CURRICULUM IN INTEGRATIVE MEDICINE:
A GUIDE FOR MEDICAL EDUCATORS

Consortium of Academic Health Centers for Integrative Medicine

Working Group on Education

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University of California, San Francisco
Osher Center for Integrative Medicine
www.ucsf.edu/ocim

Columbia University
Richard and Hinda Rosenthal Center for Complementary &
Alternative Medicine
www.rosenthal.hs.columbia.edu

Duke University
Duke Center for Integrative Medicine
www.dcim.org

Albert Einstein College of Medicine of Yeshiva University
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www.healthandhealingny.org

George Washington University
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Osher Institute
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University of Maryland  
Center for Integrative Medicine  
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University of Massachusetts  
Center for Mindfulness  
[www.umassmed.edu/cfm/](http://www.umassmed.edu/cfm/)

University of Michigan  
Complementary & Alternative Research Center  
[www.med.umich.edu/camrc](http://www.med.umich.edu/camrc)

University of Minnesota  
Center for Spirituality and Healing  
[www.csh.umn.edu](http://www.csh.umn.edu)

University of Medicine and Dentistry of New Jersey  
Institute for Complementary & Alternative Medicine  
[www.umdnj.edu/icam](http://www.umdnj.edu/icam)

Oregon Health and Science University  
Women’s Primary Care and Integrative Medicine, Center for Women’s Health  
[www.ohsu.edu/women](http://www.ohsu.edu/women)

University of Pennsylvania  
Office of Complementary Therapies  
[www.med.upenn.edu/progdev/compmed/steering.html](http://www.med.upenn.edu/progdev/compmed/steering.html)

University of Pittsburgh  
Center for Complementary Medicine  
[www.complementarymedicine.upmc.com](http://www.complementarymedicine.upmc.com)

University of Texas Medical Branch  
UTMB Integrative Health Care  
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Department of Family Medicine  
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INTRODUCTION
INTRODUCTION TO INTEGRATIVE MEDICINE CURRICULUM GUIDE

Background

More than 40% of the US population is now using complementary and alternative medicine (CAM) approaches on a regular basis.1 Patients’ perceptions about the deficiencies in their medical care are reflected in their increasing expenditures for alternative care, votes in favor of medical freedom acts (Minnesota, North Carolina), and petitions to Congress for access to over-the-counter herbs and supplements. The public desire for the integration of "alternative” or “unconventional” treatment approaches into conventional health care settings has been well documented. Physician dissatisfaction with the current system of care is also prevalent, with the limitations imposed by managed care as a major contributing factor.

Integrative medicine is a new approach to medicine that embraces the concerns of the public and medical profession for more effective, compassionate, patient-centered medicine. Integrative medicine has been defined as healing-oriented medicine that takes account of the whole person (body, mind, and spirit), including all aspects of lifestyle. It emphasizes the therapeutic relationship and makes use of all appropriate therapies, both conventional and alternative.2 Over the past 10 years, the number of medical schools providing education related to integrative medicine has grown rapidly. As of 1998, 64% of schools responding to a survey in the United States had curriculum offerings in this area.3 However, many of these offerings have been elective and thus not part of the learning experience of most students. In addition, different areas of content and instructional strategies have been used to teach topics in integrative medicine. The wide variation in content and delivery stems in part from the absence of explicitly designed educational objectives and learner outcomes for integrative medicine. The development of student competencies in integrative medicine and methods for evaluating curricular interventions is only underway at a few institutions.4

Consortium of Academic Health Centers for Integrative Medicine (CAHCIM)

In response to the need for a more coherent response to this new area within academic medicine, the Consortium of Academic Health Centers for Integrative Medicine (CAHCIM) was formed in 1999 with eight member institutions.5 The Consortium has met twice since this initial meeting and is now comprised of 22 member schools.6 The mission of CAHCIM is to “help transform healthcare 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.” Criteria for admission to CAHCIM include:

a) Meeting the criteria of the Association of Academic Health Centers (AAHC) defining an Academic Health Center.6
b) Having an established program in integrative medicine that includes ongoing work in more than one of three areas: research, education, and clinical activity.

In 2001, a subgroup of the Consortium began to work on guidelines for assisting medical schools in their design of integrative medicine curriculum activities. As a first step, this Education Working Group developed a set of competencies that delineated the values, knowledge, attitudes, and skills that CAHCIM believes are fundamental to the field of integrative medicine. These competencies were endorsed by the CAHCIM Steering Committee in May 2003, and an article outlining them appears in the June 2004 issue of Academic Medicine.7 Many of these competencies re-affirm humanistic values inherent to the practice of all medical specialties, while others are specific to

* Albert Einstein, Columbia, Duke, George Washington, Georgetown, Harvard, Jefferson, Oregon Health Sciences University, University of Arizona, University of Calgary, University of California at Los Angeles, University of California at San Francisco, University of Hawaii, University of Massachusetts, University of Maryland, University of Medicine and Dentistry of New Jersey, University of Minnesota, University of Michigan, University of Pennsylvania, University of Pittsburgh, University of Texas at Galveston, University of Washington
"unconventional" approaches to health and healing. These competencies are presented in Section 2 of this guide and can be used by medical institutions as a framework for developing curriculum and for evaluation of programs in integrative medicine.

**CAHCIM Curriculum Implementation Guide**

The Integrative Medicine Curriculum Guide is offered to assist medical educators as they move to develop curricular materials to effectively address these competencies. The guide contains samples of materials that were contributed by medical educators from a number of US medical schools to illustrate approaches to introducing CAM and integrative medicine topics. CAHCIM members were invited to submit curriculum samples currently in use that address one or more of the competencies in integrative medicine and that might be shared as a template for adaptation within other medical schools.

Samples presented in this guide are not intended to be comprehensive. Our goal is to represent offerings from a variety of medical schools that can be employed at different levels within the four years of medical school. The curriculum examples represented cover a variety of topics and incorporate the many approaches to facilitating effective learning. Table 1 (see page 9) outlines the types of curricular activities contained in this guide.

For first and second year students, the guide includes, among other courses, an overall lecture-type introduction to CAM for entering first year students that is followed by a field trip component and reflective small-group discussion; an introduction to Herbal Medicine presented as part of a second-year pharmacology course; a Web-based interactive learning unit on Spirituality in medicine; cases illustrating an evidence-based approach to applications of CAM; and a standardized patient experience to permit practice and evaluation. For students in the third and fourth years, we include descriptions of some of the in-depth elective experiences available in this area. In each module, the materials contributed by the medical schools are preceded by an outline of goals and objectives, specific learning outcomes from the CAHCIM competencies, learning methodology, illustrations of application, reflection questions to encourage deeper understanding, implementation challenges, and proposed evaluation strategies.

**Challenges in implementation**

Given the divergent nature of unconventional therapies and the varying levels of evidence that supports their use, the integration of topics in complementary and alternative medicine into conventional medical education poses a unique challenge. Innovative educational approaches are required to achieve an effective understanding of the principles and practice of integrative medicine. These approaches demand that we develop methods beyond those needed to teach new scientific facts. Two particularly important components for effective implementation of teaching in integrative medicine, which are not typically part of medical school curricula, are the use of experiential approaches to facilitate an understanding of complementary and alternative therapies, and the education of medical students in self-care and reflection. Examples of both are provided in the curriculum modules in this guide.

Perhaps the most significant challenge posed by the introduction of integrative medicine competencies into the conventional medical school curriculum at many schools is finding time for them. Educators at a number of schools have addressed this problem by working to incorporate teaching on integrative medicine into existing courses rather than looking to establish new courses. For example, introducing information on taking an effective history of a patient's use of CAM modalities into the interviewing course has been an effective strategy; another example would be integrating a patient's use of CAM modalities into an existing standardized patient encounter or problem-based learning case rather than trying to find room for an entirely new session covering only
### Table 1. Curriculum modules included

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an integrative medicine topic. One example of such an approach in this guide is Temple University’s standardized patient case of an older woman’s desire to address her menopause symptoms using alternative therapies that is part of the advanced doctor-patient interviewing course. Another illustration of how to incorporate teaching on integrative medicine into existing programs is Jefferson Medical College’s introduction to addressing herbal medicine, which is provided within the existing pharmacology course. This “integrative” approach to the time challenge avoids many of the power and political struggles that typically govern allocation of time in the preclinical curriculum. It is also more in keeping with the ultimate goal of having this material thoroughly integrated into the entire medical school curriculum rather than standing alone in either a required or an elective course.

A second, and perhaps equally difficult, challenge is that an integrative medicine curriculum includes material that may not be recognized en face as core medical content. Concepts are presented that have been excluded or marginalized by the current biomedical paradigm. For example, traditional healing systems include the concept of a life force, theories of spiritual causation, and therapeutics based on interconnectedness of healer and patient. Another example is the importance placed by integrative medicine on studying dimensions of illness and healing that cannot be captured through quantitative analysis. Integrative medicine therefore makes use of supplemental lines of inquiry methods including self-reflection, participant-observation, qualitative research methods, historical review, and cultural studies. By bridging biomedicine with alternative healing paradigms, integrative medicine creates opportunities for students (and faculty) to become philosophers of science, challenging them to critically reflect upon core philosophical assumptions underlying diverse models.

**Experiential learning**

Experience, within the context of the application, provides the deepest levels of understanding. Providing learners with an opportunity to experience and reflect on learning is key to building competence within a domain. Teaching alternative medical practices and systems (e.g., acupuncture, homeopathy, chiropractic, naturopathy, Ayurveda and other traditional healing practices), mind–body interventions (meditation, hypnosis, etc.), would be straightforward if introducing these therapies only required the presentation of new facts. However, systems such as Traditional Chinese Medicine are complex and are founded on paradigms that differ significantly from the allopathic medical model. Teaching these topics solely through a didactic format, although necessary as a start, may not be sufficient to develop a real understanding. A lecture on acupuncture is unlikely to capture the sensory experience of having an acupuncture needle placed or the deep relaxation that may be experienced through a practice such as tai chi. Similarly, describing the physiology of the relaxation response may be less effective than having students experience it directly through a meditation exercise.

Inclusion of traditional systems of medicine and other complementary approaches in the medical school curriculum requires both a synthesis of additional facts and a need for experience-based understanding to facilitate real clinical awareness. As with other aspects of a “multicultural approach” to medical education, immersion and other experience-based teaching methods can be invaluable to facilitate an understanding of the differences between “conventional” and “unconventional” views of health and illness and how they can be reconciled. The experiential component adds a rich contextual learning base that augments the acquisition of facts related to these unfamiliar therapies. Furthermore, immersion adds empathetic awareness in the student that will be utilized in the future when recommendations may be made.

Experiential learning also enables medical students to develop skills in self-reflection and strategies for self-care. A central tenet of integrative medicine is the notion that self-care for the physician, and the cultivation of a practice of reflection, are critical to the effective practice of medicine. The 1998 American Association of Medical Colleges (AAMC) learning objectives suggest: “physicians must be compassionate and empathetic in caring for their patients ... [and] have honesty and integrity in all interactions with patients’ families, colleagues and with others whom they must interact in their personal lives.” Implicit in this objective, it would seem, is that physicians should value and cultivate these attributes in themselves and engage in life-supporting activities that will foster their own health so as to serve as effective role models for their patients. But the nature of conventional medical training and professional life often do not support this practice. Therefore, many
medical schools have already recognized the need to add formal education in self-care and reflection to their curriculum.

Examples in the curriculum guide that devote time to deepening meaning from student experience include the many reflection exercises throughout the University of Minnesota Spirituality unit, the UCSF “Healer’s Art” course, and the Mind-Body experience provided by Georgetown University School of Medicine, which provides students with experience and a planning process for their own self-healing process. In addition to these units that specifically address reflection and self-awareness, we have provided in this guide suggested reflection questions for each illustrated unit. Promoting reflection in the medical school curriculum in general is an important and current goal for many medical educators. We hope that the demonstration here of how reflection questions can be provided even for sessions (such as the Jefferson Medical College Herbal Medicine module) oriented toward factual knowledge is helpful in illustrating how this approach can be integrated throughout a curriculum.

A reliance on interactive learning is another critical part of the experience-oriented approach proposed in this guide, as demonstrated by Web-based courses (University of Minnesota Spirituality, UMDNJ overview), reviewing case studies with guided discussion exercises (Harvard case study, UTMB cases, EBM cases), and standardized patient interviewing (Temple OSCE). Such strategies—as opposed to lecture format presentations—provide the context and application of new learning so that the student is able to “try on” the roles of interviewer, decision-maker, and patient advocate in a new way. Clearly, lectures and PowerPoint presentations play an important role in delivering new information to medical students. However, in this guide we have chosen to place emphasis on active and interactive approaches to learning which are particularly critical in mastering the competencies proposed for integrative medicine.

Summary

The need to facilitate student understanding of CAM topics and therapies within the modern medical environment, and the integration of new topics into the already dense medical school curriculum, pose several challenges for educators. Identifying and claiming time for introducing new topics and engaging students, so that they are able to make meaning within the learning process, is both politically and logistically challenging. The institutional climate for incorporation of CAM and integrative medicine will vary widely from one school to another. Some schools have been successful in integrating topics throughout the four-year medical school curriculum at the time of planned curriculum reform. In other cases, educators have incorporated only selected components. Many may still be engaged in debating whether medical education in this area is appropriate at all. The competencies as well as curriculum activities presented in this guide can be adapted or customized to meet the needs of educators and students at a given school. Our hope is that the spectrum of approaches presented here is wide enough to be useful in some way to educators at all points along the spectrum.

References

5. Duke, Harvard, Stanford, Universities of Arizona, California at San Francisco, Massachusetts, Maryland, Minnesota.
6. According to the AAMC, an Academic Health Center consists of an allopathic or osteopathic medical school and at least one other health profession school or program and at least one affiliated or owned teaching hospital.
COMPETENCIES IN INTEGRATIVE MEDICINE
FOR MEDICAL SCHOOLS
COMPETENCIES IN INTEGRATIVE MEDICINE

Introduction

The practice of integrative medicine goes beyond content, tools, and techniques to include an expanded way of viewing the physician, the patient and their work together. Therefore—in keeping with the recent trend in all of medical education to reaffirm and re-emphasize the humanistic values at the core of medicine—training in integrative medicine should incorporate philosophical perspectives in addition to a knowledge base and therapeutic skills to clearly underscore the relevance of human experience and interactions in health and medicine. To explicitly delineate these philosophical perspectives, we [the CAHCIM education working group] have expanded upon the standard “knowledge/attitudes/skills” format for competencies that form the basis of a curriculum, to include a description of values that we believe form the foundation for teaching in this area. These values are a re-affirmation of fundamental core medical values as articulated by Hippocrates. They have also been emphasized—along with many of the competencies that address areas of communication skills and multicultural sensitivity—over the past two decades in medical education in the areas of professionalism, medicine and the humanities, doctor-patient relations, and biopsychosocial training. In addition, many of these values and competencies have long been incorporated into training in other healthcare disciplines such as nursing. As these values are particularly germane to the knowledge, skills, and attitudes of integrative medicine theory and practice, they are reiterated here.

We recognize that these values are timeless, whereas the content of courses is almost certain to change as science and research advances. The knowledge, skills, and attitudes sections of this guide explore the content, relevant at this point in time, to understanding the foundations of the biomedical paradigm, the most commonly used CAM modalities, and legal, ethical, regulatory, and political influences on the practice of integrative medicine. The competencies outlined in these sections are not meant to serve as checklists for delineating the exact content of courses in this area—which will need to be defined independently by each school—but rather as general guidelines describing areas of content that must be addressed to describe this area accurately to our students.

The goal in elaborating values as well as knowledge, attitudes, and skills is to make explicit not only specific behaviors, but also a way of living and being for physicians. Some would argue that the majority of these values are actually attitudes, and would raise the question of whether values can be taught or rather need to be selected for. We acknowledge the challenge of assessing “a way of being.” Perhaps its measurement may be learned from other traditions such as theological training or through qualitative inquiry and study of exemplary integrative medicine practitioners. Finally, we acknowledge that these competencies may be adapted and or modified in a variety of ways to fit the particular needs and culture of individual schools.

Values

A graduating physician shall demonstrate an understanding of the following:

1. A physician is defined by a philosophy and perspective on health and illness as well as by a set of skills and techniques. This broad perspective will improve outcomes for patients, deepen fulfillment in collegial relationships, and enable the physician to find continuing meaning in his or her work.

2. A physician has a broad definition of professionalism that allows the health care team to become a healing community that supports and develops wholeness in all relationships, those between colleagues as well as those between physician and patient.

3. A physician recognizes the relevance of feelings, beliefs, life experiences, meaning, and faith to his or her professional behavior. This recognition broadens the nature of physician–patient interaction and shifts the conventional boundaries of the physician/patient relationship.

4. A physician is able to recognize the value of his or her own full human experience and to focus and dedicate it to the benefit of patients. Who the physician is as a person is transmitted through his or her work and "presence" and has a substantive impact on the outcome of the doctor-patient relationship.
5. A physician believes that an ongoing commitment to personal growth is fundamental to the practice of medicine.
6. A physician is able to create a relationship of harmlessness, safety, non-judgment, and acceptance that enables patient to access their own strengths and direct their own lives.
7. A physician recognizes the pursuit of meaning as fundamental to the process of healing and has the capacity to find meaning in daily work and daily relationships. This capacity allows him or her to accompany patients as they seek and find meaning in the events of their lives.
8. A physician recognizes the multivariate and sometimes unknown factors that influence health and healing.
9. A physician views health and illness as a part of human development, which can evoke the potential for personal and social wholeness through the experience of illness and suffering.

Knowledge
A graduating physician shall be able to:
1. Discuss how personal, cultural, ethnic, and spiritual beliefs shape an individual’s interpretation and experience of his or her disease and its treatment.
2. Identify the major strengths and limitations of biomedical knowledge as applied to healthcare delivery.
3. Give examples of the different ways of knowing about illness and healing.
4. Discuss the distinction between the terms “healing” and “curing.”
5. Describe the distinction between integrative medicine (IM) and complementary/alternative medicine (CAM).
6. Describe the evidence for mind-body-spirit relationships in illness and health.
7. Describe the prevalence and patterns of CAM use in the patient’s community.
8. Describe the basic concepts of the most commonly used CAM modalities such as chiropractic, herbal and nutritional medicine, and mind/body therapies, and of one or more of the widely-used traditional systems of medicine such as Chinese medicine and Ayurvedic medicine, including:
   a. basic definitions/theory/philosophy/history
   b. common clinical applications
   c. potential for adverse effects
   d. current research evidence for efficacy
   e. reputable resources for in-depth information
   f. training/credentialing standards for practitioners
9. Identify potential legal and ethical implications related to the inclusion or the exclusion of CAM modalities in a patient’s treatment plan.
10. Identify reputable information resources for CAM and IM in order to support life-long learning
11. Explain the current status of government regulation of herbal medicines and dietary supplements.

Attitudes
A graduating physician shall be able to demonstrate:
1. A respect for the influence of the patient’s personal, cultural, ethnic, and spiritual beliefs on their experience of health and illness and on the patient’s clinical decision-making process.
2. An awareness of how the physician’s own personal, cultural, ethnic, and spiritual beliefs may affect their choice of recommendations regarding patients’ treatment decisions.
3. A respect for the strengths and limitations of applying evidence-based medicine principles to the circumstances of an individual patient.
4. A respect for the potential of a variety of healing approaches to be effective for the treatment of certain conditions.
5. An awareness of the importance of self-care both for physician well-being and as a model to promote self-care in patients.

Skills
A graduating physician shall be able to:
1. Demonstrate an ability to assist patients in developing their own self-care program as part of encouraging active patient involvement in health promotion and clinical decision-making.
2. Demonstrate skills to communicate effectively with patients about all aspects of their health and illness including biological, psychological, social, and spiritual factors as part of comprehensive history taking.

3. Demonstrate skills to communicate effectively:
   a. with patients about their use of CAM in a respectful and culturally appropriate manner
   b. with patients and all members of the interdisciplinary healthcare team in a collaborative manner to facilitate quality patient care. (The team may include nurses, chaplains, nutritionists, social workers, practitioners of healing systems other than allopathic medicine, such as Traditional Chinese Medicine, chiropractic, etc.)

4. Design a personal self-care program that includes:
   a. learning to assess one's level of stress
   b. implementing a self-care strategy (may include nutrition awareness, self-regulatory techniques, exercise, journaling, creative arts, spirituality, mind/body skills, etc.)

5. Demonstrate an ability to utilize the principles of evidence-based medicine in analyzing integrative medicine approaches, including:
   a. developing focused questions regarding the application of IM principles or practices for an individual patient
   b. utilizing databases, peer-reviewed publications, authoritative textbooks, Web-based resources, experiential knowledge of CAM practitioners, and participatory observation to gather relevant information
   c. evaluating the information for scientific quality and clinical relevance
   d. plan to implement findings in care of an individual patient
   e. evaluating the outcome of applying IM principles or practices in patient care.
SELECTED CURRICULUM MODULES
DIDACTIC/EXPERIENTIAL UNIT WITH FIELD VISIT

INTRODUCTION TO COMPLEMENTARY AND ALTERNATIVE MEDICINE

MODULE DESCRIPTION

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Integrative Medicine competencies addressed: (see Section 2, list of competencies)
Knowledge 1
Knowledge 8
Knowledge 10
Skills 3
Skills 5

Goals and Objectives:
Explore general patterns of CAM use
Identify and describe components of the major areas within CAM as identified by the National Institutes of Health (NIH): alternative medical systems, body-based systems, mind-body medicine, biological approaches (herbal medicine, nutritional approaches, pharmacological therapies), and bioelectromagnetics (energy healing).
Examine research on evidence related to safety and efficacy of primary areas of CAM for treatment of major disease entities.
Investigate one CAM modality through research articles, interaction with a CAM provider, and personal experience with observation and/or participation in therapy.
Articulate key issues facing CAM researchers and practitioners.
Evaluate patient motivations for using CAM and other self-care strategies.

Curriculum component:
Required

Target audience:
M1 students

Duration:
5–7 hours over one week

Learning methods:
• large group lecture (PowerPoint)
• field visit, with observation of provider and patient and/or experiential
• small group discussion
Faculty resources:
1 medical faculty—lecture overview
13-14 medical faculty small group leaders
13-14 CAM professional small group leaders
50-65 CAM professionals—office site visits

Description:
Students in the first semester of the first medical school year participate in a required Doctor-Patient Relationship course, which introduces communication, interviewing, history taking, and clinical skills. The Introduction to Complementary and Alternative Medicine unit within this course is comprised of three parts. To initiate the unit, students receive a syllabus with bibliography, and the course director presents a one-hour lecture with PowerPoint slides (included) that provides definitions and a brief overview of the use of CAM modalities in the United States, and a brief description and research findings on effectiveness of a sample of modalities. Topics include homeopathy, body-based systems of acupuncture and massage therapy, mind-body medicine including meditation and Therapeutic Touch, herbal medicine, nutritional approaches, pharmacological therapies, and bioelectromagnetics.

Students are assigned in pairs to a CAM specialty and field visit site. The purpose of the two to four hour site visit is to hear an overview of the modality from the practitioner, and to observe the CAM provider during a patient visit and/or to experience the modality and, in turn, observe the treatment on the other student. Students are assigned to read a set of modality specific readings prior to the site visit, including both descriptive and evidenced-based articles. The syllabus includes a list of discussion questions that guide the observation and stimulate questions to be answered by the CAM provider during the visit. Students are sent in pairs so as not to overburden the CAM provider, to build on shared experiences for later reflection exercises, and to permit greater opportunities to observe as the provider simulates a treatment with the other student.

The third component of this unit is a discussion group that meets a week after the introductory presentation. Each group is comprised of 12 students and two facilitators. Care is taken to assign students within the group to a cross-section of CAM modalities and locations so that the discussion of experiences will cover a wide range of practitioners. Students are asked to bring notes from their field visit and to share impressions of the visit. A CAM provider is paired with each medical faculty small group leader to facilitate the small group discussion. CAM providers serve as small group leaders so that they can interpret student experiences and provide a broad experiential background to observed alternative therapies. Medical faculty and CAM facilitators meet prior to the discussion session to review goals and discuss the approach to conducting the small group session. Students take turns describing their experiences, then work through the discussion questions.

Sample Discussion questions: (Full list included with materials)
What was the purpose of the CAM treatment that you observed?
What did you notice about the physical environment of the provider’s office?
What was the patient’s reaction to the treatment? (If a student served as patient, what was the student’s reaction?)
What types of questions did the CAM provided ask the patient before administering treatment?
What aspects of CAM, if any, would be important for you to know as a physician? What would you incorporate into your practice?

Suggested Reflection questions:
What were your first thoughts as you listened to the CAM overview presentation?
What were you thinking as you approached this site visit? Did you notice anything unusual?
What contributed to your reactions to this CAM unit?
What would you name as the most significant experience for you during this unit?
What do you need to do to learn more about this topic?
What will you do differently, in patient interviews or symptom review, after learning about patients’ use of alternative healing modalities?
Resource materials:

Syllabus contains:

- Modality specific readings for field experience
- Discussion Guide Questions
- Websites, journals listed as additional optional reading.

Evaluation strategies:
No specific assessments are conducted to evaluate student learning of this specific unit. To evaluate learning, students complete a complete a CAM Knowledge and Attitude Survey that is administered at the beginning of each academic year by the CAM program administrator and administered again at the beginning of the each academic year. Planned evaluation strategies include inclusion of CAM standard patient experiences, incorporating patient use of CAM modalities that will be conducted in the second and at the end of the third year.

Student evaluations of curriculum session:
All students complete two evaluations at the end of the final session of this unit, one for the field visit (included) and a ten-item evaluation of the CAM unit overall. The unit is also included as a separate item in the medical school’s course evaluation that is completed by a cohort of students at the end of the course. Over the past four years, students have given the experience very high ratings, and this unit has been one of the most highly rated units within the course. Student comments have guided the course director in revising the list of CAM providers who participate as field visit sites and as small group leaders, and have informed providers on ways to make the experience more valuable. Over 85% of the students report that this unit has stimulated their desire to learn about CAM and that they find this course to be valuable.

Challenges to presenting this unit:
Assignment and coordination of 170 student placements begins approximately two months prior to the CAM unit. To recruit the approximately 65-70 CAM providers who participate in the field visits, letters are sent to CAM providers that describe the goals of the field experience and dates of the proposed field visits. Selection of CAM providers and facilitators is based on personal knowledge of the providers, years of practitioner’s experience, community reputation, and experience with teaching and community and/or university presentations. Confirmation of participation is made by a follow-up phone call. Care is taken to recruit practitioners representing a variety of CAM modalities.

Challenges to this unit’s success are many, including attempting to recruit practitioners, some of whom may not be well known to the coordinators, attempts to include providers whose part-time practice hours did not match medical school assigned visit schedules, inability to provide CAM provider preceptor training prior to the students’ visit and inability to provide stipends to CAM field visit providers for the time devoted to medical student education. Recruitment of CAM co-facilitators is less challenging, as fewer are needed. Time for administrative coordination is substantial. The course unit has been offered over the past four years.
CONTRIBUTED CURRICULUM MATERIALS

Course introduction/goals and objectives/CAM field visit instruction
Reading lists, modality-specific
CAM field visit discussion questions
CAM field visit evaluation form
Resource list
Power Point Presentation
COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM)

Goals
To identify common forms of CAM.
To become aware of reasons for patient use of CAM.
To experience and observe the clinical practice of a CAM modality.
To observe and reflect on differences among CAM practices and between CAM and conventional medicine.

The purpose of this unit is to briefly introduce you to the vast field of CAM through readings, field visit experiences, and lecture/small-group discussion. The use of CAM by patients is rapidly increasing in the United States. The field of CAM encompasses a wide variety of modalities and practices and is provided by an array of different health professionals trained in one or several practices of CAM.

The National Institute of Complementary and Alternative Medicine (NCCAM), a division of the National Institute of Health (NIH) groups CAM into five major domains.

I. Alternative medical systems
Alternative medical systems involve complete systems of theory and practice that have evolved independent of and often prior to the conventional biomedical approach. Many are traditional systems of medicine that are practiced by individual cultures throughout the world. Included within this domain of CAM are a number of Asian approaches, such as traditional oriental medicine or ayurveda and western approaches, such as homeopathy, anthroposophic medicine and naturopathy.

II. Mind-body interventions
Mind-body interventions encompass a variety of techniques designed to facilitate the mind’s capacity to affect bodily function and symptoms, such as, meditation, hypnosis, dance, music, and art therapy, and prayer and spiritual healing.

III. Biologically-based interventions
This category of CAM includes natural and biologically-based practices, interventions, and products, many of which overlap with conventional medicine's use of dietary supplements. Included within this domain are herbal medicine and special dietary, orthomolecular, and individual biological therapies.

IV. Manipulative and Body-Based Interventions
This category includes methods that are based on manipulation and/or movement of the body, and/or tissues, such as chiropractic care, massage therapies and acupuncture/pressure.

V. Energy Therapies
Energy therapies focus on re-aligning the energy fields posited to originate from within the body (biofields) or other sources (electromagnetic fields) to promote healing. The practices include, for example, Therapeutic Touch, Reiki, as well as biomagnetics.

As you can see, each CAM domain covers a host of different systems and treatment modalities. You will have the opportunity to experience/observe one of the practices or systems of medicine covered by these broad categories through a field visit. During your field visit, some of the CAM providers will simulate an experience with you as if you were coming to see them for the first time. Others will allow you to observe their practice with clients/patients. As with your other field experiences, please be prompt in arriving at your specific location, respectful in asking questions of the providers, and follow the specific directives given to you before and at the time of the visit.
In your packet, you will find a few general articles on CAM. In addition, to further your knowledge base, you will find a list of resources on CAM as well as a specific reading list related to the various modalities. Articles from the reading list can be obtained from the IITP office.

Prior to your field visit, read the four general articles on CAM. Once your field visit is assigned, you should obtain copies of readings related to the specific modality or alternative system of medicine that you will be observing. Information in these articles will greatly enhance your understanding of the CAM practices you will be observing/experiencing and enable you to ask more informed questions of the provider. A list of the CAM providers and their primary modality of practice will be made available.

The four general articles on CAM offer different pieces of information. It will be helpful to you if you read them in the following sequence. Read the article by Warber first. This article provides an overview of CAM and brief description of the major modalities. Read the article by Astin next. In this article, Astin presents evidence on the various reasons why patients are pursuing CAM. The 1998 article by Eisenberg provides information of the prevalence, cost and usage of CAM in the past decade. This article documents trends in alternative medicine and is a follow-up to his seminal study in 1993 that first highlighted CAM usage to the medical community. The fourth article you should read is the 1995 article by Eisenberg. In this article, he discusses ways in which to advise patients on CAM.

