

INTEGRATIVE MEDICINE AND PATIENT-CENTERED CARE

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Commissioned for the IOM Summit on
Integrative Medicine and the Health of the Public
February, 2009

The responsibility for the content of this paper rests with the authors and does not necessarily represent the views or endorsement of the Institute of Medicine or its committees and convening bodies. The paper is one of several commissioned by the Institute of Medicine. Reflective of the varied range of issues and interpretations related to integrative medicine, the papers developed represent a broad range of perspectives.

ABSTRACT *Integrative medicine has emerged as a potential solution to the American health care crisis. It provides care that is patient-centered, healing oriented, emphasizes the therapeutic relationship, and uses therapeutic approaches originating from conventional and alternative medicine. Initially driven by consumer demand, the attention integrative medicine places on understanding whole persons and assisting with lifestyle change is now being recognized as a strategy to address the epidemic of chronic diseases bankrupting our economy.*

This paper defines integrative medicine and its principles, describes the history of complementary and alternative medicine (CAM) in American health care, and discusses the current state and desired future of integrative medical practice. The importance of patient-centered care, patient empowerment, behavior change, continuity of care, outcomes research, and the challenges to successful integration are discussed. The authors suggest a model for an integrative health care system grounded in team-based care. A primary health partner, who knows the patient well, is able to address mind, body and spiritual needs, and coordinates care with the help of a team of practitioners is at the centerpiece. Collectively, the team can meet all the health needs of the particular patient and forms the patient centered medical home.

The paper culminates with ten recommendations directed to key actors to facilitate the systemic changes needed for a functional health care delivery system. Recommendations include creating financial incentives aligned with health promotion and prevention. Insurers are requested to consider the total costs of care, the potential cost-effectiveness of lifestyle approaches and CAM modalities, and the value of longer office visits to develop a therapeutic relationship and stimulate behavioral change. Outcomes research to track the effectiveness of integrative models must be funded, as well as feedback and dissemination strategies. Additional competencies for primary health partners, including CAM and conventional medical providers, will need to be developed to foster successful integrative practices. Skills include learning to develop appropriate health care teams that function well in a medical home, developing an understanding of the diverse healing traditions, and enhancing communication skills. For integrative medicine to flourish in the U.S., new providers, new provider models, and a realignment of incentives and a commitment to health promotion and disease management will be required.

INTEGRATIVE MEDICINE: HISTORY AND DEFINITIONS

A vision for a new kind of health care is emerging. It is patient-centered, healing-oriented, and embraces conventional and complementary therapies. This medicine has become known as integrative medicine. Driven initially by consumer demand, it is now increasingly being accepted by health care providers and institutions. Definitions abound but the commonalities are a reaffirmation of the importance of the therapeutic relationship, a focus on the whole person and lifestyle—not just the physical body, a renewed attention to healing, and a willingness to use all appropriate therapeutic approaches, whether they originate in conventional or alternative medicine.

Integrative medicine represents a broader paradigm of medicine than the dominant biomedical model. It comes from a growing recognition that high-tech medicine, while wildly successful in some areas, cannot fully address the growing epidemics of chronic diseases that are bankrupting the U.S. domestic economy, and that health promotion and prevention are vital to creating a healthier society. The Centers for Disease Control and Prevention (CDC) estimates that 70 percent of all deaths are due to chronic disease. The pain and suffering from these diseases places substantial burden on the more than 133 million Americans who live with them; the cost of chronic care is greater than \$1.5 trillion a year or 75 percent of all medical expenses (CDC, 2008). At the same time, we spend a fraction of our budget on prevention and health promotion, despite the evidence that prevention has been proven to reduce chronic disease burden. For example, in adults with diabetes, walking at least two hours per week was associated with a 39 percent reduction in overall mortality (Gregg et al., 2003).

The Institute of Medicine (IOM) report *Crossing the Chasm* created a heightened awareness of the broken U.S. health care system. It acknowledged that the U.S. delivery system focuses primarily on acute episodic care and that our reimbursement system rewards are misaligned. It called for care that is safe, effective, patient centered, timely, efficient, and equitable (IOM, 2001). Patient-centered care was defined as care that informs and involves patients in medical decision-making and self-management; coordinates and integrates medical care; provides physical comfort and emotional support; understands the patients' concept of illness and their cultural beliefs; and understands and applies principles of disease prevention and behavioral change appropriate to diverse populations. Integrative medicine seeks to create a health care system that incorporates these principles, prioritizes self-care, reemphasizes the therapeutic relationship, and bridges conventional and alternative medical systems.

This paper will discuss the history of integrative medicine, its principles, current status, and recommendations for practice. Highlighted will be the need for

patient-centered care with a practitioner who knows the patient well and can respond to his needs. Integration of a broader array of services that are cost-efficient and therapeutically effective will be described. Inserted throughout are cases that illustrate some of the current challenges and exemplify how integrative medicine might provide solutions.

Case Number 1

Integrative Medicine For A Young Man With Persistent Headaches

An 18 year-old high school student presented to the Arizona Center for Integrative Medicine clinic with a three year history of severe headaches, neck pain, and a new onset tic disorder. He had previously been healthy and played on the varsity baseball team. He recalls the headache beginning after a violent sneeze. After a month of severe daily headaches, during which time he was unable to return to school, he was referred to a neurologist. New symptoms included poor sleep, poor energy, and a loss of enjoyment for most activities. He was diagnosed with depression, Paxil was prescribed, a psychiatric consult was recommended, and an MRI and an EEG were performed. The family sought a second opinion with a neurologist who was also a board certified psychiatrist. Persistent daily headache was diagnosed and Tofranil and Corgard were prescribed. Over time, due to the persistence of the daily headaches and the subsequent tic that developed, the patient was prescribed Imitrex, Sinequan, Zomig, Maxalt, Risperdal, Tenex, Klonopin, Soma, Kappra, Zyprexa, and even Orap (an antipsychotic medication) without benefit.

The patient was evaluated in the integrative medicine clinic and referred to an osteopathic physician who identified multiple tender points in the neck muscles. Using a gentle manipulation technique called strain-counterstrain these tender points resolved. The patient reported an immediate decrease in the intensity of his neck pain for the first time since the pain started (on a scale of 1-10 moving down from a 9 to 5.) He returned 2 weeks later, stating he had begun regular school attendance and was starting to throw a baseball around. A second treatment reduced the pain to a level of 2. Six weeks later he remained off all medications and had returned to his previously normal activities.

