

SUMMIT ON INTEGRATIVE MEDICINE & THE HEALTH OF THE PUBLIC: ISSUE BACKGROUND & OVERVIEW

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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 as background for the Summit on Integrative Medicine and the Health of the Public. Reflective of the varied range of issues and interpretations related to integrative medicine, the papers developed represent a broad range of perspectives.

INTRODUCTION

Integrative medicine orients the health care process to create a seamless engagement by patients and caregivers in the full range of factors known to be effective and necessary for the achievement of optimal health over the course of one's life. In integrative medicine, patients are active partners in their health and providers care for them as individuals in different life circumstances, rather than just treating their illnesses. Thus, integrative medicine takes into account biological, psychological, social, and spiritual aspects of individuals' lives, draws the best evidence for their needs and circumstances, and engages both treatment and prevention, including diet, exercise, stress management, emotional wellbeing, and socio-environmental factors. Integrative medicine makes use of the best conventional care and the latest advances in predictive, preventive, and personalized medicine and uses all appropriate evidence-based prevention, treatment and supportive approaches. Finally, it asks physicians to serve as guides, role models, and mentors and to recall that "healing is always possible, even when curing is not."¹

Widespread implementation of an integrative medicine approach would fundamentally transform our nation's current fragmented, inefficient, expensive, and reactive "sick care" system to one that is more proactive, personal, efficient, and appropriately focused on enhancing the health of each person and the population as a whole. Five chronic conditions—mood disorders, diabetes, heart disease, asthma, and high blood pressure—now account for more than half of all U.S. health expenditures. The onset and serious consequences of these conditions may have been partly or wholly preventable. Current patterns of care do little to enhance health, prevent illness, or treat it efficiently and effectively when it occurs. The reimbursement system encourages this pattern, by financially rewarding units of service, rather than outcomes, prevention, and the integration of care processes that each patient should expect. Little encouragement, through incentives or care patterns, is offered to individuals to take active part in their own care to enhance wellness and minimize disease.

Expanding health care coverage is both an important societal obligation and necessary to address effectively the challenge of reforming our currently fragmented system, but, alone, it cannot address the primary sources of the nation's health care woes. It is a necessary but hardly sufficient step to an efficient, coordinated, and prevention-oriented health care system, geared to enhancing health and wellness and personalizing the prevention and treatment of disease. To the extent that a more rational system saves costs and improves outcomes, it will make expanded coverage both financially feasible and sustainable.

¹Tracy W. Gaudet, MD, Director, Duke Integrative Medicine.

Is an integrated health care system possible? With the United States spending twice as much per capita as the average for most other developed countries—and 50 percent more than the second largest spending nation in the world—yet achieving poorer results than nearly two dozen other countries, the resources currently devoted to health are clearly sufficient to obtain much better outcomes. What is needed is a fundamental reorientation of the care process to achieve these results.

This reorientation is even more vital in the face of emerging insights regarding the importance of mind/body interactions and patient empowerment, which strengthen the scientific basis for health enhancement, personalized disease prevention, early intervention, and more effective treatment. Risk assessment tools are rapidly becoming more sophisticated to enable personalized health planning for patients, including a health risk profile, a description of current health status, means to detect disease early, and positive actions to preserve health.

Advances in health information technology enable—or soon will—the collection and analysis of large amounts of patient-specific information at the point of care. These advances can also enable provision of timely reminders, risk monitoring, and tailored education not only to providers, but directly to patients in their homes, reengaging them with the motivation and capacity to take greater responsibility for their own health prospects. At present, this new frontier of health care is one for which every element of the system—from health professions education and culture to health care delivery, regulatory, and reimbursement incentives—is ill-prepared

In 1910, the Flexner Report changed American medicine by insisting that doctors should be trained to diagnose and treat illnesses using the scientific tools of the day. Since then, the medical sciences have splintered into more and more specialties concerned with narrower and narrower aspects of the human body. Medicine's focus on pathophysiology alone, and the reductionist perspective, do not well serve the many patients whose complex problems are incompletely understood and treated by “find it and fix it” approaches.

As the Flexner centenary approaches, it is again time to reevaluate the training in U.S. medical schools and assess whether it is teaching tomorrow's doctors to use the modern scientific tools of genomics, proteomics, and advanced diagnostic imaging not merely to treat disease, but to use these and more integrated strategies to prevent its occurrence and enhance their patients' health. This requires taking a broader view of individual patients that takes into account the social, family, and physical environments in which they function as well as the patient's own empowerment and motivation. It requires use of the best conventional medicine and cutting-edge diagnostic and treatment methods in combination with appropriate mentoring, compassion, and proven complementary approaches.