Before you go on your field visit, familiarize yourself with the discussion questions listed on the following page. These questions will help you hone your observation skills. After your field visit, jot down notes of your experiences in response to these questions. Reflecting on your experience immediately after through writing will allow you to capture salient thoughts and feelings and bring them back more easily during the discussion. Read your notes prior to the small group discussion section, as this will enrich the quality of the discussion.

Please complete the evaluation form after the field visit. The information you provide on the evaluation form provides valuable feedback to the future design of this unit.

Bring both your notes and field visit evaluation form to the small group discussion section. The forms will be collected at that time.
MODALITY-SPECIFIC READINGS FOR FIELD VISITS

ALTERNATIVE MEDICAL SYSTEMS
Homeopathy

Chinese Medicine

Has K. *Acupuncture Information and Resources Package.* NCCAM Clearinghouse. Publication Z01. April 1999.

Naturopathy


Anthroposophic

BIOLOGICALLY BASED THERAPIES
Diet/Nutrition


Herbal Medicine

MANIPULATIVE MEDICINE AND BODY-BASED THERAPIES
Polarity Therapy


Craniosacral Therapy

Massage Therapy
Chiropractic

Alexander Technique

Feldenkrais Method

Trager Approach

MIND–BODY MEDICINE
General Overview

Mindfulness Meditation

Biofeedback


Hypnosis


ENERGY MEDICINE
Reiki

Reflexology

Therapeutic Touch/Energy Healing

Flower Essences

CAM DISCUSSION QUESTIONS

1. What kind of CAM therapy did you observe/receive?

2. What did you understand about the therapeutic and scientific basis of this therapy?

3. Why do you think the clients/patients that you observed chose to see this CAM provider?

4. What did you observe to be the purpose of the CAM treatment?

5. What did you notice about the physical environment?

6. What reactions did you find yourself feeling and thinking about while observing or experiencing practice of CAM?

7. What reactions did the patient have to the CAM treatment? If you experienced this CAM modality yourself, what were your reactions?

8. What kinds of questions did the CAM provider ask about the patient and his or her symptoms before administering treatment?

9. What kinds of information, if any, did the CAM provider share with the patient about the short- and long-term effects that patients may experience from the different treatments?

10. What attributes of the provider’s style of communication (e.g. types of comments, nonverbal, touching, timing, patience, warmth, distance, etc. did you see that you think enhanced the provider-patient relationship?

11. What major differences did you observe between conventional medicine and CAM practices?

12. How do patients pay for CAM visits? Is it covered by insurance? Do you think this affects the provider-patient interaction?

13. Why do you think patients would seek out CAM?

14. What aspects of CAM, if any, do you think would be important for you to know as a physician? What would you want to incorporate into your practice of medicine? What else would you need to know before incorporating this practice?
CAM FIELD VISIT EVALUATION FORM

Last Four Digits of SS Number________________ Date of Field Visit__________________________
Name of Field Visit CAM Provider____________________________________________________

I. Using the following rating scale, please circle the number that reflects your experience of the CAM field visit.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

1. I learned new information about the use of CAM. 5 4 3 2 1
2. I was treated with respect. 5 4 3 2 1
3. The questions that I posed were answered by the CAM provider. 5 4 3 2 1
4. I would like to learn more about this particular CAM practice. Specifically__________________________

5a. I felt comfortable observing the practice of this CAM modality 5 4 3 2 1
5b. I felt comfortable experiencing the practice of this CAM modality 5 4 3 2 1

II. Please respond to the following questions.
6. The best thing about this CAM field visit experience was:

7. The worst thing about this CAM filed visit experience was:

8. What surprised me the most about this CAM field visit was:

III. Please use the space below to share any other comments that you have.
RESOURCE LIST FOR REFERENCES

BOOKS


JOURNALS
Advances in Mind-Body Medicine
Alternative and Complementary Therapies
Alternative Therapies in Health and Medicine
Bridges
    Carol J. Schneider, Ph.D., International Society of the Study of Subtle Energies and Energy
Business Spirit Journal On-Line: Bringing Consciousness to Business
Complementary Therapies in Medicine
Focus on Alternative and Complementary Therapies (FACT)
HerbalGram
The International Journal of Healing and Caring
The Journal of Alternative and Complementary Medicine
    Mary Ann Liebert, Inc. Publishers
The Journal of Consciousness Studies, Controversies in Science and the Humanities
Psyche, An Interdisciplinary Journal of Research on Consciousness
The Review of Natural Products
Subtle Energies and Energy Medicine
    Steven L. Fahrran, Editor, International Society for the Study of Subtle Energies and Energy
The Scientific Review of Alternative Medicine (SRAM)
Alternative Medicine Review
    Allan Miller, ND, Kathleen Head, ND, Editors, Thorne Research, Inc., Dover, ID.

NEWSLETTERS
Alternative Medicine Alert
Alternative Therapies in Women’s Health
Dr. Andrew Weil’s Self-Healing: Creating Natural Health for your Body and Mind
Dr. Christiane Northrup’s Health Wisdom for Women
The Integrative Medicine Consult
The Integrator, for the Business of Alternative Medicine
The Pharmacist’s Letter
Research News and Opportunities in Science and Theology
    Harold G. Koenig, MD, Editor, Research News and Opportunities in Science and Technologies, Inc.,
WholisticHealingResearch.com Newsletter

_The Review of Natural Products_
American Pharmaceutical Association

**CAM ELECTRONIC DATABASES**

_Cochrane Library_
Website: [www.update-software.com/ccweb/cochrane/revabstr/ccabout.htm](http://www.update-software.com/ccweb/cochrane/revabstr/ccabout.htm)

_CAMPAIN Database_
Complementary Medicine Program, University of Maryland Medical School, Publisher
[www.compmed.ummc.umd.edu/ris/risweb.isa](http://www.compmed.ummc.umd.edu/ris/risweb.isa)

_Natural Medicines Comprehensive Database_
Published by _pharmacist's Letter_. 209-472-2244
[www.naturaldatabase.com](http://www.naturaldatabase.com)

_Massage Database_
Tiffany Fields, Publisher
Web site: [http://gehon.ir.miami.edu/touch-research/massref.html](http://gehon.ir.miami.edu/touch-research/massref.html)

_ALTMEDEX_
Micromedex, Publisher
[www.micromedex.com](http://www.micromedex.com)

_AMED_
The British Library, Publisher
[www.silverplatter.com/catalog/amed.htm](http://www.silverplatter.com/catalog/amed.htm)

_AltHealthWatch_
Cyberstax, Publisher
[www.epnet.com/database.html#awh](http://www.epnet.com/database.html#awh)

_British Medical Association Collected Resources_
[www.bmj.com/cgi/collection/complementary_medicine](http://www.bmj.com/cgi/collection/complementary_medicine)

_IBIS (Interactive Body-Medicine Information System)_
Integrative Arts, Inc., Publisher

_Bonnie Snow List of Important Databases_

_MANTIS (Manual, Alternative an Natural Therapy)_
Ron Rupert, Publisher
[www.healthindex.com/MANTIS.asp](http://www.healthindex.com/MANTIS.asp)

**WEBSITES:**

_CAMRC: University of Michigan Complementary and Alternative Medicine Research Center_
[www.med.umich.edu/camrc](http://www.med.umich.edu/camrc)

_National Center for Complementary and Alternative Medicine_
[www.nccam.nih.gov](http://www.nccam.nih.gov)

_American Botanical Council_
[www.herbalgram.org](http://www.herbalgram.org)

_American Herbal Products Association_
[www.ahpa.org](http://www.ahpa.org)

_American Holistic Medical Association_
[www.holisticmedicine.org](http://www.holisticmedicine.org)

_American Nutraceutical Association_
[www.americanutra.com/](http://www.americanutra.com/)
Center for Mindfulness in Medicine, Healthcare and Society - The umbrella organization which houses the Stress Reduction Clinic and a range of other activities dedicated to the integration of mindfulness meditation practices into the mainstream of medicine and health care, as well as its integration into other arenas in society.  
www.umassmed.edu/cfm

Commonweal.org - A health and environmental research institute which offers major programs for people with cancer and health care professionals, and those interested in searching for a healthy and sustainable future.  
www.commonweal.org

ConsumerLab.com, LLC - Provides consumers and healthcare professionals with results of independent tests of products that affect health and well-being.  
www.consumerlab.com

Herb Research Foundation - The world's first and foremost source of accurate, science-based information on the health benefits and safety of medicinal plants.  
www.herbs.org

The Institute of Functional Medicine - Dedicated to the development and practice of functional medicine and nutrition to advance knowledge about and acceptance of functional medicine as an approach to the prevention and treatment of disease.  
www.fxmed.com

The Institute of Noetic Sciences - A nonprofit membership organization that both conducts and sponsors research into the workings and powers of the mind, educates the public about the latest findings through our publications, conferences and website, and supports community building.  
www.noetic.org

Integrative Medicine - Bridging the gap between conventional and alternative medicine with information and advisory services.  
www.onemedicine.com

National Institute of Healthcare Research - An educational, medical, and social scientific research organization that encourages professional collaboration to advance the understanding of spirituality and health.  
www.nihr.org

Office of Dietary Supplements - An office of NIH that supports and disseminates research in the area of dietary supplements.  
dietary-supplements.info.nih.gov

OneBody - Provides businesses, consumers, and health care professionals with CAM service and credible health care information.  
www.onebody.com

White House Commission on Complementary and Alternative Medicine Policy - The White House Commission on Complementary and Alternative Medicine Policy (WHCCAMP) was established by Executive Order 13147 on March 7, 2000, to develop legislative and administrative policy recommendations that will maximize the benefits of complementary and alternative medicine (CAM) practices and products for the general public.  
www.whccamp.hhs.gov/
Evidence Base of Complementary Medicine

Sara Warber, MD
Co-Director, UM CAM Research Center
Department of Family Medicine
University of Michigan

What’s in a Name?

- Alternative, unconventional
  - Methods not usually taught in medical schools
  - Now 75/124 Medical Schools teaching about …
- Complementary
  - European term
  - Complete the whole
- Integrative
  - Use the best offerings regardless of origin
Why do we care?

- 1990 national telephone survey
- 1/3 of patients use alternative methods
- 72% of users did NOT inform their physician


Follow-up Study

- 1997 study of 2055 households
- 42% used at least 1 of 16 therapies
- Disclosure rates did not improve
- Out of pocket expenditures ≈ $27 billion

Why do patients use CAM?

- National survey: 1035/1500 responses
- 40% had used CAM in past year
- 4.4% primarily relied on CAM
- Perceived benefits
  - Relief of symptoms
  - Treatment works better than standard therapy


Levels of Evidence

- Case report
- Case series
- Retrospective review
- Prospective clinical trial
  - single blind
  - double blind
  - case controlled
  - randomized
- Meta-analysis
- Clinical practice guidelines
NCCAM-NIH Content Areas

- Alternative Medical Systems
- Body-based Systems
- Mind-body Medicine
- Bioelectromagnetics
- Herbal Medicine
- Nutritional Approaches
- Pharmacological Therapies

Alternative Medicine: Expanding Medical Horizons
Report to the NIH, Sept 1992

Alternative Medical Systems

- Oriental
- Ayurvedic
- Native American
- Homeopathy
- Naturopathy
- Anthroposophic
Alternative Medical Systems

- Different views of body, illness
- Different basis for “knowing”
- Different diagnoses
- Different treatments

Meta-analysis of Homeopathy

- 89/186 trials met quality criteria
- Odds ratio 2.45 (2.05-2.93) for homeopathy
- Ocular symptoms in seasonal allergies
  - 4 studies with Galphimia glauca
  - Odds ratio 2.03 (1.51-2.74) for homeopathy
- Homeopathic effects not completely due to placebo

Body-based Systems

- Chiropractic
- Massage
- Acupuncture
- Acupressure

Manipulation for Acute Low Back Pain

- Review of 58 studies
- 7 controlled trials assessed back pain
  - Probability of recovery at 2-3 weeks
  - 50% for placebo
  - 67% for manipulation

- Safety: serious complications
  - Cauda equina syndrome <1/1 million
  - Paraplegia with coagulation dyscrasias
  - Death due to misdiagnosis & delay of treatment

Massage Therapy & Labor Pain

- 28 women randomly assigned
- Massage plus coaching or coaching alone
- ↓ depressed mood
- ↓ anxiety and pain
- ↓ agitated behavior
- Shorter labors
- Shorter hospital stay
- Less postpartum depression


Acupuncture

- 1996 FDA approves single-use needles
- 1997 NIH Consensus Conference
- Safety
  - adverse effects substantially lower than many drugs
- Nausea
  - chemotherapy
  - surgical anesthesia
  - pregnancy
- Pain
  - post surgical
  - musculoskeletal

Mind-body Medicine

- Hypnosis
- Meditation
- Imagery
- Yoga
- Art, Music, Dance
- Biofeedback
- Intentional effects on living systems
- Prayer/mental healing

Mind-body Medicine

- Engages mind and body in healing process
- Psychoneuroimmunology
- Emphasis on healing rather than curing
- Emphasis on meaning of illness
Meditation for Stress Reduction

- Animal studies: chronic stress $\Rightarrow$ ↑ basal cortisol, ↓ response to stress $\Rightarrow$ disease
- Prospective, randomized study TM vs. stress education
  - ↓ basal cortisol, ↑ response to stress
- TM technique reverses effects of chronic stress significant for health


Meditation effects on Carotid Atherosclerosis

- RCT, TM vs stress education over 6 mo.
- 60 African Americans w/ HTN
- Outcome: carotid intima-media thickness
  - surrogate for CAD
  - predictor of coronary events and stroke
- TM group significant decrease vs increase in controls (p=0.038)

Therapeutic Touch Meta-Analysis

- 22/59 experiments were RCT’s in humans
- 11/22 assessed effects on anxiety
- 9/11 used STAI pre & post TT
  - Jadad quality score- median 4 (0-5)
  - Sample sizes 8-153, total 567 subjects

![Diagram showing difference in mean improvement between Therapeutic Touch and Mimic TT](image)
Magnets for Post Polio Pain

- 50 pts randomized, double blind
- 300-500 Gauss magnets x 45 min over trigger point
- Significant ↓ pain score
- Ongoing study at U of Virginia for treatment of fibromyalgia


57 y.o. woman w/ hyperlipidemia

- PMHx:
  - Mitral valve prolapse with enlarging atrium
    - Palpitations
    - Recent syncope
    - Hypertension (170/90)
- Family Hx: Strokes, MI
- Diet: Excellent
- Exercise: 1x/week
Herbs and Supplements

- Multivitamin
- B-complex
- Chromium picolinate 200 mcg
- Garlic 650 mg x 2
- Grape seed extract 50 mg
- Co Q-10 100 mg
- EPO 500 mg x2 q hs
- Vit E 400 IU q hs
- Calcium Citrate + Vit D
- Ginger 550mg BID
- ECASA 81 mg
- Kava Kava 425 mg QID
- Hawthorn 450 mg BID
- Lipitor 10 mg QD

Garlic (Allium sativum)

- Uses
  - Lower cholesterol
  - anti-thrombotic
  - lower blood pressure
  - anti-microbial agent
- Contains alliin in intact garlic bulb
- Alliin $\Rightarrow$ allicin
Garlic - Evidence

- German Commission E
  - elevated blood lipids
  - prevention of age-related vascular changes
- 25 studies between 1979-1998 with 2,920 people
- 5 Double blind RCT for hyperlipidemia
- Mixed results highly dependent on type of garlic preparation

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Garlic - Evidence

- 2 Meta-analyses
  - garlic lowered total cholesterol between 9-12%
- Double blind RCT - 152 subjects for 4 years
  - garlic reduced development of atherosclerosis
- Anti-hypertensive effect approximates a 10% reduction
Kava (*Piper methystictum*)

- Powdered root
- 60-210 mg kavalactones daily (max 300mg/d)

- **German Commission E**
  - mild anxiety
  - to induce sleep

- Fat-soluble lactones
  - kavalactone most effective

- **Kavalactone’s actions**
  - sedative
  - anticonvulsant
  - analgesic

Kava - Evidence

- RCTs - Over 350 patients with anxiety syndromes
- Marked improvement over placebo for mild anxiety using validated scales
- Benzodiazepines more effective than kava for
  - Panic attacks
  - Severe anxiety
- Kava did not impair mental functioning or reaction time
Kava - Toxicology

■ Side effects (2.3%)
  - headache, dry scaly dermopathy, gastrointestinal distress
■ 3 cases of dystonic reactions
■ Allergic rashes
■ Drug interactions
  ◦ Case report - sedative/hypnotics
  ◦ Theoretical - other CNS active drugs

Hawthorn (*Crataegus* spp) for CHF

■ Extract of leaves and flowers
■ Contains flavonoids, proanthocyanidins, cardiac amines
■ Positive inotrope
■ Antiarrhythmic
■ Vasodilator in coronary & peripheral beds
■ Antioxidant
Hawthorn - Clinical trials

- 3 randomized, placebo-controlled, double-blind studies
- Total # patients = 268, NYHA class II failure
- After 8 weeks: improved symptom scores
- Decreased dyspnea, palpitations, edema
- Decreased heart rate, blood pressure
- No serious side effects

Vitamin E & Coronary Artery Ds

- 20% of population taking Vit E.
- Anti-oxidant highly associated with LDL
- Epidemiologic evidence
  - Nurses’ Health Study
  - Health Professionals Follow-up Study
- Prospective secondary prevention
  - CHAOS: 800 IU Vit E
    - MI by 77%
- Safety: do not use with warfarin
- Recent large RCT - no effect

There is more to heaven and earth, Horatio, than is dreamt of in your philosophy.....

Shakespeare’s Hamlet
DISTANCE LEARNING/MULTIDISCIPLINARY SEMINAR VIA INTERNET

COMPLEMENTARY AND ALTERNATIVE MEDICINE OVERVIEW SEMINAR

MODULE DESCRIPTION

Unit Contributed by:
Adam Perlman, MD
Executive Director

Riva Touger-Decker, PhD
Program Director
Institute for Complementary and Alternative Medicine
UMDNJ-SHRF Department of Primary Care-MS in Clinical Nutrition Program
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University of Medicine and Dentistry of New Jersey
Newark, NJ

Web Education Course Developed by:
Center for the Study of Alternative and Complementary Medicine

Integrative Medicine competencies addressed in Legal Issues unit (see Section 2, list of competencies):
- Knowledge 9
- Knowledge 10
- Attitudes 4

Goals (entire course):
To increase health profession students’ knowledge of the basic principles of CAM through learning activities addressing uses, types of therapies included, benefits, risks, and legal and ethical issues.
To increase health profession students’ knowledge of applications of CAM in clinical practice.
To prepare health profession students to interview and advise patients appropriately regarding use of CAM therapies and CAM providers.

Objectives (specific objectives for Legal Issues lesson are marked with and *):
1. To increase student and practitioner knowledge in regards to:
   a. Cultural belief systems used for wellness and illness(es) for CAM,
   b. The types of therapies along with risks, benefits, and appropriate uses of CAM in wellness and illness(es),
   c. Scientifically sound research using CAM,
   d. Legal issues and implications of integrating CAM therapies appropriately in practice including office sales of CAM therapies,
   e. Appropriate resources for use of CAM in practice.
2. To facilitate the ability of health professions students to dialogue with clients/patients regarding:
   a. Previous and current use of CAM (products, doses, reasons for use, potential effects).
   b. Potential drug-treatment interactions and risks of CAM.
   c. Evaluation of client/patient knowledge of CAM and its use as part of care.
   d. Uses and limitations of CAM.
   e. Referral to qualified CAM providers.

Curriculum component:
  Elective

Target audience:
  Medical and other health profession students enrolled in post-baccalaureate programs, both on campus and across the country

Duration:
  Self-paced seminar course, extending over three months

Learning Methods: (in seminar course):
  • Interactive learning
  • Didactic presentations
  • Project development
  • Case-based problem solving
  • Web bulletin-board discussion

Faculty resources:
  2 course directors
  1-2 faculty per lesson

Description:
  Students who enroll in this 3 (graduate) credit, distance-learning course complete 13 units for lessons that cover a broad range of topics, including naturopathy, acupuncture, botanicals, qi gong, cancer, CAM research, cultural issues, legal issues (included as an example), and journal reviews. Readings and Web resources will be provided with each session. A journal review and mid-term project make up the two additional units for a total of 15. This Web-based multidisciplinary seminar is described as providing students with a working knowledge of complementary and alternative medicine (CAM) and clinical applications for patient/client care and research.

  The home Web page displays links to the honor code agreement, and a pretest, both of which must be completed before any lessons are initiated. Lessons appear over the series of weeks, so students are guided through the sequence of topics that are addressed in the seminar course. Many lessons include an audiotape of lecture material, which may be played in segments in concert with the paraphrased text on each Web page. Requirements include participation in threaded discussions on weekly topics to demonstrate learning through lectures and readings, completion of case scenarios with descriptive action plans, completion of a CAM practitioner interview and critically reporting on the experience, preparation of a journal review on a related topic, and completion of a multiple-choice posttest. Students may send an email to the course or session director at any time to gain clarification or approval of a selected project topic. Guest faculty who are content specialists for selected units are available only during the week they are scheduled on the master course schedule. Students are required to have regular access to appropriate hardware and software, specified clearly within the first pages of the course introduction.

Discussion questions (see additional questions in attached sample lesson):
  1. Suppose that a CAM treatment has a significant placebo effect, but the actual effect of the treatment is minimal or doubtful. Let’s also assume that not much else is available to treat the
patient’s condition. Is “placebo effect” a sufficient reason for a conventional provider to offer a therapy to a patient?
2. If a patient is completely informed about the treatment and consents, should such consent protect the provider from liability?

Reflection questions:
How did you use your new understanding of legal issues to guide your response to discussion questions?
What problems are caused when understanding of legal issues is inadequate?
What did you find surprising about the legal considerations discussed?
What was significant about the surprise you experienced?
What further learning is needed to more fully understand legal considerations in recommended CAM therapies?
What do you want to remember about this unit?

Resources:
Entire course: provided in online main page syllabus and within lesson unit
Legal Issues lesson (sample reference): Kathleen M. Boozang, Western Medicine opens the door to alternative medicine, XXIV Am J. L. Med. 201-212 (1998)

Evaluation Strategies for the Seminar course:
Performance is assessed for both knowledge and hypothetical clinical application skills. Knowledge will be evaluated based on a pre- and posttest. Test questions address topics covered in the course including basic principles of CAM, cultural and legal issues, risks and benefits, and specific therapies addressed in the course. Clinical evaluation strategies are based on case scenarios. Within the presented scenarios, students design interview questions for patients and describe how they would respond to and guide patients regarding therapies used in the case scenarios. The pre- and post knowledge test and clinical evaluation piece will be conducted on-line with students.
To receive credit for this course, students complete a mid-term project (20%) that includes both analysis of two case scenarios and a written report describing a CAM practitioner interview. They are evaluated on a journal review (25%) on a topic related to the practitioner interview and on their participation in the threaded Web discussions for each lesson. The posttest is evaluated for the remaining 20% of the course grade. A noncredit option is available, with an expectation that these students attend all content sessions, and participate in bulletin board discussions in a minimum of 7 of the 13 sessions. Noncredit elective students are exempt from the midterm project and journal review.
CONTRIBUTED CURRICULUM MATERIALS

Course schedule
Legal module (from Web-based format)
### UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY
### COMPLEMENTARY AND ALTERNATIVE MEDICINE SEMINAR (PCAR 7115)
### FALL 2003

Weekly schedule of lecture topics and assignment due dates

<table>
<thead>
<tr>
<th>Course Content</th>
<th>Week</th>
<th>Other pertinent information</th>
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</table>
| **Session 1**  
Overview of Complementary and Alternative Medicine  
Lecturer: Adam Perlman, MD, MPH | 9/4-9/10   |                            |
| **Session 2**  
Botanicals, Ergogenic aids, Women's issues supplements, and Functional foods  
Lecturer: Diane Rigassio Radler MS, RD | 9/11-9/17  |                            |
| **Session 3**  
Legal and Ethical Issues, Liability and Informed Consent in CAM  
Guest Lecturer: Kathleen Boozang JD, LLM | 9/18-9/24  | Manuscript topic due        |
| **Session 4**  
Scientifically sound CAM research, types of research, clinical vs statistical significance  
Guest Lecturer: Riva Touger-Decker, PhD, RD, FADA | 9/25-10/1  |                            |
| **Session 5**  
Evaluating uses and limitations of CAM in illness and wellness:  
Applying the evaluation process  
Guest Lecturers: Judith Deutsch, PhD, PT and Ellen Anderson, MA, PT | 10/2-10/8  | Manuscript outline due      |
| **Session 6**  
Qi Gong: Introduction, history, current applications - Kevin Chen, PhD  
Acupuncture: Introduction, history, current applications - Ala Malko | 10/9-10/15 |                            |
| **Session 7**  
Midterm projects (Journal review and Interview) | 10/16-10/22 | Student posting and discussion |
| **Session 8**  
Homeopathic Medicine: History, Philosophy and Practice  
Guest Lecturer: Patricia Connolly Ditura, CNM | 10/23-10/29 |                            |
| **Session 9**  
Allergy, Immunology, and Asthma: Popular CAM therapies  
Guest Lecturer: Leonard Bielory, MD | 10/30-11/5 |                            |
| **Session 10**  
Massage therapies  
Guest Lecturer: Michael Yablonsky | 11/6-11/12 |                            |
| **Session 11**  
Cancer: Popular CAM therapies in prevention and management  
Guest Lecturer: Maureen Huhmann, MS, RD | 11/13-11/19 | Draft manuscript due        |
| **Session 12**  
Patient management and integration of CAM into health care  
Lecturer: Adam Perlman, MD, MPH | 11/20-11/26 |                            |
| **Session 13**  
Guest Lecturer: | 11/27-12/3 |                            |
| **Session 14**  
Mind/body therapies: Biofeedback, Guided visualization, hypnotherapy, relaxation  
Guest Lecturer: Gary Goldberg, PhD | 12/4-12/10 |                            |
| **Session 15**  
Final Manuscript due  
Complete Course evaluation and Post-test | 12/11-12/17 | Student presentations        |
LEGAL ISSUES

Sample Module: Legal Issues

The following text appears in short segments on consecutive Web pages. Interactive elements consist of discussion questions and “Bulletin board” responses.

Complementary and Alternative Medicine Seminar
Session 10 Legal Issues
Professor Name, JD, LLM
Professor of Law, Associate Dean for Academics
Director, Health Law & Policy Program
Named University School of Law

I. About the Teacher
Let’s begin by giving you a chance to get to know a little bit about who I am. For the past [number] years, I have been a law professor and the director of the Health Law Program at [named] University School of Law. We offer a law degree, of course, as well as a special one year degree program in health law for health professionals, called an MSJ.

I teach a variety of health law courses that are mostly business related. I have particular interest in end-of-life care and alternative medicine, and I have written two articles on CAM issues. One addresses the question of whether and when it is appropriate, from a legal and ethical perspective, to integrate CAM with conventional or Western medicine. The other article asks whether and when managed care should cover CAM. I am currently working on an article that explores whether healthcare professionals may or should use placebos for therapeutic purposes.

I am attracted to thinking about alternative modalities because it forces us to rethink many of our conceptions about health care and medicine, the adequacy of Western allopathic medicine, medical research, how we decide what kind of care is appropriate, physicians’ relationships with other caregivers, what kind of health care public and private insurance should cover, bioethics, and the law and healthcare, including informed consent and malpractice.

II. Goals
We cannot possibly consider the myriad issues evoked by CAM. I thought it would be useful for us to focus on the question of when it is appropriate to offer CAM.

I have chosen two issues for consideration in this class:

1. What legal and ethical questions arise in which physicians and nurses seek to integrate CAM in their care of patients?
This discussion applies to situations when conventional providers themselves offer CAM therapies and when they refer their patients to, or seek to coordinate care, with CAM providers.

2. How might malpractice rules apply to unproven CAM therapies?

Note about terminology:
It is more difficult to efficiently address language choices in this context. Consequently, I have decided to choose certain terms that are under-inclusive. A number of terms are used to distinguish between conventional/Western medicine and alternative, complementary, integrative medicine. For ease of reference, I am going to use the terms conventional medicine and CAM.

Innumerable kinds of providers are involved in the provision of healthcare, whether it be conventional or CAM. Physician, nurses, advanced nurse practitioners, physician assistants, therapists, etc. are considered to be part of the school that provides “conventional medicine,” even though they rely upon differing philosophies in the care they provide and may be very open to CAM. The different kinds of CAM providers are impossible to enumerate. For ease of reference, I am going to use the terms conventional provider and CAM provider, even though these references do not accurately reflect what goes on in the real world.
III. Integration of CAM and Conventional Treatment: Ethical and Legal Considerations

Most people use alternative therapies without involving or even telling their Conventional providers, which has its own serious implications. Increasingly, however, conventional providers are more aware of, or desire to participate in their patients’ use of a variety of treatment modalities. Most often, the patient initiates the discussion about integrating conventional treatments with CAM.

In these situations, the patient tells her Conventional provider that she wants to combine her medical treatment with alternatives she has discovered on her own, or is receiving from an alternative therapist. In these cases, the conventional provider must decide whether he or she is willing to “go along with” the patient’s decision to combine CAM and conventional therapies. The conventional provider might be enthusiastic or negative. In either case, the provider must consider whether acceding to the patient’s wishes is ethically and legally appropriate.

With increasing frequency, conventional providers are asking themselves whether CAM therapies are becoming so popular that they should add them to their practices. A number of motivations may exist here. Motivation matters.

- Some CAM therapies are being proven to be effective, and conventional providers should offer them to patients whom they believe will be helped. Other CAM therapies that have not been subject to clinical trials appear from pervasive use to be helpful to patients. Many CAM therapies are the subject of current research; some have already been proven not to work.
- Some Conventional providers treat patients who employ alternative treatments that they have adopted from their religion or culture. These providers want to gain their patients’ trust and to respect their beliefs, to the extent possible.
- Some CAM therapies offer conventional providers an opportunity to increase revenue, especially if the therapies involve products that the conventional provider can sell.

It is safe to assume that there is nothing particularly controversial about a conventional provider’s adoption of a CAM therapy that has been proven to work. The questions become much more difficult when it is unclear whether the treatment works, or no evidence exists to suggest that the treatment is efficacious. This is especially true if the Conventional provider plans to charge for the treatment, or to sell “therapeutic products.”

Please download the PDF file and read the following excerpt from Kathleen M. Boozang so that we can further discuss these issues.