This case exemplifies the adage “when your only tool is a hammer, every problem looks like a nail.” It clearly demonstrates the limits of a purely pharmaceutical approach to health issues.

HISTORY OF COMPLEMENTARY AND ALTERNATIVE MEDICINE IN THE U.S. HEALTH CARE SYSTEM:

As a result of the Flexner report published in 1910, American medical schools were tasked to set higher admission and graduation standards and to adhere strictly to the protocols of mainstream science in their teaching and research. Over the next 25 years, close to 60 percent of the medical schools were forced to close (Beck, 2004). Schools providing training in eclectic medicine, naturopathy, and homeopathy were even more adversely affected by the report leading to closure of the majority. What is now called alternative medicine was pushed out of the mainstream. Despite this setback, alternative medicine never disappeared and continued to grow surreptitiously.

Today the fields of chiropractic, naturopathic, acupuncture and Asian or traditional Chinese medicine (TCM), midwifery, and massage therapy all have well-established, federal- and state-recognized regulatory agencies to oversee accreditation of schools and colleges, certification and licensing, and professional associations. Other complementary and alternative medicine (CAM) professions have recently made significant achievements, such as the 2008 licensure of the first homeopathic medical college in the U.S. since the 1800s, the development of educational standards for yoga training, and the establishment of Ayurvedic and Tibetan medical programs. It bears restating that TCM, Tibetan, and Ayurvedic medicine; massage therapy; and homeopathy have much longer histories than conventional medicine.

Currently CAM is defined as those medical fields that fall outside of conventional medicine. The 2000 White House Commission on Complementary and Alternative Medicine Policy report documented the growing use of CAM, revealing that most people used CAM in conjunction with, rather than as a replacement for, conventional medical therapy. The report also noted that people sought conventional medical treatment first before turning to CAM practitioners, and that many patients combined care from a variety of approaches (White House Commission on Complementary and Alternative Medicine Policy, 2001).

The IOM report on CAM (2005) further documented growing use of CAM. One third of American adults were using some form of CAM, with total annual visits to CAM providers exceeding visits to primary-care physicians, and an estimated 15 million adults taking herbal remedies and vitamins in addition to prescription drugs. The IOM report noted increasing integration of CAM and conventional medicine in many settings: hospitals, private physician practices, integrative medicine centers, cancer treatment centers, health maintenance organizations, and insurance companies (IOM, 2005).

CAM is not a single field. There is an immense range of ideas including whole systems of medicine (e.g., TCM, Ayurveda, homeopathy), modalities (e.g.,

massage, botanical medicine, manipulation practices) and therapies (e.g., reiki, healing touch). Patient-centered care and patient empowerment are primary components of these fields, as is the commitment to address the mind, body, and spiritual aspects of health. As an emerging field of medicine, integrative medicine seeks to build a bridge between conventional and alternative medical systems and to find therapeutic and cost effective ways to combine them so as to have “the best of both worlds” while still maintaining the integrity of each system.

Academic health centers have responded to the demand to include CAM in education in a variety of ways. In 2000 the Consortium of Academic Health Centers for Integrative Medicine (CAHCIM) was formed to help transform medicine and health care through rigorous scientific studies, new models of clinical care, and innovative educational programs that integrate biomedicine, the complexity of human beings, the intrinsic nature of healing, and the rich diversity of therapeutic systems. The CAHCIM has developed curricular goals for medical schools, holds the largest research conference in integrative medicine, and serves as a collective voice for reforming our health care system. Membership in the consortium currently stands at 42 academic health centers and requires dean level support and active programs in integrative medical education, clinical care, and research.

In 2004, the Academic Consortium for Complementary and Alternative Healthcare (ACCAHC) was formed. ACCAHC is an organization of CAM accrediting agencies, professional associations, councils of colleges, certifying and testing organizations, and individual colleges and programs. Its mission is to advance the academic needs and development of the evolving CAM professions and to foster a coherent, synergistic collaboration with academic institutions of the conventional medical, nursing, and public and community health professions. The CAHCIM, ACCAHC, and other leading organizations could join their collective expertise to reform the U.S. health care system. To do so they will need to ratify a common set of principles such as those below.

PRINCIPLES OF INTEGRATIVE MEDICINE*

1. Patient and Practitioner are partners in the healing process.

Care is based on a continuous healing relationship informed by scientific knowledge and implemented through a partnership that recognizes the uniqueness of each person (Heidemann et al., 2008; Khaw et al., 2008; Maizes et al., 2002; Schroeder, 2007).

*Principles originated from a working document of the University of Arizona Center for Integrative Medicine.

2. All factors that influence health, wellness, and disease are taken into consideration, including mind, spirit, and community, as well as body.

These multiple influences on health have been firmly documented in the literature (Anonymous, 1948; Astin and Forsys, 2004; Egolf et al., 1992; Grossman et al., 2004; Kivimaki et al., 2006; Kirsch and Sapirstein, 1998) but are not often recognized as important in medical practice. Conventional medical care tends to focus on the physical influences on health. An integrative approach also addresses the importance of the nonphysical (e.g., emotions, spirit, social) influences on physical health and disease.

3. Appropriate use of both conventional and alternative methods facilitates the body's innate healing response.

Integrative medicine recognizes the body's profound healing mechanisms and seeks to mitigate barriers to healing by using nutrition, activity, mind-body medicine, and, where appropriate, conventional and alternative therapies (Maizes et al., 2002; Snyderman and Weil, 2002).

4. Effective interventions that are natural and less invasive should be used whenever possible.

There is great potential for harm among our current medical treatments (Fisher and Welch, 1999; The Action to Control Cardiovascular Risk in Diabetes Study Group, 2008; Lazaro et al., 1998). Integrative medicine orders therapies ranking first those that have the greatest potential for benefit with the least potential for harm. Examples include nutrition, movement, stress management, and a focus on spiritual pursuits. Acupuncture has been recognized by the U.S. Food and Drug Administration as having few or no side effects from its use (U.S. FDA, 1996).