By favoring, whenever appropriate, the use of low-tech, lower-cost interventions, not only is the patient better served, but so are the societal goals of a sustainable health care system. As health care becomes more fractured and disease-focused, patients find the health system less and less responsive to their wants and needs, jeopardizing physician-patient relationships. Cost-control strategies developed as blunt instruments have often tended to increase care fragmentation, rather than integration, and to alienate physicians frustrated by a loss of autonomy, which further erodes their capacity and incentives for the kind of caring patient relationships they would prefer.

This summit explores the vision, scope, science, practice, and economic realities of integrative medicine. Following is an overview of the state-of-play, opportunities, and challenges in fulfilling the promise of integrative medicine—realizing true patient-centered care, enhancing the health of the public, modernizing health professions education, engaging the public, meeting research needs, and developing supporting financial and policy implications. It touches on elements of material found in background papers prepared for the summit, in the available literature, and the views of several field experts.

PATIENT-CENTERED CARE

Patient-centered care is one of the six aims for a 21st Century health care system recommended in the IOM report, *Crossing the Quality Chasm*²: care “respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.” A health system that achieved patient-centered care and the report’s other five aims (care that is safe, effective, timely, efficient, and equitable) would, the authors write, enable patients to count on receiving the full array of preventive, acute, and chronic services likely to benefit them. Several specific “rules” identified for a redesigned health system would increase patient-centeredness and parallel the goals of integrative medicine:

- Customization of care based on patient needs and values
- Giving patients the necessary information and the opportunity for shared decision-making
- Shared knowledge and information between patients and clinicians
- Transparency of information for patients choosing health plans, hospitals, clinical practices, or alternative treatments

²Institute of Medicine. 2001. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, D.C.: National Academy Press.

- Anticipating patient needs—a concept that should include disease prevention and health promotion—rather than simply reacting to events.

Each of these is important to the vision of integrative medicine, which expands the notion of patient-centeredness to a coordinated approach to delivery along with a careful consideration of the family, social, and community dynamics that can shape the course of the healing processes. Achieving a system responsive to patients in this way would require qualitatively different communication between patients and their health care providers, as well as giving patients a more central role in managing their own health prospects and disease treatment.

Programs encouraging self-management of chronic conditions like diabetes or asthma are examples of trends that mirror the concepts of integrative medicine. These programs have developed some best-practice approaches for engaging patients, encouraging greater patient responsibility for health maintenance, encouraging their greater role, and drawing on supportive community programs. They include individual consultation with physicians who provide state-of-the-art treatment; health education and nutrition counseling by nurses, nutritionists, and others; and individual and group counseling and support. Such comprehensive approaches have been shown to improve health outcomes, reduce hospitalizations and emergency room visits, and save costs. Comprehensive models like these may be replicable for other chronic conditions.

The medical home concept currently is being advanced by four specialty societies for primary care physicians, which have issued joint principles intended to operationalize the patient-centered medical home.³ Many integrative medicine concepts are embraced by this approach. The principles advocate that: each patient should have an ongoing relationship with a physician trained to provide comprehensive care; this physician should lead a team that collectively takes ongoing responsibility for the patient's care; the physician should have a whole-person, whole-life orientation; care should be coordinated and integrated across all elements of the health care system; care provided should be high-quality and safe; patients should have greater electronic and other access to their practice; and the payment system should reward the added value that having a medical home offers patients.

A patient-centered approach relies on the notion of multidisciplinary teams working in a seamless integrated fashion. Team members provide appropriate components of care and counseling that fit their skills and training and reasonably limit costly physician time. Certain team members can be responsible for regular patient monitoring, mentoring and educational reinforcement, and psychosocial

³American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, and American Osteopathic Association, together representing approximately 333,000 physicians.

support, which enhance continuity of care. Teams also may include patient navigators to help patients access different health system components. Similarly, some model medical home projects that provide comprehensive services hire LPNs with deep community knowledge and good communications skills to conduct home visits and patient education. Through them, the medical practice learns a great deal about the patient's home environment and what is practical and possible in the way of self-management and lifestyle change.