Kathleen M. Boozang., Western Medicine Opens the Door to Alternative Medicine, XXIV Am J. L.Med, 1998; 201-212

Questions for post-reading discussion (Respond on the bulletin board):
1. Suppose that a CAM treatment has a significant placebo effect, but the actual effect of the treatment is minimal or doubtful. Let’s also assume that not much else is available to treat the patient’s condition. Is “placebo effect” a sufficient reason for a Conventional provider to offer a therapy to a patient?
2. Some CAM proponents argue that clinical trials are designed according to the philosophy and values of Western medicine and that CAM treatments should not be required to be subjected to clinical trials as currently designed. How do you respond?

Providers must obtain a patient’s informed consent to treatment. This requires the provider to advise the patient of his or her

- diagnosis
- prognosis
- alternative treatments, including the option of nontreatment
- the risks and benefits of the proposed treatment

For purposes of this discussion, the issue is: what qualifies as an appropriate treatment to offer a patient? Most of us assume that the treatment is efficacious.

3. If the conventional provider believes that it is completely unclear or even doubtful whether a CAM...
therapy is efficacious, should the conventional provider agree to provide it to her patient?
A) Why?
B) If the provider does offer it, what should he or she tell the patient about the treatment?

IV. Can a conventional provider be liable for negligence if he or she accedes to a patient’s demand for a CAM therapy that proves harmful?

A CAM therapy might itself cause harm to a patient, either by itself, or because it interacts adversely with a conventional therapy. When the patient is seriously ill, a conventional provider may be particularly concerned if the patient desires to employ a CAM therapy of uncertain or doubtful efficacy in lieu of a conventional treatment that offers a great chance of benefit to the patient. The standard for negligence in a medical malpractice claim is “whether the treatment deviates from accepted medical standards.”

This test presents an obvious problem to those who desire to employ CAM therapies that are not mainstream alternatives—it appears that such practitioners would automatically be engaging in negligent behavior. If this deviation from standard medical practice is the cause of harm to the patient, the provider would be liable for malpractice.

The question becomes whether a practitioner of CAM therapies can protect himself or herself from legal liability by explaining to the patient that the treatment is not proven, that the patient may suffer harm either from the treatment or because the patient is foregoing a more reliable alternative, and obtaining the patient’s consent to the CAM treatment. In short, can a provider who offers a CAM therapy to her patient protect himself or herself from a malpractice claim by arguing that the patient has “assumed the risk of using the treatment”? The answer to this question is unclear, but New York is one of the few states that has addressed the question.

*Please download the PDF file and read the excerpts from the trial and appellate court decisions in Charell v. Gonzalez.*

Consider the following, then respond to the discussion questions on the bulletin board:
Did the jury find that the defendant had engaged in negligent behavior?
Did the jury find that the defendant had provided the plaintiff with sufficient information about the treatment he was offering?
Did the jury feel that the plaintiff had any responsibility for the harms she suffered?
Questions for bulletin board discussions:
In your opinion, should Charell have been liable for the care he provided?
Charell represents only one case in one state. As the law develops in this area, what should the law be?
Should providers ever be liable for providing unproven CAM treatments to patients (assuming the patients are harmed as a result)?
If a patient is completely informed about the treatment and consents to receive it, should such consent protect the provider from liability?
INTERVIEW SKILLS:
STANDARDIZED PATIENT EXPERIENCE

MODULE DESCRIPTION

Unit Contributed by
Michael Curtis
David Barclay, MD
Standardized Patient Program
Temple University School of Medicine
Philadelphia, PA

Integrative Medicine competencies addressed: (see Section 2, list of competencies)
Knowledge 4
Knowledge 5
Attitudes 1
Attitudes 2
Attitudes 3
Skills 3

Goals and Objectives
The goal of this workshop is to build skills needed in a therapeutic doctor-patient relationship, recognizing the prevalence of nontraditional medicine among patients. Identify perceived differences between traditional “allopathic” medicine and CAM “nontraditional” medicine. Utilize questions to discover the case challenges through the therapeutic interview process. Evaluate patients’ reasons for seeking nontraditional medicine. Evaluate limitations to Western allopathic medicine. Determine methods of responding to your questions and patients’ questions about CAM. Practice interviewing and observe other students interviewing skills.

Curriculum component:
Required

Target audience:
M2 students

Duration:
One two-hour workshop,
(Component of the second year Fundamentals of Clinical Care course)

Learning Methods employed:
• Small group discussion
• Experiential learning

Faculty resources:
1 medical school faculty for 8 students
1 Standardized Patient
Description:
Students in the second-year course “Fundamentals of Clinical Care” participate in eight two-hour interviewing workshops, each of these linked to a preliminary didactic session addressing specific psychosocial issues in patient care. Prior to this session, a presentation is provided on complementary and alternative medicine. Students are assigned to an eight-member small group with one faculty preceptor. Faculty members complete a preparation course prior to serving as preceptor, and prior to each case workshop, they receive instructions and objectives for the case. The theme of this workshop is to provide students with an opportunity to interview a patient who places much greater confidence in complementary and alternative medicine than in mainstream “allopathic” medicine. In keeping with the workshop’s objective that students are to discover the challenge through the therapeutic interview process, preceptors are told not to discuss the theme of the case prior to the patient interview.

After an orientation to the session, the “standard” patient joins the group. Two students are selected to conduct the interview. Students follow a checklist of topics, with the first student initiating the interview with the rapport-building and family and social history, and the other student following with review of systems and more specific questions. Students practice active listening and use of open-ended questions and follow-up on patient comments leading toward the underlying concern. The preceptor or the interviewer or the other observing students may call for a “time out” in the process to discuss a response or determine a change in approach. (See further description of the session in the “Format of the workshops” in included materials.)

After the interview, students discuss the obstacles to building a therapeutic relationship with this patient. An observing student completes the interview assessment form (provided at the end of the case). The preceptor emphasizes teaching points that are provided in the preceptor guide, discusses the observed interviewing process, and provides feedback to the two students who served as interviewers. The assessment form is reviewed at this time. All students in the group write up the patient history to be submitted to the preceptor for review and comments.

Suggested Discussion questions:
In what ways did the patient’s view of traditional medicine change over time?
What was the patient seeking through nontraditional providers and treatments? What are the beliefs that are guiding her actions?
What approach and questions were successful in bringing out the patient’s concerns? What other questions could aid this process?
How do you define “therapeutic interview”? What components of the interview make the encounter a therapeutic relationship?

Suggested Reflection questions:
What was your reaction to the first glimpse of the patient’s distrust of allopathic medicine?
What reaction did you see in other students in the group?
What contributed to your reaction?
What does this case reveal about traditional allopathic care?
What do your beliefs do to create healing? What do your behaviors do to create healing?
What questions remain after considering the aspects of this case?
What concept or approach was most useful to you?
What growth is needed? What learning do you plan to do?
What do you want to remember from this event that you will carry into the next situation?

Resource materials (students may be given these after the session):

Almed.com
Evaluation Strategies:
Students who conduct the interview receive informal feedback during the workshop from the preceptor. The preceptor reviews the assessment form, which is completed by an observing student, with the group. All students receive feedback on the written patient history.

Student evaluations:
Students provide feedback on the quality and level of difficulty of the patient case. Based on student feedback, the case has been modified to be more challenging and to include more patient concerns between allopathic and alternative approaches.

Implementation challenges:
Standardized patient experiences are expensive due to the extensive training required for the actors and the cost of retaining them.
CONTRIBUTED CURRICULUM MATERIALS

Standardized patient description
Student assessment tool
TEMPLE UNIVERSITY SCHOOL OF MEDICINE  
Standardized Patient Program  
Case 48

Case History:  
Written by Michael Curtis  
Reviewed by David Barclay, MD

Case intended use:  
For Fundamentals of Clinical Care 201 Interviewing Workshops

Teaching Goals (Not to be discussed with the students before the encounter):  
This case is intended to provide students with an opportunity to encounter a patient who has placed much greater confidence in complementary and alternative medicine than in mainstream or allopathic medicine. The issue of menopause is used as a context for the encounter.

Teaching points  
The following points were made in Dr. Kris Parris’ lecture on Complementary and Alternative Medicine to the FCC-2 students:  
1) Embrace it if it is an integral part of your patients’ lives.  
2) Understand why patients turn to CAM and see the limitations of traditional Western medicine.  
3) Understand the different modalities that are being used.  
4) Separate the facts from fiction in the science behind CAM.  
5) Put it all together: how to answer questions about CAM for both you and your patients.

Perceived differences between “traditional” (allopathic) medicine and “nontraditional” (CAM)

<table>
<thead>
<tr>
<th>“Traditional” (allopathic) medicine</th>
<th>“Nontraditional” (CAM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>Prevention</td>
</tr>
<tr>
<td>Short-term goals</td>
<td>Long-term goals</td>
</tr>
<tr>
<td>Evidence based</td>
<td>Less evidence based</td>
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<tr>
<td>Limited options</td>
<td>Wide range of options</td>
</tr>
<tr>
<td>Depersonalized</td>
<td>Personalized</td>
</tr>
<tr>
<td>Superior when surgical information needed</td>
<td>No surgical option</td>
</tr>
</tbody>
</table>

Why patients use CAM
• Seeking health promotion and disease prevention  
• Conventional therapies have been exhausted  
• Conventional therapies of unclear benefit  
• Conventional therapies with side effects  
• Media influence

Common beliefs about CAM
• “Not really medicine”  
• No side effects  
• Monitoring of CAM not required

Suggested resource  
Altmed.com
Presenting Issue (Information for the student before meeting the patient):
Mrs. Elaine Harper is a 53-year old woman who has come to the Family Practice because her health insurance provider requires her to see a physician for a regular check-up.

Instructions to Standardized Patient (SP):

1. Patient Intention:
   Mrs. Harper has come to the doctor because her health insurance provider requires that she have a check-up once every three years, and she is now due for one. She is not happy about having to see a physician, and simply wants to assure the doctor that she is feeling very well and has no need of any medical care,. She would like the physician to agree that she is healthy. She does not expect to convert the doctor to alternative medical practices but if the opportunity presents itself she will make it clear that she no longer has much confidence in mainstream medicine.

2. Patient Manner:
   Mrs. Harper is very polite and speaks confidently with the doctor but is not very warm towards the interviewer at first. She gives the impression of being a bit suspicious, waiting for the doctor to reveal her or his attitudes towards her health practices. She speaks enthusiastically about her alternative medical practices but should not appear eccentric in any way. If an interviewer should denigrate her alternative health practices, she will politely, but firmly, defend her beliefs. Note that she will not, under any circumstances, direct any criticism towards the interviewer personally, but rather towards the “mainstream medical system.”

   SPs should note the material in quotation marks and try to use it verbatim when possible and as a guide to the patient’s general manner of speaking.

3. Patient History:
   SP’s should note that the case is written for a patient 53 years old. SP’s should portray a patient as close to that age as is reasonable for them. If necessary adjust the age and aspects of the history to accommodate the age of the patient they are playing. Please advise the preceptor ahead of time about the age of the patient.

History of Present Illness
Mrs. Harper has no complaint for which she is seeking treatment at this time. In the last year she has been experiencing menopause but will say that she does not see that as an illness, and “anyway, I’m dealing with it strictly through natural means.” She has not seen a physician regarding her menopause or regarding her use of various substances to deal with it.

History of Menopause
Mrs. Harper started to experience menopause about a year ago. Her menstrual bleeding started fluctuating wildly in terms of regularity—sometimes coming on several times in a month, other times being absent entirely—and in heaviness of flow. Over that time, she has noticed episodes of profuse sweating, and sudden hot flashes that sometimes wake her up at night. She feels them as intense heat over her trunk and face, with flushing of the skin and heavy sweating. They last only a few minutes but can be very severe. “It’s this wave that just takes over you, and you’ve got to pretend it isn’t happening. Sometimes I just feel like falling to the floor.” They can occur at any time but are more pronounced late in the day, in hot weather, after having hot food or hot drinks, or if she is feeling tense. They have been happening a little more frequently lately, sometimes several times a day, but not quite every day. If she has them at night, she feels very sweaty and uncomfortable and cannot sleep. She has had a few episodes of heart palpitations, the first such incident about four or five months ago, the most recent a few weeks ago. She will say that she was having problems with mood swings at first, but that they seem to have passed now. She has had some problems with tenderness in her breasts and vaginal dryness.

If asked, she plays down all symptoms of menopause, saying that she has had them, of course, but that they are “nothing to worry about, everything is well under control, it’s totally normal of course.” They have not changed significantly in some months.
To deal with the menopause, she has been following a variety of naturopathic treatments. She has absolutely rejected any suggestion of conventional hormonal replacement therapy, stating that it has been shown to be very dangerous, increasing the likelihood of cancer and heart problems. She will link this to anecdotes about women she knows who have been on HRT and are having serious health problems.

**Current health practices**

She last saw a primary care physician for a check-up a few years ago. At that time she had not yet experienced any signs of menopause, but her doctor “warned” her to expect it soon, and “made it sound like some sort of disease.”

Since the menopausal symptoms first appeared, she has been taking an herb, in a condensed tablet form, called black cohosh. She understands this to be a traditional herb long used by women in Germany. It is supposed to reduce the hot flushes and sweating.

She has been using a Chinese root called dong quai. It, too, is supposed to reduce hot flushes and night sweats. She has been using it for about six months. (She might add that she is interested in Traditional Chinese Medicine—likes the idea of an ancient philosophy behind it—but does not know a lot about it. She thinks she might try some other traditional Chinese substances.)

She has been using evening primrose oil, “just started that recently”, which is to reduce sweating. “It’s a very powerful female oil, and works with the female energies.”

She has been taking red clover, which she says prevents heart palpitations, for a few months.

She has been using St. John’s wort for about a year. She says it is used to reduce mood swings and reduce the nervousness that sometimes accompanies menopause.

She has been using motherwort for the past year, to reduce vaginal dryness, and thinks “it is starting to work with my female energies.”

She drinks ginseng tea to improve her energy.

She drinks Earl Grey tea if she has a headache.

She is taking calcium supplements to avoid osteoporosis.

She has tried a variety of homeopathic remedies, in liquid form, as well for all of the various problems, settling on “a couple of them. I don’t recall what they are right now, herbal extracts that have been diluted so that you get only the real essence, the real vital force of the plant, no impurities at all.”

She is considering having regular shiatsu massage and acupuncture treatment to prevent arthritis.

She tends to follow the recommendations of the herbalist she goes to and has also been researching natural remedies on the Internet. All of the substances noted above are taken orally.

If asked about other naturopathic health practices, she will say she finds them quite interesting, and is considering aromatherapy for stress reduction. The exception is ear-candling, which she thinks is “weird.”

Note to SPs: Naturopathic practitioners sometimes ask questions of the patient that can seem quite irrelevant, such as whether the patient likes hot or cold rooms, what music they like, etc. Some students may find the topic of interest and may pursue such questioning. Be prepared to answer any such questions using your own inclination. The patient may recognize the technique and will be enthusiastic about it.
past medical history

Mrs. Harper recalls being told she had ear infections as an infant, but remembers no details. She also recalls “being a very sickly child.” She does not recall the details but knows she was out of school for weeks on end several times.

As a teenager, she remembers having the flu a lot, and mononucleosis once, with sore throat and high fever. She was told the only treatment was rest, and she had to stay home for a couple of weeks.

As an adult, she has had urinary tract infections several times, causing painful and frequent urination. She has also had skin rashes on a number of occasions.

She had used birth control pills for a few years after the birth of her last child but stopped when her husband had a vasectomy.

Mrs. Harper will say that, “every time something went wrong the doctors would just give me more pills. And they never really seemed to work. I guess finally I just realized that it was all the wrong way to go about it; it just wasn’t natural. It was coming to menopause that did it. I realized that you have to work with your body’s energies. It’s more of an Oriental approach. And that’s been marvelous for me.” If asked further about her negativity toward mainstream medicine she will say, “it was the C-section business that got me really annoyed with regular medicine.” She had her first child by vaginal delivery and all went well, and she looked forward to the same with further children. But while in labor with her second child “something went wrong. I don’t know what and they never really explained it properly to me. The next thing I knew I had been under anesthetic and they had done a C-section. Well, okay, if it was really needed fine, but when I got pregnant with my third they told me because I’d had one C-section I couldn’t go back to natural childbirth. And they just wouldn’t even discuss it. I got really annoyed.”

family history

Father died at age 66 of heart disease. He had been hypertensive and obese.

Mother died at age 72, following a stroke. She had developed diabetes as an adult, and osteoporosis and arthritis in her later years.

Mrs. Harper has a brother, two years older, who is being treated for heart disease, and one sister, a year younger. Her sister “always seemed to be sick when she was a kid” (the patient cannot provide details) and developed diabetes some years ago. She is now on medication and insulin. While Mrs. Harper gets along well with her sister, the two of them disagree about medicine. “She just follows whatever the doctor tells her, and she ends up having to take all sorts of pills. We just don’t talk about it anymore; there’s no point.”

Mrs. Harper does not know much about the health histories of her grandparents, except for her mother’s mother, who died of breast cancer in her 60s.

She does not know the menopausal history of any of her female relatives.

social history

Mrs. Harper edits ArtsNow, a magazine about activities in the arts in the Delaware Valley. She enjoys her job, finding it stimulating talking with people about music, art, dance, theater, literature, etc. She is active evenings and weekends, going to arts events.

She has been happily married for 27 years. Her husband is a real estate lawyer. They are financially comfortable. They have three grown children. (SP can elaborate on this as suitable and necessary.)
If asked about sexual activity, Mrs. Harper will admit that she has not been as comfortable with it lately. She has some vaginal dryness and discomfort during coitus, but expects that will go away.

Habits History
Mrs. Harper will say she follows a healthy diet and eats well. She has become interested in following a vegetarian diet and is gradually stopping eating meat and eating more soy products. She will say she heard that soy was "much better for women’s bones than meat." She has reduced the level of fat in her diet and is trying to consume more fresh vegetables and fruit. She has reduced her coffee to one cup per day ("wonder if I should cut that out too; coffee is a male plant.") She has never smoked and never used illicit drugs. She drinks alcohol only rarely now, on social occasions; "I don't know that it's all that natural.”

Her husband used to smoke, but quit about 15 years ago. “I convinced him that the second-hand smoke wasn’t good for me or the children.” They do not permit smoking in their home.

She does not follow an exercise program and will sheepishly admit that she “should, of course, as part of a natural program of health, but I’m so busy with work it’s hard to fit it in.”

She does regular breast self-examinations and sees a gynecologist every two years for a pelvic exam.

Medications
Note that Mrs. Harper does not think of her homeopathic and herbal treatments as “medicine.” But she knows what the doctor is “getting at,” and if she is asked what medications she takes she will say “I don’t use any medications of the sort that you would prescribe.” If asked what she means by that she will say she is using only natural products. She will, however, readily, even enthusiastically, explain about all of them.

- Black cohosh
- Dong quai (“dong k-why”)
- Evening primrose oil
- Red clover
- St. John’s wort
- Motherwort
- Ginseng tea
- Earl Grey tea
- Various homeopathic remedies
- Calcium supplements

She labels all the plant products as “female plants and herbs. You have to match the plants to the person and the need. There are male plants and female plants and herbs, and women should take only female ones for female needs.” She will explain that the natural substances she is taking “work with the body, not against it like Western synthetic medicines.” She is not clear on the strength of any of the substances, saying only that she takes them “every day, one tablet or whatever, as recommended.” If asked if she worries about interactions amongst the various substances or possible side effects, she will say “no, there’s no worry; they’re all natural products.”

Review of Symptoms
Mrs. Harper will say she is “feeling in excellent health” and will talk about these various symptoms only if asked specifically about them.

For the last six months she has been losing weight, but she is actually quite pleased with this, though it had not been her intention. She has lost approximately 15 pounds, most of it in the last couple of months. (SPs may alter depending upon their own build.)
She has noticed for a few months that she is urinating more often, but attributes this to “better functioning, I’m flushing away the impurities” and that she is drinking more fluid. She finds she is now urinating nine or ten times a day.

She feels thirsty more often in the past few months, and is indeed drinking more water, six or seven glasses a day, but shrugs this off, saying she “should be drinking more, it’s just my body telling me it needs the basic fluid of life. I’ve heard you should drink eight glasses a day anyways.”

She has noticed a few episodes of heart palpitations but tends to think of those as related to menopause, “and it’s only happened a few times, well under control; I’ve heard of it far worse in friends who are using estrogen.” The first such incident was about four or five months ago, the most recent a few weeks ago.

Twice in the last year she has had vaginal yeast infections, which she has treated with douches.

She has had a few headaches in the last few weeks but shrugs this off as just pressure of work. They are not in any one specific area of her head and tend to last only an hour or so. She drinks tea when she gets a headache, “I’m not going to take Tylenol or anything like that; there’s oil of bergamot in Earl Grey tea. That’s supposed to be good for headaches, and it seems to be working.”

She has been feeling a little more tired than usual lately but attributes this to working harder lately. “There’s so many problems with arts funding, and we’re trying to cover it all in the magazine.”

**Time Line**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>As a child</td>
<td>Ear infections, several unknown illnesses</td>
</tr>
<tr>
<td>As a teenager</td>
<td>Frequent flu, mononucleosis once</td>
</tr>
<tr>
<td>As an adult</td>
<td>Frequent urinary tract infections, skin rashes</td>
</tr>
<tr>
<td>26 years ago</td>
<td>First child born, normal delivery</td>
</tr>
<tr>
<td>24 years ago</td>
<td>Second child born, C-section due to unknown emergency</td>
</tr>
<tr>
<td>22 years ago</td>
<td>Third child born, C-section, much to her annoyance</td>
</tr>
<tr>
<td>15 years ago</td>
<td>Husband stopped smoking</td>
</tr>
<tr>
<td>3 years ago</td>
<td>Last check-up, doctor “warned” her about menopause</td>
</tr>
<tr>
<td>1 year ago</td>
<td>First signs of menopause, started trying various herbal and homeopathic substances</td>
</tr>
<tr>
<td>1 year ago</td>
<td>Started taking St. John’s wort, motherwort, ginseng tea</td>
</tr>
<tr>
<td>1 year ago</td>
<td>Started taking black cohosh</td>
</tr>
<tr>
<td>Within last year</td>
<td>Two episodes of yeast infections</td>
</tr>
<tr>
<td>6 months ago</td>
<td>Started using dong quai</td>
</tr>
<tr>
<td>6 months ago</td>
<td>Start of weight loss</td>
</tr>
<tr>
<td>4 or 5 months ago</td>
<td>First heart palpitations</td>
</tr>
<tr>
<td>A few months ago</td>
<td>Started using red clover</td>
</tr>
<tr>
<td>In the last few months</td>
<td>More frequent urination, greater thirst</td>
</tr>
<tr>
<td>In the last couple of months</td>
<td>More rapid weight loss</td>
</tr>
<tr>
<td>A few weeks ago</td>
<td>Most recent heart palpitations</td>
</tr>
<tr>
<td>Last few weeks</td>
<td>Headaches</td>
</tr>
<tr>
<td>Just recently</td>
<td>Started using evening primrose oil</td>
</tr>
<tr>
<td>NOW</td>
<td></td>
</tr>
</tbody>
</table>
4. **Communication Challenge:**

At some time approximately five or six minutes into the interview, regardless of what else may have been discussed up to that point, the patient will say:

"My last doctor seemed to think menopause was some sort of disease. He acted like there was something wrong with me. But really, menopause is natural, and that's the way I'm looking at my health, as a natural thing to be dealt with through natural means."

*Depending upon how the rapport has been built between doctor and patient and what else may have been discussed, this may be said in a tone of suspicion (implied that she thinks this doctor agrees) or of relief (that she thinks this does doctor is not like that).*
**TEMPLE UNIVERSITY SCHOOL OF MEDICINE**

**FCC-2 Interviewing Skills Workshops with Standardized Patients**

(To be completed by an observing student in the workshop.)

Date: (mm/dd/yyyy) __________/_________/__________ Case

Student Name: ________________________________

Preceptor: ________________________________

**Case-Specific Items**

These are the specific critical items the student should deal with in the interview:

<table>
<thead>
<tr>
<th>Item</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
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<tr>
<td>3</td>
<td>0</td>
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</tr>
<tr>
<td>10</td>
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</tr>
</tbody>
</table>

**Process**

<table>
<thead>
<tr>
<th>Item</th>
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<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0</td>
</tr>
<tr>
<td>2</td>
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<tr>
<td>3</td>
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<tr>
<td>10</td>
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</tr>
<tr>
<td>10.1</td>
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</tr>
<tr>
<td>10.2</td>
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<td>10.3</td>
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<td>10.4</td>
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</tr>
<tr>
<td>10.5</td>
<td>0</td>
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</tr>
</tbody>
</table>

**Professionalism**
<table>
<thead>
<tr>
<th>Item</th>
<th>Exceedingly well</th>
<th>Very well</th>
<th>Adequately</th>
<th>Poorly</th>
<th>Very badly</th>
<th>Note how well each item was done.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Introduced self as a medical student and addressed patient by proper name.</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Did student conduct interview without being negatively judgmental?</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Did student establish rapport with patient?</td>
</tr>
</tbody>
</table>
INTRODUCTION TO HERBAL MEDICINE

MODULE DESCRIPTION

Unit Contributed by:
Steven Rosenzweig, MD
Medical and Academic Director
Jefferson Center for Integrative Medicine
Jefferson Medical College
Philadelphia, PA

Integrative Medicine competencies addressed (see Section 2, list of competencies):
Knowledge 8, 10, 11
Attitudes 3
Skills 4, 5

Session goals:
Define the term “botanical medicine” (herbal medicine) and describe the wide range of pharmacologically active materials subsumed under this term.
Evaluate the philosophical and cultural context of botanical medicine use.
Access and interpret the evidence base of botanical medicine.
Identify quality and safety issues relevant to botanical medicine, including natural-synthetic (herb-drug) interactions.
Explore potential applications of botanical medicine to support the health of a second-year medical student.

Curriculum Component:
Required

Primary Target audience:
M2 students

Duration:
1 hour

Learning Methods:
• Lecture, PowerPoint slides
• Case presentations and large group discussion
• Assigned readings from syllabus

Faculty Resources:
One medical school faculty

Description:
Students in the second medical school year pharmacology course receive a presentation on Herbal Medicine, as part of the series on nonprescription medications. Cases are used throughout the lecture to illustrate the application of other approaches to treat common conditions, including fatigue and stomach upset. Students are given a chance to consider controversies and evaluate the concepts of evidence versus proof in effectiveness. An extensive syllabus includes a list of readings, Websites,
educational goals, key terms, introductory materials on the topics provided, tables illustrating herb use and evidence base of botanical medicine. Also included in the syllabus are cultural considerations, controversies, safety considerations, study questions, and “how to learn more: next steps” guide of activities in the medical center and central campus to further develop understanding of the topic.

This topic is reinforced in a session later in the year that provides an overview of CAM. Selected pharmacology slides are presented again, for review and discussion. During the fourth year, a one-month pharmacology elective course is offered, with nearly 25 percent of the fourth-year class enrolling. The botanical medicine material is reviewed and presented in more depth and complexity during this course.

Discussion questions:
Recognizing the fact that botanical medicines are not regulated by the US Food and Drug Administration (FDA), how do you obtain high quality products in the United States?
What steps can be taken by physicians and their patients to minimize the possibility of significant herb-drug (natural-synthetic) interactions?
How does botanical medicine use complement the prescription of conventional pharmaceuticals?
Are there prescribing gaps that can be filled by botanical medicines? Consider that allopathic physicians generally prescribe drugs that are anti-symptom. Consider differences in potency and side-effect profiles between conventional pharmaceuticals and medicinal herbs.

Suggested reflection questions:
What are your views on efficacy and safety of herbal therapies?
How do herbal medicines differ from pharmaceutical medicines you have encountered in your own experience?
In what way do your beliefs on this topic affect your willingness to listen to a patient’s story of herbal medicine use?
What information would you require before recommending or prescribing an herbal medicine to a patient?

Evaluation strategies:
The presenter writes five questions that are included in the pharmacology course examination. Students participate in interviewing course strategies in the M3 year and are expected to incorporate questions about use of herbal products during patient interviews.

Student evaluations of curriculum session:
Course director has included this lecture for four years. Student reviews of the session are very positive.

Resource Material:
1. Web Resources:
2. Books
3. Extensive journal reference list in syllabus
Challenges to presenting this unit:
Challenges included the attempt to cover such a large topic within a single lecture. Another issue was some reluctance to the introduction a novel topic within an established curriculum.
CONTRIBUTED CURRICULUM MATERIALS

Lecture notes
NON-PRESCRIPTION MEDICATIONS 2:
HERBAL MEDICINE

READINGS

WEBSITES
Herb Research Foundation resource links: http://www.herbs.org/links/links.htm
Links to herb photographs http://herbs.org/gallerylinks.htm
Subscription database: http://www.NaturalDatabase.com

EDUCATIONAL GOALS
• Understand the wide range of pharmacologically active agents subsumed under the term “botanical medicine” or herbal medicine.
• Appreciate the philosophical and cultural context of the use of botanical medicines.
• Access and interpret the evidence base of botanical medicine.
• Identify quality and safety issues relevant to botanical medicine, including natural synthetic (herb-drug) interactions.
• Explore potential applications of botanical medicine to support the health of a second-year medical student.

KEY TERMS
• Botanical medicine (herbal medicine)
• Current Good Manufacturing Practices (CGMP)
• Dietary Supplement Health and Education Act of 1994 (DSHEA)
• Dietary Supplement Verification Program (DSVP)
• European Scientific Cooperative of Phytotherapy
• German Commission E
• Integrative Medicine
• Medicinal herb
• National Center for Complementary and Alternative Medicine (NCCAM)
• Natural–synthetic interaction
• Pharmacodynamic interaction
• Pharmacokinetic interaction
• Phytochemical
• Phytomedicine
• Standardized extract
• Xenobiotic

1. INTRODUCTION
1.1 Use of complementary and alternative medicine (CAM) continues to increase in the United States. Consumption of botanical medicines has increased dramatically over the past decade. Eisenberg reported a rise in use from 2.5% to 12.1% between 1990–1997.[JAMA; 11 Nov 1998] This parallels the skyrocketing increase in sales of herbal products, rising from $20 million annually in 1990 to $400 million in 1998. Most use of botanical medicines is self-directed and not under the supervision of either a physician or trained herbalist. It is of great concern that patients who combine herbs with drugs run the risk of adverse natural-synthetic (herb-drug) interactions.
Top-selling herbals - Mass market
August 1997 to July 1998

<table>
<thead>
<tr>
<th></th>
<th>in $US millions</th>
<th>% growth per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ginkgo</td>
<td>138</td>
<td>140</td>
</tr>
<tr>
<td>St John’s wort</td>
<td>121</td>
<td>2801</td>
</tr>
<tr>
<td>Ginseng</td>
<td>98</td>
<td>26</td>
</tr>
<tr>
<td>Garlic</td>
<td>84</td>
<td>27</td>
</tr>
<tr>
<td>Echinacea</td>
<td>33</td>
<td>151</td>
</tr>
<tr>
<td>Saw palmetto</td>
<td>27</td>
<td>138</td>
</tr>
<tr>
<td>Grapeseed</td>
<td>11</td>
<td>38</td>
</tr>
<tr>
<td>Kava</td>
<td>8</td>
<td>473</td>
</tr>
<tr>
<td>Evening primrose</td>
<td>8</td>
<td>104</td>
</tr>
<tr>
<td>Echinacea/Golden seal</td>
<td>8</td>
<td>80</td>
</tr>
<tr>
<td>Cranberry</td>
<td>8</td>
<td>75</td>
</tr>
<tr>
<td>Valerian</td>
<td>8</td>
<td>35</td>
</tr>
</tbody>
</table>

1.2 While utilization of botanical medicines is on the rise, the evidence base supporting the efficacy of these substances is often limited and confusing. Nevertheless, substantive pharmacological, toxicological, and clinical data are available for numerous botanical medicines.