5. Good medicine is based in good science. It is inquiry-driven and open to new paradigms.

Practical and pragmatic research models that evaluate systems of care and investigate the interaction of multiple health influences are needed. Randomized controlled trials cannot answer questions about cost effectiveness. Nor are they the most useful method to study therapies such as acupuncture and meditation which are already in common use and for which true "placebos" cannot be created (Tunis et al., 2003; Paterson and Dieppe, 2005; Pincus, 2002; Roland and Torgerson, 1998).

6. Ultimately the patient must decide how to proceed with treatment based on values, beliefs, and available evidence.

Integrative medicine honors the individual's right to choose a healing path for him. Practitioners offer options, share their experience and insight, and partner with informed patients (Maizes, 2007).

7. Alongside the concept of treatment, the broader concepts of health promotion and the prevention of illness are paramount.

The majority of medical education and treatment focuses upon disease mechanisms. Integrative medicine addresses the mind, body, and spirit with an emphasis on supporting balance, maintaining health, and promoting longevity (Antonovsky, 1979; Lindstrom and Eriksson, 2005; Rakel, 2008; Snyderman and Weil, 2002).

8. Practitioners of integrative medicine should exemplify its principles and commit themselves to self-exploration and self-development.

It is difficult to facilitate health and healing in others if we have not explored how to do this for ourselves. Medical training should encourage self-reflection that results in health for the learner (Givens and Tjia 2002; Rakel and Hedgecock, 2008; Roberts et al., 2001; Rosenthal and Okie, 2005). Integrative medicine believes that this "heal the healer" approach is the most efficient method of empowering professionals to develop an understanding of the self-healing mechanism (Ball and Bax, 2002; Chaterji et al., 2003; Frank et al., 2004).

Case Number 2

Integrative Medicine and Lifestyle Change

Mr. Smith is a 54-year old man who recently had a myocardial infarction (MI) and was treated with a stent placed in his left anterior descending coronary artery. He was hypertensive, overweight, stressed, and had elevated lipids with an LDL of 274. He came to the University of Wisconsin integrative medicine clinic wanting to find non-pharmaceutical options to prevent another heart attack. He was ethically against "big pharma" and did not want to take something that "may cause more harm than good."

The clinician took time to listen to his story. All options were reviewed to help reduce his risk of another MI, including nutrition, exercise, weight loss, fish oil, medications, and emotional well being. Mr. Smith has 3 children, the youngest a 16-year-old daughter. Motivational interviewing was used to encourage self-reflection; clinician and patient both developed a deeper understanding of his concerns about pharmaceuticals. An internet-based 10-year cardiac risk calculator based on the Framingham data showed a recurrence risk of 20 percent. With medications to lower his LDL and control his blood pressure, his risk could drop by over 10 percent. Mr. Smith decided to give

the medications a try so he would “be around for his wife and kids.” He was started on a statin, aspirin, and a beta-blocker, was referred to a nutritionist and a mindfulness stress reduction program, and was given a pedometer with the goal of 10,000 steps a day.

This case exemplifies the use of integrative medicine, where effective medications are prescribed in conjunction with lifestyle change. The clinician was able to elicit the patient’s values and in so doing helped him realize his love of family outweighed his concerns about big pharma.

INTEGRATIVE MEDICINE IN PRACTICE

Currently some elements of integrative medicine are already being broadly practiced and a few integrative medicine practice models have also emerged. This section will describe the roles of patient-centered care, self-management and empowerment, communication and behavior change, continuity of care, new provider models, and group models in integrative medicine. It will also review the evidence supporting both the individual elements and the emerging models of care. These critical elements that support the therapeutic relationship are often downplayed when the focus is primarily placed on CAM.

Patient-centered care

Patient-centered care (PCC) is a fundamental component of practicing integrative medicine. PCC has a movement in its own right and has been the subject of multiple meetings (Knebel, 2002). Its hallmark is to customize treatment recommendations and decision-making in response to patients’ preferences and beliefs. As delineated in *Crossing the Quality Chasm*, PCC is an essential component of quality care and included it as one of 5 major areas needing reform in our health care system.

Research reveals that PCC leads to enhanced patient satisfaction, better outcomes, improved health status, and reduced utilization of care (Mauksch et al., 2008; Stewart et al., 2000; Williams et al., 1998). Interestingly, it also leads to enhanced practitioner satisfaction and lower malpractice rates (Levinson et al., 1997; Meryn, 1998). Levinson found lower malpractice rates in primary care physicians who practiced PCC principles. Specifically these physicians spent more time orienting patients about what to expect in the visit, solicited their opinions, checked their understanding, and encouraged them to speak more. Not surprisingly, they also spent more time in routine visits than those primary care physicians who had been sued (mean=18.3 vs. 15.0 minutes).

One widely replicated model of PCC is the Planetree model, founded in San Francisco in 1978. While initially focused on hospital-based care, this nonprofit consulting organization has now spread to outpatient settings. One of the pioneers of Planetree, Rosalyn Lindheim stipulated that health care environments should:

- Welcome the patient's family and friends;
- Value human beings over technology;
- Enable patients to fully participate as partners in their own care;
- Provide flexibility to personalize the care of each patient;
- Encourage caregivers to be responsive to patients; and
- Foster a connection to nature and beauty (Antonovsky, 2001).

Renovation of the physical plans of hospitals makes these tenets tangible. Nursing stations are open and invite dialogue with patients and families. Kitchens are offered for families to cook wholesome food. Sacred spaces, labyrinths, and meditation gardens are other significant changes (Dubbs, 2006). The Planetree organization impacts over 600,000 annual patient admissions, 10 million outpatient visits, and 90,000 births. When studied, Planetree patients reported better mental health status and role functioning after discharge, but otherwise their health status was similar to controls after 3 to 6 months. There were no differences in length of stay, readmissions, hospitalization charges, or outpatient care during the following year (Martin et al., 1998). The authors acknowledge that not all the attributes of PCC were met; while Planetree patients received more education and involvement in their care than controls, their interactions with physicians were not substantially different and they were rarely involved in decisions about their care.

Integrative medical practice embodies the spirit of PCC by spending more time with patients. Through initial 90-minute interviews with 30-minute follow-up appointments, there is ample time to discuss options and make decisions together that reflect patient preferences. When visits are rushed, as it frequently is in conventional medicine, this patient-centered ideal is often compromised.