A major factor impeding the diffusion of patient-centered, integrated care models is the current reimbursement system, which undervalues primary care and preventive counseling services and overvalues procedure-intensive specialty care. The number of medical students choosing primary care has dropped precipitously, and this financial discrepancy is cited by many as a principal reason for pursuing specialty training. This trend runs directly counter to ample evidence from the United States and abroad that communities with high proportions of primary care providers have better health, including lower death rates, than communities whose physician complement is dominated by specialists. Hospitals and academic medical centers have little incentive to promote primary care, because it does not bring in the high reimbursements and research dollars that specialty care does, and subsidies for primary care residency training are lower.

The procedure-oriented health system is geared toward disease events, rather than patient-centered care, and change is hard. Health care providers have a legacy of paternalistic attitudes toward patients that, in turn, have fostered a generation or more of passive patients. Large numbers of Americans are not "health literate," let alone "proficient." The growing number of immigrants includes many people who are not proficient in English increases the challenge. Effectively involving culturally diverse groups with the health care system, before or after the onset of disease, is difficult.

Provider culture is also a challenge to patient-centered care. Despite years of discussing the importance of teamwork in providing effective health care services, health professions training and the professionalization process (and, sometimes, state scope-of-practice laws) inhibit the development of flexible, mutually supportive team-based care. Again, *Crossing the Quality Chasm* notes that, although team-based care is common, at least in theory, its full benefits are inhibited by traditional roles, and it is "slowed or stymied by institutional, labor, and financial structures, and by law and custom."⁴

Greater appreciation of these challenges offers prospects for change. Health reform efforts will likely seek to shift economic incentives toward primary care and prevention. Wider use of health information technology is expected to increase the efficiency, effectiveness, continuity, and integration of the care process.

⁴Institute of Medicine, *op. cit.*, page 12.

Electronic health records (EHR), which are gradually increasing in U.S. health care and promoted in the February 2009 economic stimulus legislation, will offer an important tool to facilitate providers' and patients' ability to obtain the information needed to the right place at the right time, with electronic prompts and decision aids. Moreover, greater access by patients to web-based information on diagnostic and treatment protocols will deepen the capacity and motivation for patients to seek tailored information about their health condition—information that may help center patient and provider discussions around key issues.

PREVENTION & HEALTH OF THE PUBLIC

Preventive medicine and public health share the objectives of promoting general health, preventing diseases, and applying the techniques of epidemiology to achieving these ends. Preventive medicine focuses on individual patients, while public health uses organized community efforts to promote health in populations by, for example, increasing availability of healthful food choices or discouraging cigarette smoking.

Good health results from the complex interplay of genetic, behavioral, environmental, psychosocial, and health care factors. Health care services, per se, play a relatively small role as a determinant of a population's health. Even so, it is greatly beneficial for physicians to assess, encourage, and support modification of these factors, to the extent possible. With the increased capability of genomic medicine, physicians increasingly will be able to tailor educational and intervention efforts to the biological vulnerabilities and strengths of specific individuals.

Individual behavior—smoking, alcohol and drug abuse, lack of exercise, poor diet, reactions to stress, and so on—are the chief causes of poor health among Americans. More than 15 years ago, epidemiologic analysis yielded estimates that, in the United States, fully half of the mortality from the 10 leading causes of death was attributable to behavior that causes chronic diseases or makes them more serious.⁵ Lifestyle choices are a major contributor to development of heart disease, stroke, diabetes, some cancers, and injuries, including fires, falls, automobile injuries, suicide, and homicide. However, these choices are not made in a vacuum; a variety of social influences affect personal behavior. Modern preventive approaches have moved from a sole focus on persuading individuals to change their habits to altering the environment in ways that discourage negative behavior and encourage healthier decisions.

Clearly, the consequences of unhealthy behavior are costly, not only to individuals and families, but also for the entire health system. Disease prevention and

⁵McGinnis, JM and Foege, WH. 1993. Actual Causes of Death in the United States. *JAMA* 270:2207-2212.

wellness efforts cannot prevent every case of these diseases and injuries, but, even when disease occurs, they usually can help slow disease progress and avoid many serious sequelae. For example, a robust prevention-oriented approach to managing patients with diabetes can prevent foot and leg amputations and blindness.

