

Mainstreaming Complementary Therapies: New Directions In Health Care

A true collaboration between conventional and alternative medicine promises patients the best of both worlds.

by **Mary Ruggie**

PROLOGUE: In its decades-long struggle for recognition and respectability, alternative medicine—which covers a range of therapies, including acupuncture, massage, herbal remedies, and chiropractic—has endured many insults and overcome unflattering, and possibly unfair, comparisons to organized medicine in America. As an example, charges that alternative therapies are not safe or effective have always carried with them the implication that, in contrast, Western medicine rested on a firm foundation of evidence supporting its own claims to superiority.

But one need not look beyond recent headlines to find chinks in the armor of Western medicine. For example, the recall of the popular prescription painkillers Vioxx and Bextra over safety concerns has revealed shortcomings in the U.S. drug approval process. On a broader scale, research continues to reveal marked variations in practice patterns by practitioners of conventional medicine, which suggests that there is a lack of consensus on best practices. These observations, among others, have provided fodder for the evidence-based medicine movement, which has itself cast a harsh light on the practice of conventional medicine.

At the same time that conventional medicine has been fighting threats to its credibility, alternative therapies have been enjoying unprecedented popularity, even among groups that have historically been its adversaries. This paper by Mary Ruggie recounts the story of alternative medicine, from its early struggles to its growing acceptance by physicians and other health care professionals as a legitimate and acceptable form of treatment for disease.

Ruggie's interest in this topic is highly personal. She was a breast cancer patient in 1997. At that time, her exposure, in the clinic where she received care, to information on alternative therapies further fueled her incipient interest in the topic. Ruggie (mary_ruggie@harvard.edu) is an adjunct professor of public policy at the John F. Kennedy School of Government, Harvard University. She holds a doctorate in sociology and a master's degree in education, both from the University of California, Berkeley. Her book on alternative medicine, *Marginal to Mainstream: Alternative Medicine in America*, was published by Cambridge University Press in 2004. A Perspective by Richard Nahin, Carol Pontzer, and Margaret Chesney follows.

ABSTRACT: Within the past decade, complementary and alternative medicine (CAM) has penetrated mainstream U.S. health care. Major medical journals are publishing research on the efficacy of specific CAM therapies, physicians are attending oversubscribed continuing medical education courses on CAM, and hospitals are offering CAM services, sometimes through outpatient integrative medicine clinics. This paper presents factors behind the growth of CAM, analyzes its relationship with conventional medicine, and suggests how the integration of CAM and conventional medicine can be more effectively guided.

ALTERNATIVE MEDICINE IS THE TERM most commonly used in the latter decades of the twentieth century for therapies that ranged from such ancient modalities as acupuncture and herbs to such contemporary innovations as biofeedback and guided imagery. However, during the 1990s both the term and the understanding of the therapies it envelopes underwent major transformation. After the American Medical Association (AMA) disbanded its Committee on Quackery, following a Supreme Court ruling in 1990 that its practices against chiropractors violated antitrust laws, physicians gradually became more open to medical pluralism. The foremost influence on their changing attitudes was surveys showing that increasing numbers of people were using chiropractic, acupuncture, herbs, massage, yoga, and mind-body relaxation techniques, to name a few. It became clear that these therapies were serving less as alternatives than as adjuncts to conventional medicine. Accordingly, the term *complementary* appeared, and a new acronym gained currency: CAM (complementary and alternative medicine). By the end of the decade, major health care institutions were providing CAM services or setting up integrative medicine clinics, primarily for outpatients. These programs combine biomedicine with those CAM therapies for which there is evidence of safety and efficacy.

The changes in name reflect a change in the status and legitimacy of CAM vis-à-vis conventional medicine—from outsider to partner. There are many reasons for the transformation. Four are briefly discussed below: (1) growing use, which led to (2) the establishment of the National Center for Complementary and Alternative Medicine (NCCAM) at the National Institutes of Health (NIH), which led to (3) scientific research on the safety and efficacy of CAM, all of which are (4) stimulating physicians' interest in and acceptance of CAM, albeit conditional. The implications of these developments for the future of health care are far reaching.