Patient-centered decision making can be facilitated by the growing emphasis on reporting the “number needed to treat” and “number needed to harm.” For example a recent trial (Ridker et al., 2008) reported a 47 percent reduction in relative risk of cardiovascular events with use of a statin medication. While this sounds compelling, what is more important in clinical practice is the absolute risk reduction. In this study, the actual rates of cardiovascular events in the population were low: they dropped from 1.8 percent (157 of 8,901 participants) in the placebo group to 0.9 percent (83 of 8901 participants) in the medication group, giving an absolute risk reduction of 0.9 percent. When patients learn that, as in this study, over 100 patients must be treated for two years to prevent one event, they often

decide the prevention drug is not worth the risks. In this trial, the number needed to harm was 165 for increased risk of diabetes and 1 for the cost (estimated at \$1,250 a year or \$285,000 per event prevented.)

The greatest challenge to shared decision making arises when patients are faced with serious illnesses for which they must make rapid decisions. A variety of very useful interactive decision-making tools have been developed to help women with breast cancer decide on the benefits they will derive from chemotherapy, hormone therapy, and radiation therapy. Adjuvant online (2008) allows a health professional to estimate the added benefit from chemotherapy or hormone therapy by inputting a woman's age, tumor size, involvement of lymph nodes, and the histological grade of the tumor. When a woman learns, that based on a sample of similar women with a similar diagnosis, her risk of cancer recurrence or death drops by 7 percent, she can make the deeply personal value decision that the additional percent reduction is worth the risks of the therapy or not. A similar decision-making tool exists for radiation therapy (IBTR, 2008). These tools, which assess risk reduction, approach the goal of individualized feedback from which patients can make reasoned decisions.

Self-Management and Patient Empowerment

The division of power between clinician and patient has significantly changed over the past three decades. With medical advances came more accurate diagnoses and effective treatments. Along with this positive evolution came a hierarchical relationship based on the belief that science and technology held the answers. This authoritarian approach has only recently been challenged in part by the internet that makes available the vast array of medical knowledge to any sophisticated searcher.

Patient empowerment is defined as a greater sense of control over one's life (Wallerstein, 1992). Patients become empowered when they have the "*knowledge, skills, attitudes, and self-awareness necessary to influence their own behavior... to improve the quality of their lives*" (Funnell et al., 1991). Empowerment arises from the relationship between clinician and patient. It is less a transfer of power and more a symbiotic process where power is created and grows through the relationship (McKay et al., 1990). Although evidence is limited, empowered patients have higher satisfaction with care (Barrett et al., 2003; Grol, 2001), adherence to treatment regimens (Hall et al., 1988; Hughes, 2008), and improved outcomes (Greenfield et al., 1985; Lind-Albrecht, 2006; Powers and Bendall, 2003; Segal, 1998).

Communication and Behavior Change

“The truly competent physician is the one who sits down, senses the ‘mystery’ of another human being, and offers with an open hand the simple gifts of personal interest and understanding” (Jenkins 2002).

Often described as the art of medicine, sitting with another human being with the desire to understand and the intention to be of service, is what calls many to practice medicine. This relationship is the centerpiece of healing-oriented care and needs to be protected and honored. Within this sacred bond, the nonspecific influences on health manifest; unfortunately, these influences are often discounted in conventional medical research and training since they are nonphysical and difficult to quantify.

Leaders in PCC have developed the mnemonic PEECE that helps focus on those nonspecific influences: positive prognosis, empathy, empowerment, connection, and education (Barrett et al., 2007). When clinicians attend to the art of medicine, results can enhance and even surpass the specific influences of a prescribed therapy. This is nicely demonstrated in an innovative study by Kaptchuk (2008) in which he sought to discriminate between three components of the placebo effect. Studying patients with irritable bowel syndrome, he layered on therapies to ascertain the impact of being involved in a study (Hawthorne effect), receiving a therapeutic ritual (placebo treatment), and responding to an “augmented visit” with a warm empathic practitioner. He found that an enhanced relationship with a practitioner, together with the placebo treatment, provided the most robust treatment effect. Another dramatic example is provided in a retrospective analysis of psychiatrists treating patients with depression. Those psychiatrists able to develop strong relationships revealed better results using a placebo to treat depression than physicians less gifted at developing relationships, who used an active drug. The authors concluded, “the health care community would be wise to consider the psychiatrist not only as a *provider* of treatment, but also as a *means* of treatment” (McKay et al., 2006).

Integrative medicine considers the therapeutic relationship to be the most important influence in creating positive behavior change in the medical setting. Motivational interviewing mines for a patient’s own motivation to make healthy lifestyle changes. Through conversation, patients recognize their ambivalence to change by exploring the positive and negative aspects of a behavior. In doing so, they gain insight on how it affects their ability to achieve goals that give life meaning and purpose (Rollnick et al., 1992; Lussier and Richard, 2007). Successful application relies on a clinical relationship built on empathy and trust without judgment, delivered not through paternalistic prescribing, but through artful ques-

tioning that allows patients to find their own inner motivation to change (Brown, 2007). Indeed, meaningful conversation where the patient feels heard and respected is essential to fostering lifestyle change.

Continuity of Care

Continuity of care refers to multiple concepts. Although it most commonly refers to clinician continuity (the proportion of patient visits with a given, particular practitioner), it can also refer to record continuity (availability of patient's medical information to all clinicians who care for the patient), site continuity (a patient's usual source and site for obtaining health care), the continuum of care (from beginning to the end of the healing process), and continuity as an attitudinal contract (referring to the patient's understanding of who is in charge of their care and providing information to the patient and his or her family) (Donaldson, 1997).

One example of the potential impact of building a health care delivery system centered upon continuity of care with a team of providers is provided by the South Central Foundation in Alaska. When this foundation restructured its health care system, it asked Alaska Natives what they wanted most in their health care. The answer was a continuous healing relationship based on patient need and personal choice. The new health care system centered itself around this concept and reduced urgent care/emergency department use by 40 percent, specialist care by 50 percent, and hospital days by 30 percent, all the while increasing patient satisfaction ratings (perfect care) from 35 percent to 85 percent (Gottlieb et al., 2008).

Continuity of care with a provider supports the healing process. It creates a forum for ongoing communication and relationship-building, which enhances trust. It can encourage the patient to become more candid with the practitioner regarding the emotional and mental causes of the disease state. Finally, it supports adherence to treatment and lifestyle changes.