Social and environmental influences on health come in many forms. Social factors include race, ethnicity, and minority or immigrant status. They also include family structure, income, education, and health insurance status. These factors clearly influence the development of young children, but they also affect levels of psychosocial stress and physical and mental health throughout life. Social factors, of course, also can be great sources of strength and their positive potential can be marshaled to promote health. With respect to health insurance status, physicians rarely know anything about their patients' coverage and, therefore, the out-of-pocket cost burden specific recommendations may entail—perhaps one reason their advice is so frequently not followed.

Harmful environmental influences are factors in the physical environment, like exposures to harmful chemical or biological substances in air, water, food, or consumer products; excessive noise or sunlight (ultraviolet); or radiation from medical or occupational exposures. They include safety hazards to which people are exposed in the home, at work, and when traveling, especially in automobiles. Control of these factors lies more in the realm of public health practice and environmental design than in clinical medicine; however, a physician's awareness of the environment in which patients live and work can guide advice on risk mitigation. Such advice is particularly important for patients with genetic or other physical factors that might make environmental exposures more hazardous.

Since integrative medicine begins from the perspective of maintaining and promoting individual health, it is necessarily closely attuned to the array of behavioral and environmental factors that put health at risk. Inevitably, the health system must look beyond the individual patient to broader social and environmental influences. As mentioned, many environmental factors require public health advocacy and intervention. However, even individual behavior, such as smoking and exercise, is susceptible to social and environmental approaches. Widespread anti-smoking advocacy and supportive public policies, like anti-smoking rules in workplaces and public spaces, increased tobacco taxes, and consumer education programs have changed the environment in the United States from a pro-smoking to largely anti-smoking culture. Similarly, public policies that promote exercise by building bike, jogging, and walking trails, corporations and city planners that encourage office and residential buildings to include gyms and showers, and an array of other public policies support a health-promotion culture. Health professionals have credibility in public discussions of such policies and can do a great deal for their own patients and the community by endorsing such pro-health initia-

tives. Medical researchers and health policy analysts can develop the clinical research and public policy assessments on which sound public policies can be based.

HEALTH PROFESSIONS EDUCATION

The dominant emphasis on diagnosis and treatment of disease events by an increasingly specialized clinician workforce characterizes health care today. The integrative notions of tending to the whole patient, emphasizing wellness, engaging patients centrally in their care, and the related goals of fostering continuity of care and community health are clearly not the foci of most health professions education. Indeed, prevention and the holistic approach at the core of integrative medicine are substantially marginalized in typical health professions training programs.

Academic medicine must play a major part in training clinicians for the new roles of providers called for by integrative approaches, including the need to promote research to test the effectiveness of new practice models. Evidence of the benefits of the integrated, patient-oriented approach can be found in another neglected realm of medical education, palliative care, which in the face of terminal illness focuses on “whole person” needs, addresses social/family issues, and promotes compassion and healing, even though cure is impossible. But, while academic medicine has been a constant source of innovations in specialty care, few medical schools and training institutions have become engaged in approaches to improving general clinical care or development of provider models to improve care delivery.

Some elements of an integrated approach to health care also have their roots in practices that began under the rubric of complementary and alternative medicine (CAM). The effectiveness of such approaches has been strengthened as experience and evidence has been gained. In 2003-2004, the National Center for Complementary and Alternative Medicine sponsored a series of grants to strengthen awareness and knowledge about complementary and alternative medicine practices among medical students. The goal was to broaden the array of evidence-based techniques that physicians have at their disposal. A common finding from these projects was that culture change, including faculty development, was a necessary accompaniment to curriculum changes, and the result is a growing presence of relevant courses in the nursing and medical curricula. Expansion of these trends will require additional research, resources, incentives, continuing education courses, licensure requirements, and, perhaps, ultimately, reimbursement incentives.

A number of academic centers are beginning to change, adding formal integrative medicine programs, including research, education, and clinical care components to speed the transformation toward more integrated, coordinated care management. Others, mindful of the deep interest of many patients and providers in CAM practices—ranging from the use of mindfulness meditation, acupuncture, massage and biofeedback, to nutritional practices and dietary supplements (e.g., herbs, vitamins, minerals)—have developed research, education, and practice programs that seek to deepen the evidence base, in order to accelerate the application of effective health care practices. Many medical and nursing faculty and students are philosophically supportive of greater integration of conventional and CAM therapies, but referral to these modalities is infrequent, as a result not only of limitations in the evidence base, but also of prevailing professional attitudes and beliefs.