The Social Transformation Of CAM

■ **Growing use.** There is a popularized conception in the United States that traces the resurgence of CAM back to the activist (and pacifist) movements of the 1960s and continues to associate CAM with the “New Age.” Although partially correct, there is much more to the growth of CAM. By the early 1990s, surveys were identifying a wider population that, despite frustration with conventional medicine, had not turned against it and was using CAM together with standard medical care.¹ A major segment of CAM users were shown to be people in poor health or having

chronic conditions. And because these users had to pay for CAM out of pocket, they tended to have higher incomes and more education. Other isolated characteristics of typical users were white, female, ages 35–55, and living in the West.

The first large-scale survey that included spending on CAM produced startling results.² It found that in 1991, one-third of respondents spent about \$14 billion—\$10.5 billion out of pocket—for these therapies. When the survey was repeated in 1997, all of the numbers were much larger: 42 percent of respondents had spent \$21 billion—\$12 billion out of pocket. These expenditures exceeded the amount spent on all U.S. hospitalizations. And, as before, Americans were visiting CAM practitioners more frequently than primary care physicians.

■ **Congress and the NIH.** In 1991, before the bulk of surveys on CAM use were published, Iowa's Sen. Tom Harkin, a Democrat who had become interested in alternative medicine, held congressional hearings on what he discerned to be growing use and concern among the medical profession that these therapies were unproven and possibly unsafe. Senator Harkin chaired the Appropriations Subcommittee that determines NIH funding. After the hearings, a bipartisan majority of committee members decided that the NIH should investigate the safety and efficacy of alternative medicine and proposed new funding to set up an Office of Unconventional Medicine, as it was first called, at the NIH.

NIH officials were not pleased with this turn of events.³ There were years of contention and many changes of directors at the Office of Alternative Medicine (OAM), as it was next called. But with the help of respected medical researchers and practitioners, as well as professional CAM organizations and practitioners, the various directors began to establish programs of scientific research. They stood up to politicians who wanted quick results and ready market access by insisting that scientific proof of safety and efficacy superseded market availability. In response, Congress circumvented the lengthy process of Food and Drug Administration (FDA) approval for botanicals by passing the Dietary Supplement and Health Education Act (DSHEA) in 1994. Led by senators from states with strong dietary supplement industries, it gave herbs the status of food, not drugs.

■ **Scientific research.** The first task of the OAM was to identify and classify the therapies most commonly used in the United States. About 100 therapies were placed into the following categories: mind-body intervention; bioelectromagnetics; alternative systems of medical practice, such as traditional Chinese medicine; manual healing methods; pharmacological and biological treatments; herbal medicine; and diet and nutrition.⁴ The next step, setting out a plan for research, took several years. NIH officials felt that it was critical for CAM research to conform to the rigorous standards of scientific medicine, which meant that the therapies had to be investigated in randomized controlled trials (RCTs). At the same time, the medical profession, voicing its opinion in mainstream medical journals, conferences, and seminars, indicated that it would have nothing to do with these therapies unless and until they were proven to be safe and effective. The emphasis on proof implied that

RCTs, the gold standard of scientific medical research, were imperative.

Accordingly, the OAM began to fund research on those more widely used therapies for which there was preliminary evidence of safety and efficacy. Some of the therapies were studied first in laboratories, others in clinical trials. Some readily lent themselves to double-blind, placebo-controlled investigation. For others, researchers had to develop creative modifications of standard RCT methods.⁵ Although definitive findings have not yet been established, there is accumulating evidence that a number of CAM therapies are safe and effective for specific medical conditions and that other therapies are questionable, if not unsafe and ineffective. Pleased with the progress, Congress repeatedly increased the budget of the OAM and in 1999 changed its status from an “office” to a “center.” The second five-year strategic plan of the National Center for Complementary and Alternative Medicine (NCCAM) expands the scope of its earlier initiatives and, thereby, the reach of CAM in U.S. medicine.