With rare exception, patients coordinate information of their own care as they create their own health care team. In addition to the challenges of communication between clinic and hospital, pharmacy, physical therapy, and nutrition services, the communication between practitioners trained in different languages and paradigms is especially difficult. Research supports that acupuncturists and medical doctors do not routinely communicate with each other about the care of their patients. Identified barriers included that most patients were self-referred, that acupuncturists were not sufficiently trained to communicate with conventional providers, and that were understaffed to manage such communications (Sherman et al., 2005). What may work best is a shared language between providers around symptoms and measures to improve these symptoms. Thus, rather than discussing how "kidney yin deficiency" is improving, an acupuncturist could instead de-

scribe how urination has improved, along with back pain and insomnia (all of which are related in the TCM paradigm). Development of standardized communication models and electronic medical records would greatly facilitate integrative care.

Potential New Provider Models

Our current health care system is actually a disease-centric medical model. We focus the majority of our attention on acute care (e.g., treating heart attacks and cancer) followed by chronic disease management (e.g., treating hypertension and diabetes) with minimal funding or attention paid to preventive care.

The shortage of primary care physicians contributes to the challenge of managing the health care needs of Americans. Between 1997 and 2005, the number of U.S. graduates entering family medicine residency programs decreased by 50 percent, and over 80 percent of internal medicine residents chose to subspecialize or become hospitalists rather than providing general internal medicine (ACP, 2006; Bodenheimer, 2006). Most other countries have much higher percentages of primary care. Geographic areas with more subspecialty care as compared to primary care spend more for care that is fragmented without better outcomes (Baicker et al., 2004). One strategy has been to have more advanced practice nurses and physician assistants provide primary care (Robin et al., 2004), as research shows that they listen well and spend more time on lifestyle counseling than physicians (Deshfey-Longhi et al., 2008). Estimates show that nurse practitioners can effectively manage 80 percent of patients' primary care needs; 2 meta-analyses found comparable outcomes of care provided by doctors and nurse practitioners (Brown and Grimes, 1995; Horrocks et al., 2002). Most of the research has focused on nurse practitioners providing care for patients requesting same day appointments for minor illnesses and working in a team with doctors. Additional research on nurse practitioners' care of patients with chronic diseases is needed.

Integrative medicine emphasizes tending to the health of the body rather than waiting for the development of disease. One benefit of integrative medicine is that it can be used to address symptoms at an earlier stage of a disease process, when from an allopathic perspective they may still be barely discernable (Shinto et al., 2004; Dou et al., 2008). For example, in TCM, a provider observes a patient's facial expression, muscle tone, posture, mode of speech, and general appearance. This is followed by assessment of the tongue and pulse, palpation of the body, and follow-up questioning. By describing the patient's body as a whole, patterns emerge, pointing to an emerging illness and allowing preventive treatment (O'Connor and Bensky, 1981).

The patient-centered medical home (PC-MH) is one current method being piloted to transform our system. Recently, the American Academy of Pediatrics, the American Academy of Family Physicians, the American College of Physicians, and the American Osteopathic Association adopted the (PC-MH) concept. The principles of the PC-MH include having a personal physician who directs the care; provides whole person, coordinated care, wherein quality and safety are hallmarks of the care; enhances access to care; and employs payment structures that recognize the value of this form of care (ACP, 2008).

Another potential mechanism for health promotion is the development of a health-oriented team. For example, a health-oriented team for optimal weight may include a primary care provider, a nutritionist, an exercise physiologist, a mindfulness eating instructor, an acupuncturist, and a spiritual guide. In contrast, a disease-oriented team may be necessary for a patient with renal failure and would include a nephrologist, a dialysis technician, a surgeon, a pharmacist, a renal nurse, a mind-body coach, and a spiritual director.

Previous research has identified barriers to implementing health-oriented interventions. The 3 most common barriers cited relate to time, communication, and cost.

- Not enough time. It is perceived as difficult to see enough patients in a limited time to ensure financial sustainability in a disease-focused medical culture (Hansson et al., 2008; Deen et al., 2003).
- Non “face-to-face” clinical time needs to be rewarded for multidisciplinary teams to work effectively (Prada, 2006).
- Few economic incentives are currently in place that support a focus on health (Kuttner, 2008; Fisher, 2003).
- Limited resources exist within most primary care clinics to facilitate behavior change.
- Little collaboration occurs between clinical and administrative medical leaders (Prada, 2006).
- Many physicians need a cultural shift to move from an “all knowing” (traditional model) to a “shared knowledge” team model (Hansson et al., 2008; Prada, 2006).

Group Visits

The group visits model addresses many of these barriers. Originally conceived in 1974 as a model for well-child consultations, group visits have been shown to reduce costs of health care, deliver better outcomes, and enhance patient and provider satisfaction (Jaber et al., 2006). Typically organized as diagnosis-specific

appointments, group visits include education emphasizing patient self-management and address topics such as pharmaceutical management, nutrition, exercise, and psychosocial contributors to health and illness. They usually also include a private or semiprivate evaluation by a physician or nurse practitioner. Most group visits comprise the same cohort of patients from visit to visit, although some are designed as drop-in group medical appointments.

Considering the vast numbers of patients with lifestyle-related chronic diseases, group interactions make sense with their inherent peer support. Group visits allow more time for self-management education, skill building, and doctor-patient interaction. The group process can reinforce patients' self-efficacy by modeling others' successes in accomplishing desired behavior changes. Group visits have been studied in "high-utilizing" patients, such as those with diabetes, hypertension, headaches, well-child visits, and the chronically ill (Clancy et al., 2008; Kawasaki et al., 2007; Vachon et al., 2007). Most studies showed enhanced patient satisfaction with group visits; for example, a study of 120 patients enrolled in a 6-month series of group visits which met for 2-hours per month showed improved sense of trust in the physician (Clancy et al., 2003). Emergency visits were reduced in two headache studies (Blumenfeld and Tischio, 2003; Maizels et al., 2003) and quality of care as measured by patients having preventive procedures, medication reviews, and recommended screening were improved in patients with diabetes (Clancy et al., 2003; Power, 1983; Sadur et al., 1999; Trento et al., 2004; Wagner et al., 2001).

Emerging Integrative Care Models

The development of integrative patient care models is progressing. Influential factors include recognition of the enormous numbers of patients using alternative medicine, their demand for integrative care, growing experience of providers referring to and using CAM, increased numbers of trained integrative medicine professionals, and the potential cost savings in these forms of treatment.