Progress in evidence-based integrative care will therefore depend on leadership from academic health professions schools to develop the interdisciplinary research and training programs. New models for residency training programs, such as the “Integrative Family Medicine” pilot program, conducted at six pilot sites⁶ around the country that combine family medicine residencies and integrative fellowships appear promising. These new models could be especially effective if paired with incentives for academic health centers through research funds, with accreditation and reimbursement programs, and with incentives for practitioners through licensure and board certification examinations.

Take the example of prospective medicine as a component of an integrated approach to health care. For prospective medicine to be central to medical education would require changes in basic sciences teaching, clinical education, and medical school culture. The basic sciences would need to include teaching about the role of predictive biomarkers, the evolution from “health” to “disease,” and the points of potential intervention along that continuum. Clinical education should include practice in conducting comprehensive medical evaluations, health planning, establishing good two-way patient communication and motivation, and disease management.

These improvements depend on fundamentally altering health professions training to focus on interdisciplinary education and practical experience in working in effective care teams that can reduce medical errors, improve health care quality, and put at clinicians’ disposal the full array of skills needed for effective patient care and wellness promotion. Teams are essential for the best care of people with chronic illnesses, although impending shortages in primary care physi-

⁶University of Arizona, Beth Israel/Albert Einstein College of Medicine (New York, N.Y.), Maine Medical Center, Middlesex Hospital (Middletown, Conn.), Oregon Health & Science University, and the University of Wisconsin.

cians and other team members will increasingly hamper team-based practice. This, too, requires basic changes in the structure of economic incentives, to emphasize primary care and health outcomes.⁷

PUBLIC & PATIENT COMMUNICATION STRATEGIES

Increasing public support for a radical change in the current fragmented system of medical care is reflected in the growth of advocacy groups that support health care that centers on the patient, with all the attendant changes implied. A long-term goal of many such groups is to influence health policy to remove regulatory and reimbursement barriers to preventive care and to support personalized medicine research. These groups sponsor educational sessions to acquaint the public and policymakers with integrative medicine concepts.

People who support these changes in the health care system and who seek out and use integrative medicine practices are generally self-directed and more interested in taking a greater role in their own health care. They typically want more of a conversation with their physicians, which can be brief yet still extremely effective, that produces shared expectations and a treatment plan that both sides buy into. The one-way stream of information to which patients are usually subjected has been notably ineffective in encouraging adherence to treatment plans. Greater patient involvement and physician listening might result in plans more relevant to patients' circumstances and, therefore, improve adherence rates.

Perhaps the lack of two-way dialog has prompted large numbers of patients to seek complementary and alternative medical practices over which they have direct control. About half of healthy individuals report using one or more of these modalities in an attempt to enhance or maintain health and functioning. Ironically, this can exacerbate the divide between patients and providers. Patients often worry that their physicians would disapprove of some of their CAM practices, they frequently avoid mentioning them—a potentially harmful outcome if an alternative practice interferes with medical treatment. For example, a study of cardiac surgery patients found that about 70 percent used some form of complementary therapy. Most commonly, patients used vitamins (54 percent), prayer (36 percent), nutritional therapy (17 percent), massage, herbs, chiropractic services, and meditation (10 to 11 percent each). Only one in five patients discussed these practices with their surgeons. Unfortunately, 45 percent of the pa-

⁷Bodenheimer, T, Chen, E, and Bennett, HD. 2009. Confronting The Growing Burden Of Chronic Disease: Can The U.S. Health Care Workforce Do the Job? *Health Affairs* 28: 64-74.

tients were using a therapy, especially certain herbs, that could negatively affect the results of their surgery.⁸

Recognizing that patients are very likely using these modalities, strategies for improving communication between physicians and patients about CAM are important. Additional research is needed on the clinical effectiveness of CAM, and using the clinical environment to implement carefully planned research protocols may further enhance clinicians' familiarity with them, while fostering greater trust between clinicians and patients.

Good patient-physician communication also is important to integrative medicine in a much wider sense. It is essential to changing individual attitudes, beliefs, and practices of patients and health systems alike. Practitioners need the ability to emotionally and intellectually convince patients that change in their lifestyle or health care practices is required and to use intellectual and economic arguments to convince health care institutions and systems that a better style of practice will benefit them, too.

