from medical doctors, those who sought care from chiropractors were more likely to feel that treatment was helpful (99% vs 80%), more likely to be satisfied with their care (96% vs 84%) and less likely to seek care from another provider for that same episode of pain (14% vs 27%)."

16. However there are other developments that suggest the chiropractic profession must be vigilant and not assume that evidence of effectiveness, value and satisfaction will guarantee continuance of present rights of practice and reimbursement. Chiropractors who have seen themselves as a distinct profession providing chiropractic services must appreciate that most others now see them as providing spinal rehabilitation, that this is a multibillion dollar growth marketplace, and that health care competitors and investors are devising methods to gain control. These methods include:

- a) Treating spinal rehabilitation as one component of the larger field of all vocational and physical rehabilitation.
- b) Suggesting, wrongly as this Report has shown, that rehabilitation services can only be provided in a multidisciplinary facility with a sophisticated plant.
- c) Controlling access to and/or reimbursement for rehabilitation services through:
 - Systems of accreditation of rehabilitation facilities that have criteria to exclude competitors, including the chiropractic profession in the field of spinal rehabilitation.
 - Preferred provider networks that contract directly with payors, claiming the advantage of providing all rehabilitation services from one source with global monitoring of cost and appropriateness.

17. To counter this the chiropractic profession must be active with government departments, regulatory agencies and others influencing policy in the area of rehabilitation services. It must have representatives on health provider advisory groups making recommendations on standards and reimbursement. These representatives must identify, as Liebensson has done:

- a) The distinct area of spinal rehabilitation.
- b) In this area the difference between secondary functional restoration, most appropriately and inexpensively provided for the great majority of patients in a low-tech private facility, and tertiary functional restoration (see para 6 above).

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John Triano, MA DC (United States) *Multidisciplinary Management*
Åke Nygren MD DDS PhD - *Current Cervical Spine Research*

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c) The need to appreciate and allow for these differences in any regulation or reorganization of rehabilitation services.

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Professional Notes: continued from page 1

many common medical treatments and in favour of manipulation. Those whose incomes and positions were threatened, including orthopedic surgeons and equipment suppliers, lobbied to prevent publication. Pharmaceutical manufacturers were in disbelief seeing recommendations against use of prescription drugs with most patients.

Although opponents caused a delay of 12 months, the back pain guideline was published in December 1994. No one can argue credibly against its general soundness, a view supported by the fact that a UK government guideline based on the same evidence and published at the same time made similar recommendations. However the heavy hitters began to wield the bat.

- At this time an AHCPR headache panel was enrolled, commissioned to provide a guideline on management of chronic headache. Given the political turmoil, it asked for and received a guarantee of funding and other support to complete its project.

The draft final guideline is now complete and has clearly caused a few bats to swing by making recommendations that the pharmaceutical world finds too uncomfortable to be tolerated - namely that use of prescription drugs should be tempered and that non-drug management of headaches arising from the cervical spine structures - including management with spinal manipulation - is appropriate for many patients. The result - as of May the AHCPR was propelled out of the guidelines business, and as of June the headache project is dead.

There is an old African saying that when the elephants fight the grass gets trampled. The grass here is the US public, represented by the AHCPR. You get no prizes for guessing who the elephants are.

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