The most common form of integrative medicine is the patient-directed model, where the patient seeks providers to supplement or supplant conventional medical care. The patient functions as a team coordinator and may or may not inform providers of one another. The patient retains control and selects his own providers. Another common model involves conventional medical practitioners who have received integrative training and either refer patients to CAM providers or offer some CAM modalities to their own patients. Finally, patients may rely on non-physician providers to manage their healing process.

Independent integrative medicine clinics began opening in the 1990s. Many of these integrative clinics closed after two to three years despite high patient de-

mand. A 2007 Health Forum survey of hospitals offering CAM programs cited the top reasons for closures as: poor financial performance (55 percent), reprioritized hospital initiatives (40 percent), lack of community interest (35 percent), inability to break even (30 percent), lack of medical staff support (30 percent), and general cuts to nonessential programs (25 percent) (Ananth, 2008). Many hospital-initiated programs started CAM or integrative medicine clinics due to public demand but did not incorporate them into the larger institution; when medical profits grew tight in the 1990s, these programs were often cut. This became known as the “guillotine effect,” removing integrative medicine clinics that did not earn large profits in a disease-centered medical model. To prevent this from reoccurring in the future, integrative medicine clinics will have to create more successful financial models and be viewed as an essential service.

In the late 1990s, academic health centers began opening integrative medicine clinics. Universities of Arizona, California at San Francisco, and Maryland were among the first academic health centers to provide integrative care; they have since been joined by the majority of CAHCIM affiliated centers (CAHCIM, 2008). Many CAM institutions have either opened their own integrative clinics or developed a training relationship with an integrative clinic (AANMC, 2008; ACC, 2008; CCAOM, 2008). In addition, a proliferation of small to large integrative medicine clinics have opened, some successful (e.g., Scripps, Beth Israel Continuum Center) and others not.

Hospitals have begun to integrate CAM into their services in a variety of ways. For some, integration consists of offering art therapy, meditation, or tai chi courses. Others provide acupuncture or chiropractic. The American Hospital Association (2008), found that U.S. hospitals are increasingly adding CAM to conventional services; 37 percent of responding hospitals now offer one or more CAM therapies, up from 26.5 percent in 2005. Eighty-four percent of the hospitals indicated patient demand as the primary reason for offering the alternative therapies, while 67 percent stated clinical effectiveness as the main reason.

Integrative medicine is also being offered in leading cancer centers, including M.D. Anderson Cancer Center, Dana-Farber Cancer Institute, Memorial Sloan-Kettering Cancer Center, and Columbia University pediatric oncology. These centers are largely funded by cancer survivors who desire an integrative form of oncology care. In addition, integrative medical care has found its way into detoxification programs, eating disorder centers, assisted living centers, hospice, and the spa industry. For example, the National Acupuncture Detoxification Program has developed an auricular acupuncture protocol that has been adopted by rehabilitation centers and drug courts in several states. Finally, several community health centers, assisted living, and nursing homes have begun to offer integrative medicine services.

Case Number 3

Integrative Medicine In A Cancer Patient

A 44 year-old woman with history of type 1 diabetes since age 12 presented to the University of Arizona Center for Integrative Medicine clinic for help with side effects from her chemotherapy. She had been diagnosed with stage IIB infiltrating ductal carcinoma of the breast. After lumpectomy and radiation, chemotherapy with adriamycin and cytoxan had been recommended. With her first cycle of chemotherapy, she developed diabetic ketoacidosis, which placed her in the intensive care unit for a week. Despite additional premedications with her second cycle of chemotherapy, the same thing occurred. Her oncologist told her it was too risky to proceed with further chemotherapeutic treatment. The patient presented to the integrative medicine clinic stating, "I have 4 children; I need aggressive treatment to survive." A treatment plan was developed that included weekly acupuncture treatments and daily self-hypnosis using a tape to reduce the nausea and vomiting associated with chemotherapy. Using these two adjunctive therapies, the patient was able to complete her chemotherapeutic regimen without further hospitalizations.

This case exemplifies the use of integrative medicine as an effective adjunct to cancer care. The patient's values were sought out clarifying her appeal for help. Multiple strategies are available to mitigate the side effects of chemotherapy and allow patients to complete their chemotherapeutic course, which in turn enhances the likelihood of a cure.

Outcome Research to Support Integrative Medicine

A large number of studies support lifestyle change and increased time spent in consultations with patients. These include lower risk of the development of diabetes and reversal of cardiovascular disease (Hambrecht et al., 2004; Ornish et al., 1998.) Longer consultations resulted in fewer prescriptions, more lifestyle advice, better handling of psychosocial problems, and empowered patients (Freeman et al., 2002).

Several studies support cost savings with the use of CAM. For example, acupuncture treatments have been shown to reduce the need for knee surgery at an average savings of \$9,000 per patient (Christensen et al., 1992), reduce days in hospital or nursing home following stroke at a savings of \$26,000 per patient (Johansson et al., 1994), and postponement of heart surgery due to clinical improvement resulting in return to work at a total savings of \$31,000 (Ballegaard et al.,

1996). Manipulative therapies for neck pain were as effective and less costly than physical therapy or care by a general practitioner (Korthals-de Bos et al., 2003).

Very few studies of outcomes research of integrative medicine exist. McCaffrey and her colleagues explored patient preferences through focus group interviews of patients who received their primary care in an integrative clinic in Cambridge, Massachusetts (McCaffrey et al., 2007). They found that patients believed the combined approach of CAM and conventional medicine provided better care than either approach alone, particularly when all options are considered in a nonhierarchical way.

One focus group member is quoted as follows: *“I really like that things are integrated and that there are all these different options. There are pharmaceuticals as an option and there is homeopathy and herbal supplements, but all of them are considered valid options depending on what works for you.”*

Another said: *“I like seeing a doctor who is aware of the bigger picture. Even if she decides or recommends a conventional treatment, at least I know they’re aware of alternative health thinking...”*

Another qualitative study used focus groups to interview patients with cancer and other serious illness seen in consultation at the University of Arizona Center for Integrative Medicine (Koithan et al., 2007). Provider-patient partnering was described by 77 percent of the patients with cancer and 85 percent of the other patients as one of the major differences from typical conventional care. This was described as listening to concerns, respectful attention, providing uninterrupted time, considering the effect of the treatments on the person as a whole, communicating the equality of the partners, and empowerment.

