

## **Chapter 2: Overview of CAM in the United States: Recent History, Current Status, And Prospects for the Future**

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Complementary and alternative medicine, or CAM, can be defined as a group of medical, health care, and healing systems other than those included in mainstream health care in the United States. CAM includes the worldviews, theories, modalities, products, and practices associated with these systems and their use to treat illness and promote health and well-being.

Although heterogeneous, the major CAM systems have many common characteristics, including a focus on individualizing treatments, treating the whole person, promoting self-care and self-healing, and recognizing the spiritual nature of each individual. In addition, many CAM systems have characteristics commonly found in mainstream health care, such as a focus on good nutrition and preventive practices. Unlike mainstream medicine, CAM often lacks or has only limited experimental and clinical study; however, scientific investigation of CAM is beginning to address this knowledge gap. Thus, boundaries between CAM and mainstream medicine, as well as among different CAM systems, are often blurred and are constantly changing.

Examples of the health care systems, practices, and products typically classified as CAM in the United States are listed in Table 1.

Table 1. CAM Systems of Health Care, Therapies, or Products

<b>Major Domains of CAM</b>	<b>Examples Under Each Domain</b>
<b>Alternative health care systems</b>	Ayurvedic medicine Chiropractic Homeopathic medicine Native American medicine (e.g., sweat lodge, medicine wheel) Naturopathic medicine Traditional Chinese Medicine (e.g., acupuncture, Chinese herbal medicine)

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In this report, "mainstream," "conventional," "allopathic," and "biomedical" are used synonymously to refer to the principal form of health care and medicine available in the United States.

This table was adapted from the major domains of CAM and examples of each developed by the National Center for Complementary and Alternative Medicine, National Institutes of Health

<b>Major Domains of CAM</b>	<b>Examples Under Each Domain</b>
<b>Mind-Body interventions</b>	Meditation Hypnosis Guided imagery Dance therapy Music therapy Art therapy Prayer and mental healing
<b>Biological based therapies</b>	Herbal therapies Special diets (e.g. macrobiotics, extremely low-fat or high carbohydrate diets) Orthomolecular medicine (e.g., megavitamin therapy) Individual biological therapies (e.g., shark cartilage, bee pollen)
<b>Therapeutic Massage, Body Work, and Somatic Movement Therapies</b>	Massage Feldenkrais Alexander Method
<b>Energy Therapies</b>	Qigong Reiki Therapeutic Touch
<b>Bioelectromagnetics</b>	Magnet therapy

Many of the CAM systems of health care listed in Table 1 have evolved from the collective clinical experiences of many practitioners over generations of practice, such as in Traditional Chinese Medicine. Others have evolved from the clinical experiences of a single practitioner or small groups of practitioners who have developed a particular intervention.

Despite their diversity, there are some common threads that run among many traditional systems of health care as well as systems that have emerged more recently. These similarities include an emphasis on whole systems, the promotion of self-care and the stimulation of self-healing processes, the integration of mind and body, the spiritual nature of illness and healing, and the prevention of illness by enhancing the vital energy, or subtle forces, in the body.<sup>1</sup>

**Convergence of CAM and Mainstream Healthcare**

Some of the common threads that run through CAM health care systems also are part of mainstream, or conventional, health care. For example, conventional medicine has a long tradition of being concerned with preventing disease as evidenced by the development of programs for immunizations, healthier mothers and babies, family planning, safer and healthier foods, fluoridation of drinking water, control of infectious diseases, reducing deaths from heart disease and stroke, decreasing the use of tobacco products, and promoting motor vehicle safety and safer workplaces.<sup>2</sup>

Mainstream or conventional health care also has long-recognized that good nutrition and exercise are important components of a healthy lifestyle.<sup>3,4</sup> There also is a growing recognition within conventional health care that biopsychosocial and spiritual factors may play an important role in promoting health and preventing illness.<sup>5,6</sup>