Patients in general want better communication with their providers. Whatever they feel about the health system, they trust their own physicians and believe they provide high-quality care. A recent Kaiser Permanente study of enrollees found that they judged the quality of care provided by the system almost solely on these relationships. Providers and payers alike have a greater responsibility than previously acknowledged to nurture those relationships, for several reasons: growing awareness that satisfaction with the health system improves health care outcomes; from an economic standpoint, it also may reduce patient churn; and, knowing enrollees are likely to stay in a health system or insurance plan for a longer period greatly increases insurers' incentives to work on disease prevention and wellness.

RESEARCH CONTEXT & PRIORITIES

Advances in the research base have revealed the promise of integrative medicine and will be key to its progress. As a result of contributions from research in epidemiology, genetics, endocrinology, psychology, and health services, the core knowledge needed to shift the practice of medicine to a more integrated model—emphasizing personalized, predictive, preventive, and participatory approaches—is now available. A much stronger science base provides the foundation for knowing about the important elements of prevention and health promotion, about the importance of exercise and dietary factors on health prospects, about individual predispositions to disease and disability, about the impact of stress and psycho-

⁸Oz, Mehmet. 2004. Emerging Role of Integrative Medicine in Cardiovascular Disease. *Cardiology in Review* 12: 120-123.

logically supportive factors on disease processes, about the inter-relationships between the neurologic and endocrine systems, about the harm done by discontinuities in care. We are now in a position for contemporary science to help understand health insights and practices that sometimes span the course of recorded history.

Yet our established knowledge is still young. When patients have multiple chronic conditions, the ability to manage, monitor, slow disease progress, and avoid complications becomes increasingly complex, and research is needed on ways to optimize and balance treatment choices for individual patients. Many chronic conditions—even normal aging—are frequently accompanied by psychological symptoms that affect patients' ability to recover from illness and motivation to maintain health. These complicated situations underscore the need for health services research to identify and develop practice models that facilitate delivery of integrated, patient-centered care, including ways to better incorporate mental health services into ordinary clinical practice. High-profile research into these questions also will enhance the stature of primary care in medical schools, where prestige is heavily based on research capacity and achievement.

In the past few years, research projects by government agencies, industry, and academic institutions “has begun to provide an increasingly rich infrastructure to identify the mechanisms involved in transitioning from health to disease and the biomarkers . . . (that) predict clinical events.”⁹ Knowledge derived from the Human Genome Project, the International HapMap Project, and growing information from the fields of genomics, proteomics, metabolomics, bioinformatics, medical technologies, and systems biology are making this transition possible.

Increasingly, researchers and practitioners will be able to use biomarkers to predict and track disease and assess the effects of treatment. A national “personalized health care” initiative is beginning to combine genomic research breakthroughs with improved health information technology to enable susceptibilities to be identified as early as possible, so that clinicians can take and recommend preventive countermeasures. Prospects are developing for biomarkers to help predict the onset or course of some breast and prostate cancers, as well as appropriate dosages of certain medications. Used in combination with traditional clinical prognostic tools, the new predictive technologies will create a sound scientific base for many new preventive approaches.

The temptation may exist for clinicians (and some patients, too) to treat genomics, proteomics, and so on as the next generation of high-tech tools that provide quick “answers” to clinical problems. However, they will never substitute for clinicians' and patients' judgments, and the data derived from these tools should be seen as an opportunity to build a long-term relationship, focused on health maintenance. The data provide a more accurate long-range forecast of out-

⁹Snyderman, R. and Yoediono, Z. 2008. *Academic Medicine* 83: 707-714.

comes, which enables clinicians and patients to set in motion long-term strategies to minimize identified risks through close monitoring and the management of related behavioral and environmental factors. Used appropriately, these technologies should foster closer patient-physician collaboration, not curtail it.

Priorities and challenges for research in integrative medicine start with the most fundamental concepts. People from different cultures vary in their understanding and views of the origins of disease. In our culture, biological processes are almost always considered the sole culprit in an illness, with occasional reference to the impact of psychosocial factors on disease processes. Some other cultures, for example, attribute disease to malevolent spirits or supernatural forces. In the multicultural U.S. society, the very different lenses through which physicians see the world, on one hand, and the traditions and beliefs of various cultural groups, on the other, lead to widely disparate worldviews, misunderstanding, and counterproductive communication on matters vital to the effectiveness of treatment.¹⁰ Researchers, as much as clinicians, are challenged to take these vastly different perspectives into account when assessing patient outcomes.