For example, one focus group member said: *“I really appreciated that they really cared about how I felt. I was treated with respect – like I had a brain...”*

Another reported: *“It seemed like I was the most important person he had to see that day – it was very emotional.”*

An outcomes study of 763 medically diverse patients was carried out at Thomas Jefferson University Hospital’s integrative medicine clinic. The clinic provides anthroposophical medicine, nutritional medicine, Western herbs, homeopathy, nutritional counseling, and acupuncture. At the three month follow-

up, there were statistically significant improvements in health related quality of life on all eight SF-36 subscales (Greeson et al., 2008). The University of Michigan opened its integrative medicine consultation clinic in 2003. An outcomes research project measuring the SF-12, a Holistic Health Questionnaire (HHQ), and a patient satisfaction scale was carried out in 85 patients who received a consultation between 2003 and 2006. The authors found that patients had a high level of satisfaction with care, statistically significant improvement in the physical component of the SF-12 (but not the mental), and statistically significant improvements in the HHQ subscales for body, mind, and spirit (Mykelbust et al., 2008).

Clearly there is a critical need for additional outcomes research. To date, funding has been scarce for these complex, and expensive research projects that look at an entire package of care rather than individual elements (Bell et al., 2002).

Case Number 4

Integrative Medicine For 6 Year-Old Male With Otitis Media

A 6 year-old male had a recurring history of Otitis media since age 2. He had been treated with recurring courses of antibiotics yet the ear infections recurred every 2-3 months; eustacian tube placement was also unsuccessful. His mother presented with him to the American Medical College of Homeopathy with a 24 hour history of fever to 102 degrees, bilateral ear pain, worse on the right and described as sharp and cutting, enlarged painful lymph glands, and nocturnal salivation.

He was treated with Mercurius solubilis hahnemanni 200cc in a single dose. The symptoms resolved completely 24 hours after the medication. He had one recurrence of Otitis media 6 months later which responded well to repeating the homeopathic medicine. He has been symptom free now for 5 years.

Homeopathy often presents the greatest challenge to allopathic physicians as its presumptive mechanism of action is completely different from the allopathic paradigm. The evidence for homeopathy is mixed. A 2005 widely publicized metaanalysis suggested that homeopathy is no more than a placebo (Shange et al., 2005). Yet, multiple well-designed randomized trials, including one for Otitis media, have demonstrated the chosen remedies as superior to placebo and a new study challenges the authors' methods (Jacobs et al., 2001; Lütke and Rutten,

2008). Homeopathy, however, will continue to be controversial as it challenges current paradigms.

THE INTEGRATIVE MEDICINE MODEL

Given the complexity of medicine, the wide range of therapeutic options, the need for preventive care, health promotion, acute disease care, chronic disease management, and palliative care, team-based care will become increasingly important. Already, teams have formed in complex areas of medicine, notably for children with disabilities, adults with renal failure, and hospice and palliative care. Teams will need training to work together effectively. Grumbach and Bodenheimer (2004) describe the 5 key characteristics of cohesive primary health care teams as having clear goals with measurable outcomes, clinical and administrative systems, division of labor, training of all team members, and effective communication.

Health promotion and preventive care require a different set of skills and attitudes than acute care. Motivational skills, understanding of patient's beliefs and values, and willingness to address societal influences on health are important. Similarly, acute care demands speed, calm under pressure, rapid diagnostic acumen, and recall. Chronic disease care and education regarding lifestyle change may also be carried out in groups which require facilitation skills and a systems orientation to address all the needs of someone with diabetes or heart failure. Hospice and palliative care calls for still another set of skills, including being comfortable in identifying and addressing the spiritual needs of patients.

For most patients, the selected team of health care providers will vary. At the same time, a primary health partner must be identified with the following characteristics:

- Knows the patient well
 - Schedules initial visit long enough to get to know the person
 - Values continuity
- Able to work with a team
 - Values and respects other team members
 - Knowledgeable about CAM and allopathic therapies
- Accountable for preventive and screening needs of patient
 - Agrees to abide by established recommendations (i.e., U.S. Preventive Services Task Force)
 - Screens patients or refers to a qualified team member
- Able to assess if urgent or critical health issue

- Appreciates signs and/or symptoms of cancer diagnosis, blood clots, or rare diagnoses
- Accesses team members who are trained to diagnose these problems
- Able to appropriately care for the needs of the patient
 - Acknowledges that needs may change over time (i.e., child to adulthood or healthy person to new chronic disease state requiring different level of care)

The team of providers will vary depending on the patient's diagnosis and the goal of providing comprehensive, evidence-based health care that addresses mind, body, and spirit. Team members will be drawn from conventional providers (e.g., doctors, nurses, pharmacists, nutritionists, physical therapists, social workers, chaplains) and from the CAM community (e.g., TCM acupuncturists, naturopathic physicians, chiropractors, massage therapists, and instructors in yoga, qi gong, and meditation). The team will also vary depending on the patient's most critical needs: pediatric care, health promotion and prevention, acute care, chronic disease management, or palliative care.

Physicians, nurse practitioners, and CAM providers who meet the above characteristics may serve as primary health partners when selected by their patients. Ideally, teams of professionals would work together within a medical home, providing the breadth of nonhospital-based care. Communication will be facilitated by trained integrative professionals who function as "culture and language brokers" working to bridge the different healing traditions and educating patients and providers about the different healing options.

In this model, reimbursement rates would value time spent in developing a therapeutic relationship or counseling patients; CAM services would be reimbursed at levels consistent with other providers. All services, CAM and conventional, would be tracked through electronic databases and research networks to assess effectiveness of care. Incentives for successfully keeping patients healthy, for coordination of all chronic disease needs, and for innovations in care delivery would be built into the system.

Case Number 5

The Future Of Integrative Care

Jorge Munoz presents for his semiannual health promotion check-up at his primary care clinic in New Mexico. He is a 46 year-old man who has been followed for 2 years with borderline elevated blood sugars, a low HDL and elevated triglycerides, all hallmarks of metabolic syndrome. Despite discussion with his physician, he has gained 48

pounds over the past 2 years. He had been unable to make the recommended lifestyle changes as he was simply too busy. Today his labs confirm early diabetes with a hemoglobin A_{1c} of 7.1. His physician explains that while there are medicines to manage his diabetes, the only way to reverse it is with lifestyle change.