■ **Physicians’ growing interest.** The years of litigation between the AMA and the U.S. chiropractic profession undoubtedly soured the attitude of many physicians toward CAM—or certain types of CAM. Nevertheless, one study conducted at the height of the lengthy litigation process found that even though 66 percent of the family physician respondents in Washington State indicated “discomfort with what chiropractors do while acknowledging their effectiveness for some patients,” one-quarter viewed chiropractors as an “excellent source of care for some musculoskeletal problems.”⁶ By the mid-1990s a national survey of family practice physicians and internists found “surprisingly high” support, even encouragement, for patients’ use of CAM and referrals to CAM practitioners.⁷ The growing number of people using CAM undoubtedly brought these therapies to the attention of physicians. But physicians also might have been motivated to pay more attention to CAM because surveys were finding that many patients were not disclosing their use of CAM to their physicians, and the majority of physicians were not asking.⁸ The implications of this finding were threefold. First, it suggested that health care problems could arise from the use of therapies that are unsafe or that have adverse interactions with drugs. Second, if and when patients did talk with their physicians about CAM, it was commonly to ask for advice. Physicians were not, however, sufficiently knowledgeable about CAM to respond. Third, the studies highlighted a more generalized problem in physician-patient communication, one that medical schools have become increasingly aware of and are attempting to correct.⁹ In addition to the role of patients, the growing involvement of the NIH in investigating CAM was gradually paving the way for specific therapies’ acceptance in conventional clinical settings.

Piecing together surveys conducted throughout the 1990s on physicians’ opinions of CAM, one can detect increasingly more favorable attitudes and growing interest in learning about these therapies. A recent survey of faculty at a medical school that emphasizes primary care found that more than 70 percent of respondents rated five therapies (nutrition and diet, counseling and psychotherapy, fit-

ness and exercise, emotional support groups, and biofeedback) as legitimate medical practices, and more than 50 percent rated another six therapies (acupuncture, herbal medicine, massage, chiropractic, hypnotherapy, and meditation) as legitimate.¹⁰ Furthermore, 85 percent of faculty reported that they had training in CAM therapies, and 83 percent had personal experience with CAM, most of it effective. Reflecting demand, a growing number of medical schools are offering courses on CAM, either in the regular curriculum, as electives, or in continuing medical education (CME) programs.¹¹ Unfortunately, these courses are not yet taught in a uniform manner.

In addition, more physicians are conducting research on CAM. The authors of published articles on CAM, especially involving RCTs, are more likely to be doctors of medicine rather than philosophy. To be sure, skepticism remains, and tolerance or acceptance is likely to be limited to a select few therapies. However, because the tide is turning, we can begin to think about the next stages in the social relations of CAM and conventional medicine.

The Next Stages

For the foreseeable future, research on CAM will likely increase the legitimacy of specific therapies. Research findings as well as expanding the use of CAM are driving demand for a new regulatory framework for certain CAM therapies, particularly botanicals. Some insurers are also expressing interest in CAM's economic implications. If the medical profession responds to these developments by integrating CAM into health care, as we are beginning to see, health care will take a profoundly new direction.

■ **The medical profession and research.** The medical community's acceptance and incorporation of CAM rest in large measure on CAM's scientifically verifiable legitimacy, although it will be exceedingly difficult to sway some of the more hardcore critics.¹² However, staunchly negative attitudes are held by a minority within the medical profession. The research on CAM aims to satisfy the majority of medical professionals who are at least agnostic if not yet fully open-minded.

The medical profession wants CAM researchers to detail their methods of investigation and tests for validity. Researchers are complying, for the most part. For instance, studies of acupuncture now specify the conditions of the experimental treatment (what kind of needle is used, to what depth the needles are inserted and with what force) as well as the nature of the control.¹³ Studies that limit the scope of the treatment to specific patient populations with specific medical conditions are also more likely to appeal to the medical community.

