When the *Journal of the American Medical Association* devoted its November 1998 issue to complementary and alternative medicine (CAM), the same year that the National Institutes of Health upgraded its Office of Alternative Medicine to center status, it was clear that a phenomenon had taken hold in the U.S. health care system. Increasingly, sick people are going beyond the boundaries of the doctor’s office.

According to the 1999 National Health Interview Survey, nearly one in three adults seeks so-called CAM therapy – a broad, ever-changing category that includes, but is by no means limited to, manipulative methods such as chiropractic, osteopathy and massage; homeopathic and naturopathic medicine; mind/body interventions; dietary supplements and herbal therapies; energy therapies such as qi gong, Reiki and therapeutic touch; and traditional Chinese practices such as acupuncture.

What’s going on? One of the primary factors driving the growing interest in CAM is the increase in chronic illness in the United States. “People are living longer, and thanks to certain successes of conventional medicine, more people...”
are living with chronic illnesses,” says Dr. Michael S. Goldstein, professor of community health sciences at the UCLA School of Public Health and author of *Alternative Health Care: Medicine, Miracle, or Mirage?* (Temple University, 1999). “But there have not been concomitant advances in medicine’s ability to offer a cure for many of these chronic problems.”

“Most medical physicians always felt that anything that wasn’t medicine was quackery, and refused to even talk to their patients about it,” agrees Dr. Scott Haldeman, adjunct professor of epidemiology at the school. “Until the late 1980s, it was considered unethical for a physician to associate with an acupuncturist, a chiropractor or a homeopath. So their patients would use these therapies and not tell them, and the medical world had no concept of what patients were doing.”

“While many physicians remain skeptical of CAM therapies, they at least now recognize that CAM is an important phenomenon that the scientific community needs to address,” Haldeman adds.

Meanwhile, many physicians have begun to embrace aspects of CAM that were long ignored. “There are plenty of good studies, for example, demonstrating that adjunctive cancer therapies that use meditation and other mind/body work can reduce side effects of conventional medical treatment and improve well-being,” notes Dr. Dawn Upchurch, professor of community health sciences at the school. In addition, she notes, insurance companies are increasingly likely to cover certain CAM therapies, including chiropractic, acupuncture and, in some cases, massage, adding more fuel to the trend.

Attempting to define and categorize CAM is tricky, Goldstein notes. Prominent researchers in the field have classified it as encompassing therapies not taught in conventional medical schools. But many medical school curricula now cover approaches as “alternative” as herbalism and therapeutic touch, and an estimated two in three U.S. medical schools are offering coursework in CAM. The National Center for Complementary and Alternative Medicine defines it as “a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine.”

But because of a historic bias in research funding as well as other factors, many CAM therapies have little scientific data to support them.

call CAM – have been prominent throughout this country’s history, and they never became as marginalized as conventional medicine made them out to be, he says.

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As a trained social and personality psychologist with an emphasis in health – particularly elderly and minority health – and adherence behaviors to screening, O’Donnell is interested in understanding how knowledge, attitudes, beliefs, motivations, and barriers are related to the decision to use or not use CAM. She is currently a postdoctoral researcher in the School of Public Health-based Division of Cancer Prevention and Control Research, studying whether CAM use among minority populations impedes or supports Western cancer screening practice. “Most CAM research focuses on Caucasians,” O’Donnell notes. “Paradoxically, many CAM therapies originate in Asia; yet, little is known about the patterns of use among Asians who live in the United States.” O’Donnell is also working on a project exploring the predictors of CAM use among younger breast cancer survivors. “This area of research can no longer be ignored as an important aspect of health and well-being,” O’Donnell says.

“Given CAM’s rise in popularity, it is essential that physicians are aware of the possible barriers that its use may present to their recommendations for cancer screening or other preventive health behaviors.”
Paul Hsu, M.P.H. ’03

Growing up with stories about friends and relatives utilizing acupuncture and herbal remedies in their everyday lives, “alternative medicine seemed routine to me,” Hsu recalls. (In Chinese herbal lore, watermelon is considered to have cold properties, and is thus believed to be something the body should avoid before going to sleep.) Hsu admits to being skeptical at times, but adds, “It’s hard to argue with ‘Eat your vegetables.’”