The difference between conventional and CAM health care systems in many of these areas, however, is one of emphasis. In part, because of the many technological advances that have occurred in conventional health care over the years (see Recent History of CAM section, below), pharmacological, surgical, and other technological approaches have come to dominate conventional health care. While acknowledged, prevention and wellness promotion have been underemphasized. For example, according to a recent report by the Nutrition Education Consortium, the teaching of nutrition in medical schools and residency programs remains "woefully inadequate,"<sup>7</sup> and a survey by Cooksey et al.<sup>8</sup> found that most medical schools do not have faculty trained specifically in nutrition. As a result of this lack of training in nutrition in medical education, many practicing physicians are not adequately prepared to provide nutrition counseling to their patients. However, registered dietitians and clinical nutritionists are employed by hospitals and clinics. These are the specialists who are trained in this area and are well established in the conventional health care system.

Because many CAM approaches often focus on prevention rather than cure,<sup>9</sup> they have come to be identified with wellness and self-care. This may be a reflection of history, as effective treatments for many of the infections and severe injuries that occurred were lacking. Traditional systems were better able to strengthen the individual and attempt to prevent disease than to treat many of the illnesses that killed millions even one hundred years ago. This is not to imply that CAM systems of health care are more effective than conventional health care in promoting health and preventing illness, as many have not been scientifically shown to prevent disease or promote health.

The perception that conventional health care emphasizes high technology approaches to treating patients, while CAM health care emphasizes low technology approaches to promoting health and preventing disease, has led some to suggest that conventional and CAM health care may eventually converge to form a new health care system that integrates the best of each<sup>10</sup>. However, there are not only scientific, but also educational, regulatory, and political obstacles to integration of the two systems.

### **Evolution of CAM Terminology**

As interest in and use of non-mainstream health care practices has evolved in this country over the past several decades, the terminology used to describe CAM systems, practices, and products has had to evolve accordingly. Rather than focus on what these "other" health care systems are not (i.e., "unorthodox,

"unconventional," or "unscientific"), more recent terminology has begun to focus on what these systems are and how they might be used.

For example, because many consumers appeared to be using unconventional health care practices as alternatives to conventional health care, the term "alternative medicine" was widely adopted in the United States and Europe in the later 1980s.<sup>11,12</sup> This perception, however, was largely dispelled by surveys in the early 1990's, which found that people were using the two systems of health care—mainstream and alternative—simultaneously.<sup>13,14</sup> These surveys found that health care consumers were accessing a range of therapeutic and preventive options, both alternative and conventional, to essentially "complement" one another. As a result, the term "complementary medicine" was widely adopted not long afterwards to describe systems of health care and individual therapies that people used as adjuncts to their conventional health care.<sup>15,16</sup>

A more recent and detailed survey conducted by Astin<sup>17</sup> has found that, although many unconventional therapies were being used to complement mainstream medical care, some were being used instead of conventional medical care. These data suggested that the term "complementary" was only partially descriptive of what was occurring in the marketplace. To acknowledge this dichotomy, Congress adopted the phrase "complementary and alternative medicine" and applied it to the National Institutes of Health's National Center on Complementary and Alternative Medicine (NCCAM), when the Office of Alternative Medicine was elevated to the status of a coordinating research "Center" in 1999.

Even this terminology is unsatisfactory to many because it does not reflect emerging models of health care that have arisen in the overlapping areas between these various systems. Nor does it account for the fact that health care systems, practices, and products that are not widely accepted or readily available in one part of the United States may be fully accepted and easily available in another. Members of the Commission considered other terms, such as "integrative health care," "collaborative health care," "comprehensive health care," and "holistic health care," but chose to use the term "complementary and alternative medicine" because it is used in the President's Executive Order and is widely recognized by the media and in the scientific literature.

To fully understand the complexities of CAM as well as its current relationship with conventional health care in this country, it is necessary to understand its recent history, its current status, and future prospects, including emerging models of integrative and collaborative care.