Officials at the NCCAM firmly believe that CAM can be studied through scientific methods of investigation. Although there are funding opportunities for various kinds of research methodologies, clinical studies that provide evidence of safety and efficacy in large-scale RCTs are sought whenever possible. However, the agency recognizes that this format cannot be applied to all CAM therapies or

answer all questions about CAM. The NCCAM's new five-year strategic plan elaborates alternative methods and epistemological premises for investigating CAM; it also calls for more systematic study of the placebo effect.¹⁴ Since a growing number of projects (just under half at present) are jointly funded with other NIH institutes and centers, and more collaboration across disciplines is occurring, this diversity will most likely increase our understanding of CAM.

Because research on CAM is still in its early stages, researchers emphasize that the specificity of their investigations limits the generalizability of findings and, as a result, their clinical applicability, which is a problem with all RCT research. In some ways, one can say that there is never enough research, especially given the need for replication and the vast number of therapeutic modalities and applications. However, CAM practitioners may soon ask whether the research base is sufficient to rest the case for safety and efficacy, for certain therapies at least, and to turn to a new endeavor: guiding the next stages of integrating CAM and conventional medicine. Furthermore, insofar as providers are already offering integrative medicine, it appears that the time has come for the scientific and clinical communities to collaborate more effectively.

■ **Regulation of CAM.** Regulation of CAM practitioners varies by state and professional organization.¹⁵ The FDA regulates certain devices that are used in CAM therapies, such as acupuncture needles. However, a more hotly contested domain of regulatory initiative is dietary supplements, including botanicals, which, after chiropractic, are the most widely used type of CAM in the United States. The lax rules (or lax enforcement) surrounding these products pose thorny issues and warrant concerns for both the medical profession and consumers of health care.

Prior to 1994, various pieces of legislation allowed the FDA to regulate dietary supplements as food additives and to require premarket approval of their safety.¹⁶ Under the 1994 DSHEA, dietary supplements reverted to the status of foods, not food additives. The FDA has only postmarketing powers. It is responsible for monitoring the safety and accurate labeling of products on the market (through spot checks of items pulled from store shelves or collected during inspections of manufacturing firms) and for taking any necessary action against violators, such as withdrawing a hazardous product from the market. Manufacturers of dietary supplements are responsible for ensuring that their products are safe before marketing, and they are required to ensure that information on the label is “not false or misleading.”¹⁷ Furthermore, manufacturers can claim general health benefits (for example, that products help maintain normal functioning), but they cannot claim that products “diagnose, treat, cure or prevent any disease.”¹⁸ Manufacturers must notify the FDA of their claim within thirty days of marketing a product, but they are not required “to disclose to FDA or consumers the information they have about the safety or purported benefits of their dietary supplement products.”¹⁹ These regulations and the FDA's reach do not extend to Web sites or the mass media. The Federal Trade Commission (FTC) is responsible for overseeing advertising in

these venues.

The fact that it took the FDA several years to act against manufacturers of ephedra highlights the impotence of this regulatory framework and the power the dietary supplement industry has acquired since passage of DSHEA. The agency began to issue warnings about this product to manufacturers and the public as early as 1997, after the accumulation of consumer complaints. But not until December 2003, after a high-profile death, did it announce, in a joint statement with the U.S. Department of Health and Human Services, plans to prohibit sales of dietary supplements containing ephedra. The rule became effective in April 2004.²⁰ However, in April 2005 a federal district court in Utah ruled that the DSHEA prohibits the FDA from banning dietary supplements. These must be treated like food, and the FDA must prove substantial or reasonable risk regardless of benefit.