For example, one key database has been constructed by the European Scientific Cooperative on Phytotherapy (ESCP) that currently contains more than 200 clinical trials in addition to pharmacological and toxicological data on 60 botanical medicines. The problem is that historically, graduates of US medical schools have had minimal or no exposure to these data.

1.3 NIH funding for research in botanical medicine has rapidly increased through the Office of Dietary Supplements (ODS) and The National Center for Complementary and Alternative Medicine (NCCAM). Six botanical research centers have been funded around the country.

1.4 According to the model of Integrative Medicine, botanicals and other complementary therapies can be combined with conventional care to improve health outcomes. There is an urgent need to train physicians to proactively counsel patients on the safe use of botanical medicines and monitor them for adverse events. Physicians who prescribe botanical medicines must learn how to access clinically relevant databases and seek out the latest research findings in order to bring a truly evidence-based approach to the bedside.

2. DEFINITION AND SCOPE OF BOTANICAL MEDICINE

2.1 Drug. Substance used to treat disease or improve health. Botanical medicines are drugs, although they are not regulated as drugs in the United States. (They are regulated as drugs in the European Union and Australia.)

2.2 Botanical medicines. Botanical medicines, herbal medicines and plant medicines are all equivalent terms. They include medicinal herbs and phytomedicines.

Medicinal herbs
Crude drugs of botanical origin. Administered as teas, soups, or compresses. Traditionally, several crude herbs are prescribed in combinations known as formulas.
Phytomedicines
Pharmaceutical preparations made by extracting herbs with various solvents to yield tinctures, oils, nonstandardized extracts, or standardized extracts.

2.3 A standardized extract means that the plant material is processed in such a way as to assure the content of one phytochemical. Historically, St. John’s wort (Hypericum perforatum L) extracts were standardized to hypericin content. Recently, it has become clear that hypericin is not essential for its mood-elevating effects but may be responsible for the majority of its drug-herb interactions. New extracts are being developed that are standardized to hyperforin content.

2.4 Examples of botanical medicines:

- **Coffee** (coffee): Stimulant and digestive aid.
- **Foeniculum volgare** (Fennel seeds): Digestive aid located at the cashier of most Indian restaurants.
- **Allium sativum** (garlic): HMG-CoA reductase inhibition, platelet aggregation inhibition.
- **Matricaria recutita** L. (chamomile): Intestinal antispasmodic, anti-inflammatory at mucosal services, sedative.
- **Huang Qi** ("Yellow Leader") or **Astragalus membranaceus** (Astragalus): Increase in Chi ("Life Energy"), adaptogenic.
- **Remifemin®**: Standardized black cohosh root extract, produced in Germany, distributed in the US by GalaxoSmithKline—alleviation of menopausal symptoms.
- **Iscar®**: Parenteral, standardized whole plant extract of European mistletoe—used in complementary cancer therapy.
2.5 Botanical medicine systems

- Local, folk
- Medical systems such as, Traditional Chinese Medicine, Ayurveda, Tibetan, Native American Medicine
- European phytomedicine industry

3. CULTURAL AND PHILOSOPHICAL CONSIDERATIONS

3.1 Cultural context

- Botanical medicines remain the basic *materia medica* for 75% of human beings.
- Tradition of self-care. Place in the family medicine chest.
- NOT East vs West: Use of most plant medicines were dropped out of urban American culture post WWI but remained very prominent part of healthcare in Western Europe.
- In many cultures, use of botanical medicines confirms a vital relationship between human beings and nature.

3.2 Therapeutic principles

- In contrast to allopathic medicine, botanical medicines were not historically prescribed only as antidotes to symptoms. Instead, medicines were given in order to balance, nourish, harmonize, and tonify. We don’t have “tonics” in our PDR.
• Medicinal herbs were traditionally given to support the body’s own healing resources. Conventional pharmacotherapy often overrides or suppresses these mechanisms of healing. For example, the conventional treatment of acute infection would include antibiotics, which override the immune response, and fever-reducing medications called antipyretics, which suppress the immune response. Traditional herbal formulas include herbs to enhance resistance (e.g. echinacea) and modulate fever (e.g. hawthorne).

3.3 Controversies

Whole plant vs. single phytochemical
• Point: The spectacular success of conventional pharmacotherapy has demonstrated the power of isolating and administering single-chemical agents to achieve desired effects and assure purity and dose control. Digoxin is far superior to foxglove extract in treating congestive heart failure. This has led to suspicion of any plant-based medicine that has not been ultimately refined into a purified single chemical agent.
• Counterpoint: A medicinal plant contains a micro-array of phytochemicals that work synergistically to increase effectiveness and reduce toxicity.

Natural vs. synthetic
• Point: Synthetic implies purity and control.
• Counterpoint: Plant substances have coevolved in that they are more easily utilized by the human body and are less likely to produce long-term, unpredictable toxicities.

Evidence
• Point: There is a paucity of highest quality clinical trial data available to “prove” the efficacy of botanical medicine. Use of botanicals cannot be condoned.
• Counterpoint: There is an abundance of data of varied quality that can and ought to be interpreted, leading to the rational use of plant medicines—see discussion below on Evidence Base.

Metaphysical
1. Point: Plants, like human beings, are only physical, chemical structures.
2. Counterpoint: Living systems contain qualities, “energies,” and information that are not reducible to biochemistry. Plants offer healing qualities that are not limited to chemical content.
4. EVIDENCE BASE OF BOTANICAL MEDICINE

4.1 Historical / Traditional (Ethnobotanical)
- Many herbs have undergone an extensive empirical trial of safety and efficacy over thousands of years.
- Mills’s Rule: Credibility is increased when two cultures, separated geographically, develop similar use of a medicinal herb. An example is *Arnica montana*, applied externally to soft tissue injuries to reduce pain and swelling in South America and in Europe. Melatonin is an example of a biochemical that is endogenous to humans and plants.
- Traditional practitioners were well aware of the typical actions of medicinal herbs and catagorized them accordingly. The pharmacological underpinnings of these catagories have been demonstrated (see Table):

<table>
<thead>
<tr>
<th>Archetypal phytochemical subgroup and common sources</th>
<th>Subjective impact and application in traditional medicine of plants rich in this subgroup</th>
<th>Confirmed pharmacological activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>acrid, “pungent” principles (hot spices) eg. in cayenne, ginger, peppers</td>
<td>hot, heating, increasing warmth to diseased tissues, preventing food poisoning in hot climates, sustaining febrile response in fever management, topical to arthritis and other subdermal inflammations</td>
<td>Thermogenic(^1) and metabolic Stimulant(^2) (involving catecholamine release and possibly reflex irritation eg. from vanilloid receptors on Cfibres(^3)), increased gastric secretions(^5), propylactic against some food poisoning, pain Relief(^6), (^7), (^8), (^9), (^10), increase in absorption of other nutrients and agents(^11), (^12)</td>
</tr>
<tr>
<td>alkaloids e.g. in opium, henbane, belladonna, datura, hemlock, psilocibin, tobacco</td>
<td>poisonous, neuroactive, analgesic, sedative, psychoactive</td>
<td>neuroactivity prominent among disparate group, a major pharmaceutical dispensary of its own</td>
</tr>
</tbody>
</table>

An artist’s conception of the metaphysical qualities of *Arnica montana*.
<table>
<thead>
<tr>
<th>Archetypal phytochemical subgroup and common sources</th>
<th>Subjective impact and application in traditional medicine of plants rich in this subgroup</th>
<th>Confirmed pharmacological activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>anthraquinone and other laxatives e.g. in senna, cascara, aloe</td>
<td>laxative, topically anti-inflammatory</td>
<td>Laxative(^{3, 10, 11}), anti-inflammatory(^{16, 17})</td>
</tr>
<tr>
<td>aromatic (essential) oils e.g. in cinnamon, cardamom, fennel, rosemary and other kitchen spices</td>
<td>aromatic and warming, settling digestion, stimulating digestion in debilitated states, warming treatment for bronchial congestions</td>
<td>Carminative(^{20, 21, 23, 25, 26, 27, 28, 29}), anti-inflammatory(^{21, 22, 25, 26, 27, 28, 29, 30}), antiseptic(^{23, 31}), expectorant(^{31}), diuretic (^{32})</td>
</tr>
<tr>
<td>bitters e.g. in wormwood, chicory, hops, coffee, angostura, quinine bark, condurango</td>
<td>bitter, stimulant to appetite and digestion, cholagogue, cooling effect in fever management, prevention, and treatment of enteric infections, tonic</td>
<td>systemic or local gastric responses shown(^{3, 14}), digestive stimulant(^{23, 36, 37, 18})</td>
</tr>
<tr>
<td>cardioactive glycosides e.g. in foxglove, lily-of-the-valley, ouabain</td>
<td>arrow poisons, in small doses for the treatment of dropsy</td>
<td>toxic, positive inotropic and negative chronotropic myocardial stimulant</td>
</tr>
<tr>
<td>cyanogenic glycosides e.g. in wild cherry bark, bitter almonds, apricot kernels</td>
<td>bitter, aroma of almonds, toxic, antitussive, sedative</td>
<td>sedative, antitussive effects likely</td>
</tr>
<tr>
<td>emetics e.g. in ipecacuahua, squills</td>
<td>emetic, expectorant in subemetic doses</td>
<td>emetic, reflex expectorant in subemetic doses</td>
</tr>
<tr>
<td>fibre e.g. in flaxseed, psyllium</td>
<td>bulking, bowel regulator, demulcent (like mucilages)</td>
<td>bulking laxative(^{39, 40}), hypcholesterolaemic(^{41}), improving glucose tolerance(^{42})</td>
</tr>
<tr>
<td>flavonoids and anthocyanidins e.g. in hawthorn, citrus peel, grapes, elderflower</td>
<td>color, fever management, digestive modulator, wound remedies, cough/cold</td>
<td>Antioxidant(^{43}), Vasculoprotective(^{40, 49, 50}), Anti-inflammatory(^{51, 52}), Vasculoactive(^{63}), antitumor, oestrogenic activity</td>
</tr>
<tr>
<td>mucilages e.g. in slippery elm, marshmallow, plantains</td>
<td>slimy, emollient, demulcent, soothing to wounds and abrasions, reducing coughing due to dry irritability, soothing upper digestive inflammations</td>
<td>physical basis for soothing properties demonstrated(^{54, 55, 56}), antitussive(^{57})</td>
</tr>
<tr>
<td>resins e.g. in myrrh, Tolu balsam, balm of Gilead, mastic, Propolis</td>
<td>sticky, antiseptic, stimulating defensive activity on exposed mucosa</td>
<td>anti-inflammatory(^{56, 59})</td>
</tr>
<tr>
<td>saponins e.g. in ginseng, licorice, astragalus, helonias root, wild yam</td>
<td>lather in water, sweet taste, emetic/expectorant, tonics and gynecological remedies</td>
<td>steroidal molecules with various competitive, modulating effects on steroidal receptors and functions postulated(^{60, 61, 62}), expectorant(^{63}), hypcholesterolaemic(^{64, 65}), aid digestion of nutrients(^{66})</td>
</tr>
<tr>
<td>sulphur-containing volatiles e.g. in garlic, horseradish, mustards</td>
<td>hot, odiferous, heating, warming, and clearing bronchial congestion, antipathogenic, topically counterirritant</td>
<td>antimicrobial(^{67}), antitumour(^{68}), hypcholesterolaemic, antiatherogenic(^{69}), rubefacient and vesicant</td>
</tr>
<tr>
<td>tannins e.g. in oak, witch hazel</td>
<td>astringent, making lather, wound cauter, anti-inflammatory in upper digestive tract, reducing reflex diarrhea in gastroenteritis</td>
<td>astringent (crosslinks exposed protein molecules)(^{90}), styptic(^{71, 72}), and protective(^{73, 74, 75}), antioxidant(^{76, 77})</td>
</tr>
</tbody>
</table>
4.2 Pharmacodynamic
As stated above, many medicinal herbs have been studied for their pharmacodynamic effects on the body. This refers to their action on biological function. It does not, however, prove clinical effects. For this we need a clinical trial in a patient population. However, the fact that *Arnica montana*, for example, inhibits lysosomal enzymatic activity in neutrophils lends credence to its role as an anti-inflammatory agent.

4.3 Clinical Trials
Hundreds of clinical trials have been conducted on botanical medicines. Many, if not most, must be interpreted with caution because of any number of the following caveats:

- Small sample size
- Short study period
- Poor definition of baseline and endpoints
- Industry sponsorship (outcome bias)

While the German pharmaceutical industry has sponsored the majority of clinical trials, many of these industry products bear little resemblance to the medicinal herbs used historically. For example, clinical depression was a traditional *contraindication* to the use of St. John’s wort! *Gingko biloba* leaf was not used in traditional herbal medicine. Also, keep in mind that the highly refined, standardized extract of St John’s wort or *Gingko biloba* are certainly not equivalent to the action of dried, bulk herb.

4.4 “Triangulating” the Data
Given the paucity of highest-quality controlled clinical trials, we can still make headway by bringing together data from each of the above categories in order to build a case for credibility, safety, and efficacy. For instance, consider astragalus:

- **Historical / traditional**—5000 years of empiric usage in China to tonify vital energy (*Chi*).
- **Pharmacodynamic**—Enhances cytotoxicity of natural killer cells, protective against parainfluenza infection in mice, modulates mitochondrial oxygen consumption, hepatoprotective in liver injury model.
- **Clinical trial**—Positive trials reported in China for improving leukopenia, chemotherapy, hepatitis.

![Medical evidence pyramid.](image)

### Systematic Reviews and Meta-analyses

- **Randomized Controlled Double Blind Studies**
- **Cohort Studies**
- **Case Control Studies**
- **Case Series**
- **Case Reports**
- **Ideas, Editorials, Opinions**
- **Animal research**
- **In vitro (test tube) research**

### Historical / Epidemiological
- **Historical**
- **Epidemiological**

### Pharmacologic / Pharmacodynamic
- **Mechanism**
- **Safety**
- **Plausibility**

### Non-randomized studies / Small RCT’s
- **Building a case for the use of a botanical medicine requires triangulation of data that includes the historical record of use by large populations over hundreds or thousands of years.**

4.5 Expert Reviews
Expert reviews bring together these different kinds of data. No single review is without flaws.
However, these are invaluable resources for the medical student and practicing physician who needs to know more about specific herbs:
- European Scientific Cooperative on Phytotherapy (ESCoP)
- Cochrane Collaboration
- www.NaturalDatabase.com
- Authoritative textbooks: V Tyler, S Mills (see beginning of lecture notes).

5. SAFETY

5.1 Quality and purity

5.1.1. USA.
Medical evidence pyramid. Building a case for the use of a botanical medicine requires triangulation of data that includes the historical record of use by large populations over hundreds or thousands of years.

In the USA the supply of herbal products is currently regulated by the Dietary Supplement Health and Education Act 1994 (DSHEA), an amendment to the Federal Food, Drug and Cosmetic Act, which the FDA enforces. Herbal products are considered to be food supplements and are not regulated as prescription or over-the-counter drugs. Manufacturers are allowed to make claims for effects on the "structure and function of the body or on general wellbeing" as long as such claims can be substantiated and cannot be construed as "therapeutic claims" (i.e., treating symptoms or diseases). This regulatory policy raises many concerns over product quality and the safety of botanical medicines produced or sold in the United States. Without mandatory quality controls, there can be no guarantee of product content or purity, and contamination with xenobiotics (biologically active contaminants) does occur. Beware of discount products!

Manufacturers in the United States are held to the standard of Current Good Manufacturing Practices (CGMP) for foodstuffs, which are much less stringent than CGMP for pharmaceuticals. It should be noted that certain manufacturers voluntarily register with the FDA as pharmaceutical companies and comply with pharmaceutical CGMP. One example is PhytoPharmica/Enzymatic Therapy. However, there is no mandatory government inspection. In March 2003, the FDA proposed mandatory CGMPs for dietary supplements that would assure across-the-board product quality--STAY TUNED!

Dietary Supplement Verification Program (DSVP) is a new initiative of the United States Pharmacopoeia (USP). This is a new program of the USP, an independent, nongovernmental organization that has established standards for more than 3,400 prescription and over-the-counter (OTC) medicines which pharmaceutical manufacturers are required to meet.

In the meantime: check out ConsumerLab.com, which provides independent verification of dietary supplements: www.consumerlab.com.
5.1.2. European Union and Australia
Botanical medicines are regulated as pharmaceuticals in Europe and Australia. This means that federal law regulates and enforces pharmaceutical-grade quality and purity. German companies that distribute in the United States include MMS and Weleda. An example of an Australian company is MediHerb.

5.1.3 Asian Herbs (Chinese, Ayurvedic, Tibetan)
There is a particular concern about medicinal herbs grown in Asia, where there is widespread contamination of ground-water with lead and other heavy metals. Many Chinese herbal patent medicines have been found to be adulterated with pharmaceuticals such as antibiotics and steroids. Certain Asian herb companies do appear to maintain the strictest standards by controlling cultivation and providing external certificates of analysis by independent agencies.

5.2 Toxicity
- Toxicity data are available for hundreds of medicinal herbs. Hundreds of medicinal herbs have been established to be nontoxic when ingested at certain doses and intervals. By contrast, approximately one third of the herbs reviewed by the German Commission E are listed as “unapproved,” either because efficacy is not established or because of potential or documented toxicity. Highly toxic herbs, such as foxglove, were rarely used in traditional medicine.

- Legislation has been proposed to ban the sale of Ma Huang (pronounced mah hwahng) or mandate a warning label. Ma huang is the plant source of ephedra, an adrenaline-type compound. Historically, it has been used safely in Traditional Chinese Medicine formulas, where it is included in modest amounts and its pharmacology is balanced by other constituent herbs. However, there has been an explosion of ma huang containing weight loss
and stimulant products on the market, none of which are regulated by the FDA because they are classified as food supplements. This is an example of taking a traditional herbal medicine out of its historical context and exploiting its pharmacological properties.

Although products with ephedra make up less than one percent of dietary supplement sales, it has accounted for 64 percent of the serious side effects that have been reported to the Centers for Disease Control and Prevention in association with dietary supplements. These adverse reactions include: increase in heart rate, increase in blood pressure, heart rhythm problems, links to heart attack, stroke, sudden death, insomnia, nervousness, tremors, headache, seizures.

A useful discussion of this issue is available at: http://www.herbs.org/greenpapers/tdh-pres.html.

• Another well-known example of herb toxicity is the kidney failure produced by the herb *Aristolochia fangchi*. This was documented in multiple patients who inadvertently ingested aristolochia when it was substituted because of a manufacturing error for other, non-toxic herbs in certain Chinese herb formulas.

• Many medicinal herbs should be avoided during pregnancy. It is important to be very cautious when investigating the safety of an herbal medicine during pregnancy.

5.3 Natural–synthetic (herb–drug) interactions

5.3.1 Pharmacokinetic interactions

A botanical medicine may alter absorption, distribution, or elimination:

5.3.1.1 Drug absorption from the gut: tannins, mucilages, saponins, resins

5.3.1.2 Absorption from the gut: hot spices, sulfur-containing volatiles, bitter digestives

5.3.1.3 Elimination (anthraquinone laxatives)

5.3.1.4 Phase 1 hepatic metabolism via cytochrome P450 enzymes

• 14 enzyme families found in most tissue
• CYP3A4 is one example, metabolizing drugs with narrow therapeutic windows: carbamazepine, cyclosporin, digoxin, diazepam, fluoxetine, indinavir, nifedipine, quinidine, verapamil, warfarin
• St. John’s wort is an inducer of CYP3A4. Administration will decrease drug levels

5.3.2 Pharmacodynamic interactions

A botanical medicine may alter biological effects on target organs. Examples:

• Standardized extract of *Ginkgo biloba* has been demonstrated to reverse symptoms of dementia and may be an effective treatment for claudication (leg pain resulting from atherosclerosis). Its ingestion may increase the likelihood of hemorrhage in patients taking coumadin, an anticoagulant.

• Yohimbe, an herbal aphrodesiac, may produce a hypertensive crisis in patients taking cyclic antidepressants.

5.3.3 Favorable natural–synthetic interactions

• Milk thistle may afford protection from hepatotoxic effects of pharmaceuticals

• Ginger and bitters may mitigate chemotherapy side effects of nausea and constipation.
6.0 CLINICAL EXAMPLES

Case 1: You are catching a cold: Upper respiratory tract infection.

Echinacea

In this randomized trial of Echinacea for the common cold, doses tested were 25-50% those recommended by the German Commission E.

Eg: *E. angustifolia* dried root:
- Preventive: 1-3 g
- Chronic: 1-3 g
- Acute (3-5 days): 10-15 g

Andrographis

Steam Inhalation Treatments with Chamomile and Eucalyptus oil – an application of aromatherapy (use of essential oils).

**Chamomile**
- Preclinical: anti-inflammatory, antimicrobial, anti-spasmodic
- Clinical trial data: mucositis, colic

**Eucalyptus Oil**
- In vitro: antibacterial
- In vivo: antitussive
- Clinical: Single-blind study, n=234, better than steam for first hour

Case 2: You are feeling run down: chronic stress response.

Concept of adaptogens: botanical medicine that conserves adaptation energy—protects the system. Eleutherooccus (Siberian ginseng) is classic example.

Concept of tonic: Increases or releases reserves of adaptation energy. Panax ginseng is classic example.

Ashwaganha is considered to be a balanced adaptogen/tonic.
Case 3: Your tummy’s upset: irritable bowel syndrome (IBS).

Bitters (wormwood)

- Preclinical:
  Antimicrobial, gastric secretions, choleric, analgesic, antipyretic.
- ESCOP: Anorexia, dyspepsia.
- Apéritif (vermouth)
Carminatives (chamomile, fennel)

Ginger

Peppermint oil capsules (enteric coated)

Peppermint oil for irritable bowel syndrome: a critical review and metaanalysis
Pittler MH, Ernst E. Am J Gastroent 1998

- Eight trials reviewed
- Meta-analysis of 5 DB RCT’s
- 2 negative studies
- 3 positive studies
- Overall: Peppermint oil superior to placebo (p<0.001)
7. HOW TO LEARN MORE: NEXT STEPS

7.1 The best, first book to read is Tyler’s Herbs of Choice—see top of lecture notes.
7.2 The best textbook currently available is Principles and Practice of Phytotherapy by Simon Mills and Kerry Bone; Churchill Livingstone, 2000.
7.3 Another good reference is: The Complete German Commission E Monographs, published by the American Botanical Council.
7.4 Increasing numbers of medical education conferences on herbal medicine are being given. Columbia University College of Physicians and Surgeons offers a comprehensive and expensive 5-6 day medical education conference in botanical medicine each year.
7.6 Spend time at the Jefferson Center for Integrative Medicine—6215 Gibbon. A most popular medicinal among medical students.
7.7 Drink more herbal teas! There is no substitute for experiential learning. Start with the carminatives (chamomile, fennel) and digestives (ginger). Chamomile tea is also a good nightcap.

8. STUDY QUESTIONS

- Recognizing the fact that botanical medicines are not FDA regulated, how do you obtain high quality products in the United States?
- What steps can be taken by physicians and their patients to minimize the possibility of clinically significant herb-drug (natural-synthetic) interactions?
- In theory, at least, how does botanical medicine “complement” the prescription of conventional pharmaceuticals? Are there specific “gaps” that may be filled in by botanical medicines? (In answering this question, consider that allopathic physicians generally prescribe drugs that are anti-symptom. Also consider differences in potency and side-effect profiles between conventional pharmaceuticals and medicinal herbs.)

9. REFERENCES

4. Eldershaw TP, Colquhoun EQ, Bennett KL et al. Resiniferatoxin and piperine: capsaicin-like stimulators of oxygen
uptake in the perfused rat hindlimb. Life Sciences 1994; 65(5): 389–397


Kingly WS. A critical review of controlled clinical trials for peripheral neuropathic pain and complex regional pain syndromes. Pain 1997; 73(2): 123–139


Leng-Peschlov E. Sennoside-induced secretion is not caused by changes in mucosal permeability or Na+K+ATPase activity. Journal of Pharmacy and Pharmacology 1993; 45(11): 951–954


Giacchetti D, Taddei E, Taddei I. Pharmacological activity of essential oils on Oddi’s Sphincter. Planta Medica 1988; 393–392


Reiter M, Brandt W. Relaxant effects on tracheal and ileal smooth muscles of the guinea pig. Arzneimittel-Forschung 1985; 35(1A): 408–414


Moorehead LD. Contributions to the physiology of the stomach. XXVIII Further studies on the action of the bitter tonic on the secretion of gastric juice. Journal of Pharmacology and Experimental Therapeutics 1915; 7: 577–589


56 Blackburn JM, Johnson IT. The influence of guar gum on the movements of insulin, glucose and fluid in rat intestine during perfusion in vivo. Pfugers Archiv 1983; 397: 144-148


61 Milanov S, Maleeva E, Taskov M, Tribestan: Effect on the concentration of some hormones in the serum of healthy volunteers. MBI: Medico-biologiek Information 1985; 8: 27-29


71 Root-Bernstein RS. Tannic acid, semipermeable membranes and burn treatment. The Lancet 1982; 2:1168


ALTERNATIVE MEDICINE IMPLICATIONS FOR CLINICAL CARE
CASE STUDY: MY ACHING BACK

MODULE DESCRIPTION

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Integrative Medicine competencies addressed (see Section 2, list of competencies):
Knowledge 4, 8, 9, 10
Attitudes 1, 2
Skills 3, 5

Course Goals:
To gain knowledge of the basic theory and practice of alternative therapies commonly used in the United States.
To summarize the state of basic science knowledge and data from controlled trials related to the efficacy and mechanisms of action of alternative therapies.
To identify study design limitations and propose creative solutions.
To learn to discuss alternative therapy use with patients.

Objectives of Case Session:
(Objectives and Study Questions Attached)

Curriculum Component:
Elective

Primary Target audience:
M4 Students

Additional Learners:
Open to M1 – M3 students and PhD students

Duration:
Four hours, four times in one week
Learning Methods employed:
- Faculty presentations, CAM professional presentation
- Student presentations
- Case presentation and discussion
- Patient visit and CAM treatment demonstration

Faculty Resources:
Two to three medical school faculty members per group of eight to ten students.
A patient, a massage therapist, and a chiropractor meet with students as part of the case.

Course Session:
The fourth year elective, Alternative Medicine: Implications of Clinical Care, is a four-week course that addresses the integration of CAM into traditional medical practice and the ways in which beliefs, expectations, and conditioning predictably confound rigorous scientific inquiry and complicate patient-doctor communications. Learning activities include didactic sessions, student presentations, hands-on learning, and observation of demonstrations. Principles of epidemiology and interpretation of the clinical literature are presented and discussed. During the course, students are assigned individual reports of clinical trials that they summarize and present to other students. Approximately 60% of the course is devoted to didactic and discussions of cases involving patients who request or demand alternative therapies.

The sample case “My Aching Back” is presented and discussed in the first week of the course. Prior to case presentation, students are assigned a meta-analysis review paper on effectiveness of massage and chiropractic care in the treatment of lower back pain. During the first session, a chiropractor provides a short lecture on the history of chiropractic medicine. The course director provides a brief review of the common treatment of lower back pain from a traditional “Internal Medicine” perspective. Students receive an orientation to the case, a list of study questions to guide their approach to the case, and a list of assigned readings that provide supportive reference information. A set of the patient’s radiographs are available for review. On the second day of the case, the patient and his chiropractor visit the class. Students are able to interview the patient, collecting social and medical history. They observe as the chiropractor provides a treatment to the patient, and they ask questions of the provider. After the patient and the chiropractor leave, students and faculty discuss what they have seen and discovered.

On the third day a massage therapist demonstrates a variety of therapies used for back pain on each member of the class. The history of massage is presented along with the evidence for its use. During the final session of the case, students are guided by discussion questions as they work together to determine the risk/benefits of massage and chiropractic care. Students consider actions taken by the patient based on his beliefs and expectations, ethical considerations of continuing care that may be contraindicated, tolerance for continuation of palliative care versus seeking a definitive remedy for the pain, and choosing between therapeutic options when there is no conclusive evidence for just one.

Sample Discussion Questions (See also attached Objectives and Study Questions):
What aspects of chiropractic support the notion that it is a “nonconventional” medical technique? What aspects are “conventional”?
Based on published literature, what are potential adverse effects of chiropractic?
What evidence is there to support effectiveness, safety, and cost effectiveness?
What language would you use to discuss chiropractic with a patient who insists on a chiropractic referral for an acute injury?
Would you recommend chiropractic to one of your patients? Under what circumstances would you recommend it to a member of your family?

Suggested Reflection Questions:
What did you learn from this case? What surprised you?
What were the most important goals of the patient in seeking pain relief? How is that different from your beliefs on seeking pain relief?
In what ways do your beliefs affect your willingness to listen to a patient’s story?
In what ways will your approach to patients change after this experience?

Resource Materials:
Syllabus includes extensive required and recommended reading list and list of study questions (attached).

Evaluation Strategies (course):
Students are evaluated on their participation in case discussions. Other aspects of the course are also evaluated, including presentation of journal articles and a proposal for a clinical trial based on their examination of a group of cases.

Student Evaluations of Curriculum Session:
Students complete an evaluation of this case study and the course overall at the end of the course. Over the past ten years, student feedback has been very positive. Comments from students show that this approach to teaching, using direct observation and hands-on training, is very effective. Several of the students have turned the class project into a grant proposal for NIH funding.