### **Recent History of CAM in the United States**

The history of CAM in the U.S. is a long, complex story that has been shaped by scientific, economic, and social factors. A detailed rendering of this history is beyond the scope of this report. This section instead provides a brief overview of

the more recent developments that have helped shape the present status of CAM in this country and its prospects for contributing to the health and well being of our nation.

Early American health care consisted of an eclectic mix of systems. In fact, until the middle of the 19th century, the vast majority of primary medical care in this country was provided by botanical healers, midwives, chiropractors, homeopaths, and an assortment of other lay healers offering a variety herbs and nostrums for a range of illnesses.<sup>18-20</sup>

This began to change in the latter part of the 19th century, however, with the development and validation of the germ theory and significant scientific advances in antiseptic techniques, anesthesia, and surgery. Beginning in the late 1800s and lasting until the early 20th century there also was a major revolution in medical education that helped scientific medicine evolve into the dominant health care system in this country.

This revolution in medical education began with the publication of William Osler's (1847-1919) textbook, *The Principles and Practice of Medicine* in 1892, which brought diagnostic clarity to medical practice. By 1905 Osler's textbook was the primary medical textbook in the vast majority of U.S. medical schools.<sup>21</sup> This revolution culminated with the release of a report by Abraham Flexner in 1910<sup>22</sup> that served to crystallize the educational reform movement. After the release of the Flexner's report, many medical institutions that did not meet its standards were driven out of business or forced to implement significantly more rigorous training programs.<sup>21</sup> Schools for many unorthodox healing systems either ceased to exist or became marginalized.<sup>20</sup>

The isolation and elaboration of life-saving hormones, sulfa drugs, and other antibiotics in the early and middle of the 20th century, conventional medicine cemented its place as the nation's preeminent form of health care in this country. Although most of the other health care systems and their therapies did not disappear, they were considered by most of the public and the mainstream medical community to be unscientific relics of the past. As a result, many were practiced in relative obscurity.

With the reduced threat of infectious diseases and other acute illnesses, conventional medicine began turned its focus to the more complex and costly problems of chronic, degenerative illnesses. As a result of public health interventions developed earlier in the 20th century, people began living significantly longer. This gradual aging of the population began to significantly increase the prevalence of chronic conditions, such as arthritis, back pain,

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For a brief overview of medicine and health care in the 19th and early 20th centuries in the United States, see Acknerknecht EA. *A Short History of Medicine*. Baltimore, MD: John Hopkins University Press, 1982 or Duffin J. *History of Medicine: A Scandalously Short Introduction*. Buffalo, NY: Toronto University Press, 1999.

diabetes, hypertension, heart disease, and cancer, putting further pressure on conventional medicine to address these conditions.

As the health care system developed more sophisticated means of diagnosing and managing chronic illnesses, the cost of health care began to rise dramatically. Between 1965 and 1975, national health care expenditures more than tripled, rising from just over \$41 billion to nearly \$130 billion. Although employers and government programs covered some of these increases, out-of-pocket expenditures more than doubled during this same period.<sup>23</sup> Since then costs have continued to rise, with national health care expenditures reaching more than \$1.2 trillion in 2000, the latest year for which such figures are available, and they are expected to reach more than \$2.6 trillion by 2010.

It was during this time of increasing rates of chronic illness and escalating health care costs that medical pluralism began to reemerge in this country. This reemergence was spurred on by a number of overlapping and sometimes interrelated movements. Beginning in the 1950s, the whole foods and dietary supplement movements began to change Americans' view of food as not only something they needed to stay alive but also as potential therapeutic agents. In the late 1960s and early 1970s, Americans were increasingly exposed to a variety of traditional health care systems from foreign and indigenous cultures, many of which dated back to antiquity.<sup>24</sup> New York Times writer James Reston's account of his emergency appendectomy in a Chinese hospital during then Secretary of State Henry Kissinger's visit to China in 1971 was particularly influential in this process.<sup>25</sup> Reston's article described how his post-operative pain and discomfort were relieved by acupuncture and herbs. For most Americans, this was their first glimpse of Traditional Chinese Medicine and its potential uses.