Meanwhile, the FDA has proposed strengthening its enforcement powers through new regulations requiring current Good Manufacturing Practices (cGMPs) that “establish standards to ensure” purity and accurate labeling and that require manufacturers “to evaluate the identity, purity, quality, strength, and composition of their dietary ingredients and dietary supplements.”²¹ The FDA has completed the stage of receiving comments from the public, but the proposal has not yet been finalized. Although requiring cGMPs is a step in the right direction, the sum of FDA activities is far from meeting the growing demand from consumers and the medical community for better regulation of dietary supplements.²²

A number of independent agencies help fill the gaps in this regulatory framework through their quality assessment programs. The U.S. Pharmacopeial Convention (USP) has been setting standards for botanicals since 1820. In its Dietary Supplement Verification Program, manufacturers voluntarily submit documentation, including compliance with the FDA’s proposed cGMPs, for review in order to bear the USP certification seal. Manufacturers must also agree to audits, including random off-the-shelf testing. A recent article summarizes the certification procedures of four other agencies, which charge for their services: ConsumerLab.com, Good Housekeeping Institute, NSF International, and the National Nutritional Foods Association.²³

Manufacturers’ participation in these programs indicates that they want to prove to the public that their products are safe. A few manufacturers are going one step further. Once sufficient preliminary evidence has accumulated on the efficacy of a botanical for a specific disorder, they are pursuing FDA approval of the botanical as an investigational new drug (IND), which would allow them to make a more focused health claim and study and market the botanical as a drug.²⁴

■ **The economics of CAM.** *Cost-effectiveness and savings.* A few studies on the cost-effectiveness and cost-saving potential of CAM are promising. For instance, British researchers found that acupuncture for chronic headache gave patients in the intervention group twenty-two fewer days of headache per year and allowed them to make 25 percent fewer visits to general practitioners (GPs) and to take 15 percent

fewer sick days, compared with the control group.²⁵ Canadian researchers have found that teaching transcendental meditation (TM) to heart patients greatly reduces health care costs by controlling levels of stress.²⁶ U.S. research has confirmed the effectiveness of TM in lowering hypertension.²⁷ If it can be shown that these inexpensive CAM interventions reduce the need for surgery, the savings could be enormous. CAM therapies are also being used before, after, and during surgery to induce relaxation.²⁸ Studies have shown that providing guided-imagery tapes to heart patients prior to surgery decreases pain and reduces lengths of hospital stay.²⁹ More investigations are needed on whether CAM can help patients heal faster, use less medication, and leave the hospital sooner.

It appears that many people use CAM for relief from the discomfort of chronic conditions. Even though cost savings may not occur, CAM therapy could still be cost-effective (offer good health value for the money spent) and improve the quality of life. For instance, patients who use one of the three most popular CAM therapies for pain—acupuncture, chiropractic, and massage—might find that they can reduce their consumption of pain medication or be more functional with work or day-to-day activities. These therapies may entail greater out-of-pocket expenses in the short term. However, that people are using them reflects either the adverse side effects of long-term intake of drugs or personal preferences for less interventionist treatment.

Coverage of CAM. Small but growing numbers of insurers and employers are including CAM in their health care packages. The coverage remains low and varies considerably across plans. Both the benefit itself and the specific therapies covered are primarily driven by consumer demand. Insurers have imposed some limits, however, on the number of visits, often to a preferred provider, or on the total amount of coverage. Alternatively, CAM may be included in a defined contribution plan (such as an annual flexible spending account). Some employers believe that offering CAM coverage is “a low-cost benefit with high payoff,” in that it improves employee retention and morale, empowers employees with choices, and controls health care costs.³⁰ However, research has found that insurance coverage increases use of CAM, which may dissuade midsize and small employers from offering it.³¹ Once again, scholarly investigation of these issues is required, especially if policymakers are going to encourage insurers to extend coverage for CAM. In its 2001 report, the White House Commission on Complementary and Alternative Medicine Policy urged third-party payers to “evaluate the possibility” of covering CAM.³² Thus far, only the state of Washington mandates coverage.