A key challenge to research therefore lies not only in developing the biological, molecular, and advanced imaging tools for predicting and early identification of disease, but also in applying these tools to improve the process of care and support the interactive and integrative nature of the care experience, including:

- Improved strategies for patient engagement, through education, communication, motivation, and support
- Identifying lessons from related disciplines, such as palliative care, stress management, and social connectedness
- Epidemiologic studies that address patient and cost outcomes across populations of different races, ethnicities, and socioeconomic status
- Evaluating alternative professional education programs
- Developing and testing new health service delivery models and evaluating the effectiveness and cost-effectiveness of practice-based integrative care
- Assessing the impact of alternative reimbursement policies, regulations, and incentives on the adoption of integrative medicine principles.

ECONOMICS & POLICY

Coursing throughout all dimensions of health care that is integrative in nature—care that integrates prevention and treatment, mind and body, the traditional

¹⁰See, for example, Fadiman, A. 1997. *The Spirit Catches You and You Fall Down*. New York: Farrar, Straus, & Giroux.

and the emerging, the elements and stages of the care experience—is the need to align economic incentives appropriately. This is a matter of necessity not simply for care that is more effective but for care that is more efficient as well.

The nation is now confronting an economic crisis unlike any in nearly a century—and perhaps ever. With U.S. health care costs, already so much higher than elsewhere and still rising, making our industries less profitable and less internationally competitive; and with the health system underperforming at such a significant level, it is already a substantial part of our nation's near-term economic problem. But, without dramatic change, it is destined to become a much larger share in the future. Although much more work needs to be done to provide the economic models and proof of the return on investment that an integrated health care system could provide, both common sense and the studies in hand support the precept that preventing disease and injury is preferable to attempting rescue after the damage is done—preferable in terms of patient outcomes and quality of life, cost savings, and increased economic productivity. Further, evidence to date suggests that adequate economic incentives can motivate clinicians and institutions to change their practices toward a more integrated model of care.

Well-designed educational efforts to inform patients about their care options have been shown to influence patients' choice of therapies, and they frequently choose less aggressive treatments, including surgery, than their physicians would have recommended.¹¹ Preventive and disease management programs supported by employers for their workers have been shown to improve productivity and reduce costs. A Duke University study showed that a proactive management program for patients with congestive heart failure could improve health outcomes *and* reduce health care costs.

Because most economic studies done to date have not been able to adequately capture in economic terms the full range of benefits that accrue to keeping people healthier and happier, some payers take only the short-term view. They limit integrative services because they see only near-term costs and fear increases in demand. In fact, when these services are covered, use may rise, but the few studies that address costs suggest that greater use may not increase overall expenditures; rather, it can reduce costs by serving as a lower-cost, lower-tech substitution for later needs.

Current payment and reimbursement incentives militate against development of clinical care models that use an integrative medicine approach. The procedure-centered, acute-care orientation of U.S. payers is in stark contrast to the more whole-patient-centered, prevention-oriented philosophy in some other countries.

¹¹Wennberg, J. E., A. M. O'Connor, E. D. Collins, and J. N. Weinstein. 2007. Extending the p4p agenda, part 1: How Medicare can improve patient decision making and reduce unnecessary care. *Health Affairs* 26(6):1564-1574.

However, a small, but growing number of U.S. physician practices to varying degrees have adopted an integrated medicine style of practice. They put more emphasis on teamwork, better meld physical and mental health services, rely more heavily on non-physician practitioners for patient education and counseling, involve complementary and alternative medicine practices and practitioners as needed, implement electronic health records, and organize their practices in other ways to make care more wellness-oriented. Some of these physician practices have been found to not only increase and maintain patients' health more effectively than traditional approaches, but also to reduce health care costs. Reimbursement strategies that support this kind of practice, especially its counseling and educational elements, or share payers' savings with the practice will be essential for widespread adoption.

CONCLUSION

Science, compassion, and economics, all underscore the need to transform our current approach to health care from its disease-event focus to one of health enhancement and effective disease prevention and management. Although the knowledge base is still being developed, models for more coherent and rational approaches to care are expanding. The IOM Summit will explore the vision, models, evidence, education, and workforce needs, as well as the economics underlying more integrative approaches to medicine and the health of the public. From this exploration will emerge greater clarity regarding the steps needed to rationalize our approach to health, well-being, and minimization of preventive diseases.