During this same period, the growing "counterculture" movement in America sparked a fascination with the religious and philosophical traditions of Asian cultures. Transcendental Meditation, which is derived from Hinduism, became widely known and practiced.<sup>20</sup> Meanwhile, there was a growing interest in indigenous health care traditions, such as Native American and Mexican-American health care practices, particularly their reliance on herbs and natural substances. This movement, in turn, led to a renewed interest in "natural" health care movements that had developed in this country in the 19th century but had been relegated to the background of the American health care landscape.

The late 1970s saw the emergence of the holistic health care movement in this country. Holistic practice (holism comes from the Greek word "holos" or "whole") emphasized an attention to the whole person, including the physical, spiritual, psychological, and ecological dimensions of healing. Holistic health care incorporates practices and concepts of Eastern philosophy and diverse cultural traditions, including acupuncture and the use of herbs, massage, and relaxation techniques as well as conventional medical practices.<sup>26</sup> It gained its greatest

following among nurses.<sup>27</sup> However, many physicians, particularly those in the new specialty of family medicine, also became interested in this movement. The American Holistic Medical and Nurses Associations were formed, large professional and public conferences held, and a number of holistic medical clinics and holistic health centers opened.

The late 1970s and early 1980s also was a time when a variety of self-care movements emerged; they offered programs or sponsored events to help individuals and families increase wellness or reduce their risk of onset of illness through diet or lifestyle changes.<sup>28, 29</sup> The years since then have been a particularly active time for the personal fitness movement, which increasingly is making use of the techniques of other systems of healing, such as yoga, tai chi, and massage.<sup>30</sup>

### **The Current Status of CAM in the United States**

Today, use of CAM approaches and therapies is more prevalent in a number of patient populations in the United States, no matter how narrowly or broadly it is defined. Physicians, hospitals, and other conventional health care organizations also are showing a growing interest in CAM. Although such prevalence of use and interest in CAM is not an indication that these practices are effective, it does suggest that those with chronic conditions and the physicians who treat them are looking for more therapeutic options than are widely available in conventional health care settings. Indeed, for some chronic conditions, state-of-the-art conventional therapies have provided only modest gains. For example, according to a number of assessments over the years, expensive mainstream health care approaches to managing chronic lower back pain often have not been very effective.<sup>31-36</sup> This is perhaps why individuals with back pain are some of the most frequent users of CAM practices.

### **Consumer Use of CAM Practices**

Because of the dramatic increase in the prevalence of chronic conditions, the past decade has witnessed an acceleration both in consumer interest in and use of CAM practices and/or products. Surveys indicate that those with the most serious and debilitating medical conditions, such as cancer, chronic pain, and HIV, tend to be the most frequent users of CAM practices. CAM usage also appears to be high among certain ethnic populations that have access to their traditional forms of healing.

### **CAM and Cancer**

A survey that assessed both the prevalence and predictors of CAM use in a comprehensive cancer center population where all were using conventional therapies found that 63 percent had used at least one CAM approach other than a spiritual practice. Women with cancer were more likely to use CAM than men with cancer, and those patients who had surgery, chemotherapy, or both were more likely to use CAM than cancer patients who had neither.<sup>37</sup>

Another survey of almost 2,000 tumor registry patients selected at random found that 75 percent had used at least one CAM modality.<sup>38</sup> The most frequently used therapies among this group of cancer patients were nutritional approaches (63 percent), massage (53 percent), and herbs (44 percent). The most common reason patients gave for using CAM was to "stimulate an immune response" (73 percent). Breast cancer patients were significantly more likely to be consistent users of CAM therapies compared to patients with tumors in other sites areas of the body (84 percent versus 66 percent, respectively).