Mr. Munoz has been mulling this over in his mind for some time and is now motivated. His mother died of complications of diabetes and he does not want the same fate. Recognizing the challenges he's had on his own, he enrolls in the clinic's diabetes prevention group. This 6-month commitment involves weekly visits with a nutritionist, naturopathic physician, exercise physiologist, and behavioral therapist. Twenty-eight other clinic patients with metabolic syndrome or early diabetes have enrolled. He learns from the nutritionist how to eat low on the glycemic index and cut back on processed and refined foods. He and his wife incorporate simple dietary changes including garlic and onions in cooking and using a half teaspoon of cinnamon daily to lower blood sugar. He remembers how he loved the nopales (prickly pear) his grandmother used to make and learns that the cooked stems can lower blood sugar. Group members share tips including local restaurants catering to folks trying to follow the principles of the South Beach Diet. His naturopathic doctor, in a one-on-one visit, suggests a few dietary supplements to enhance blood sugar control including chromium and alpha lipoic acid. The exercise physiologist lends pedometers to each member of the group. Jorge, who has always thought of himself as very active on his job as a real estate agent, is surprised to see his daily tally at 2,000 steps. He begins taking walks in the evening with his wife. He notices how this helps him feel more peaceful and centered and decides to commit to the mind-body stress reduction seminar his physician is offering.

Over a 2-year period Jorge loses 37 pounds and 8 inches from his waist line. His blood sugars are consistently normal as is his hemoglobin A_{1c}. His triglycerides normalized once he began 2 grams a day of fish oil. He speaks of being grateful for the wakeup call that has him feeling better, more comfortable in his body, and aware of the chronic disease he has successfully prevented.

This case describes effective use of team-based care. The roots of the illness are addressed, effective education and support are provided over time in the group setting, and the patient is able to reverse a potentially serious chronic illness. He is left feeling empowered and capable, aware that his own actions reversed the disease process.

CONCLUSION

For integrative medicine to flourish and provide solutions to our current health care crises will take systemic change. It will require a commitment to focus on prevention and health promotion, to embrace new providers, and new provider

models. To honor the therapeutic relationship and the bond that forms when a trained provider and patient will require a shift in focus. Technology, including electronic medical records that enhance interdisciplinary communication and teamwork, will be a necessary driver. To provide health care that is both high-tech and high-touch, more integrative medicine providers will have to be trained. The emphasis of this training will be to learn to facilitate healing. Steps to move us toward this health care system are outlined in the recommendations listed below.

Recommendation	Key Actors	Example or Needs
1. Align incentives so that they support health.	Federal and state governments to redirect Medicare and other insurers.	At present, hospitals profit substantially from amputating a diabetic limb and lose money providing preventive diabetes care.
2. Develop systems that recognize total costs, including costs of benefit and harm.	Health payers including private insurers, Medicare, and Medicaid.	When acupuncture is compared to epidural steroids for low back pain, it has been found to be more effective, less harmful and cheaper (Arden, 2005; Thomas, 2006). Acupuncture has a cost/quality adjusted life year (Cost/QALY) of \$8,097 vs. \$319,130 for epidural steroid injections (Ratcliffe, 2006; Price, 2005).
3. Pass a congressional mandate that requires insurers to fairly reimburse providers for a one hour visit for a new patient to develop a therapeutic relationship and for lifestyle coaching.	Congress Related governmental health agencies	More time to form a therapeutic relationship and develop insight will result in more accurate diagnosis and cost efficient care (Freeman et al., 2002). Develop robust outcome measures to track the impact of lifestyle coaching, and the results of integrative care for different conditions
4. Create a set of competencies among health-oriented teams where both conventional and CAM providers develop an understanding of each others' fields; include training in effective patient	Health profession schools Accrediting agencies	Create interdisciplinary health-oriented teams that facilitate health for a common health need (e.g., pain management or obesity). Team members learn from each other through open

Recommendation	Key Actors	Example or Needs
communication, lifestyle coaching, and appropriate referral.	Certifying bodies of continuing professional education	communication, defining terminology, and sharing medical system theories. California licensing now requires 10 hours of continuing medical education in palliative care or pain management.
5. Create a set of required competencies in conventional medicine for CAM providers including recognition of critical health issues, prevention and screening, and broad understanding of health care.	Accrediting agencies of CAM professions	Although most accredited CAM colleges and schools include coursework in Western sciences such as pathophysiology and appropriate referral, the additional study of biomedical clinical practices, policies, and medical systems are needed to help CAM professionals more easily acculturate into ambulatory care and hospital settings.
6. Establish credentialing and privileges that allow greater integration of CAM practitioners in conventional settings, particularly primary care team development.	Hospitals Insurers	Partnerships with CAM institutions are encouraged to allow for mutual education of students and to provide clinical training beneficial to both patients and providers.
7. Fund outcomes studies that measure cost and clinical effectiveness of integrative medicine.	Agency for Healthcare Research and Quality National Institutes of Health	Include measures that are of interest to employers who pay for health care, hospital CEOs, and the insurance companies. Create systems to communicate and reward best practices in integrative clinic management. Patient feedback should be a central feature of these systems.
8. Create societal incentives to support and educate patients and their families as they seek to enhance their own health.	Businesses Schools Community Centers	Some corporations have invested in wellness activities and onsite gyms that have been able to show profitable returns on their investments. Teach integrative medicine concepts, such as mind/body awareness, meditation techniques, and qi gong

Recommendation	Key Actors	Example or Needs
<p>9. Create incentives in insurance to maintain a continuous healing relationship between clinician and patient, including support for the development of health teams in patient-centered medical homes.</p>	<p>Payers, including private insurers, Medicare, and Medicaid.</p>	<p>exercises in secondary education to foster healthier children and families. Communities can identify their most critical health needs and develop programs to address them.</p> <p>A patient who receives medical care from a health care team over time will gain insight that creates understanding of what the person needs for health.</p>
<p>10. Health care providers should practice self-care.</p>	<p>CEOs Hospital and clinic administrators.</p>	<p>Insurers will also benefit from more effective medicine resulting in greater cost-savings in the long run.</p> <p>Health care professionals and other caregivers often suffer from stress and other ailments that can affect performance and the patient-clinician relationship.</p>

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