Challenges to Presenting This Unit:
• Time intensive for providers and patients.
• Locating the right CAM therapists who respect the medical model and are able demonstrators.
• Teaching the basics of epidemiology and assessment of trial literature in just a few hours.
• Finding a time when students have as much as two hours per day outside of class to read the assigned readings.
CONTRIBUTED CURRICULUM MATERIALS

Course overview
Case study
Bibliography
COURSE OVERVIEW

Introduction
"Complementary, Alternative, Integrative" (a.k.a. "unorthodox," "nonconventional," "holistic") medicine refers to medical techniques not in conformity with the beliefs or standards of the conventional medical community and include: chiropractic, acupuncture, homeopathy, massage, herbal medicines, spiritual healing, and macrobiotic diets. The objectives of this course are:

1. to gain knowledge of the basic theory and practice of alternative therapies commonly used in the United States;
2. to summarize the state of basic science knowledge and data from controlled trials relating to the efficacy and mechanisms of action of alternative therapies;
3. to identify study design limitations and propose creative solutions;
4. to learn to discuss alternative therapy use with patients. Course format includes lectures, demonstrations, epidemiologic reviews, and discussions of cases involving patients who request or demand alternative therapies.

The course addresses the ways in which beliefs, expectations, and conditioning predictably confound rigorous scientific inquiry and complicate patient-doctor communications. Students are required to design a prospective randomized controlled trial to critically assess one or more alternative medical therapies.

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Case Author: David Eisenberg, M.D.

Case I: My Aching Back...

Part I

Mr. Frank Richards is a 46-year-old gentleman with a strong handshake and a salesman’s smile. He prefers to call you by your first name and asks that you call him Frank. Frank retired at 42, having successfully managed and owned four McDonald’s restaurants. He is currently investigating other business opportunities, but is troubled by intermittent, severe low back pain. His past medical history is significant for mild hypertension for which he initially tried nonpharmacologic therapy (i.e., salt restriction, aerobic exercise, and daily relaxation response techniques). Ultimately, nonpharmacologic interventions failed to adequately control his blood pressure and he resorted to pharmacotherapy. He currently uses enalapril 5 mg. PO q.d. and has a blood pressure of 120/80.

Frank’s back problems are not lifelong. Although he had one episode of back strain at age 16, he did not experience severe back discomfort until his early 40s. In the past year, he has had three discrete episodes of disabling back pain precipitated by strenuous exercise or yard work. Each episode has required bed rest and was self-limited (i.e., resolving within two or three weeks). Frank uses ice packs and nonsteroidal anti-inflammatory drugs for acute back pain. He insists he is now avoiding any heavy lifting; claims to swim two or three times a week and to take ibuprofen whenever his back “starts to act up.” Nonetheless, if Frank plays squash more than twice a week or lifts anything heavier than five pounds, he develops stiffness and moderate discomfort in his low back. He is quite concerned that he is going to precipitate a fourth incapacitating episode of low back pain.

While at his health club, Frank attended a lecture by a Boston-based chiropractor. Intrigued by the chiropractor’s approach, Frank would like to see this chiropractor for consultation and therapy. He asks you, his physician, what you think about chiropractic in his case.
Part II

Six months have passed. Frank returns for a routine blood pressure check. He informs you that he has continued to have intermittent low back pain. Without your knowledge, he referred himself to an orthopedic surgeon at a prestigious clinic. The orthopedist’s diagnosis was “lumbar spondylitis.” According to Frank, the surgeon recommended regular swimming exercises, physical therapy, and continued use of nonsteroidal anti-inflammatory medications. Frank received physical therapy for three months and gradually increased his swimming to three or four times per week. However, he has experienced little or no relief of his chronic back discomfort.

Frank tells you he next referred himself to a neurosurgeon. [Office reports from the neurosurgeon and a report of the CT of the patient’s spine are included.] According to Frank, the neurosurgeon told him that his CT scan was negative and “there is nothing in your back to fix and not much we can do for you medically.” The surgeon recommended continued use of nonsteroidals, continued swimming and the addition of a back brace for additional support.

Frank reports that after conservative conventional therapy failed to bring him relief, he sought consultation of a local chiropractor. According to the chiropractor’s records, Frank’s initial diagnosis was:

"...right sacroiliac joint subluxation, L5 subluxation, neuritis and myofascitis ... joint fixation with a significant soft tissue component that would probably need additional therapy ... and various fixations (subluxations) of the thoracic and lumbar spine as well as right sacroiliac joints.”

The chiropractor’s initial treatment consisted of “diversified adjusting of T10 and L5 and the use of blocks.” In addition, the chiropractor prescribed “ultrasound/high volt trigger point therapy to the lumbar paraspinal muscles.” Frank initially received treatments from the chiropractor twice weekly and was given specific stretching exercises. In addition, the chiropractor referred Frank to a licensed massage therapist for “adjunctive neuromuscular therapy.” Frank tells you that after the first two weeks of chiropractic therapy, he felt great relief from his back stiffness and pain. Chiropractic treatments were then scheduled once per week. After an additional six weeks, Frank was able to perform all normal activities without significant discomfort. Since then, chiropractic treatments have been scheduled monthly. Frank tells you the combination of chiropractic and massage therapy has helped him enormously.

Part III

In addition to chiropractic treatments, Frank went to a licensed massage therapist for “adjunctive neuromuscular therapy.” The massage therapist’s initial assessment included the following:

"muscle spasm and hypertonitis of the sacral and lumbar regions, principally involving the piriiformis, rectus spinae, quadratus lumborum and psoas muscles."

Initial therapy consisted of 1) myofascial release, 2) deep muscle trigger point therapy, and 3) cross-fiber friction massage to the above mentioned muscle groups. Frank was also noted to have “secondary spasm involving muscle groups of the neck and shoulders.” These regions also received the above-mentioned therapies.

In addition to muscle spasm and hypertonitis, the massage therapist felt that the patient’s “energy meridians” in the area of his sacral and lumbar spine were significantly blocked. He therefore used gentle acupressure release at relevant points in an effort to improve the patient’s condition.
Treatments were initially scheduled once per week for the first two or three months (coincident with chiropractic therapy) and then less frequently for “maintenance.” Frank tells you that the massage therapist has “hands like radar.” He is convinced that this therapy has resulted in extraordinary relief and increased mobility. Frank demonstrates how limber he has become by placing both palms on the floor. He encourages you to meet his massage therapist so you can consider referring other patients to him.

CASE I: Office Notes from Neurosurgeon

3/9/--

Mr. Richards is a 47-year-old who has had intermittent episodes of low back pain for a number of years. He has had on one occasion pain radiating down the left leg to the heel. He is quite limited now in all activities and his condition has not been responsive to chiropractic or physical therapy.

On examination, he has an extremely rigid back that does not bend at all. He does have good lateral motion and rotational movements. Heel walking and toe walking are well performed. His deep tendon reflexes are symmetrical. Sensory examination is also normal. Thigh circumferences measure 42 centimeters on the right, 41 on the left. Calf circumference is 36 on the right, 35 on the left.

I have reviewed his x-rays, which show him to have a spondylolysis of L5. I suspect he has an L4-5 disc and have asked that he obtain a CT scan. I plan to see him again after that has been obtained.

3/29/--

Mr. Richards is seen in follow-up. I have reviewed his CT scan with him, which shows no evidence of disc. I have discussed the significance of the spondylolysis at L5. I have recommended a warn 'n form orthosis and have discussed a physical therapy program of lumbar muscle settings.

ACKNOWLEDGEMENT: Case bibliographies compiled by Ted Kaptchuk, OMD.; case materials prepared and edited by Debi Arcarese and Debbie Lane. Additional educational and editorial input provided by Mimi Wetzel, PhD and colleagues from the Office for Educational Development, Harvard Medical School.
OBJECTIVES AND STUDY QUESTIONS

I. Informational

1. Discuss the historical origins of chiropractic (see original writings) and the evolution of chiropractic as a profession in recent decades.

2. Define chiropractic; distinguish schools of chiropractic and list principal tenets of each. Interpret the phrase "innate intelligence" and discuss its relevance to chiropractic practice.

3. Distinguish chiropractic and chiropractors (DCs) from osteopathy and doctors of osteopathy (DOs).

4. Distinguish chiropractic from popular forms of bodywork, including: acupressure, Alexander technique, applied kinesiology, Feldenkrais, myotherapy, reflexology, rolfing, Swedish massage, shiatsu and therapeutic touch.

5. Describe the epidemiology of chiropractic use in the United States today. Comment on any known sociodemographic predictors of chiropractic use.

6. Summarize the current legal status regarding the accreditation, licensing, and reimbursement of chiropractic in the United States.

7. Propose a strategy to improve coordination and collaboration of chiropractors and medical doctors.

II. Reasoning

1. Identify aspects of chiropractic that support the notion that it is a "nonconventional" medical technique. Define the terms "cultist," and "quack," and discuss their relevance or lack thereof in this analysis.

2. Identify aspects of chiropractic that support the notion that it is a "conventional" medical technique.

3. Based on selected controlled trials and meta-analyses (see essential references), formulate an opinion as to whether chiropractic has been shown to be: a) effective, b) safe, c) cost effective.

4. What are the potential adverse effects of chiropractic (based on published literature)?

5. Is there scientific evidence to support the chiropractic hypothesis of spinal "subluxation" or "subluxation complex"?

6. Propose one or more clinical trials that would be helpful in clarifying the efficacy, safety, and/or efficiency of chiropractic intervention.

7. Predict the outcome of your proposed clinical trial(s) and hypothesize the response that various possible outcomes would elicit from: (a) the conventional medical community, (b) the chiropractic community, and (c) the general public.
III. **Experiential**

1. Observe and describe a typical chiropractic encounter. Comment on various basic chiropractic techniques and on what a patient can expect on initial follow-up visits.

IV. **Skills and Attitudes**

1. What are the prevailing attitudes of the conventional medical community towards chiropractic and vice versa?

2. What does the chiropractor’s diagnosis of L5 subluxation, myofascitis and neuritis mean to: a) the chiropractor, b) the patient, c) the patient’s MD? What does the massage therapist’s diagnosis of muscle spasm and hypertonis mean to each? What does the orthopedist’s diagnosis of spondylosis in the absence of disc herniation mean to each?

3. What language would you use to discuss chiropractic with a patient who *requests* a referral to a chiropractor as an adjunct to conventional medical therapy?

4. What language would you use to discuss chiropractic with a patient who *insists* on a chiropractic referral for an acute injury?

5. What language would you use with a patient who informs you he or she has been using chiropractic on an ongoing basis and now requests your written approval for continued chiropractic use?

6. Would you recommend chiropractic to one of your patients? Would you recommend it to a member of your family or a close friend? Under what circumstances? Would you document this in a patient’s medical record and, if so, how?

7. Give examples of patients for whom mental issues (i.e., problems of somatization, anxiety, depression) complicate the use of chiropractic as an adjunctive or principal therapy.

**Optional Objective**

1. For the above-mentioned questions replace the term "chiropractic" with "massage therapy" and discuss.
BIBLIOGRAPHY FOR CASE I: MY ACHING BACK

REQUIRED REFERENCES

A. Overview


Ernst E, Assendelft WJ. Chiropractic for low back pain. We don’t know whether it does more good than harm [editorial]. BMJ 1998;317(7152):160.


B. Patient Satisfaction Data

C. Scientific Evidence Issue

1. Meta-Analyses and Reviews


2. Controlled Clinical Trials of Spinal Manipulation

a) Sham Controlled Trials of Spinal Manipulation (with one including neck pain)


b) Equivalence Randomized Controlled Trials for Low Back Pain (with two including neck pain)


c) Pragmatic Randomized Controlled Trials for Low Back Pain


d) Outcome Study for Low Back Pain


e) Evidence for Manipulation for Other Conditions


D. Brief Selections from Original Writings on Chiropractic


E. Policy Discussion and Opinions

Getzendanner S. Permanent injunction order against AMA. *JAMA* 1988; 259:81-82.

F. Adverse Effects


G. Osteopathy


H. Massage/Bodwork Techniques

Note: Massage is a component of conventional biomedicine in such disciplines as psychiatry, rehabilitation therapy, orthopedics, nursing, and physical therapy. Massage used in these conventional disciplines is beyond the scope of this bibliography. The medical and scholarly literature on nonconventional massage/bodwork is limited, and this bibliography reflects this fact. Furthermore, some bibliographic references on the "laying-on-of-hands," Therapeutic Touch and other "energy" hands-on work are found in Case IV.


Churchill P. Practitioner handout: Fundamental Categories of Bodywork and Therapeutic Massage Methodology.

I. Suggested Readings


Palmer, DD. Textbook of the science, art and philosophy of chiropractic. Portland, Or: Portland Printing, 1910, 1966: 691 (on the innate and soul); 661-662 "Chiropractic:"


Directory of schools with programs accredited or approved by American Massage Therapists Association Commission on Massage Training Accreditation/Approval.

INTRODUCTION TO SPIRITUALITY IN HEALTHCARE

MODULE DESCRIPTION

Unit Contributed by:
Karen Lawson, MD, DABHM
   Director of Integrative Clinical Services
Barb Leonard, PhD, RN, FAAN
   Director of Graduate Studies
   Center for Spirituality and Healing, Academic Health Center
   University of Minnesota
   Minneapolis, MN

Integrative Medicine competencies addressed (see Section 2, list of competencies):
   Knowledge 1, 2, 3, 4, 6
   Attitudes 1, 2, 4
   Skills 2, 3

Goals and Objectives:
   Define spirituality.
   Discuss the relationship of spirituality to religion, culture, health and healing.
   Evaluate the importance of spiritual issues in a healthcare environment.
   Discuss the evidence base for the relevance of religion and spirituality in healthcare.
   Assess the role of the physician in addressing the spiritual needs of the patient.
   Evaluate two interviewing tools available for assessing spiritual needs.

Curriculum Component:
   Required

Primary Target audience:
   M1 students

Additional Learners:
   One portion of this unit (online module) applicable for all students, residents, and practicing physicians

Duration:
   1-hour lecture plus 1-hour small-group discussion session
   Unlimited time for review of Spirituality in Healthcare Online Educational Module

Learning Methods employed:
   • Large group lecture, PowerPoint slides
   • Small group discussion
   • Case review (in large group and small group session)
   • Optional Online Review Module that contains case presentations, video of patient interview and reflection questions
   • Patient interview

Faculty Resources:
1 medical faculty, course director
14-15 medical faculty as small group leaders (master tutors)

Description:
Students in the M1 year attend an overview presentation on Spirituality in Health Care as part of the series of topics that make up the required Physician in Society course. During the large group presentation, students review a case, consider definitions, and compare concepts of spirituality and religion in culture and their relationship to health and healing. Statistics on physicians’ and American’s beliefs on the impact of spiritual attitudes and empirical evidence from research studies are presented, as are barriers to discussing spiritual issues. Two spiritual assessment tools are specifically highlighted, as follows: Puchalski’s FICA model (Faith and Belief, Importance and Influence, Community, Address/Action) and Anandarajah’s HOPE model (Hope Sources, Organized Religion, Personal Spirituality and Practices, Effects on Medical Care and End-of-life issues).

The one-hour large-group presentation is followed by a one-hour small group session focused on this topic. The 10 individuals in each small group and assigned physician educator (master tutor) continue to meet together as a small group throughout the first year of medical school. Faculty leaders receive an extensive discussion guide (sample Master Tutor Guide included) to aid in facilitation of the supporting small group session.

Reinforcement for this introductory unit is provided in several ways throughout the curriculum. First, students are directed to the optional Online Educational Module on Spirituality in Healthcare that provides a menu of topics. Educational goals, key terms, stages of spiritual development, evidence base of spirituality in health care, cultural considerations, and information on referrals for spiritual and religious counseling are included. A case is highlighted and a video interview demonstrates a physician incorporating the spiritual interview. Reflection questions are incorporated into each component of the online module to further develop understanding of the topic and to aid the learner in identifying his or her own beliefs on this topic. Students also practice using the spiritual interview tool while interviewing seniors at nearby nursing homes.

In the future, students will practice spiritual interviewing skills during their Physician and Patient M1 year course, and an OSCE evaluation at the end of the M1 year will assess competency.

Discussion questions (see also Master Tutor Guide to small group discussion):
What kinds of information may help you understand a patient’s fears?
What are the resources used by patients when they are facing health challenges?
How do you define spirituality? How is it similar or different to religion?
What is the relationship between spirituality and religion? How do they both relate to culture, health, and healing?
To what extent is it the responsibility of the physician to assess a patient’s spiritual beliefs?
What are you missing if you do not assess a patient’s spirituality?
Who else in the medical center may be of help in assessing spiritual beliefs or religious practices?

Reflection questions (included):
What does spirituality mean to you?
In what way did the session change your idea of spirituality?
What is the healing response to supported spiritual beliefs?
How might awareness of your spiritual beliefs aid or hinder your relationship with a patient?
What are your views on the healing response to supported spiritual beliefs?

Additional Reflection Questions:
What will you do differently in patient interviews after learning about the spiritual interview?
Resource Material  (Samples, Web page provides reference list):

1. Books

2. Articles

Faculty Guide for Small Group Discussion:
Faculty receive a tutor guide that contains objectives for the session, background materials that include summaries of key concepts from assigned reading or a formal presentation, and orientation to the sequence and intended outcomes from the discussion. The guide includes an orientation to concurrent courses and student activities that may be sources of pressure, and strategies to guide students through the sequence of discussion questions and self-reflection.

Evaluation strategies:
   1. Medical School Administration Evaluation: The large-group and small-group sessions are evaluated as part of the Physician in Society course.
   2. A pre- and post-module survey is available to assess attitude and confidence levels. Questions include confidence in knowledge and skills, views on importance of the topic, interest in further training, intention to use, and extent that students feel the topic has reached “mainstream.” As the online module is not required, the survey is not yet being used for M-1 evaluation.

Plans for further evaluation include activities at the end of both the second and third medical school years.

Student evaluations:
Students may optionally evaluate the online Spirituality in Healthcare module, assessing the overall educational value, clarity, level of difficulty, perceived accuracy, level to which it was interesting, instructional strategies, and helpfulness of feedback.

Unique Implementation Challenges:
The greatest implementation challenge, as with anything new, is helping faculty become familiar with and use the web resources. Many faculty members are willing to have the web resources used as recommended, but not required resources.
CONTRIBUTED CURRICULUM MATERIALS

Description of Online Module
Sample pages from Web-based interactive module
Master Tutor Guide
Online instructional modules created by the Center for Spirituality and Healing

Spirituality in Healthcare

Included in this module:

- Definitions of spirituality and religion
- Evidence of the link between spirituality and health
- Discussion of the role spirituality plays in our lives
- Practical guidelines on how to conduct spiritual screenings
- Information on how to partner with chaplaincy and other spiritual leaders

Note: This module is designed for persons who are beginning their careers in healthcare or for those who are beginning to incorporate spirituality into their practices. This module is not intended for chaplains, clergy, or other experts in spiritual care.
Learning Objectives for the Spirituality module*

- Define spirituality
- Identify why it is important to consider spiritual issues in a healthcare environment
- Discuss the relationship of spirituality to religion, culture, health, and healing
- Discuss the role spirituality can play in an individual's life
- Discuss your own spirituality with regard to yourself, others, and the environment
- Identify three ways to maintain daily spiritual centeredness and awareness
- Discuss the scientific evidence base for the effects of spirituality
- Identify four goals for clinical care
- Identify respectful ways to interact with patients and families about their spiritual needs
- Discuss concerns about ethical and professional boundaries
- Conduct a spiritual screening of patients in different life transitions (birth, initial diagnosis, emergency, chronic condition, end of life)
- Partner effectively with chaplaincy and other spiritual providers, including knowing when and how to refer patients

*The learning objectives for this module support the following ACGME competencies for medical education: Patient Care, Interpersonal and Communication Skills, and Professionalism.

All of our online modules feature:

- Content relevant to healthcare professionals, written and reviewed by subject matter experts in Nursing, Pharmacy, and Medicine at the University of Minnesota
- An aesthetic, intuitive interface
- Interactive media including games, simulations, audio, and video
- A quiz that tests mastery of learning objectives
- Access to additional online resources and reference lists

This module was made possible by Grant Number NIH #R25AT00556 from the National Center for Complementary and Alternative Medicine (NCCAM).
Spirituality in Healthcare

by Barbara Leonard, Ph.D., R.N., F.A.A.N., and David Carlson, M.Div., S.T.M.

This module provides an introduction to spirituality in healthcare. It will take approximately three hours to complete.

In the overview, you will find:

- Definitions of spirituality and religion
- Evidence of the link between spirituality and health
- Discussion of the role spirituality plays in our lives
- Practical guidelines on how to conduct spiritual screenings
- Information on how to partner with chaplains and other spiritual leaders

This module is designed for persons who are beginning their careers in healthcare or for those who are beginning to incorporate spirituality into their practices. This module is not intended for chaplains, clergy, or other experts in spiritual care.
Spirituality in Healthcare

Role of Spirituality

Our Spiritual Needs
Howard Clinebell, Ph.D., outlines his perception of seven spiritual hungers that humans have in common, based on over 30 years of psychological counseling and pastoral care:

- Healing and empowerment of love
- Renewing times of transcendence
- Vital beliefs
- Values, priorities, and life commitments
- Inner wisdom, creativity and love of their unique transpersonal/spiritual self
- Awareness of our oneness
- Spiritual resources to help heal

[Clinebell, H. 1992]

Regardless of country or race, we have the same spiritual hungers.

Move your mouse over the words in blue for more information.

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Spirituality in Healthcare

Role of Spirituality

Your Own Spirituality
To understand the role spirituality can play, think about its impact in your own life. Here is an exercise to help you understand your own spirituality and its role.

Print out this assessment, then complete it. Fill in your responses quickly; come back to it tomorrow if words do not flow.

Click here to print the PDF version of this assessment.

Spiritual Self-Assessment

1. List six adjectives that describe me:
   1.
   2.
   3.
   4.
   5.
   6.

2. List five things I like about myself:
   1.
   2.
   3.
   4.
   5.

3. Write four things I do well:

Understand the role spirituality plays in your own life.

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Why Is Spirituality Important in Healthcare?

Did you know that:

- 77% of outpatients surveyed stated that physicians should address the patient’s spiritual needs as part of routine medical care (King, D., 1994).
- Nearly 90% of American adults believe that religion helps patients and families cope with illness (Buordan, R., 1996).
- Nearly 75% believe that praying for someone else can help them recover from illness or injury (Melchel, T., 1996).

Given the high prevalence of these beliefs, it is likely that many of your patients will see spirituality as central to their health and healing.

Have you encountered any situations where spirituality or religion played a large role in your own or a patient’s healing?

When you have reflected, move your mouse over the over the question (in blue above) for a discussion. When done, click the forward arrow to advance.
What is your definition of spirituality?

When you have reflected, move your mouse over the question (in blue above) for a discussion. When done, click the forward arrow to advance.

Other Definitions

Looking at a few other definitions may give you some ideas to refine your own definition.

- Murray and Zanter (1989) define spirituality as a quality that goes beyond religious affiliation, that strives for inspiration, reverence, awe, meaning, and purpose, even in those who do not believe in God. The spiritual dimension, they suggest, tries to be in harmony with the universe, strives for answers about the infinite, and comes into focus when the person faces emotional stress, physical illness, or death.
- Buchel (2000) contends that “Spirituality is that which allows a person to experience transcendent meaning in life, whatever beliefs and values give a person a sense of meaning and purpose in life.”
- Piotnikoff (2002) writes that “Spirituality is a journey toward, or experience of, connection with the source of ultimate meaning—whether with one’s self, with others, with nature and with a higher power.”
Distinctions

This illustration offers a simplistic, but possibly helpful way, to consider some of the distinctions between spirituality and religion. Note that these attributes are not exclusive to one or the other, but are more a matter of emphasis.

<table>
<thead>
<tr>
<th>Spirituality</th>
<th>Religion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Truth</td>
<td>Codified community answers</td>
</tr>
<tr>
<td>Non-institutional</td>
<td>Institutions (buildings and acknowledged leaders)</td>
</tr>
<tr>
<td>Internal accountability</td>
<td>External and internal accountability</td>
</tr>
<tr>
<td>Texts with personal meaning, including sacred</td>
<td>Sacred texts of that faith tradition</td>
</tr>
<tr>
<td>Individual discovers own truth</td>
<td>Individual learns the defined community truth</td>
</tr>
<tr>
<td>Driven by a search for the sacred</td>
<td>A fulfillment of social expectations or needs</td>
</tr>
</tbody>
</table>

How do you think spirituality and religion relate?

Drag each word to the place in the model where it fits for you. There are no right or wrong answers, this is just an exercise for your own discovery.
Body of Research Growing

Today, the body of research on health and health outcomes related to religion and spirituality is growing in volume and rigor. Matthews and Larson charted the way with their classic Annotated Bibliography of Clinical Research on Spiritual Subjects.

Most of the research is descriptive, such as Levin’s 20 plus years of epidemiological research on religion and health (Levin, 2001). However, in a critical review of 2700 published reports on spiritual healing, energy medicine, and mental intention effects, Jonas and Crawford demonstrate that an increasing amount of research is now experimental (although the majority of the research to date is still correlational) (Jonas and Crawford, 2003). Note that much of the research focuses on religion because of the difficulties of measuring spirituality. For example, the research reported by Koening focuses on religion “because most of the research that links spirituality and health has thus far operationalized spirituality in terms of religion (given the difficulty of measuring spirituality as a separate concept)” (Koeng, 2001).

The scientific evidence that follows is based largely on descriptive studies.
**Netscape: Spirituality in Healthcare**

**Spirituality in Healthcare**

**Explanation of HOPE**

Below is an explanation of the tool.

H: Sources of hope, meaning, comfort, strength, peace, love, and connection.

O: Organized religion

P: Personal spirituality and practices

E: Effects on medical care and end-of-life issues

Move your mouse over each letter for some sample questions.

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**Netscape: Spirituality in Healthcare**

**Spirituality in Healthcare**

**See if you understand the HOPE model a little already.**

Drag the X beside each question to the appropriate letter in the HOPE model.

**DEFINITION**

- Is there a clergy person that you would like me to contact?
- Where do you find meaning?
- Is there anything more, or different, that we can do for you?
- What spiritual practices do you find most helpful to you personally?

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PHYSICIAN AND SOCIETY MASTER TUTOR GUIDE
SESSION ON SPIRITUALITY

Overview of Session:
I. Self-assessment spirituality tool, and discussion
II. Discussion of Session topic questions
III. Discussion of Session case

Note to tutors: It would be tremendously helpful for each of you to have completed the self-guided learning resource module on Spirituality in Healthcare listed in on-line resources on the Center for Spirituality and Healing Website. It takes approximately three hours to complete in full, with quizzes, but could be skimmed in a shorter period of time. Having taken time to answer these questions for yourself, if you have not, will make the discussion much more powerful.

I. Self-assessment spirituality tool (10 min.)
The students should have taken both of the self-assessment tools included in syllabus materials (master tutors are suggested to fill them out as well).

Lead a brief discussion about any self-discovery that occurred. Did this process change their idea of spirituality?

Consider in the discussion how awareness of the students' own spirituality may help them be able to better respond to patients and their needs. Consider situations in which the student’s beliefs or practices may cause an initial conflict or challenge in meeting the patients where they are. Examples: an atheist physician interacting with a religiously devout patient, or a physician with a strong spiritual belief that is in conflict with a behavior or choice of a patient. Consider how reframing vocabulary can help ease discomfort. (Example: “Everyone in my church is praying for me” could be understood as “I have tremendous emotional support from my community.”) This may help physicians not be reactive when they are uncomfortable.

The tutors may wish to briefly discuss how an understanding of their own spirituality has impacted their own clinical practice and their ability to respond consciously to patients, regardless of their personal religious or spiritual orientation.

II. Discussion of session topic questions (30 min.)
You may wish to initiate this discussion with some example of the issue of spirituality as it has arisen with a patient you have cared for, either one where not knowing the spiritual or religious issues may have impeded optimal medical care, or one in which understanding a belief system may have helped guide your clinical decision-making process. The questions posed in the syllabus follow, with discussion points in italics.

1. How do you define spirituality? How is it similar or different to religion?

Acknowledge the broad spectrum of perspectives you expect to be included in such a group, and note the discomfort some individuals may be experiencing (ranging from the skepticism of atheists to the very structured mindset of the religiously devout to those who feel the entire topic is irrelevant to physicians.) Discussion about these emotional responses will allow everyone to speak honestly, without fear of censure. Relevance may be emphasized by noting that the AAMC, in its Learning Objectives for Medical School in 1998, specified that "physicians must seek to understand the meaning of their patients' stories in the context of the patients' beliefs and family and cultural values." There are a wide variety of definitions of spirituality, which may include the following concepts: sense of energy, vitality,
consciousness, essence, inspiration, reverence, meaning, purpose, harmony, transcendence, connection, infinite … .

A flip chart collection of input from the students will help lay out the broad range of ideas present.

One example of a working definition is:

AAMC definition: Spirituality is recognized as a factor that contributes to health in many persons. The concept is found in all cultures and societies. It is expressed in an individual’s search for ultimate meaning through participation in religion and/or belief in God, family, naturalism, rationalism, humanism, and the arts. All of these factors can influence how patients and health care professionals perceive health and illness and how they interact with another.

Compare and contrast both the definition and purpose of spirituality and religion, acknowledging the challenge of doing this in words. Some main points of commonality may include: a relationship with the transcendent, a set of beliefs around meaning and purpose, adherence to a set of ethical beliefs, and activities such as prayer, meditation, reading sacred writings, celebratory singing and dancing, and retreat. Religion serves the function of nurturing communal, as well as individual spirituality, by prescribing a set ideology, ceremonial practices, proscriptions, and participation in community. In contrast, spirituality can be fiercely individual, and is a universal dimension of human experience even in those who have no belief in a higher power. Spirituality is an experience of meaning and purpose, which may be supported or thwarted by a particular religious community. Indeed, high tension may exist between these two closely related entities.

2. Should I apply research findings in spirituality and religion to my clinical practice, and if so, how?

The research as it was reviewed in a large group is equivocal and focuses mostly on religious behaviors and practices, versus issues of deeper spirituality. It is unlikely that individuals would feel comfortable prescribing a change in religious beliefs or practices (any more than they would suggest that patients get married to lower their mortality risk). However, following the research as it evolves, and using it to support or reinforce healthy, positive behaviors in patients, may serve a therapeutic purpose. At the very least, knowing what issues may be present because of a patient’s religious or spiritual beliefs can serve a very practical role in facilitating optimal patient care and understanding underlying motivations and barriers to treatment.

3. What is the physician’s job, if any, in addressing either the religious issues or spiritual needs of patients? Is the physician responsible for doing this job?