“Don’t eat all that watermelon before you go to bed,” Hsu recalls. (In Chinese herbal lore, watermelon is considered to have cold properties, and is thus believed to be something the body should avoid before going to sleep.) As an adult, he has been surprised at how the research has been conducted on CAM. He has learned how to analyze and evaluate results rationally and in an objective manner.

Haldeman, who has a Doctor of Chiropractic degree as well as an M.D. and Ph.D., notes that the research on manipulation and manual therapy is more advanced than for other forms of alternative care. Acupuncture, too, has attracted its share of research, with studies suggesting positive short-term effects on pain in general, though there is less evidence on acupuncture’s impact on specific types of pain. There are also hints that the therapy could be effective for other purposes, such as treating addiction and weight control, though that is by no means established, Haldeman says. Controlled clinical trials in the homeopathic field have mostly come from Europe, and it has been difficult to conclude from the data thus far that there is a particular condition or conditions that can benefit from homeopathy, Haldeman says. Some evidence suggests that massage and touch therapy can positively affect babies and the elderly.

But everyone agrees that there is much more work to be done in establishing the scientific basis of many popular CAM therapies. “In the past, there’s been limited incentive for people to do research on these techniques,” says Goldstein. “Most of them can’t be patented, so there’s no one who stands to make a lot of money like a pharmaceutical company would from a successful new drug. And many of the techniques are very hard to evaluate because they’re highly individualized.”

Critics of CAM have pointed to the lack of data on the effectiveness of many of the therapies, but that’s also true for many aspects of conventional medicine. “It’s amazing how little we know about the effectiveness of a lot of therapies,” says Dr. Hal Morgenstern, professor of epidemiology. “Many things that physicians do have not been well evaluated.”

What’s more, funding for research on the safety and efficacy of CAM therapies has been rising dramatically. The Office of Alternative Medicine was established by Congress in 1991 with a $2 million budget for the fiscal year 1992. For FY 2004, the budget is expected to exceed $116 million.

Goldstein and Dr. Deborah Gilk, also a professor at the UCLA School of Public Health, were among the first researchers supported by the Office of Alternative Medicine, which funded their study of patient satisfaction with homeopathic treatment. Previously, Goldstein had examined factors that led some conventionally trained medical doctors to become involved with CAM. He also spent two years conducting research at The Wellness Community, a support group for cancer patients, nearly all of whom combined alternative therapies with conventional treatments. Goldstein has taught a course at the school on alternative medicine for the last decade.

He is currently co-principal investigator and program director of CHIS-CAM, the National Cancer Institute-funded follow-up study to California Health Interview Survey (CHIS) 2001.
Dr. Michael S. Goldstein (above), among the first researchers funded by the National Institutes of Health to study CAM, authored a book on the phenomenon.

Dr. Eric Hurwitz (facing page) has conducted studies comparing chiropractic and medical care for patients with low-back and neck pain.

examining the use of complementary and alternative medicine among approximately 8,000 California adults, more than half of whom have had cancer or other chronic illnesses. Among the questions being asked of those surveyed in the follow-up study are which CAM modalities they have used, why they chose them, their assessment of whether they benefited, whether they told their medical doctor and, if they did, how their doctor reacted.

"Up to now, national studies of CAM utilization haven’t had large enough samples to separate out people with serious illnesses, or to look at utilization by ethnicity or income," says Goldstein. "At the same time, most of the CAM studies with people who are sick involve clinically based populations. CHIS is a community-based study, so the hope is that our data are going to be much more valid in terms of understanding how people in California are actually using CAM."

In studying a specific population – long-term survivors of breast cancer – Dr. Patricia Ganz, professor in the schools of public health and medicine and director of the Division of Cancer Prevention and Control Research, found that women who were distressed were more likely to have used CAM therapies.

Ganz and colleagues are now analyzing data from a follow-up study of approximately 600 women between two and 10 years after breast cancer treatment. The current study asked the women in great detail about their use of complementary and alternative strategies – everything from mind/body techniques to diet, exercise, meditation and acupuncture. In addition to gathering detailed information about CAM use, the wide range of time since treatment among the cohort should provide interesting data on when survivors are most likely to turn to CAM, and the diversity of the group will enable the researchers to explore differences by ethnicity.