■ **Integrative medicine.** The term *integrative medicine* reflects a recent bottom-up development, emerging from educational and clinical pursuits across the country. A number of organizations have evolved to bring together multiple stakeholders from conventional medicine and CAM as well as from philanthropy and business.³³ These organizations engage in dialogue, education, and advocacy. Their Web sites offer links to wide-ranging information on CAM and integrative medicine, to documents

and reports, and to other organizations.³⁴

One sign of their success is a recent recommendation by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) that U.S. hospitals make nonpharmacological therapies for pain management available to patients. A monograph describes dozens of possible therapies along with examples of uses; it notes, however, that these “strategies should supplement, but not replace, the use of medications.”³⁵ Another sign is the growing integrative medicine industry. There are no data on the total number of integrative medicine clinics (IMCs) in the United States or on their various forms. But we do know that there are many scattered across the country and that their organizational forms are diverse. Other programs or service delivery models that are not clinic based, such as “service line” or “environment of care” models, also exist, but little is known about them.

Research on IMCs. Current research on IMCs in university hospital settings reveals some interesting commonalities among differences in the meaning and practice of integration.³⁶ Good relations with hospital physicians are crucial to the success of an IMC.³⁷ Directors of IMCs, most of whom are medical doctors, are fully aware of the challenges of overcoming physicians’ resistance to CAM. They have paved their paths toward acceptance by, for instance, conducting grand rounds to introduce physicians to the science and efficacy of CAM and explaining how particular therapies can be used to facilitate the care of patients with particular illnesses or disorders. Practitioners at IMCs are careful to inform physicians about their treatments and to coordinate, even co-manage, patient care whenever possible. Interesting examples include cancer patients participating in mind-body relaxation techniques before, during, or after chemotherapy and massage therapists, acupuncturists, and oncologists discussing the feasibility of using these therapies on cancer patients.

Obstacles to IMCs. The greatest obstacle now facing IMCs seems to be financial viability. Because CAM work is more labor-intensive and time-consuming, the volume of services is much lower than in conventional medicine. Moreover, insurance reimbursement rarely exists, and when it does, it is too low to cover costs. Accordingly, most IMCs require patients to pay up front in full.

Financial success. The growing popularity of CAM led some academic hospital-based administrators to presume that these “all-cash” services would bring in large sums of money. However, because of hospital regulations and red tape, these expectations have not been met. But many independent IMCs, including those that have separated, legally and financially, from university hospitals, are experiencing greater financial success.

IN JUST A LITTLE OVER A DECADE, CAM has made impressive inroads into U.S. health care. The NCCAM is laying a solid research base for CAM and collaborating with the FDA to build a tighter regulatory framework, all of which is easing physicians’ acceptance of CAM. Also relevant for new developments in

health care delivery, a number of clinics are offering integrative medicine. Clinical experience in integrative medicine is building examples of best practices, suggestions for organizational adaptation, guidelines for regulating practitioners, business models, and so on. As a result, models of care based on a true collaboration between conventional medicine and CAM are emerging.

Before full-scale mainstreaming can occur, however, studies must confirm, refute, or modify preliminary findings about the cost-effectiveness of CAM. Sound evidence of cost savings might motivate more coverage and, thereby, wider access. It might also lead to more research on the clinical applications of CAM. All in all, these developments will help us sort the wheat from the chaff in CAM therapies. They also promise patients the best of both worlds.

.....
The author thanks the anonymous reviewers of this manuscript for their very helpful comments.