Encourage the students to explore the pros and cons of addressing these issues as a physician (Cons may include time limitations, personal bias, disbelief in importance/relevance in treatment, discomfort or unfamiliarity with subject area, lack of support team to make referrals or unwillingness to go through a referral process.) (Pros may include a deeper understanding of patients’ perspectives and motivations, ability to work within patients’ belief systems when making treatment recommendations, optimization of patients’ larger religious or spiritual support system, possible increase of meaning in one’s own work in a service profession.)

There are other members of the care team who may be well-placed in a given scenario, or more inclined to do this job. In the in-patient setting, there is an intake done by nursing that may gather this information. Sometimes, pastoral care may become involved through requests of the family or nursing staff. However, it behooves the physician to be aware of whether appropriate assessments have been done and what the assessment revealed. In some settings, the physician may be the only person available to be seeking this information. Time invested up front may facilitate clinical care over time.
3. What scenarios are most demanding of spiritual support and or understanding of religious orientation?

Discuss clinical scenarios when these issues may be most obviously critical to adequate and compassionate clinical care (e.g., end-of-life issues; life-threatening diagnoses; major trauma or loss, such as the death of a child; situations involving transplant, artificial life-support, or organ donation) Have the students discuss what the value may be of obtaining this information at nonurgent primary care visits, laying the groundwork for a long-term clinical relationship. Drawing from any personal experiences of the group members would be most powerful, if they are willing to share. Drawing from the tutor's own clinical experience would also be instructive here.

III. Discussion of Session Case (10 min.)
The case: 55-year old divorced man with an extensive family history for coronary artery disease (CAD) is in the coronary care unit (CCU) recovering from a cardiopulmonary arrest caused by a severe, initial acute myocardial infarction (MI). He had been a high-powered executive, with a stereotypical type A personality. Now, he is depressed, minimally conversant, and uninterested in his treatment plan. He is unwilling to speak with a psychologist, and seems to have few visitors or support persons.

Several possible spiritual/religious scenarios are as follows. Depression is clearly associated with higher morbidity and mortality in the post-MI group, and clinically needs to be addressed. Give each scenario to the group and discuss how understanding the specifics for this patient would alter treatment and hopefully improve outcome.

A. He is a man who was raised Catholic but is not actively practicing his religion. He left the church in anger when his first marriage failed and has not pursued any religious affiliation since that time. He, however, still holds deeply ingrained beliefs about a punitive God and purgatory as a destination for those who have fallen away from the church. He is afraid of death, but not trusting enough to speak to clergy.

Because he has issues of fear and anger that stem from religious beliefs, he is probably correct in assuming that a conventional psychological approach to depression may not work with this problem. Because of his anger at the Catholic church, Catholic clergy would likely be rejected, but a non-denominational chaplain, with familiarity with Catholic beliefs, may be able to be of great help to him. A referral to the hospital chaplain, after getting the patient’s permission, could be of great benefit.

B. He is a very spiritual man who has always trusted that if he led a good life, ate well, exercised, didn’t smoke, meditated, had positive relationships with others, and followed your purpose in life, he would achieve a longer and healthier life than his father and grandfather did. He is sad and disappointed and is seeking deeper meaning for this traumatic event in his life, but he doesn’t belong to an organized church or religion and is unfamiliar with hospital clergy. Because his beliefs fall outside of accepted religious structure, he does not know whom to ask for help.

He is suffering from a challenge to a deeply held belief system and is grieving that loss. Because he does not have comfort from an organized church, he may be at a loss as to whom to discuss these issues with. Beginning a conversation just with his physician may provide him some support. Involving a psychologist with a transpersonal or spiritual orientation, or a spiritual director or a chaplain who is understanding of the circumstances may be acceptable to the patient, after a reassuring discussion with the physician.

C. He is a man who is deeply spiritual and religious but has felt alienated from his church since his divorce. No one from the church knows he’s here. He is uncomfortable in reaching out to that community himself.
He may be very willing to allow a referral to be called to his community church by the physician or nurse, whereas he may be too prideful to do it himself. The reinstitution of a community support system and reaffirmation of his religious practice would likely be strongly supportive of a better outcome after discharge.
**LECTURE/DISCUSSION IN REQUIRED THIRD-YEAR CLERKSHIP:**

**DEMONSTRATING THE INTEGRATIVE APPROACH TO ASTHMA**

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**MODULE DESCRIPTION**

**Unit Contributed by**
Benjamin Kligler, MD
Co-Director, Beth Israel Fellowship Program in Integrative Medicine
Albert Einstein College of Medicine (AECOM)
Bronx, NY

**Integrative Medicine competencies addressed:** (see Section 2, list of competencies)
- Knowledge 8
- Attitudes 4
- Skills 2, 5

**Goals:**
To apply the process of integrative assessment and treatment planning with a patient with asthma

**Objectives:**
- To describe how the integrative assessment differs from the conventional assessment process.
- To examine the evidence for the application of nutritional medicine, herbal medicine, and mind-body approaches to the treatment of asthma.
- To develop an integrative treatment plan.
- To describe the challenges in developing research to adequately examine the integrative approach as it is applied in clinical practice.

**Curriculum component:**
Required, core lecture in the Family Medicine clerkship

**Primary Target audience**
M3 students

**Additional Learners**
Residents

**Duration**
One hour, repeated once monthly throughout academic year per group of 8 medical students

**Learning Methods employed:**
- Case-based presentation
- Lecture, PowerPoint
- Small group discussion
Faculty resources
1 medical school faculty for 8 students

Description:
This case-based presentation is presented as one session within the context of a series of primary care topics required for students in the third-year clerkship in Family Medicine. The purpose of this session is to illustrate the application of an integrative assessment and treatment approach to a specific patient condition, in this case, childhood asthma. The assessment expands on conventional assessment by including more in-depth discussion of nutritional factors, psychosocial-emotional factors, and environmental influences. The integrative treatment approach incorporates where appropriate, techniques and strategies from various healing arts to the treatment plan.

The presenter initially shares information with the group about how the treatment of a child with asthma can be enhanced by the application of an integrative assessment and treatment approach. Students participate in developing assessment questions through critical reflection and group discussion regarding a host of dimensions of a child’s life not typically considered by conventional medicine that might bear on his or her asthma. The presenter provides additional information to guide and expand the range of the group’s thinking process in regard to assessment and potential applications of healing approaches outside of conventional medicine. Evidence from the medical literature on the safety and efficacy of each potential intervention is presented and discussed, along with cost and practicality of each potential intervention. The group works together to develop a reasonable treatment plan taking these issues and the issues of access to CAM therapies in the patient’s community into account. The presenter concludes the session with a description and rationale for the interventions that were actually used and a discussion of the outcome of the case.

While this case-based session describes a patient with asthma, the process of developing assessment and treatment options within the context of available evidence can easily be applied to any condition. The application of this "modified" evidence-based approach has been very effective in demonstrating to third year students the range of treatment options offered in integrative medicine.

Discussion questions:
- How does the integrative assessment differ from a conventional assessment?
- What treatment options might arise from a consideration of this broader assessment process?
- What evidence exists to support these treatment options?
- Of all these options, which ones would you suggest and why?
- What are the challenges to meaningful research in clinical applications of integrative medicine? What research strategies might be used to overcome these obstacles?

Suggested Reflection questions:
- Which of your own health issues or those of family members may be affected by nutritional, psychoemotional, or environmental factors not addressed in the conventional medical assessment?
- What are the obstacles you imagine to implementing this broader approach?
- What do you imagine a patient’s response might be when presented with unconventional treatment options? How would you feel as the physician offering these options? What do you think would make you feel comfortable offering these options?
- Is offering the option the same as recommending the option?
- What types of evidence make you feel comfortable recommending an intervention? Does this vary depending on the patient’s presenting condition?
- How does your belief system affect your decisions for particular recommendations?

Suggested Resources:
1. Lecture notes, attached

Evaluation Strategies
Lectures in this series are formally evaluated by the Department of Family Medicine as part of their ongoing evaluation of the clerkship experience. Students complete a standardized form used for teaching experiences throughout AECOM and rate the session on a five-point scale for relevance, presentation, presenter knowledge, and organization.

Student evaluations
Students must complete an exam at the end of the clerkship; material covered in this lecture is included on that exam.

Implementation challenges:
Faculty time/availability
CONTRIBUTED CURRICULUM MATERIALS

PowerPoint presentation
Lecture Notes
ASTHMA: AN INTEGRATIVE APPROACH

Benjamin Kligler, M.D., M.P.H.
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AECOM Department of Family Medicine

OBJECTIVES

- present a brief overview in case format of an integrative approach to treating asthma
- review nutritional approaches, including use of magnesium, vitamin C, and fish oils in treatment and prevention of asthma
- review herbal therapies for asthma,
- discuss mind-body strategies for asthma
**ASTHMA: CASE STUDY**

- I.C. is a three year old boy with asthma. He has been hospitalized twice to date at the time of your first visit and has had four courses of oral steroids over the previous year. He is stable at this time on inhaled albuterol and cromolyn; he did not tolerate an inhaled steroid due to cough. His mother comes for advice on how to reduce his need for steroids over the coming winter.

**ASTHMA: CASE STUDY**

- There are no pets, rodents or smokers in the home, no carpets or drapes. No clear trigger is apparent other than U.R.I. I.C. is otherwise normal in his growth and development although has always been 15-20th percentile in height which is of some concern to his mother.

- **WHAT QUESTIONS SHOULD WE ASK?**
THE INTEGRATIVE ASSESSMENT

- FOOD RELATIONSHIPS/DIET HISTORY
- ENVIRONMENTAL FACTORS
- FAMILY HISTORY
- RELATED MEDICAL CONDITIONS
- PSYCHOLOGICAL FACTORS
- OTHER MEDICATION/HERBALS
- WHEN DID ASTHMA START?
- WHAT DO PARENTS THINK ABOUT IT?

Integrative Approach: Research Challenges

- In conventional pharmacotherapy, one drug is considered at a time, and combinations second
- In integrative medicine, single interventions are rarely effective and we really on complex combination regimens
- This poses a dilemma in research methodology
DIET HISTORY

I.C.'s mother reports that he eats a reasonably varied diet but with an emphasis on pasta, bread, and dairy products especially yogurt and cheddar cheese. His vegetable and fruit consumption is adequate; he does not consume large quantities of highly processed foods.

NUTRITIONAL MEDICINE: DIETARY MANIPULATION

- Ogle and Bullock 1980: Elimination diet for asthma and rhinitis in children
- 322 subjects
- 6 weeks on hypoallergenic diet followed by food challenge
- 91% improved during trial
- 51% had recurrence of symptoms on food challenge
NUTRITIONAL MEDICINE: DIETARY MANIPULATION (cont.)

- Ogle and Bullock, cont.
- Most common foods in producing allergy symptoms were milk, eggs, chocolate, soy, legumes, oats, corn, rice, citrus
- skin testing for allergens did not correlate with clinical symptoms in these infants

Nutritional Approaches: Supplements--Fish oil

- Cochrane Collaborative review shows no clear consensus regarding efficacy of fish oil supplementation as a solitary intervention for asthma
- most promising studies are in children, with a combination of dietary manipulation and omega three EFA supplementation
Nutritional Approaches: Supplements--Antioxidants

- Role of “oxidative stress” in chronic inflammatory state of the asthmatic
- Theory holds that chronic inflammatory state in asthma with increased cytokine levels leads to free radical oxidative damage to tissues and perpetuates the vicious cycle of inflammation and edema in the airways

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Nutritional Approaches: Supplements--Antioxidants

- Vitamin C, selenium, lycopene and various other anti-oxidant supplements have been examined in treatment of asthma
- Vitamin C appears to be moderately effective
- Lycopene appears to be moderately effective
- Evidence on selenium equivocal
PSYCHOEMOTIONAL ISSUES

I.C.’s mother reports that she and his father are going through a divorce. Due to some complicated custody negotiations and the hostility between the parents, I.C. has not seen his father, with whom his mother admits he is quite close, for the past 8 weeks.

MIND/BODY MEDICINE

IMPROVEMENT IN ASTHMA SYMPTOMS AND MEDICATION USE FOR A SIX MONTH PERIOD FOLLOWING A WRITING EXERCISE: JAMA 1998

WHAT IS THE ROLE OF UNRESOLVED GRIEF/PSYCHOLOGICAL TRAUMA IN THE PATHOGENESIS AND EXACERBATION OF ASTHMA? COULD MIND-BODY APPROACHES BE EFFECTIVE IN MODULATING THE INFLAMMATORY MEDIATORS OF ASTHMA?
Nutritional Approaches: Supplements--Fish oil

- Supplementation with fish oils and other omega-3 EFA supplements has been examined in treatment and prevention of asthma, both as a solitary intervention and in the context of dietary manipulation.
- Hypothesized mechanism of action is a shift in the arachidonic acid cascade away from the pro-inflammatory (5-series) leukotrienes.
LECTURE NOTES: INTEGRATIVE APPROACH TO ASTHMA

The integrative approach to asthma typically combines a number of different treatment strategies. A unifying principle in this approach is the view of asthma as an inflammatory condition—a view that has come to be shared by conventional medicine, as first-line treatment options have shifted toward use of anti-inflammatory agents such as steroids and leukotriene antagonists. The integrative approach utilizes “anti-inflammatory” strategies from the realms of nutrition, herbal medicine, and mind-body medicine as the cornerstones of asthma treatment.1,2 This approach is complemented by a more in-depth environmental assessment, including the role of the family and the psychospiritual state of the patient in this overview.

One concept that informs the integrative approach to problems of respiration, regardless of the specific disease, is the notion from East Asian medicine that the lungs are the seat of the emotion of grief. Thus the integrative approach to many pulmonary disorders incorporates an examination of unresolved grief in the patient’s life and the possible impact of that on their health. One of the many studies from the Western literature that may reflect this convergence of thinking is the work by Smyth et al on using writing as a therapy for asthma and rheumatoid arthritis, described above. In this study, patients with one or the other of these conditions were asked to write for an hour on three successive days about their most painful past experience. Controls wrote about a nontraumatic memory or life event. Treatment and control groups were similar in all important respects. The authors found that the treatment group participants in both disease categories had a reduction in medication use and symptom scores that lasted through the six-month follow-up period. Further research is needed both to replicate this finding and to determine through what intracellular mediators such an effect might be created; the potential relevance for the integrative approach to pulmonary disease, and possibly to inflammatory disease in general, however, is clear.

Nutritional approaches

Nutritional treatment of asthma runs along two parallel tracks. First is the notion that certain foods may be triggers of airway inflammation through a process of food allergy or sensitivity. Second is the notion that deficiencies of certain nutrients, such as omega-3 essential fatty acids (EFAs), certain antioxidants, and magnesium, may play an important role.

Conventionally food allergy has been defined as response to certain food antigens on skin testing or on RAST blood testing. Some cases of asthma certainly manifest as a result of this type of allergy, and once the offending food is identified, symptoms are usually greatly improved by avoidance of this food. More controversial is the role of food “sensitivity” in asthma, a response that is believed to be triggered by exposure of the gut-associated lymphoid tissue (GALT) to certain food antigens and then mediated by inflammatory cytokines, interleukin, and tumor necrosis factor (TNF). This type of sensitivity does not manifest on conventional allergy testing and can be difficult to diagnose other than through a process of food elimination with concomitant symptom monitoring. A number of studies have examined the use of elimination diet in both children and adults with asthma with mixed results.3,4,5,6,7 Some authors feel that the role of food sensitivities has been overstated and that most reported sensitivities do not stand up to the “gold-standard” test of randomized double-blind food challenge.8 However, in clinical practice elimination diet remains a useful tool in the treatment of asthma. Common causes of food sensitivity in children include dairy foods, eggs, citrus, peanuts, soy, wheat, and chocolate.9

A subgroup of patients can have their asthma triggered by exposure to some of the common food additives, including tartrazine, sulfites, and certain food dyes.10,11,12,13 This possibility can be addressed with an intervention that is simpler than an elimination trial, especially in children: a trial of a “whole food,” additive-free diet with symptom monitoring. Low-salt diet has also been shown to reduce symptoms in certain patients.11,12

Two other potential nutritional interventions bear mention here. The first is that weight loss programs have been shown to have an important role in asthma treatment for those with

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accompanying obesity: a Finnish group found that a 14.5% weight loss in obese subjects led to significant improvements in FEV₁ and FVC, and to reductions in medication use, frequency of exacerbation, and subjective experience of dyspnea. This benefit persisted over a year of follow-up. The second is that evidence from meta-analysis involving more than 8000 subjects clearly shows that breastfeeding during the first three months of life significantly reduces the likelihood of developing asthma by 30-50%. This effect is most pronounced in children with a family history of atopy. The mechanism for this protective effect is not known.

The nutritional supplements that have been looked at most rigorously for a role in the treatment of asthma are magnesium, antioxidants such as vitamin C, lycopene, and selenium, and fish oils. Magnesium supplementation, particularly intravenously, has been found to be helpful in the treatment of acute asthma exacerbation, reducing in several studies the likelihood of admission when used in the emergency room. It does not appear to have a role as an oral supplement in acute exacerbation or in either form for the management of chronic asthma. The proposed mechanism for its effect in acute asthma is a short-term but potent relaxation of the bronchial smooth muscle; animal models do support this as a potential mechanism.

Antioxidants, including vitamin C, selenium, and lycopene, have been examined for a role in asthma treatment based on the notion that the recurrent and/or chronic state of inflammation in the airways creates a higher level of oxidative stress for the bronchial cells, thus leading in turn to a vicious cycle of ongoing release of inflammatory mediators, increased edema in the bronchial wall, and increased asthma symptoms. The conclusion regarding vitamin C is that it does have a modest effect in protecting the airways from hyper-responsiveness to provocative stimuli. Vitamin C may also have a role in antagonizing prostaglandin-induced bronchoconstriction. Population studies have also confirmed that adults with the lowest serum levels of vitamin C have the highest risk of bronchial reactivity. Long-term benefit of vitamin C therapy in reducing asthma symptoms has not been demonstrated to date. The question remains also as to whether supplementation with vitamin C will confer the same benefit in terms of decreased airway sensitivity that has been suggested by epidemiological studies of a high vitamin C diet. Of the other antioxidants, lycopene appears to be the most promising, with one study demonstrating a significant protection from exercise-induced asthma symptoms with a daily dose of 30 mg of lycopene. Selenium supplements may also have a role in reducing bronchial hypersensitivity.

The final category of supplements that have been looked at extensively for treatment of asthma are the omega-3 polyunsaturated essential fatty acids, such as fish oils. These compounds have an important role in the treatment of certain inflammatory disorders, as they modulate the arachidonic acid cascade in the direction of the anti-inflammatory 5-series leukotrienes. As such, it was anticipated that fish oils would have an important role to play in the treatment of asthma. For unclear reasons, though, the literature, including a recent Cochrane Collaborative analysis on this question, does not demonstrate any significant improvement in asthma patients using the omega-3 EFAs. The one scenario in which EFA supplementation may hold promise is in children if used in combination with dietary manipulation. In addition, the possibility remains that EFA supplementation could be effective as one component of an integrative approach, but not alone.

**Mind–body approaches**

A wide range of mind–body approaches have been studied for their application in asthma, including biofeedback, cognitive-behavioral therapy, relaxation training, yoga, and numerous others. Conventional psychotherapy, and particularly family therapy addressing such issues as the sick role and the effect of family stress on health, has shown some benefit particularly in children with asthma. As mentioned above, Smyth et al examined the potential role of using writing to release unresolved trauma or grief, with substantial benefit to their subjects.

Yoga training, in which patients are typically taught a breath-slowing exercise, has been shown in at least two studies to have a positive impact on medication use, frequency of attacks, and peak flow rates. Aside from yoga, a number of other breathing techniques have been used to slow breathing on the theory that the hyperventilation and hypocapnia which normally accompany airway narrowing contribute to the vicious cycle of asthma exacerbation. These techniques, such as the Butyko and Hale methods, teach a slower breathing strategy, which is believed by their proponents to eliminate this trigger for bronchoconstriction by producing hypercapnia, potentially reversing the
asthma attack. The Buteyko breathing approach, as taught via video, has shown promise in at least one study, which found decreased medication use and improved quality of life in those practicing the technique, although without objective change in pulmonary function. The use of breathing techniques in the treatment of asthma requires further study before any definitive conclusions can be drawn regarding their utility.

Biofeedback has been proposed as a strategy for reducing asthma symptoms, particularly in patients in whom stress has been identified as a trigger. One study that used EMG biofeedback to teach relaxation of the facial muscles demonstrated both short- and long-term (eight months) improvement in FEV1/FVC in a group of asthmatic children as well as a reduction in anxiety and an improvement in their attitudes toward their asthma. The authors propose that this benefit is mediated by a reflex link connecting trigeminal function with vagal function, thus leading to bronchodilatation.

Hypnotic suggestion has been shown to be effective in at least one study in reducing airway hyper-responsiveness and in attenuating the exercise-induced bronchoconstriction experienced by patients with exercise-induced asthma (EIA). Ewer and Stewart showed in a prospective randomized trial that a six-week course of hypnotherapy produced a 75% reduction in response to methacholine challenge, as well as improvements in symptom score and reduced medication use. This benefit, though, was confined to those subjects who scored high on susceptibility to hypnosis; subjects who scored low in this regard did not experience a significant benefit from the intervention. Hypnotherapy is felt by some to be most effective in childhood asthma, perhaps because of children’s tendency toward susceptibility to suggestion.

**Manipulative Approaches**

Many clinicians feel that there may be a structural problem in asthmatic patients that can be addressed at least in part by chiropractic or osteopathic manipulation. There are very few studies of manipulative approaches for asthma in the medical literature; the 1998 trial in *New England Journal of Medicine* that looked at chiropractic as an adjunctive treatment for children with asthma failed to find a significant benefit. A second trial, which compared active with sham chiropractic in adults in a crossover design, also found no significant effect of manipulation on pulmonary function measures, medication use, or symptom scores. Osteopathic techniques such as lymphatic pump, which is commonly used in treatment of asthma, have also not been examined in well-controlled trials.

The evidence in the literature to date does not support a role for manipulation in the treatment of asthma. Given the clinical experience of benefit in some cases, though, it may be that this approach is useful in certain subgroups where there is a musculoskeletal component and that research needs to focus on how to identify this subgroup for referral for manipulation.

The single published study of massage therapy in children with asthma, in which parents were taught massage therapy and then practiced it with their children for 20 minutes before bedtime, did find a significant reduction in anxiety levels and cortisol levels, as well as an improvement in peak flow. This effect was more pronounced in the four- to eight-year old group than in the nine- to 14-year old group.

**Environmental strategies**

The conventional assessment of asthma has typically included environmental evaluation for triggers: pets, smokers at home, wall-to-wall carpets, cockroaches, etc. The integrative assessment takes this one step further to include the potential role of solvents, molds, and chemical sensitivities in asthma. A common approach—though one not conclusively substantiated by data to date—is the use of HEPA air filtration and ion generators in treating the home environment. The single published trial of this approach did show a decrease in rhinitis and asthma symptoms with the use of HEPA filtration in the home.

Homeopathic treatment has been explored as a strategy for the patient with environmental asthma triggers using a technique called isopathy, or homeopathic immunotherapy. Reilly et al demonstrated the efficacy of this technique—in which patients are treated with homeopathic dilutions of the environmental trigger—in a large trial of treatment for allergic rhinitis. These results have been reproduced, and a recent review comprising a total of 350 treated patients confirmed this efficacy. Proponents have suggested that a similar approach should be effective in asthma that is environmental in origin.
**Botanical medicines**

The botanicals most extensively studied for asthma to date are *Tylophora indica* and *Coleus forskohlii*, both Ayurvedic medicines used in asthma. *Tylophora*, in particular, has shown promise, with at least three randomized double-blind trials demonstrating a decrease in symptoms in the treatment group.\(^{50,51,52}\) However this herb frequently causes vomiting, limiting its use; neither *Tylophora* nor *Coleus* is currently widely available in the United States. A third Ayurvedic herb—*Boswellia serrata*—has been shown in one randomized trial to reduce asthma symptoms and frequency of attacks in 70% of treatment subjects, compared with similar improvement in 27% of controls.\(^{53}\) The treatment group also demonstrated significant improvement in pulmonary function testing when compared with placebo. This herb contains boswellic acids, which have been shown to inhibit leukotriene synthesis, and is purported to work via this mechanism. This study was only six weeks in duration, and longer-term studies are needed of this potentially promising herbal treatment.

A number of herbs from the Chinese pharmacopeia may also have a role in asthma, including Ma Huang (the source of ephedrine), ginkgo, and licorice. Ma Huang is a fairly potent bronchodilator; however, its adrenergic agonist effects are not specific, and in large doses it can cause significant blood pressure elevation and potentially dangerous arrhythmias. A number of deaths have been reported from Ma Huang, though it should be noted that in most of these the herb was being used at far above the therapeutic level typically used in Chinese herbal formulae, and also without any appropriate medical supervision.\(^{54}\) Licorice, which should be used with caution in anyone with elevated blood pressure because of an aldosterone-like effect, is felt by some to potentiate the effect of endogenous cortisol, thus acting as an anti-inflammatory agent in some cases.\(^{55}\) Gingko extract, which has been shown in animal studies to inhibit PAF-induced bronchoconstriction, has been studied in one small trial (eight subjects), which showed a decrease in bronchoconstriction and hyperreactivity in response to allergen challenge. Saiboku-Tu, a Japanese herbal formula containing licorice and nine other herbs, has also shown promise in preliminary studies, particularly as a strategy to reduce steroid dosage in steroid-dependent asthmatics.\(^{56}\)

Many other herbs have been used in the treatment of asthma, including belladonna, lobelia, marijuana, sorrel, and others; however, to date none of these has been examined systematically for efficacy.\(^{57,58}\)

**Traditional systems: Acupuncture**

In a meta-analysis from 1991, Kleijne et al found that trials of acupuncture for asthma up to that time had failed to conclusively demonstrate any benefit. Most of the trials at that point were poorly controlled and thus did not have the power to demonstrate any effect.\(^{59}\) There have been at least two well-done trials that have shown a significant improvement in pulmonary function with acupuncture in the treatment of acute exacerbation;\(^{60,61}\) at least two others, though, failed to show such an effect.\(^{52}\) The data in the treatment of chronic asthma are even less compelling: when Tashkin et al expanded the treatment protocol they had found to be effective in acute exacerbation to an eight session treatment and compared it with sham acupuncture in a blinded crossover design, they found no significant impact on lung function, medication use, or symptom scores.\(^{62}\) Biernacki and Peake used a crossover double-blind design and similarly found no difference between real and sham acupuncture, although both showed a significant benefit over no treatment.\(^{63}\) There does appear to be a significant but nonspecific benefit to needling in terms of reported symptoms, though not in terms of pulmonary function. This benefit may stem from the nonspecific release of endorphins that has been documented to accompany acupuncture treatment, whether needles are placed in real or sham locations.

The methodological challenges of studying acupuncture using conventional research designs are addressed elsewhere in the chapter on East Asian Medicine. The Chinese literature on asthma treatment, which in general consists of uncontrolled studies, many of which use herbal treatments in combination with acupuncture, tends to show much more positive results.\(^{65}\) Although this may be a consequence of examiner expectations and unblinded design, it could also be that acupuncture alone—particularly the standardized point protocols used in the blinded studies—is not as effective as the traditional combination of herbal and acupuncture approaches.
References

ASTHMA: AN INTEGRATIVE APPROACH
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OBJECTIVES
Present a brief overview in case format of an integrative approach to treating asthma; review nutritional approaches, including use of magnesium, vitamin C, and fish oils in treatment and prevention of asthma; review herbal therapies for asthma; discuss mind-body strategies for asthma.

ASTHMA: CASE STUDY
I.C. is a three-year old boy with asthma. He has been hospitalized twice to date at the time of your first visit and has had four courses of oral steroids over the previous year. He is stable at this time on inhaled albuterol and cromolyn; he did not tolerate an inhaled steroid due to cough. His mother comes for advice on how to reduce his need for steroids over the coming winter.

ASTHMA: CASE STUDY
There are no pets, rodents, or smokers in the home, no carpets or drapes. No clear trigger is apparent other than U.R.I. I.C. is otherwise normal in his growth and development, although he has always been 15-20th percentile in height, which is of some concern to his mother.

WHAT QUESTIONS SHOULD WE ASK?
The integrative assessment
Food relationships/diet history
Environmental factors
Family history
Related medical conditions
Psychological factors
Other medication/herbals
When did asthma start?
What do parents think about it?

INTEGRATIVE APPROACH: RESEARCH CHALLENGES
In conventional pharmacotherapy, one drug is considered at a time, and combinations second; in integrative medicine, single interventions are rarely effective, and we on complex combination regimens. This poses a dilemma in research methodology.

DIET HISTORY
I.C.’s mother reports that he eats a reasonably varied diet but with an emphasis on pasta, bread, and dairy products, especially yogurt and cheddar cheese. His vegetable and fruit consumption is adequate; he does not consume large quantities of highly processed foods.

NUTRITIONAL MEDICINE: DIETARY MANIPULATION
• Ogle and Bullock 1980: Elimination diet for asthma and rhinitis in children
• 322 subjects
• 6 weeks on hypoallergenic diet followed by food challenge
• 91% improved during trial
• 51% had recurrence of symptoms on food challenge
• Most common foods in producing allergy symptoms were milk, eggs, chocolate, soy, legumes, oats, corn, rice, citrus
• Skin testing for allergens did not correlate with clinical symptoms in these infants
NUTRITIONAL APPROACHES: SUPPLEMENTS—FISH OIL
- Supplementation with fish oils and other omega-3 EFA supplements has been examined in treatment and prevention of asthma, both as a solitary intervention and in the context of dietary manipulation
- Hypothesized mechanism of action is a shift in the arachidonic acid cascade away from the pro-inflammatory (5-series) leukotrienes
- Cochrane Collaborative review shows no clear consensus regarding efficacy of fish oil supplementation as a solitary intervention for asthma
- Most promising studies are in children, with a combination of dietary manipulation and omega-3 EFA supplementation

NUTRITIONAL APPROACHES: SUPPLEMENTS—ANTIOXIDANTS
- Role of “oxidative stress” in chronic inflammatory state of the asthmatic
- Theory holds that chronic inflammatory state in asthma with increased cytokine levels leads to free radical oxidative damage to tissues and perpetuates the vicious cycle of inflammation and edema in the airways
- Vitamin C, selenium, lycopene, and various other antioxidant supplements have been examined in treatment of asthma
- Vitamin C appears to be moderately effective
- Lycopene appears to be moderately effective
- Evidence on selenium equivocal

PSYCHOEMOTIONAL ISSUES
I.C.’s mother reports that she and his father are going through a divorce. Due to some complicated custody negotiations and the hostility between the parents, I.C. has not seen his father, with whom his mother admits he is quite close, for the past eight weeks.