"Most studies have looked at prevalence of CAM use, but not necessarily at the reasons patients are using it," Ganz notes. "If a patient is feeling anxious and
is self-medicating, it could be that more conventional medical or supportive care, such as counseling or prescribed medications, might be appropriate. The possibility that distressed patients are turning to CAM therapies without their physician’s knowledge is cause for concern, Ganz adds. “Studies are now being funded to subject alternative strategies to the same rigor that we do conventional treatments, but until we have results, the efficacy of many of these therapies is unknown,” she says. Because the supplement industry isn’t regulated, Ganz is concerned that patients who buy “natural” remedies at health food stores can’t know what’s in the products; in addition, certain herbal remedies such as St. John’s Wort, a popular product purported to relieve symptoms of depression, can negatively interact with conventional medications.

Morgenstern first participated in a CAM study in 1974, conducting a survey of the operations of chiropractors in North Carolina the summer before he started as a doctoral student. In the late 1980s, by which time he had joined the UCLA School of Public Health faculty, one of Morgenstern’s students was interested in doing research on the effectiveness of chiropractic. That student, Dr. Eric Hurwitz, went on to join the school’s faculty and collaborate with Morgenstern on two randomized clinical trials in a large managed care plan in La Habra, Calif., one comparing chiropractic and medical care for patients with low-back pain and the other comparing the treatments for neck pain.

When Hurwitz had been in chiropractic school, he began researching the literature and found that there was little evidence for what practitioners in his profession did—and, likewise, little evidence for what physicians did to treat musculoskeletal pain. The back pain study he and Morgenstern conducted found

“In light of recent evidence on increased risks associated with hormone therapy for menopausal symptoms, Dr. Dawn Upchurch (above) is conducting a pilot study on the potential benefits of acupuncture as an alternative.

“Acupuncture treatment is not standardized; it is individualized. The problem with some of the Western studies is that they haven’t taken into account different diagnostic categories for determining what the treatment should be.”

— Dr. Dawn Upchurch
few clinical differences between patients who received chiropractic and those receiving medical care after 18 months of follow-up. But there were significant differences in patient satisfaction – those randomized to chiropractic tended to be much more satisfied with their care, and reported more symptom improvement than patients randomized to medical care, even though, in terms of validated outcome measures of pain and disability, they were similar.

“We know that chiropractors talk to patients more about a treatment plan and what they can do for their symptoms,” says Hurwitz, assistant professor of epidemiology. “Those communication factors might have influenced patients’ perception of their symptoms, and probably influenced satisfaction as well.” While chiropractic patients have been found to be more satisfied in the past, Morgenstern notes, the significance of this study was that the patients were randomized to one group or the other, and entered their treatment with no biases.

Given the tendency for people to seek alternatives where conventional medicine has little to offer, CAM therapies for women with menopausal symptoms are particularly important to evaluate at a time when the recent evidence of increased risk of cardiovascular disease, breast cancer, and stroke associated with hormonal therapy leaves no standard treatment. Upchurch has begun a pilot study of the use of acupuncture, which empirical studies suggest might be a useful alternative treatment for menopausal symptoms.

Initially, Upchurch is investigating the level of agreement among acupuncturists in their diagnostic assessment of menopausal women based on principles of Traditional Chinese Medicine, which includes a focus on the whole person and her environment, and emphasizes the importance of addressing the root causes of symptoms rather than the symptoms themselves. “The diagnostic categories are different from those in Western medicine,” says Upchurch. “The treatment is not standardized; it is individualized. Part of the problem with some of the Western studies that have been done on acupuncture is that they haven’t taken into account these different diagnostic categories for determining what the treatment should be.”

Applying rigorous scientific research to Traditional Chinese Medicine and many other CAM therapies is particularly challenging, notes Dr. Deborah Ackerman, adjunct associate professor of epidemiology. “The randomized, placebo-controlled clinical trial is great if it’s a pill, because the actual treatment looks exactly like the active treatment,” she says. “But when the treatment is some sort of an interpersonal relationship with an acupuncturist, or a therapeutic massage, conducting a well-designed randomized clinical trial is much more difficult.”

Ackerman would lead an effort to assess the clinical- and cost-effectiveness of mind-body interventions as director of the Health Outcomes group, which includes several other faculty members from the School of Public Health, will develop methodologically sound approaches that include a thorough evaluation of patient characteristics related to factors such as degree of spirituality, level of optimism, and expectations about the treatment. “These are all characteristics that have been found to affect patients’ health either directly or indirectly, and we want to know how these characteristics interact with patients’ responses to treatment,” Ackerman explains.