The majority of cancer patients (63 percent) enrolled in clinical trials at the National Institutes of Health used at least one CAM therapy, with an average use of two therapies per person.<sup>39</sup> This same study found that the most frequently utilized therapies were spiritual approaches, relaxation, imagery, exercise, lifestyle, diet (e.g., macrobiotic, vegetarian), and nutritional supplementation therapies. Patients unanimously believed that these CAM treatments helped to improve their quality of life by helping them cope more effectively with stress, decreasing their discomforts related to treatment and the illness itself, and giving them a better sense of control. A similar pattern of CAM usage has been found among men with prostate cancer, with 42 percent of those surveyed using vitamins, prayer or religious practices, and herbs to treat their condition.<sup>40</sup> Most of the men in this survey did not report their use of CAM to their physicians.

Most of these surveys included prayer and spirituality under CAM. Many people that attend churches, synagogues, or mosques or other religious entities do not believe that this is essential information for their physician and would not feel compelled to share this information with their physician. On the other hand, the use of botanicals and other dietary supplements during cancer treatment would be a concern if the physician were unaware that their patient was using these products.

### **CAM and Chronic Pain**

A recent national survey by Astin<sup>17</sup> found that back problems were the most common medical condition (24 percent) for which people reported using CAM treatments. In this survey, neck problems also were associated with frequent use of CAM. Other studies have found that one-third of all patients suffering from back pain choose chiropractors over physicians to treat them, and that chiropractors provided 40 percent of primary care for back pain.<sup>41,42</sup> Moreover, these studies found that chiropractors retained a greater proportion of their patients (92 percent) for subsequent episodes of back pain care than did other providers. Similarly, Krauss and colleagues<sup>43</sup> found that CAM practitioners and products were chosen more often than conventional physicians and therapies by those persons with chronic pain (52 versus 34 percent) and headaches (51 versus 19 percent), as well as by persons suffering from other associated maladies, including depression (34 versus 25 percent), anxiety (42 versus 13 percent), and insomnia (32 versus 16 percent).

Surveys of rheumatology patients have found similarly high CAM utilization rates, ranging between 19 and 63 percent, depending on the type and severity of their condition.<sup>44</sup> Other studies have documented that people with painful chronic conditions, including arthritis and headache, and psychological problems (insomnia, depression, and anxiety) are frequent users of CAM therapies, particularly massage, chiropractic, and acupuncture.<sup>13, 45</sup>

### **CAM and HIV Infection**

A recent study of 1,675 HIV-positive men and women using CAM (usually in addition to conventional medication) found that the most frequently reported CAM substances were high doses of vitamin C (63 percent), multiple vitamin and mineral supplements (54 percent), vitamin E (53 percent), and garlic (53 percent).<sup>46</sup> The health practitioners most commonly consulted were massage therapists (49 percent), acupuncturists (45 percent), and nutritionists (37 percent). The CAM activities most commonly used were aerobic exercise (63 percent), prayer (58 percent), massage (53 percent), and meditation (46 percent). The majority of this group of HIV-infected individuals consulted with both conventional and CAM providers and used both conventional and CAM medications simultaneously, yet few reported that their conventional and CAM providers worked as a team.

Similar observations were made in a survey of 180 HIV-infected people.<sup>47</sup> This study found that almost half (45 percent) of this group had visited a CAM practitioner an average of 12 times per year, compared to only 7 visits per year to their conventional physician or nurse practitioner. More than two-thirds (68 percent) of the HIV-infected individuals in the study used herbs, vitamins, or dietary supplements. Eighty-one percent of those who used supplements said the remedies were "extremely" or "quite a bit" helpful. Approximately 24 percent reported using marijuana to treat weight loss, nausea, and vomiting in the previous year, and most (87 percent) said it was extremely or quite helpful.