MIND/BODY MEDICINE
- Improvement in asthma symptoms and medication use for a six-month period following writing exercise: JAMA 1998
- What is the role of unresolved grief/psychological trauma in the pathogenesis and exacerbation of asthma? Could mind-body approaches be effective in modulating the inflammatory mediators of asthma?
MIND-BODY MEDICINE SKILLS

MODULE DESCRIPTION

Unit Contributed by:
Adi Haramati, PhD
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Integrative Medicine competencies addressed: (see Section 2, list of competencies)
Knowledge 3, 4, 8
Attitudes 1, 2, 4, 5
Skills 4

Goals and Objectives:
Increase self-awareness of emotional, physical, mental, social, and spiritual aspects in one’s own life
Increase personal self-care through guided experiences and daily practice
Practice methods of reducing personal stress and enhancing health and well-being using meditation, guided imagery, journal writing, autogenic training, and movement
Experience and practice nonjudgmental, supportive collegial relationships

Curriculum Component:
Elective

Primary Target Audience:
M1 and M2 students

Additional Learners:
Appropriate for M3 and M4 students, residents, graduate level students in health-related field, or seasoned health care professionals and physicians

Duration:
Two hours, once per week, for 11 weeks

Learning Methods:
• Small group discussion and processing
• Experiential and discovery model learning
• Reflection and contemplation
• Practice of mind-body techniques
• Didactic presentation
• Assigned weekly home practice of techniques and journal writing
• Recommended readings from provided course pack

Faculty Resources:
Two medical school faculty members per group of 10 students.
(Small-group faculty complete a professional training preparation course prior to serving as small-group facilitators.)

Description:
Students in the first and second medical school years elect to participate in the 11-week Mind-Body Medicine Skills course. The course is designed with nearly 90 percent of activities devoted to experiential learning, with remaining course time devoted to discussion of techniques, reviewing assigned articles, and addressing student questions. Over the 11 sessions, students experience guided learning experiences with mind-body approaches, including self-awareness, relaxation, meditation, guided imagery, biofeedback, physical exercise, art, music, and movement. The course is originally based on a curriculum model developed by Dr. James Gordon, Director of the Center for Mind-Body Medicine. This model has been adapted for use in a number of other institutions as well.

An initial course orientation is held, where students learn expectations and intended outcomes for the course, and complete a precourse self-assessment. Students receive a course syllabus that presents educational goals, guidelines for group behavior, introductory materials, and details of each session. The course pack also provides a list of recommended readings and guidelines for practicing learned techniques. Articles are also included that focus on the most current evidence for health benefits of mind-body medicine and theoretical underpinnings for integrating mind-body skills in medical practice.

In each session, students are introduced to a new mind-body skill and have the opportunity to practice and learn the theory and research behind its practice. Each session has a process for faculty to follow along with a guide for discussion questions. This process may vary somewhat, depending on the size of the group and issues that are raised in relation to the practice of the technique. Of critical importance is the atmosphere of listening, confidentiality, safety, and respect that is facilitated by the group process.

All sessions begin with a five-minute opening meditation. Following the meditation, faculty requests updates on progress with assigned experiential exercises through a “check-in” process. During this weekly “check-in,” students are invited one at a time to discuss their progress, successes and challenges that come from practicing the assigned techniques. Faculty members also participate along with students, sharing their week’s experiences, reactions, and perceptions with the group. Following the check-in, a new mind-body skill is introduced by the faculty leader. At this time, techniques are explained and demonstrated, and if relevant, equipment is distributed for use. Students practice and process their understanding of this new skill and have an opportunity to reflect and ask questions. Sessions end with a closing five-minute meditation, followed by reminders for reading and practice assignments.

Expectations of students are that they will do “home practice” of the skills as they are learned, including the following for the duration of the course: write at least one journal entry each day, practice a form of meditation (sitting, walking, eating) for at least 10 minutes a day, three to five days per week, participate in one physical activity each day (walking, jogging, playing a sport), and complete additional assignments as they are distributed.

A typical session would follow the outline presented below:

1. Announcements
2. Candle lighting
3. Opening Meditation
4. Check-In - Questions about previous week’s lessons and home practice:
   How are you doing emotionally?
   How are you doing physically?
What are your insights or thoughts, feelings, concerns, or reactions to last week’s group session?

5. Introduction of mind-body skill
6. Practice of new mind-body skill
7. Process reaction to new mind-body skill:
   What is the experience like for you?
   What questions do you have about the practice of technique or readings about this technique?
8. Closing meditation
9. Review of next week’s assignments

Suggested Discussion questions:

What activities do you or your patients normally do ‘automatically’ which might be suited to a more mindful approach?

In what ways could you imagine using a strategy to increase mind-body awareness with patients?

Reflection questions:

What was this experience like for you? What was going on during the practice?

What did you make of this experience?

What insights and feelings emerged for you during this session?

Suggested Reflection questions:

What were you thinking as you ate one single grape?

How is this approach to eating different from the way you regularly eat? What did you notice?

What did you notice regarding the pace of this exercise? What was the reason for this pace?

Resource Material:

1. Books

2. Guidelines for use and descriptions of mind-body techniques

3. Course pack of articles

Evaluation Strategies:

1. Pre- and post self-assessment 21 item survey
2. Pre- and post self-assessment exercises
3. An open-ended six-item questionnaire at the end of the final session.

Student Evaluations:

Students have provided positive feedback on this experience, reinforcing strategies and procedures. Suggestions have been used to make revisions. The number of students participating has increased each year, based in part, on recommendations from students who completed the course.

Unique Implementation Challenges:

In the dense curriculum, medical students are overwhelmed with the tremendous workload. As an elective, students were wary about adding one more commitment to their schedules. With each passing year, the percent of students enrolling has increased to include nearly one third of the first year class, limited now by the number of available prepared faculty.
Others who have presented such a course have offered other challenges. Faculty preparation for this course occurs through participation in a two-week professional training experience, which is costly. Time to facilitate course is labor intensive. Attention to group process is a critical factor for faculty involved in facilitating this course. Despite clear information given to students and student motivation to elect the course, some may feel unprepared to share personal information about their own experiences that arise from the practice of these techniques. They are surprised by the range of experiences and emotions that arise from practicing these techniques. Time must be available for faculty to attend to student needs, not only during and in between sessions.

Currently, this course is an elective in the curriculum. Experience suggests that it may be best to maintain it as such. Not all students may want to participate in a class that focuses on intense self-reflection and self-disclosure with their fellow students. Inclusion of students not interested in this form of learning may detract from value of the group process for other students.
CONTRIBUTED CURRICULUM MATERIALS

One sample mind-body session
Student pre-post self-assessment survey
Course evaluation questions
MEDITATION

Session 3: Meditation

Agenda:
- Announcements
- Candle lighting
- Opening Meditation (5 minutes)
- Check-In (questions about previous weeks’ lessons and home practice)
  - How are you doing emotionally?
  - How are you doing physically?
  - What are your insights or thoughts, feelings, concerns, or reactions to last week’s group session?

Introduction of this week’s mind-body skill: Meditation

Eating Meditation:

Purpose:
This is a tool for developing awareness.
This exercise promotes harmony between the food we eat and our body’s actual needs.
This exercise helps in becoming mindful of sensations associated with eating.

Materials:
- Grapes
- Other “finger” food

Activity:
- Student will practice eating a [grape] slowly and mindfully

Script for Eating Meditation
Normally, most of us eat automatically or mechanically. Now, we are going to experiment with eating differently, paying full attention in a nonjudgmental, open way, and staying in the moment as much as possible.
Take one of these objects, only one. See if you can entertain the notion that you are seeing and sensing this object for the very first time.
- What does it look like?
- What shape is it?
- What colors appear?
- How does it reflect light?
Next, maybe on closer inspection, how does it feel?
- What is its texture? Its temperature? Its surface density?
Perhaps you might also bring it up to your nose. Do you smell something?
- Are you salivating?
- How do you feel about putting this food into your body right now?
- How does your body feel anticipating eating in this moment?

Now we are going to receive this food into our body. Be aware of our arm moving to your mouth.
- How is the grape taken into the mouth? Experience the food in your mouth. Chew slowly and focus your full attention on the food’s taste and texture.
Be aware of any desire you have to rush through this grape so that you can have another.
Be aware of the intention to swallow before you actually swallow.
Notice how far into your body you can still feel the grape. (What a difference a chili pepper would make!)
Know that your body is exactly one grape heavier. . .

**Mindfulness Meditation:**

**Purpose:**
- Reduce stress
- Decrease anxiety
- Increase self-awareness
- Increase ability to access inner wisdom

**Cautions and Contraindications:**
- May provoke strong emotions

**Script for Meditation**

Allowing yourself to find a comfortable position, with your head, neck, and spine aligned and comfortable and with your arms and legs in a position that feels just right for you.

And, let’s allow this to become a time in which we let go of our usual way of operating ... that of constant doing ... and let’s allow this to become a time of just being ... of allowing ourselves to be ... and becoming aware of feelings that arise as we become still inside. (Pause)

And so as you allow your body and your mind to become still and quiet, just bringing your attention to the fact that you are breathing ... and becoming aware of the movement of the breath as it enters your body and as it leaves your body ... not manipulating your breathing in any way right now ... not trying to change it ... simply being aware of it and the feelings associated with breathing. (Pause) And, if you feel comfortable with it, as you continue to notice your inhalation and your exhalation, noticing your breath flowing deep down into your belly ... feeling the abdominal wall as it expands with each inhalation and as it relaxes into the spine with each exhalation. And simply being totally here in each moment, with each breath ... not trying to do anything ... not trying to get any place ... simply being present with each breath that you take. (Allow two minutes of silence.)

Just giving full care and full attention to each in-breath and to each out-breath as they flow one after the other in a never ending life-giving cycle. (Allow two minutes of silence.)

As you may have noticed, from time to time, your mind may wander off into thoughts of the past, fantasies, anticipations of the future, worrying, memories, whatever. (Pause) As soon as you become aware that your attention is no longer here ... no longer focused on your breathing ... and without giving yourself a hard time ... simply escorting your attention, your focus back to your breathing ... and picking up wherever that happens to be ... on an in-breath or an out-breath ... becoming once again fully conscious of the duration of each inhalation and the duration of each exhalation, from moment to moment. (Allow 2 minutes of silence.)

And, in the practice of meditation, using the awareness of your breathing and using your breath as an anchor to bring you back to the present moment, and to refocus your attention on your breathing, whenever you notice that your mind is becoming absorbed, preoccupied, or restless. (Pause)

And simply remembering that every time you notice that your mind is wandering off the breath ... to just be aware of it as soon as you can be ... and gently bringing it back to your
abdomen ... back to the present ... back to the moment to moment observing of the flow of your breathing. (Allow three minutes of silence.)

And now, as this meditation comes to an end, recognizing that you have spent this time intentionally nourishing yourself ... by dwelling in this state of non-doing ... in this state of being ... making time for yourself to be who you are and to feel what you feel. (Pause)

And now, slowly and gently allowing yourself to come back into the room, perhaps moving your fingers and toes, feeling your body in the chair ... and when you are ready, at your own pace ... allowing your eyes to open ... feeling calm and relaxed, yet alert and awake.
EVALUATION MATERIALS

**Mind-Body Medicine Group Survey**

1. The mind-body approach can have a profound effect on my own physical and emotional well-being.

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<tr>
<th>Absolutely Disagree</th>
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2. The mind-body approach can have a profound effect on my chronically ill patients’ physical and emotional well-being.

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4. I have a high degree of self-awareness.

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5. I am comfortable sharing my feelings with others when appropriate.

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6. I feel that I have the capacity to deal effectively with the stresses of medical school.

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7. I feel a powerful connection with my own capacity for self-healing.

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8. I have an appreciation for my classmates’ concerns and struggles.

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9. I believe mind-body approaches are important to promoting health.

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10. I believe that all aspects of emotional well-being are a critical element of clinical practice.

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11. I believe that mind-body practices such as biofeedback, guided imagery, and meditation can bring about profound physical changes.

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12. I have doubts about whether pursuing a medical career is suitable for me.

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13. I feel prepared to deal with the rigors of medical school.

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14. I believe the spiritual dimension is important to me.

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15. I believe the spiritual dimension is important to healthcare.

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16. I would have a lesser view of myself if I were not at or near the top of my class.

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17. I worry a lot about my grades.

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18. I am very concerned that my classmates may be doing better than I am.

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19. The innate healing capacity of patients often determines the outcome of the case, regardless of treatment interventions.

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20. Physicians who strive to understand themselves generate improved patient satisfaction.

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21. I feel relaxed and happy most of the time.

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GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE
COURSE EVALUATION

Mind-Body Medicine Group program
Evaluation Questions

1. What did this course mean to you?

2. Has the course helped you as a medical student and as a person? If so, how?

3. Do you believe that this course will contribute to your work as a physician? If so, how?

4. Has it changed your attitude toward medicine and healthcare? If so, how?

5. Has it changed your attitude toward medical school? If so, how?

6. Has it affected your relationship with your classmates? If so, how?
In this curriculum unit we present materials from two sources. First is a description of the evidence-based medicine (EBM) component of a fourth year elective offered at Duke. Second is an excerpt from a text on CAM, edited by Jonas and Levin that offers a set of case studies to illustrate the applications of the principles of EBM in clinical practice.

Part I: Duke EBM module

Unit Contributed by:
Tracy Gaudet, MD
Director, Duke Center for Integrative Medicine

Larry Burk, MD
Education Director, Duke Center for Integrative Medicine
Course Director
Duke University School of Medicine
Durham, NC

Integrative Medicine competencies addressed (see Section 2, list of competencies):
Knowledge 4, 8, 9, 10
Attitudes 4
Skills 5

Course Goals (overall course):
To apply evidence-based (E-B) principles to complementary and alternative medicine (CAM)
To improve communication with patients about CAM issues
To promote self-care among students through experience of CAM practices

Objectives (Evidence-based course component only):
Cite at least one randomized controlled trial for each of the nine different CAM topics presented in the course.
Critique in detail the scientific merit of at least one research article on a CAM topic.
Identify credible sources of information about CAM from the literature and the Internet.

Curriculum component:
Elective

Target audience:
M4 Students
Limited to 10 students per session
Open to Physician Assistant and Physical Therapy students
Duration:
4-week course, 40 hours/week
Offered once per year

Learning Methods:
• Formal lectures, PowerPoint slides (20%)
• Group discussion (30%)
• Student presentations (10%)
• Experiential learning, fieldwork, office visits (40%)

Faculty resources:
2 course faculty
12 medical clinical faculty
10 CAM professionals participate
4 present didactic information
6 host visiting students

Description
This elective is designed to provide students with an evidence-based and experiential understanding of integrative medicine. This curriculum module will only discuss the Evidence-based Medicine component of this course. Throughout the course, faculty members, including four CAM professionals, provide a series of one-hour evidence-based presentations on nine topics, including a review of the literature. Following each session, an assigned student presents a critique of that subject’s best available randomized controlled trial. Critical thinking is encouraged during this systematic review of various CAM modalities and research. Acupuncture, herbal medicine, nutritional supplements, probiotics, massage, manipulation, hypnosis, meditation, and women’s health are considered. Students have the opportunity to assess the extent to which the scientific evidence has impact on the manner in which the CAM techniques are applied in practice.

Students receive an extensive syllabus that includes a list of readings, websites, educational goals, introductory materials on the topics provided, and a schedule of activities for the four-week course. Beyond the Evidence-based Medicine component, students prepare presentations on clinical experiences, learn from Web-based instructional quizzes, work through cases, participate in field visits to observe CAM practitioners, and experience self-care training during this four-week course. During the final week, students create and present a treatment plan for a chosen disease process, integrating all appropriate CAM modalities.

Discussion questions:
What are the side-effects and hazards associated with the most common CAM practices?
What are the training and credentialing requirements of CAM practitioners?

Reflection questions:
What is the advantage to understanding EBM in relation to CAM modalities?
How is this approach to evaluating CAM modalities different from your previous experience with E-B traditional Western medicine practice?
In what way do your beliefs on the CAM efficacy trials affect your willingness to listen to a patient’s story?
In what way will your approach to patients change after this experience?

Resource materials:
Attached with course session materials
Evaluation strategies:
Students are evaluated on the critique of a journal research article during the Evidence-Based sessions (20%), E-B PowerPoint disease process presentation (20%), a presentation and written summary regarding personal experiences with CAM practitioners (20%), other topical presentations (20%), and a final web-based examination focused on CAM practitioner qualifications and safety issues (20%).

Student evaluations:
Students evaluate the course qualitatively by writing short paragraphs about their experiences with various topics and practitioners. They also make short oral presentations at the end of the course about their most beneficial and least beneficial experiences. Students evaluate the elective quantitatively using three 10-point questionnaires.

Challenges to presenting this unit:
Initially there were difficulties getting the course approved by the curriculum committee. Some difficulties lie in positioning the course during the fourth year at an optimum time for the match and after interviewing trips.
CONTRIBUTED CURRICULUM MATERIALS

Course schedule provided below as an example of how teaching on EBM can be incorporated into an integrative medicine elective experience. EBM experiences in the course schedule are preceded by the designation “E-B” below.
## COURSE SCHEDULE

Course schedule for 4th year elective

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<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Instructor(s)</th>
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<tbody>
<tr>
<td>2/3 Mon</td>
<td>8:30-10:00 AM</td>
<td>10:00-12:00</td>
<td>2:00-5:00 PM</td>
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<tr>
<td>2/4 Tues</td>
<td>E-B Acupuncture: L.Burk, MD (CFLl)</td>
<td>DCIM Case Conf: (CFLl)</td>
<td>Healing Oriented Medicine: (CFLl)</td>
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<td>2/5 Wed</td>
<td>E-B Meditation: J.Lane, PhD (406p)</td>
<td>E-B Hypnosis: HForrester - Miller, PhD (406p)</td>
<td>Creative Arts Therapy:</td>
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<tr>
<td>2/6 Thurs</td>
<td>GSR Biopac Training: L.Burk, MD (428)</td>
<td>Self-Inquiry: P.Delevitt, MA(406)</td>
<td>Sound and Healing:</td>
</tr>
<tr>
<td>2/10 Mon</td>
<td>DCIM Clinic/Rice Diet/Morreene Rd Biofeedback</td>
<td>S. Moon,MD,MPh/K.Rosati, RD/C.Edwards, PhD</td>
<td>Acupuncture Office: D.Ehling, MAc, LAc (1215 Anderson St. Durham)</td>
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<tr>
<td>2/11 Tues</td>
<td>E-B Dietary Supplements: R.Liebowitz, MD (CFLl)</td>
<td>DCIM Case Conf: Presentations(CFLl)</td>
<td>Acupuncture Office: I. Florian, MAc, LAc (514 Holloway St. Durham)</td>
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<tr>
<td>2/14 Fri</td>
<td>Sports Medicine Acupuncture: L.Burk, MD, 3rd floor Finch-Yeager Bldg, Wallace Wade Stadium</td>
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<td>Qi Gong Five Animal Frolics:</td>
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<td>2/17 Mon</td>
<td>DCIM Clinic/Rice Diet/Morreene Rd Biofeedback</td>
<td>S. Moon,MD,MPh/K.Rosati, RD/C.Edwards, PhD</td>
<td>Holotropic Breathwork: B.Brame, LBMT (619 Foster St., Durham)</td>
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<tr>
<td>2/18 Tues</td>
<td>E-B Herbal Medicine: D.Kroll, PhD (CFLl)</td>
<td>DCIM Case Conf: Presentations(CFLl)</td>
<td>Herbal Office: L.Fendell, PA, MPH, LAc (2904 Hillsborough Rd,Durham)</td>
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<tr>
<td>2/24 Mon</td>
<td>DCIM Clinic/Rice Diet/Morreene Rd Biofeedback</td>
<td>S. Moon,MD,MPh/K.Rosati, RD/C.Edwards, PhD</td>
<td>Naturopathy Office: S.Delaney, RN, ND (301 W. Weaver St. Carrboro)</td>
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<tr>
<td>2/25 Tues</td>
<td>E-B Women’s Health</td>
<td>T.Gaudet, MD (CFLl)</td>
<td>DCIM Case Conf: Presentations(CFLl)</td>
</tr>
<tr>
<td>2/26 Wed</td>
<td>Functional Medicine: J. Pittman, MD (406p)</td>
<td>Self-Inquiry: P.Delevitt, MA(406)</td>
<td>Tibetan Medicine</td>
</tr>
<tr>
<td>2/28 Fri</td>
<td>Student Clinical Experience Presentations:</td>
<td>S.Moon, MD, MPH, L.Burk, MD, P.Delevitt, MA (406)</td>
<td>Course Evaluations/Final Exam: L.Burk, MD, P.Delevitt, MA (406)</td>
</tr>
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</table>
References for Evidence-Based Sessions: Randomized controlled trials for each E-B topic.


PART II: CASE STUDIES IN EVIDENCE-BASED MEDICINE
FROM JONAS AND LEVIN


<table>
<thead>
<tr>
<th>Summary of Steps</th>
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<tbody>
<tr>
<td>Step 1: Is the patient already using or wanting to use a CAM approach, or is an alternative sought?</td>
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<tr>
<td>Step 2: Is the practice inexpensive and unlikely to produce direct (toxic) adverse effects?</td>
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<tr>
<td>Step 3: Is there evidence for this practice from randomized controlled trials or observational and outcome studies?</td>
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<td>Step 4: Does the quality of the studies meet the minimum quality criteria?</td>
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<td>Step 5: Is the population in these studies similar to the patient at hand?</td>
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<td>Step 6: Is the belief and rationale for the therapy acceptable to both patient and physician?</td>
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<tr>
<td>Step 7: If Yes to all the above, consider a therapeutic trial provided:</td>
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<tr>
<td>A) A quality product or procedure by a competent practitioner can be obtained, and</td>
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<tr>
<td>B) The patient can be monitored while undergoing the treatment.</td>
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<tr>
<td>Step 8: Also consider if a new diagnostic assessment by a CAM system is in order.</td>
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</table>

By following these steps, the physician can increase the likelihood that decisions about CAM practice are based on research evidence; or, if there is no research evidence, the practitioner can be clear that clinical decisions are based on other criteria (e.g., opinion, clinical judgment).

Examples of Evidence-Based Approaches to CAM

The following case examples help illustrate the use of an evidence-based approach.

Case 1: Allergies

A 23-year-old woman comes to her practitioner for the treatment of seasonal allergies. She is in good health and has normally taken standard antihistamines and decongestants for her condition. However, these agents make her sleepy, so when she came across a homeopathic allergy remedy in the drug store, she tried it for several days. It seemed to help.

Step 1. Now she would like your opinion on whether she should continue with this preparation.

Steps 2 and 7A. The product is a combination of very low doses of plant substances and is said to be manufactured according to the standards of the United States Homeopathic Pharmacopoeia—a product for which the Food and Drug Administration does provide some insight.

Step 3. A search of the available databases comes up with two meta-analyses of randomized controlled trials and several other randomized controlled trials on the treatment of allergies with homeopathic preparations.1,2

The effect size for these studies shows that approximately 75% of patients will experience clinically significant relief, but the preparations in the studies are not exactly the same as the ones in the product she has found. No significant adverse effects have been reported from these dilutions, nor are any expected given the extremely low dose.
Step 4. A review of two controlled trials with the minimum quality criteria mentioned earlier in the chapter shows that these studies meet these standards.

Step 5. The populations in the studies are varied enough to be similar to the patient’s situation.

Step 7B. The patient is very happy to have the physician monitor the treatment and switch back to conventional treatment if the alternative proves inadequate.

Step 6. However, the physician believes that the plausibility of homeopathy’s effect is very unlikely. Thus, all of the steps in establishing the evidence criteria are fulfilled except step 6 (plausibility), with some disparity of belief between the patient and practitioner. In addition, the product is not exactly the same as that studied, so there is no direct evidence for this exact product on this condition. The physician must then decide with the patient the proper course of action (referral, limited therapeutic trial with reevaluation, etc.).

Case 2: Depression

A 45-year-old woman suffering from depression in combination with a dependent-depressive personality disorder seeks help, primarily psychotherapy. History reveals a series of losses in her past: her grandmother, who was very kind and important to her, had died when she was five. Her father, whom she admired and who doted on her, died when she was 12. From the time her father died, she had taken on considerable responsibility for herself and her younger sister. When she was in her teenage years, she started dating a young man from her neighborhood with whom she fell in love. Because he was a Protestant and she was a Catholic, a relationship seemed impossible, given the strong religious background of both families. After several years, the young man was diagnosed with leukemia and soon died. This was the same disease the patient’s father had died of. Shortly afterward, she married a close friend of her deceased boyfriend who courted her but whom she did not really love. Recently, a good friend of hers had committed suicide, which started the patient’s suicidal impulses and brought her to therapy. From reading popular books she had taken a fancy for homeopathy and inquired whether her problems could benefit from homeopathic remedies.

Step 1. Under no circumstances is the patient willing to take any conventional psychotropic medicine or consider seeing a psychiatrist. Verbal psychotherapy in a general psychodynamic framework with behavioral elements is initiated, but the patient persistently requests homeopathic treatment.

Step 2. The risk of adverse effects is low if the treatment is embedded in a general psychotherapeutic environment in which the patient is not alone with her experiences. If such a patient is left unmonitored with only CAM intervention, this approach would be very risky. Direct risk of adverse effects in this situation is low and costs are negligible, but refusal of potentially effective conventional treatment by the patient is of concern.

Step 3. There is no evidence from clinical trials or observational studies about the effectiveness of homeopathy in depression. One could consider the herb Hypericum (St John’s wort), a phytotherapeutic alternative that has been studied and seems to be effective as a mild antidepressive, but this is also for mild depression. It is also doubtful whether Hypericum alone is sufficient because it is used only for mild depression. The patient has been reading case histories in the homeopathic literature about positive effects of homeopathic treatment in depression. She thinks that her case would be clear to a homeopath because of depression and sadness after multiple losses, which she thinks is a key homeopathic diagnostic symptom.

Step 4. The evidence for a homeopathic intervention is weak. There are no trials and no formal observational studies, only single observations and case reports that are very likely due to placebo and nonspecific effects—something to which depression often responds.

Step 5. It is difficult to say whether the people reported on in the case studies the patient reads are comparable with the patient here. Usually, there is not enough information in the case studies to make a determination.

Step 6. The evidence certainly is not enough for relying solely on a homeopathic intervention. Given the patient’s refusal of other therapies and her high belief in the system,
nonspecific effects might be enhanced if a confident practitioner is found and careful follow-up with psychotherapy is maintained.

**Step 7.** There is no way of starting a therapeutic trial unless a responsible homeopathic practitioner is found, is willing to work with the physician, and uses standard homeopathic products overseen by the FDA. The physician also might consider this patient noncompliant and refuse further therapy. However, given the patient’s propensity for alternative medicine, this may place the patient at increased risk (albeit of her own choosing).

**Step 8.** The diagnosis is clear. If the patient is refusing psychotropic medication (which she does), psychotherapy is the only alternative left. If the circumstances in step 7 for referral and follow-up exist, it is possible that additional benefit from adding a therapeutic trial of homeopathy may occur.

**Follow-up:** A homeopathic treatment is initiated parallel to continuous psychotherapy. Over the course of one year, this brought out a variety of destructive impulses, sadness and mourning—feelings she had not allowed herself before. In the course of this treatment, the homeopathic practitioner says that a decisive homeopathic symptom surfaces. The patient relates the single fear she is most afraid of—losing her financial and economic security and becoming poor. However, this fear is irrational (the family is quite rich), and is correlated as a key symptom to the homeopathic remedy Aurum, made from gold. Homeopathic treatment is initiated and gradually the patient loses her self-hate and self-destructive impulses. Psychotherapy seems to progress better. When therapy was terminated, the patient said that her major gain was that she could never think of harming herself any more.

It is not clear in this case whether homeopathy itself was helpful. Subjectively it was, but it is doubtful whether the effect would have been visible without ongoing psychotherapy. Certainly, the evidence for a homeopathic treatment alone was weak and the decision to proceed was not determined by convincing evidence. If the prior probability (step 6) had been low either on the side of the patient or on the side of the therapist, proceeding with CAM therapy could not be recommended. Had the prior probability been low on the side of the patient, homeopathy or any alternative treatment could have sustained a false hope, diverting the patient from the need to seek definitive treatment. If the prior probability had been low on the side of the therapist, it is doubtful whether he or she could have integrated both perspectives, which again could interfere with an effective therapeutic process.

**Case 3: Smoking Cessation**

A 32-year-old woman who has smoked a pack of cigarettes a day for 15 years saw an advertisement for a smoking cessation clinic that used acupuncture. She comes to her physician’s office seeking advice about this program, which claims to have great results. When she visited the smoking cessation clinic, there was a single practitioner with an acupuncture degree from a Midwestern institution. The practitioner claimed that lots of research proved that acupuncture is highly effective in helping people stop smoking. The practitioner gave the patient some articles—a randomized controlled trial written up in an Italian cardiology journal claiming 60% effectiveness, and a French article showing that acupuncture was effective in helping to stop smoking. He said that in his clinical experience, 80% of people that he treated were able to stop smoking.

The treatment consists of ear acupuncture three times a week for two months, followed by a single monthly treatment for one year. Also, a small “acu-ball” is taped to points on the patient’s ear for several hours daily. The cost is $35 per visit (plus $5 for the “acu-ball”). The practitioner requests two months’ payment at the start, yet gives a discount if it is all paid up front ($240 at the first session for eight sessions). He said this payment helps patients become motivated to complete the first eight treatments. The patient would like to try this treatment because she really wants to stop smoking and has failed at previous attempts. She has tried smoking cessation classes and nicotine gum, but her nonsmoking status lasted only a few days or weeks. She is enthusiastic about the acupuncture and feels it may help her. However, before spending the money, she wanted to know if her physician thought it was a good idea.
Step 1. The patient really wants to try acupuncture. She has tried smoking cessation classes and nicotine gum and classes without success. She wants to have a baby and stop smoking before she becomes pregnant.

Step 2. If properly delivered with disposable needles, ear acupuncture is unlikely to produce serious side effects. The cost is considerable, but so is continuing to smoke.

Step 3. Her physician offers to search the literature. He logs onto the Internet and goes to the Cochrane Database of Clinical Trials in Complementary Medicine (available free on the Web page of the NIH National Center for Complementary and Alternative Medicine). Using the key words “smoking” and “acupuncture,” he finds 27 controlled trials and one systematic review.