NOTES

1. J.A. Astin, "Why Patients Use Alternative Medicine: Results of a National Survey," *Journal of the American Medical Association* 279, no. 19 (1998): 1548–1553.
2. D.M. Eisenberg et al., "Unconventional Medicine in the United States: Prevalence, Costs, and Patterns of Use," *New England Journal of Medicine* 328, no. 4 (1993): 246–252.
3. J.H. Young, "The Development of the Office of Alternative Medicine in the National Institutes of Health, 1991–1996," *Bulletin of the History of Medicine* 72, no. 2 (1998): 279–298.
4. Workshop on Alternative Medicine, *Alternative Medicine: Expanding Medical Horizons; A Report to the National Institute of Health on Alternative Systems and Practices in the United States* (Washington: U.S. Government Printing Office, 1995).
5. M. Ruggie, *Marginal to Mainstream: Alternative Medicine in America* (Cambridge: Cambridge University Press, 2004).
6. D. Cherkin, F.A. MacCornack, and A.O. Berg, "Family Physicians' Views of Chiropractors: Hostile or Hospitable," *American Journal of Public Health* 79, no. 5 (1989): 636–637.
7. D.L. Blumberg et al., "The Physician and Unconventional Medicine," *Alternative Therapies in Health and Medicine* 1, no. 3 (1995): 31–35.
8. D.M. Eisenberg et al., "Trends in Alternative Medicine Use in the United States, 1990–1997: Results of a Follow-up National Survey," *Journal of the American Medical Association* 280, no. 18 (1998): 1569–1575.
9. M.L. Vanderford et al., "Communication Challenges for Experienced Clinicians: Topics for an Advanced Communication Curriculum," *Health Communication* 13, no. 1 (2001): 261–284.
10. S.M. Levine, M.L. Weber-Levine, and R.M. Mayberry, "Complementary and Alternative Medical Practices: Training, Experience, and Attitudes of a Primary Care Medical School Faculty," *Journal of the American Board of Family Practice* 16, no. 4 (2003): 318–326.
11. M.S. Wetzel et al., "Complementary and Alternative Medical Therapies: Implications for Medical Education," *Annals of Internal Medicine* 138, no. 3 (2003): 191–196.
12. M. Angell and J.P. Kassirer, "Alternative Medicine—The Risks of Untested and Unregulated Remedies," *New England Journal of Medicine* 339, no. 12 (1998): 839–841.
13. H.M. Langevin and J.A. Yandow, "Relationship of Acupuncture Points and Meridians to Connective Tissue Planes," *Anatomical Record* 269, no. 6 (2002): 257–265; and K.J. Sherman et al., "Description and Validation of a Noninvasive Placebo Acupuncture Procedure," *Journal of Alternative and Complementary Medicine* 8, no. 1 (2002): 11–19.
14. National Center for Complementary and Alternative Medicine, National Institutes of Health, *Expanding Horizons of Health Care: Strategic Plan 2005–2009*, Executive Summary, 5 April 2005, nccam.nih.gov/about/plans/2005/index.htm (11 April 2005).
15. M.H. Cohen, *Complementary and Alternative Medicine: Legal Boundaries and Regulatory Perspectives* (Baltimore and London: Johns Hopkins University Press, 1998); and D.M. Eisenberg et al., "Credentialing Complementary