### **Ethnic Differences in CAM Usage**

In addition to the type and severity of illness one has, people's cultural and ethnic backgrounds can influence their propensity for using CAM. For example, surveys of CAM usage among Mexican-American and Hispanic populations have demonstrated that almost half of respondents have used a CAM practitioner one or more times during the previous year.<sup>48,49</sup> Herbal medicine, spiritual healing techniques, and traditional healers are used quite frequently by these groups. Similarly, surveys of Native American populations have found that they tend to have higher rates of CAM usage than the general U.S. population<sup>50</sup> and are also frequent users of herbal remedies, spiritual healing techniques, and traditional healers.<sup>51</sup> Income, not belief systems, prohibits interaction with traditional healers by Native Americans.<sup>51</sup>

### **Reasons People Give for Using CAM**

The reasons people seek out and use CAM practices are not fully understood. However, strong associations have been found between CAM usage and: 1) an interest in spirituality and personal growth, 2) a commitment to environmentalism, and 3) feminism.<sup>16</sup> In addition, several other studies have found that belief in a holistic approach to health, a strong internal locus of control, and transformational life experiences also are associated with CAM usage.<sup>17, 52, 53</sup>

Although Astin's survey<sup>17</sup> found that only a small percentage (4.4 percent) of people used CAM therapies as alternatives to conventional practitioners and treatments, there is some evidence that they used CAM because they believed it is more effective than conventional medicine. For example, in the survey of rheumatology clinic patients mentioned above,<sup>44</sup> 50 percent of respondents reported turning to CAM because they perceived their conventional treatment (drugs) as ineffective. Similarly, when researchers interviewed 113 patients at a family practice, the top reason given for seeking CAM therapies was that patients believed they would work.<sup>54</sup> A similar study of primary care patients found that: 1) recommendations from friends or coworkers, 2) a desire to avoid the side effects of conventional treatments, and 3) failure of conventional treatments to cure a problem were the most frequently cited reasons for using CAM therapies.<sup>55</sup> In this study, use of practitioner-based CAM therapies was significantly and independently associated with patients' perceived poor health status and emotional functioning and a musculoskeletal disorder, usually low back pain. Patients who used CAM most commonly visited chiropractic (35 percent), used herbal remedies and supplements, (27 percent) and sought massage therapy (17 percent). Use of self-care-based therapies was associated with high education and poor perceived general health compared to the previous year. Use of traditional folk remedies was associated with Hispanic ethnicity.

### **Conventional Health Care's Interest in and Use of CAM**

Evidence suggests that a growing number of physicians already use some CAM practices and consider them safe and effective in offering them to their patients. A comprehensive review of 25 surveys of physician practices and beliefs regarding five commonly used CAM practices-acupuncture, chiropractic, homeopathy, herbal medicine, and massage-found that about half of the surveyed physicians believed in the efficacy of these five CAM practices.<sup>56</sup> This study found that a significant proportion of conventional physicians were both referring patients to CAM practitioners and/or offering some of these CAM treatments in their practice.

In addition, Pelletier and colleagues<sup>57</sup> found that a small, but growing number of insurance companies are offering or are considering coverage for CAM services. CAM also has made significant inroads into conventional medical education, with more than two-thirds of mainstream medical schools currently offering elective courses in CAM or including CAM topics in required courses.<sup>58</sup>

However, the acceptance of some CAM practices by the conventional health care community did not come without economic and political power struggles. CAM practitioners have filed suit and won court cases against conventional health care professional associations,<sup>59</sup> and in many states CAM professions have faced strong opposition from conventional health care organizations in gaining licensing from state regulatory agencies.<sup>60</sup>

### **Evidence Base for CAM**

Surveys documenting the rise of interest in and use of CAM by consumers were a significant factor in the biomedical research community's decision to take a serious look at both the safety and efficacy of many CAM approaches and therapies. Federal expenditures for CAM research have risen dramatically since the early 1990s. To date, NCCAM has funded the establishment of 14 research centers to explore the safety and efficacy of a wide range of CAM therapies for a host of conditions. As a result of these and other international efforts, the evidence base for the efficacy a number of CAM approaches and treatments has grown significantly over the past decade.