Despite the difficulties evaluating certain CAM practices, methodologies can be devised that can prove revealing, says Haldeman, whose own research has focused on the efficacy and complication rates of various treatments for back and neck
Shannon Rhodes
Rhodes’ own positive experiences with a variety of CAM modalities – including acupuncture, Chinese herbs, homeopathy, and neuromuscular re-education – fueled her professional interest in CAM as an adjunct to more traditional medical treatment and prevention strategies. Prior to beginning the M.PH. program in the school’s Department of Epidemiology, she participated in several literature reviews on CAM topics, all of which left her thinking about the difficulties presented when attempting to study the efficacy of many CAM modalities. As a result, she is interested both in understanding what constitutes the optimal study design and outcome measurements for the diverse CAM techniques, and in integrating CAM with established medicine to decrease costs and improve quality of life for chronic disease populations.

“In learning about the variety of modalities, I have become increasingly intrigued by the concept of holism and health,” Rhodes says, “and am looking forward to studying the impact of psychological and social components on general health and on recovery from specific conditions.”

One of the major challenges is cultural. “You have to choose your subjects carefully, because there is evidence that preference affects response to a treatment approach,” Haldeman notes. “If you would rather have acupuncture than medical therapy, you’re more likely to experience a better response to acupuncture, and vice versa.”

As interest in and funding for CAM studies continue to grow, public health researchers expect to get answers to basic questions. “We really need to know more about which interventions work and which don’t, and for what populations,” says Morgenstern. “We’re just touching the surface now.”

The mind-body questions are particularly compelling, Goldstein notes. “In the past decade, for example, there has been a tremendous rise in research about the relationship of spirituality and religious practice to all sorts of health outcomes,” he says. “At this point, there’s not much evidence that religion or spirituality is curing people of illnesses, but there is a good deal of data indicating that people who practice a religion are more apt to be healthy, and more likely to respond to illness in a way that keeps them alive longer and functioning better.” Another important area warranting investigation, he adds, is the field of nutrition and dietary supplements – an area that has the advantage of lending itself to the Western model of clinical trials.

Then there’s the issue of cost. Early CAM researchers advanced the notion that the trend would alleviate the problem of soaring health care costs in the United States by replacing expensive pain. One of the major challenges is cultural. “You have to choose your subjects carefully, because there is evidence that preference affects response to a treatment approach,” Haldeman notes. “If you would rather have acupuncture than medical therapy, you’re more likely to experience a better response to acupuncture, and vice versa.”

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Federal Funding for CAM Research by Millions, 1992-2004

Office of Alternative Medicine
National Center for Complementary and Alternative Medicine
interventions with cheaper ones. “That’s been very hard to prove,” Goldstein says. “You can show that one intervention is less expensive than another for a particular problem, but as people become more knowledgeable about their health, as is typically the case for those who use CAM, they tend to utilize more services. So the issue of the financial repercussions of CAM remains in flux.”

As more evidence is published on which CAM therapies are effective and which are not, some observers believe the mainstream health care system will eventually incorporate all of the successful CAM modalities, leaving no need for CAM. “I'm not inclined to believe that will happen in the near future,” says Morgenstern. “I suspect there will always be some alternative to what medical doctors are trained to do.”

It’s true that, with the notable exception of chiropractors and, in some states, naturopaths, most CAM practitioners have minimal licensure and education requirements, making it difficult for consumers to know the level of experience and competence of providers they might choose to see. For many years, this has fueled the argument that CAM leaves the population vulnerable to quackery. Goldstein notes that there is little evidence that the problem of incompetent providers has been significantly greater in CAM than in conventional medicine. “This notion that people with a problem that can be solved by Western medicine are instead going to some quack – I’m sure there are some cases like that, but it’s very rare,” he says. “Only about 5 percent of the people who use CAM do not also use conventional medicine. People tend to come to CAM after they’ve exhausted what conventional medicine has to offer.”

Goldstein sees the CAM phenomenon in the context of medical pluralism. “The image was always that there is scientific medicine and then there are other fringe kinds of things, but now we’re seeing an acceptance that health care is a pluralistic enterprise – analogous to the recognition of pluralism in a more general way throughout American society,” he says. “We’re finally discovering something that’s always been there, but was kept underground.”

“The public’s utilization rate is huge, the cost is huge, and the question is, Does any of this do any good?” — Dr. Scott Haldeman