- and Alternative Medicine Providers,” *Annals of Internal Medicine* 137, no. 12 (2002): 965–973. For more on how scope-of-practice issues are handled in integrative medicine clinics (IMCs), see M.H. Cohen and M. Ruggie, “Integrating Complementary and Alternative Medical Therapies in Conventional Medical Settings: Legal Quandaries and Potential Policy Problems,” *University of Cincinnati Law Review* 72, no. 2 (2003): 671–729.
16. A.L. Buchman, “Personal and Government Regulation of Nutritional Supplements: What We Want and What We Should Expect,” *Journal of Laboratory and Clinical Medicine* 139, no. 6 (2002): 339–342.
 17. U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, “Overview of Dietary Supplements,” 3 January 2001, 2, www.cfsan.fda.gov/dms/ds-oview.html (10 January 2005).
 18. FDA, CFSAN, “Claims That Can Be Made for Conventional Foods and Dietary Supplements,” September 2003, 3, www.cfsan.fda.gov/dms/hclaims.html (10 January 2005).
 19. FDA, CFSAN, “Overview of Dietary Supplements,” 4.
 20. In March 2004, the FDA banned one other product, androstenedione, a steroid precursor; it is investigating a few more supplements.
 21. FDA, “FDA Proposes Labeling and Manufacturing Standards for All Dietary Supplements,” *FDA News*, 7 March 2003, www.fda.gov/bbs/topics/NEWS/2003/NEW00876.html (10 January 2005).
 22. P.B. Fontanarosa, D. Rennie, and C.D. DeAngelis, “The Need for Regulation of Dietary Supplements—Lessons from Ephedra,” *Journal of the American Medical Association* 289, no. 12 (2003): 1568–1570; and “An Assurance of Safety: Treat Supplements Like Drugs” (Editorial), *American Medical News*, 11 November 2002, www.ama-assn.org/amednews/2002/11/11/edsall11.htm (11 April 2005).
 23. W.L. Larimore and D.P. O’Mathuna, “Quality Assessment Programs for Dietary Supplements,” *Annals of Pharmacotherapy* 37, no. 6 (2003): 893–898.
 24. K.M. Wu et al., “Regulatory Science: A Special Update from the United States Food and Drug Administration: Preclinical Issues and Status of Investigation of Botanical Drug Products in the United States,” *Toxicology Letters* 111, no. 3 (2000): 199–202.
 25. A.J. Vickers et al., “Acupuncture for Chronic Headache in Primary Care: Large, Pragmatic, Randomised Trial,” *British Medical Journal* 328, no. 7442 (2004): 744–750.
 26. R.E. Herron and S.L. Hillis, “The Impact of the Transcendental Meditation Program on Government Payments to Physicians in Quebec: An Update,” *American Journal of Health Promotion* 14, no. 5 (2000): 284–291.
 27. R.H. Schneider et al., “Disease Prevention and Health Promotion in the Aging with a Traditional System of Natural Medicine: Maharishi Vedic Medicine,” *Journal of Aging and Health* 14, no. 1 (2002): 57–78.
 28. M.C. Oz, G.C. Whitworth, and E.H. Liu, “Complementary Medicine in the Surgical Wards,” *Journal of the American Medical Association* 279, no. 9 (1998): 710–711 (erratum, 280, no. 6 [1998]: 520).
 29. D.L. Tusek, R. Cwynar, and D.M. Cosgrove, “Effect of Guided Imagery on Length of Stay, Pain, and Anxiety in Cardiac Surgery Patients,” *Journal of Cardiovascular Management* 10, no. 2 (1999): 22–28.
 30. G. DeVries, “Complementary Health Care: A Welcome Addition to an Employee Benefits Program,” *Employee Benefits Journal* 28, no. 3 (2003): 30–34.
 31. P.M. Wolsko et al., “Insurance Coverage, Medical Conditions, and Visits to Alternative Medicine Providers: Results of a National Survey,” *Archives of Internal Medicine* 162, no. 3 (2002): 281–287.
 32. White House Commission on Complementary and Alternative Medicine Policy, *Final Report*, March 2002, chap. 7, 14, whccamp.hhs.gov (10 January 2005).
 33. Examples are the Consortium of Academic Health Centers for Integrative Medicine (www.imconsortium.org), the American Association for Health Freedom (www.apma.net/aaahf/default.asp), and the Collaboration for Healthcare Renewal Foundation (www.thecollaboration.org).
 34. A noteworthy item is Integrated Health Care Consortium, *National Policy Dialogue to Advance Integrated Health Care: Finding Common Ground*, Final Report, March 2002, www.apma.net/npd.pdf (11 April 2005).
 35. National Pharmaceutical Council and Joint Commission on Accreditation of Healthcare Organizations, *Pain: Current Understanding of Assessment, Management, and Treatments*, December 2001, 53, www.jcaho.org/news+room/health+care+issues/pain+mono_npc.pdf (10 January 2005).
 36. The following discussion is based on a project funded by the National Library of Medicine, Grant no. IG13LM07475-01.
 37. Health Forum/American Hospital Association, 2000–2001, “Complementary and Alternative Medicine Survey,” www.hospitalconnect.com/aha/resource_center/content/CAM%20Article%20sept02.pdf (15 May 2005).