More research on CAM currently exists than is commonly recognized. In fact, the Cochrane Collaboration, an international effort to develop an evidence base for a wide variety of medical therapies, both allopathic and CAM, lists more than 4,000 randomized trials for various CAM therapies in its electronic library. Furthermore, a number of Cochrane Collaboration systematic reviews of this worldwide research literature have identified the potential benefits of CAM and related approaches and products for a small number of chronic conditions, including:

- Low-fat or modified fat diets for preventing cardiovascular disease<sup>61</sup>
- Acupuncture in the management of low back pain and recurrent headaches<sup>62,63</sup>
- St John's Wort for treating mild to moderate depression<sup>64</sup>
- Herbal and glucosamine therapy for treating osteoarthritis,<sup>65,66</sup> and
- Nutritional supplements for several neurological conditions<sup>67,68</sup>

In addition to these Cochrane systematic reviews, an NIH scientific review panel concluded that acupuncture is a plausible option for treating several conditions, including nausea associated with chemotherapy and anesthesia, acute dental pain, headaches, temporomandibular joint dysfunction, fibromyalgia, and depression.<sup>69</sup> Another NIH review panel concluded that that mind-body techniques, such as meditation and guided imagery, are effective both in the management of painful conditions and the relief of stress and anxiety.<sup>70</sup>

All of these literature reviews have concluded that larger, more rigorous studies are needed before definitive statements can be made about the benefits of these therapies. These data, nevertheless, point to the need for a comprehensive and aggressive research program in several areas of CAM, particularly those areas

where CAM practices and products are frequently used adjunctively to mainstream medical care.<sup>71</sup>

The interaction of conventional and CAM health care systems over the years has made such a research program possible by producing significant improvements in CAM research methodology and data collection.<sup>72</sup> Conventional health care, in turn, has used these improved research methods to examine some CAM practices, found similarities between their practices and CAM practices, and has begun including them in comprehensive care programs.<sup>20</sup>

### **Safety Issues with CAM Use**

Despite the promising evidence that some CAM practices may be effective in managing and treating certain chronic conditions, most CAM therapies that are currently being used by consumers have not been studied adequately in regard to either efficacy or safety.<sup>73, 74</sup>

Even when evidence indicates that a particular CAM approach or modality is safe and effective for a particular condition, new safety concerns may arise when it is used in conjunction with conventional medications, which is the way most consumers use CAM.

Even when evidence indicates that a particular CAM approach is safe and effective for a certain condition, new safety concerns may arise when it is used in conjunction with conventional medications, which is the way most consumers use them. A recent review published in the *Journal of the American Medical Association* found that some commonly used herbal products can cause serious complications for surgery patients.<sup>75</sup> The potential complications included bleeding, cardiovascular instability, hypoglycemia, and there was evidence that some herbs may increase the strength of anesthetics or the metabolism of many drugs used during and after surgery.

The potential adverse interaction of CAM and conventional treatments is particularly troubling to public health officials because most people do not tell their conventional health care providers that they are using CAM services or products. A survey of health food stores customers found that although these CAM consumers welcomed a partnership with their physicians, they generally believed that physicians in general were closed-minded and had little knowledge about dietary supplements.<sup>54</sup> These consumers had decided to assess the effectiveness of dietary supplements through personal study and subjective experimentation and not discuss this experimentation with their doctors.

A similar lack of communication regarding CAM has been found between cancer patients and their physicians. For example, in a survey of women with breast cancer, Adler and Fosket<sup>76</sup> found that the majority of respondents (55 to 85 percent) used CAM therapies but did not divulge this use to their physicians because they assumed the physicians would not be interested, would respond

negatively, would not understand, or would dominate the conversation due to assumed disinterest. Another survey found that physicians were unaware of CAM usage by the majority (57 percent) of their patients.<sup>77</sup>

These studies suggest that physicians and patients must become more knowledgeable about the potential benefits and harms of CAM approaches and treatments, and physicians and other conventional health professionals must make significant efforts to open the lines of communication with their patients about their use of CAM approaches and products. Recently, a major effort has been made to increase conventional physicians' awareness and understanding of CAM through educational programs. However, there is a great deal of variability in the content of these programs.<sup>58</sup>

Although a few provide detailed information on potential CAM benefits and safety issues, most are too general in content to provide physicians with the knowledge base they need to feel more comfortable about the subject and to display a willingness to discuss CAM issues with their patients.

Concerns about the safety of CAM products and their interaction take place in the context of the larger public attention to the side effects and problems accompanying all medical treatment.<sup>78</sup>

### **Future Prospects of CAM**

Despite the increasing use and acceptance of CAM and emerging evidence supporting efficacy of some CAM approaches and therapies, it is difficult to predict whether many CAM systems and practices will ever be fully integrated into the conventional health care system. Although a significantly greater degree of cooperation between specific CAM and conventional health care approaches and practitioners in the future, how well they can integrate their practices depends to a great measure on the establishment of an evidence-base for safety and effectiveness of CAM approaches as well as the success of a variety of ongoing pilot programs to test the efficacy and feasibility of integrative and collaborative models of CAM and conventional health care delivery.

### **Models of Integration**

Over the past few years, a growing number of hospitals, major academic medical centers, managed care companies, and insurance carriers have become interested in integrating some aspects of CAM into their operations. According to the American Hospital Association,<sup>79</sup> nearly 16 percent of America's community hospitals offered CAM services in 2000, up from about 11 percent in 1999. Furthermore, many major medical centers, particularly comprehensive care cancer centers such as M. D. Anderson in Houston, Memorial Sloan-Kettering Cancer Center and Columbia-Presbyterian Medical Center in New York City, and Duke University in Durham, North Carolina, have begun integrating CAM services into all of their patient care.<sup>80</sup>

However, the development of integrative health care is still in its early stages and faces a number of challenges. Many of these approaches are still without an adequate scientific basis. Even where there is evidence of benefit, the delivery of CAM in a conventional health care setting often requires significant reconfigurations of the way both the conventional and CAM health care services are structured, conceptualized, and delivered.<sup>81,82</sup> Another significant challenge facing integration is many CAM practitioners' belief that they would have to dramatically alter or water down their approach to practice in order to adapt to a physician-dominated system. Some CAM professions would prefer not to integrate if it means giving up their identity and independence.<sup>20</sup>

### **Models of Collaboration**

Another model that is being tested in a number of conventional academic and CAM health care centers is collaborative model rather than an integrative one. This model does not require full integration of services but instead is based on conventional and CAM practitioners referring patients to one another within a clinic or network. The models that are currently being pilot tested range from having conventional and CAM practitioners working side-by-side as equals, collaborating both in the diagnosis and treatment of patient conditions,<sup>10</sup> to having to physician-centered models, where CAM practitioners provide services independently but under the supervision of a primary or a specialty care physician.<sup>83</sup> These models, however, reveal additional challenges, which are listed below.

### **Meeting Challenges**

As noted, many of these integrative and collaborative programs are in their infancy. As they grow and develop, they face a number of challenges, including addressing:

- Difficulties in communicating and significant differences in worldviews and methods of diagnosing and treating illness and promoting health;
- Certification and training standards for some CAM professions;
- Insurance reimbursement for safe and effective CAM practices;
- Appropriate research models;
- Comprehensive information on CAM for both the lay public and health care practitioners; and,
- Appropriate education of both conventional and CAM professionals about each other's disciplines at all stages of their training.

In the following chapters, the Commission discusses these and other challenges in depth and recommends strategies for addressing them at the national and state level. The ways in which individual practitioners and programs meet these challenges will help to shape the future of CAM practice and determine the access people have to CAM services.

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