Step 4. The systematic review (published in 1990) is a criteria-based quality review of 15 trials. The review reports that the vast majority of these trials were small, of poor quality, and reported negative results. The French study provided by the acupuncturist was also online and, although it reports positive effects from acupuncture, it received a very poor score in the systematic review. A more recent study (1997) evaluated smoking cessation rates in groups given acupuncture, nicotine gum, both, or neither. About 6% remained off tobacco at four years, with no difference between any treatment.

Steps 5 through 9 are unnecessary because the current best evidence indicates that acupuncture is no more effective than placebo or nicotine gum for smoking cessation. The patient should be informed that using the acupuncture for this purpose may be a waste of time and money. Once the patient’s initial enthusiasm for the acupuncture treatments has subsided, a relapse to smoking is highly probable. Provided the acupuncture is delivered in a proper manner with sterile needles, the patient’s main risk is the cost and time of the treatments, as well as potential resignation from future attempts at smoking cessation should she return to smoking. This might prevent her from enrolling in a comprehensive smoking cessation program, which may increase her chances of success in smoking cessation. Thus, an additional risk of acupuncture in this case is substituting ineffective therapy for possible effective therapy.

References:
INTEGRATION OF CULTURE IN MEDICAL PRACTICE

MODULE DESCRIPTION

Unit Contributed by:
Victor Sierpina, MD
Director, UTMB Integrative Medicine Education Program
University of Texas Medical Branch, Galveston, TX

Integrative Medicine competencies addressed: (see Section 2, list of competencies)
Knowledge 4, 10
Attitudes 1, 2, 3, 4
Skills 2, 3

Course Goals:
To improve communication with patients about cultural issues in medical care

Objectives:
Evaluate the influence of caregivers’ attitudes towards patients’ diverse spiritual and religious orientations, both positive and negative, on provider-patient relationships and the healing process.
Explore attitudes on healing and health recommendations using culturally sensitive interviewing process
Summarize consequences of omitting assessment of cultural influences on family health behaviors

Curriculum Component:
Required

Primary Target audience:
M2 Students

Duration:
1 hour

Learning Methods employed:
• Large group, Formal lecture, PowerPoint slides
• “Standardized family” model interview
• Case presentation and discussion

Faculty Resources:
2-3 medical school faculty

Description:
This second-year session is designed as part of the two-year required Practice of Medicine course, which includes learning experiences addressing professionalism, ethics, clinical decision-making, cultural competence, and clinical skills development, and is part of the Spirituality in Medicine unit. This session is designed to reinforce approaches to patient beliefs and interviewing skills introduced in the first-year course and a family interview practice session held earlier in the
second year. It is conducted in an interactive lecture format, and includes a simulated family interview. Prior to the lecture, students are informed that that they will be observing a physician as she conducts a family interview and they are given the background of the medical case. The case is modified from the book The Spirit Catches You and You Fall Down by Anne Fadiman.

Introductory comments in this session address the overlap of the provider’s culture and the culture of biomedicine and encourage investigation into patients’ social, cultural and spiritual beliefs relating to health care. Students are introduced to a live “standardized family”—people who complete training to portray assigned roles and to give scripted response to questions. The physician models the interview process utilizing an eight-question interview format originally proposed by Arthur Kleinman, MD, from Harvard Medical School. Students review the case and questions prior to the interview. After students listen to the simulated live interview, they are encouraged to ask the “family” further questions. Faculty facilitates a discussion between the students and family.

Students are directed to a variety of reinforcement materials on the course website (listed below in Resources). The Website includes, an extensive syllabus with a list of readings and an annotated bibliography, other resource Websites, introductory materials on the topics provided, and cases and discussion questions.

Sample Discussion Questions:
When is it appropriate to call a conference of a family to discuss a medical concern? In what other situations would a family conference be appropriate?
What did you learn from asking the family to define the type of treatment the family should receive?
Why is it important to include issues related to culture and spirituality in dialogue with patients?

Suggested Reflection Questions:
What did you learn from this case? What surprised you?
What are the advantages to understanding the cultural influences that guide decisions within a family?
In what ways do your beliefs affect your willingness to listen to a patient’s story?
In what ways will your approach to patients change after this experience?

Resource Material:
1. Syllabus online at http://cam.utmb.edu/curriculum/spirituality02.asp
2. Books
   The Spirit Catches You and You Fall Down – A Hmong child, Her American Doctors, and the Collision of Two Cultures by A. Fadiman
   A Coyote Medicine by Lewis Mehl-Madrona
   The Woman Who Glows in the Dark by Elena Avila

Evaluation strategies:
1. A faculty member writes four to five test questions pertaining this session that are incorporated into the Practice of Medicine course exams. Half of the questions are used for a practice test, and the remaining questions are used for the final exam two weeks later
2. A sample of students completes a session evaluation at the end of the session.
3. Students provide ratings of the module at the end of the course as well.

Student evaluation:
Over the past five years, student feedback has been very positive by most students. They report that including such experiences broadens the humanizing elements of medicine. A smaller number of students comment that they do not see this topic as relevant to medicine.

Unique Implementation Challenges:
Initially, finding time in the curriculum was the biggest challenge.
Standardized Patient Training—costly, labor intensive.
CONTRIBUTED CURRICULUM MATERIALS

Case
Interview Questions and Responses
Evaluation Questions
CASE STUDY

Case Study:
In this case, the child is an Hispanic infant (Leah) who suffered the same fate as Lia (in The Spirit Catches You and You Fall Down, by Anne Fadiman. She was born at Thomason Hospital in El Paso and later brought to the Houston area by her parents.

At three months, the child developed seizures, which have progressed over the past three years. She has become neurologically devastated by them. Despite multiple medications and extensive work-up, the girl continues to do poorly with recurrent seizures. A large part of the problem was the parents' inability to communicate effectively with the healthcare providers about their beliefs about Leah's problem.

Questions in italics are the Eight Questions proposed by Kleinman.
1. **What do you call the problem?**
   
   Father: “**Susto**”

2. **What do you think has caused the problem?**
   
   Mother: “She was frightened and part of her soul left.”

3. **Why do you think it started when it did?**
   
   Mother: “Leah’s sister, Yerlinda, slammed the door real hard one day and frightened part of Leah’s soul away.”

4. **What do you think the sickness does? How does it work?**
   
   Mother: “It makes Leah shake and fall down.”

5. **How severe is the sickness? Will it have a short or long course?**
   
   Father: “Why are you asking us those questions? If you are a good doctor, you should know the answers yourself.”

6. **What kind of treatment do you think the patient should receive? What are the most important results you hope she receives from this treatment?**
   
   Father: “You should give Leah medicine to take for a week, but no longer. After she is well, she should stop taking the medicine. You should not treat her by taking her blood or fluid from her backbone. Leah should also be treated at home with our curandero’s medicines. Our curandero will heal Leah. She needs brushings, limpias with a raw egg, candles to be burned, special herbs waved over her in a smoke and also to drink in teas.”

7. **What are the chief problems the sickness has caused?**
   
   Mother: “It has made us sad to see Leah hurt, and it has made us angry with her sister, Yerlinda.”

8. **What do you fear most about the sickness?**
   
   Mother: “That Leah’s soul will never return.”


SAMPLE EXAM QUESTIONS

CULTURAL COMPETENCY QUESTIONS FOR POM II

You are seeing a Chinese woman in whom you have just diagnosed cancer. Knowing that Chinese people prefer an approach of nondisclosure in such situations, which of the following is the best approach to the patient?

A. Tell the patient about her diagnosis directly and immediately.
B. Approach the family first, and do not disclose to the patient if that is what they request.
C. Approach the family and ask that they join you in disclosing to the patient. ***CORRECT***
D. Disclose only a bit of the diagnosis with the plan to disclose more at the next visit.
E. Call a Chinese friend of yours to provide advice and to assist with the disclosure.

You are seeing a patient from Mexico who speaks no English. Which of the following regarding communication is true?

A. It is important to use precise medical jargon with translation.
B. Requesting translation by a teen child of the patient is acceptable and appropriate.
C. Asking the patient to repeat what you have explained is inappropriate because it will likely offend him/her.
D. If the patient is seeking medical care in this country, finding a translator is the patient’s responsibility.
E. Having translators present in person is ideal, but one may use a language line (such as AT&T) if trained staff is unavailable. ***CORRECT***

A family brings their three-week-old infant to you for evaluation of a fever of 104°F and irritability. You find that the infant has a bulging anterior fontanelle. You embark on an evaluation for sepsis/meningitis. The family, however, refuses the lumbar puncture. Which of the following is the best course of action?

A. Perform the lumbar puncture without the consent of the family since it is necessary to determine whether or not the infant has meningitis.
B. Call Children’s Protective Services to force the family to consent to the lumbar puncture.
C. Call Children’s Protective Services to take custody of the infant and consent to the lumbar puncture.
D. Engage the family in a discussion about their objections and explain the necessity of the lumbar puncture and offer options. ***CORRECT***
E. Forgo the lumbar puncture. After all, it is their child.
FOURTH YEAR CLINICAL ELECTIVE:
INTRODUCTION TO INTEGRATIVE EAST-WEST MEDICINE

MODULE DESCRIPTION

Unit Contributed by:
Ka-Kit Hui, MD, Director
Marc Brodsky, MD, Tim Pan, MD, Bill Tu, MD
UCLA Center for East-West Medicine
David Geffen School of Medicine, University of California Los Angeles,
Westwood, CA

Integrative Medicine Competencies (see Section 2, list of competencies):
Knowledge 5, 6, 7, 8, 9
Skills 2, 3

Course Goals:
Demonstrate and compare key principles of modern Western and Traditional Chinese Medical paradigms.
Expose students to ways to integrate these principles into clinical practice.

Objectives:
1. Understand the current state of conventional medicine in the larger context of economic, cultural and societal influences, including rise of CAM use among patients
2. Gain a basic understanding of the theory, diagnostic skills, treatment principles and techniques used in TCM
3. Recognize the similarities and differences, strengths and weaknesses between TCM and modern Western medicine in approaches to patient care.
4. Review and critically assess the currently available database on modern research in TCM and integrative East-West medicine.
5. Review and practice Integrative Medicine history taking process.
7. Describe properties and effects of commonly used herbs and 10 herbal formulas as well as their applications in the treatment of common medical problems.
8. Review basic clinical pharmacology and summarize the complexity of herbal pharmacology and possible herb-drug interactions.
9. Demonstrate how integration of aspects of the two systems of medicine can be used to improve patient care.

Curriculum Component:
Elective (Clinical)

Primary Target audience:
M4 students

Additional Learners:
Residents
Duration:

Daily for two weeks

Learning Methods:

- Didactic presentations
- Case presentations and discussion
- Observation of CAM providers
- Practice with other students
- Patient care under supervision of faculty

Faculty Resources:

- 4 Course Faculty
- 3 Licensed Acupuncturists
- 3 Visiting Medical Faculty

Description:

Students spend time evenly divided between didactic sessions, case presentations, demonstrations, hands-on instruction, clinical observation, and practice. Didactic sessions include critical analysis of scientific evidence, controversies in CAM and Traditional Chinese Medicine (TCM) research methodology, placebo phenomenon, and the economical, ethical, legal, and practical aspects of integrating CAM into the conventional healthcare system. TCM is used as the main example of CAM, with emphasis placed on acupuncture and acupressure. Comparisons of the two approaches of medicine provide a forum for learning the historical, cultural, and philosophical approaches to medicine. At the end of the course, students make presentations on a research topic of their choice on East-West medicine.

Patient treatment cases are used in clinic to illustrate the many ways to integrate TCM into the patient’s health care. Students observe practicing providers as they work in a high volume outpatient clinic that combines Chinese medicine and conventional medicine. Patient interviews, each student seeing up to eight patients per day, are followed by a student/faculty discussion of the patient history, diagnosis, and treatment plan.

Students serve as practice patients to other students as they learn interviewing, diagnostic skills, and develop clinical practice skills. In practicing with other students, they experience the treatments of therapeutic massage, acupuncture, dietary advice, qi gong, and trigger point injection. After observing providers and practicing on other students, they then apply these skills to patients under the supervision of faculty. Clinically based instruction provides the opportunity to discuss clinical problem-solving, patient-oriented approaches to chronic and intractable symptoms, and culturally sensitive clinical practice issues.

Further description of this educational program:


Discussion questions:

See faculty-guided student discussion in attached materials.

Suggested Reflection questions:

What is the patient’s response to these therapies? What is the healing response?
What happened when you used the new approach? What was going on around you? What was your first thought? Was there anything unusual about this experience?
What was your expectation for patient response to the new approach? Was your expectation affected by your feelings at the time?
How is this approach to symptoms different from your previous experience?
In what way do your beliefs on this topic affect your willingness to listen to a patient’s story of seeking nonconventional therapies?
What growth is needed? (New information, behavior, acknowledgment of behavior)
What do you want to remember from this encounter/experience?
What will you do differently, in patient interviews or symptom review, after learning about herbal medicine?

Resource Material:
Course syllabus with additional handouts and computer-generated medical literature

Evaluation strategies:
1. All course faculty rate students on the standard student rotation evaluation for the competencies listed for this course. Students are also evaluated on participation in didactic sessions, class discussions, case studies, and practical demonstrations. These and the final research topic presentation are evaluated on an equal basis.
2. Faculty provide daily feedback to students during clinical interactions.
3. A self-assessment is completed by students to assess achievements on each of the learning objectives.

Student evaluations:
Students evaluate the clerkship and teaching of clinical faculty at the end of the advanced clerkship. Ratings and comments are overwhelmingly positive, and this course has been rated among the best in the medical school. Students report a deeper connection and renewed passion for medicine, and they have referred other students to the course.
Overall course and self-evaluations show that the course is effective in aiding students in the following, as reported in Hui K et al 2002* (see reference above):
1. appreciation of health and disease in general,
2. enhanced perspective on biomedical and CAM treatment approaches,
3. basic knowledge of the philosophy and theoretical underpinnings of TCM,
4. appreciation and assessment of the validity of research evidence available on TCM,
5. exposure to the conceptual principles and scientific basis of integrative East-West medicine,
6. appreciation of ways to integrate TCM into the conventional medical system, and
7. comfort with selected wellness-promoting clinical skills.

Unique Implementation Challenges:
Translation of the paradigm differences between Western (linear and reductionistic) and Eastern medicine (circular and systemic) is compromised due to the limited amount of basic and clinical research studies in TCM translated into English. Inadequate TCM teaching materials and texts have been written for biomedically trained individuals, so these materials lack the use of scientific language.
Availability of Chinese medical providers and faculty skills in TCM is essential. While access to a Chinese patient population makes this elective unique, this model can be adapted for use with other patient populations.
CONTRIBUTED CURRICULUM MATERIALS

Description of daily course content and activities
Case study presentation
COURSE CONTENT AND OVERVIEW

Course Content and Overview:

Didactic—40 percent.

Students are asked to respond to presented materials. They are encouraged to question and challenge faculty throughout the experience.

Sample Lecture topics:
Introduction to Traditional Chinese Medicine (TCM) and Integrative East-West Medicine
Introduction of Disease, according to CM
Identification of TCM Pathophysiological Patterns and Correlation with Modern Western Medicine/Clinical Knowledge
Review of Integrative Medicine Interviewing Process
Five Essential Acupoints: Overview, Location, Function, and Discussion of Modern Research
Introduction to Chinese Herbal Medicine: A Clinical Pharmacologist's Perspective
Modern Language of Integrative East-West Medicine: Psychoneuroendochrinology, Psychoneuro-immunology, and Chronobiology
Therapeutic Massage in Clinical Practice
Controversies in CAM and TCM Research Methodology
Economic, Legal, Ethical, and Practical Aspects of Integrating CAM into Conventional Western Medicine.

Case Presentations – 20 percent

Students observe as a patient is interviewed by the teaching staff. The clinician employs and models the Integrative Medicine interviewing process. The interview is followed by a discussion of the patient history, diagnosis, and treatment plan.

Demonstrations/Hands-On – 10 percent

Students review and practice the Integrative Medicine interview, which emphasizes the patient’s responses about symptoms and incapacities, and the physical, emotional, social, nutritional, and environmental factors that weaken a person’s reserve to maintain homeostasis. To reinforce skills development, volunteers from non-Western cultures are interviewed by students, providing personal experiences as case studies. Students then develop and discuss a self-care plan with the volunteer. (A case is provided below to illustrate this process)

Students observe the staff acupuncturists as they perform therapeutic massage and acupuncture on student volunteers, followed by practice sessions in acupuncture to learn a few basic acupuncture points.

Students are given the opportunity to handle and smell preparations of commonly used herbs, and later to visit a local TCM practitioner’s herbal store.

Students may participate in daily TCM relaxation/rebalancing techniques such as t’ai chi and qi gong.

Clinical Observation and Direct Patient Contact – 15%:

Selected patients meet with students to share their medical histories, including experiences with many conventional physicians, diagnoses, and therapeutic procedures received. The patient’s summary of conventional approaches is followed by presentation of diagnosis and treatment from the TCM
perspective. Aspects of diagnosis using information not gathered from the conventional review of systems, such as tongue inspection, trigger and acupoint examination, and interview questions such as taste preferences are introduced or reviewed. Students consider the usefulness of TCM in providing a diagnosis and treatment options that might not be considered using conventional medicine alone, thus encouraging integration of the two healing traditions in clinical practice.

**Student Presentations – 15 %**

Students are asked to research and prepare a presentation on a topic of their choice for presentation on the final day of the course. The presentations are made to members of the class and faculty. Sample student presentations include:
- Subclinical Hyperthyroidism: A case study
- Treating Drug Addiction with Acupuncture
- Applications of TCM to Management of HIV-Related Disease
- Integrative East-West Medical Approach to Bone Fracture
SAMPLE CASE STUDY DISCUSSION
(Selected from actual interview from course participants)

A 24-year old Vietnamese woman, who is also a medical student, presented with the chief complaint of an 11-month history of neck, shoulder, and upper back pain with decreased range of motion of the neck and periodic swelling overlying the area of her left trapezius muscle. On further history, she first noted her symptoms during a time of intense stress while she was visiting her parents. The patient was near completion of her undergraduate medical education program, and she described her mother as nonsupportive of her chosen residency program. At that time, she frequently argued with her mother, worried about her parents’ marital problems, and ended a relationship with her boyfriend. Since the onset of her symptoms, she had increasing pain, which was exacerbated by stress. She had some relief with professional massage, self-massage and application of local heat. On review of symptoms, she noted decreased energy. She had frequent cold extremities and said she preferred warm climates. She reported having difficulty sleeping. She reported chronic dry eyes. She had experienced dyspepsia with associated bloating and cramping twice a week and took antacid tablets for the symptoms. She sporadically takes Metamucil and has symptoms of constipation if she does not remember to take it. She has two roommates and gets along with them well. She exercises frequently, which includes lifting weights above her head.

On exam, she had a normal sized thyroid. Bilateral cervical and thoracic muscles were tender to palpation, and multiple associated trigger points were noted. She had a prominent left trapezius muscle. The exam was otherwise negative. A Traditional Chinese Medicine exam included an examination of tongue and pulse. The body of the tongue was slightly puffy with teeth marks. The color was dusky, and there was a thin, white coat on the tongue. The right radial pulse was wiry and the left radial pulse was slippery. The patient was taking no pain medication.

Faculty-guided student discussion:
The patient’s problem list included myofascial neck pain, dyspnea, stress, cold intolerance, stress, dry eyes, and insomnia. Review of the differential diagnosis of each of these symptoms and issues and discussion of current guidelines on the diagnosis and evidence based clinical management of these conditions brought the conclusion that the patient’s symptoms did not represent a serious disease process. The Western paradigms could not offer a diagnosis for her seemingly disparate collection of functional symptoms. There was no evidence-based approach to managing the patient with this myriad of conditions that are often seen in clinical practice. Concepts of Traditional Chinese Medicine helped to explain how stress, sleep problems, and physical trauma from overloading exercises depleted her body’s reserve of energy and caused dysfunction of her mind-body-spirit system. Anger in this patient led to intense muscle spasm that affected the neck, shoulders, and upper back, which may have contributed to her many other symptoms. Myofascial trigger points as an etiology of many functional and pain syndromes has been underemphasized in conventional medical education, and the hands-on approach that is required to diagnose and treat myofascial pain has not been part of the students’ clinical skills. Faculty presented myofascial pain as a marker that the body was having difficulty regulating itself and that treating myofascial pain could improve symptoms and decrease risk for further dysfunction. Faculty emphasize the integration of conventional Western and TCM to diagnose disease without delay, to prevent dangerous interactions between herbs and drugs, and to prevent further disregulation that can develop into more serious diseases. The model emphasizes a doctor-patient relationship, with physician serving as a teacher to the patient. By teaching self-care, responsibility for health moves from the physician’s office to the patient, and the patient is empowered with autonomy and greater control over his or her health.

Recommended treatment approach:
The treatment approach combined the best of Western medicine and TCM to solve this patient’s problem. The plan consisted of trigger point injections, massage, and acupuncture treatments. A care
plan was devised for the patient that included self-massage of acupressure points, appropriate exercise without overloading, proper diet, good sleeping habits, and yoga. The treatment plan included a consideration for prescribing a low dose of flexeril at bedtime, or consideration of Chinese herbal medicines if symptoms persisted.

**Student activities:**
The mechanisms of action of these different treatments (trigger point injections, massage, and acupuncture) and the evidence base were reviewed. Students participated in performing and receiving acupuncture and massage. The theoretical basis behind Chinese herbal therapeutics, mechanisms of action of single herbs, the efficacy of herbs to treat different problems presented, regulatory issues of herbal supplements, problems with quality control, and the potential for drug-herbal interactions were discussed.

Students worked as a group to devise a care plan for the patient, based on the symptoms presented. They also devised their own self-care plans after developing the plan for the patient.
THE CARE OF THE SOUL: SERVICE AS A WAY OF LIFE

MODULE DESCRIPTION

Unit Contributed by:
Rachel Naomi Remen, MD
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Director, Institute for the Study of Health and Illness at Commonweal, Bolinas California

Integrative Medicine competencies addressed: (see Section 2, list of competencies)
Values 1-9
Attitude 1

Goals:
To make visible the commitment to service that underlies scientific medicine.
To formulate a personal commitment to medicine.
To make a personal commitment visible among peers.
To legitimize openness and dialogue with colleagues and patients in the area of service, calling and mission.
To personally relate to the core values of compassion, service, harmlessness, courage, love and reverence for life.
To evoke and make visible the heart and spirit of medicine.
To experience the Hippocratic Oath as a way of life and a lineage.

Objectives:
Students will be able to:
1. Reconnect to their personal commitment and the purpose of their work.
2. Rewrite the Hippocratic Oath for themselves.
3. Speak their commitment to medicine aloud to their colleagues.
4. Recognize themselves as part of a committed service community.
5. Recognize that depth of commitment is independent of expertise.
6. Recognize the importance of preserving their commitment and sense of meaning of the work.
7. Witness the unity of commitment to service that lies beneath the diversity of expertise and experience.
8. Reframe their ideas of service; recognize meaning as the antecedent of commitment.
9. Validate their personal dreams of service through medicine

Curriculum Component:
Elective

Primary Target audience:
M1 and M2 students and Medical Faculty
Additional Learners:
   Appropriate for M3 and M4 students
   Residents
   Medical Faculty
   Practicing physicians

Duration:
   One two-hour session.

Learning Methods employed:
   • Large group instruction
   • Experiential and discovery model learning
   • Reflection and contemplation
   • Expressive Techniques: writing

Faculty Resources:
   1 course director

Description:
   “The Care of the Soul,” is the final session of the Healer's Art course, founded at UCSF 12 years ago and taught at 23 medical schools by the close of 2003. This session uses an experiential learning approach to explore the concepts of service, mission and calling, legitimizing dialogue and openness among professional peers in an area not usually discussed in medical education.

   This session lasts two hours. During the first half-hour the course director begins the session by offering some personal thoughts on the idea of service, calling, and commitment, and the importance of preserving a sense of personal meaning in the practice of medicine. Service is defined not as a technique but as a relationship and a way of life, and is distinguished from helping and fixing others. The course director suggests that those attracted to service often move towards situations that others avoid because something in their nature causes them to want to be with others at such times. Students and faculty are asked to respond to the question, "When did you first know that service was your way of life?" and asked to raise their hands. "How many were between 20 and 25 years old? How many were between 15 and 20? Between 10 and 15? How many were younger than 10? Usually a third or more of each class was younger than 10 and more than half of the class was younger than 15. Students report that this realization is one of the more powerful understandings they have had about themselves and about the nature of medicine. Students are then asked to reflect and remember and share stories of service from their own childhood, times they served others when they were small. Students are enabled to recognize that they can heal with their humanity even when they cannot cure with their science and that their medical training is simply an extension of something they have been involved in for many years.

   Using a simple and accessible technique, the students and the faculty are then encouraged to express their individual dreams of service by writing a personal Hippocratic Oath or mission statement. Then both students and the faculty are invited to read these personal statements aloud for 30-45 minutes, making visible the network of commitment and human caring that underlies the highly technical practice of medicine. Often, the chaplaincy students and director of the UCSF hospital chaplaincy training program will audit this session and write their personal statements of commitment to their service work and share in the reading.

   The exercise makes visible the shared commitment to serve that lies hidden below the divisiveness of expertise; it is often not possible to tell by simply listening if the person reading is a student, an oncologist or an internist, or a rabbi, minister, or priest.

   The power of this exercise to form a community of service and inspire students and faculty cannot be easily described. In this simple way, we all make visible and witness together the commitments upon which the future of medicine as a profession may depend. The reading
may be followed by a general discussion seeded by specific questions. The course ends with a few moments of silence in which we each wish all present the fulfillment of their dream of service.

Discussion questions:
See below

Reflection questions:
See below

Resource Material:
1. Books:
   - All Things Bright and Beautiful James Herriot
   - Tuesdays with Morrie Mitch Albom
   - Kitchen Table Wisdom: Stories that Heal Rachel Naomi Remen, MD
   - Wounded Healers
   - The Compassionate Caregiver: a guidebook Jeffrey Kane on healing relationships
   - The Healer’s Art Reader: A Collection of relevant articles from the medical and public literature

2. Course Website: www.meaninginmedicine.org
   (Finding Meaning in Medicine website) with extensive Bibliographies available

Evaluation strategies:
1. Self-assessment of growth and change through discussion and journaling
2. A standard Healer’s Art evaluation form and self-report is completed by both students and faculty.

Student evaluations:
This unit has been evaluated as part of the overall evaluation process for the Healer’s Art elective. A student advisory group of five to seven students, faculty, and the course director evaluate the course on an annual basis. Each year’s course design builds on student evaluations and feedback from the previous year. Changes may be implemented as the course is in progress, based on student advisor feedback. Since the beginning of the program in 1992, evaluations have shown that the processes used encourage respect for differences, self-exploration and self trust, and allows for personal ownership of the fundamental principles of healing and healing relationship.

Nearly half of the first-year students enroll in this elective at UCSF. Students value the small group experience highly and describe the Healer’s Art small groups as radically different from their other small groups and study groups. Student groups often continue to meet on their own to offer continuing support after the course has ended, drawing on the leaderless small group “Finding Meaning in Medicine” process described on the Website.

Similar Courses at Other Schools:
The course from which this module is taken has been successfully replicated by deans and faculty at 23 schools nationwide. Nationwide valuations of the course are uniformly outstanding despite wide differences in regional cultures. Faculty as well as students describe experience of the course as unique within their professional training.
CONTRIBUTED CURRICULUM MATERIALS

An experiential exercise from one of the experiential modules from The Healer’s Art course. Although it is a part of the fifth session of the course, it can also be free standing and can be incorporated into any course for all four years of students or can be used as a foundation for a two hour seminar and discussion on service values. In addition to its use in The Healer’s Art since 1992, it has been used as an independent seminar for thousands of students residents and/or physician groups across the country. It is simple to implement and is invariably evaluated highly by participants.

Note: This exercise may be conducted in any size of group, from five to 200 participants, with any level of student, resident, physician, faculty member, or any group that is committed to a healing mission.
EXERCISE: WRITING A PERSONAL HIPPOCRATIC OATH

This exercise has been done with medical students in The Healer’s Art since 1992 as well as with residents and physician groups at many sites nationwide. It is a community-building exercise that initiates a discovery process into the personal and collective meaning of medicine and the nature of service.

This simple and accessible technique enables participants to express their individual dream of service by rewriting a personal Hippocratic Oath in the form of a short poem. The study group then reads what they have written aloud to each other, making visible the network of values, hopes and human caring that underlies the highly technical practice of medicine. This is a very powerful session as the participants’ statements, while highly individual, are also universal. In a multi-disciplinary group or a group at varying levels of medical training, the exercise exposes the shared commitment to serve that lies hidden beneath the divisiveness of our expertise.

Start with a simple SHORT relaxation technique to enable people to focus on their reflection. Here is one that we have successfully used for a long time:

Begin by suggesting that people put down whatever they are holding, close their eyes and relax. (Allow five seconds of silence.)

Then say:
Gently place your attention at the end of your out-breath each time you breathe (five seconds of silence)
Notice the brief moment of stillness and peace that is there before you begin to breathe in. (Allow five seconds of silence)
We come to a place of rest five times every minute without really noticing.
Allow yourself to be in this place of rest as fully as you can each time you arrive there. (Allow about 20 seconds to pass.)

Then suggest that participants reflect on the following question. (Say it slowly.)
WHAT IF YOUR WORK DID NOT TELL YOU HOW TO LIVE?
WHAT TO WEAR?
WHAT LANGUAGE TO USE?
HOW TO BEHAVE TOWARDS OTHERS?
WHAT TO READ?
WHEN TO EAT?
OR HOW MUCH TO SLEEP?
(Allow three seconds of silence)

WHAT IF YOUR WORK WAS SIMPLY AN OPPORTUNITY FOR YOU TO EXPRESS YOUR HIGHEST VALUES INTO THIS WORLD?

WHAT WOULD YOUR WORK LOOK LIKE THEN?
(Allow three seconds of silence.)

WHERE WOULD YOU BE DOING YOUR WORK? (two-second pause)
WHAT WOULD YOUR RELATIONSHIPS WITH YOUR PATIENTS BE LIKE? (two-second pause)
WHAT WOULD YOUR RELATIONSHIPS WITH YOUR COLLEAGUES BE LIKE? (two-second pause)
WHAT WOULD BE IMPORTANT AND WHAT NOT SO IMPORTANT?
(Allow a few moments of silence while people reflect.)

TASK:
Now, ask for help in bringing this dream of service closer to your everyday work life. Write three or four sentences in the language of help, sentences that begin in one or more of the following ways:

Help me........
Show me.........
Strengthen me to........
May I............
Give me.........
Enable me to........
......or any such language form.

Ask for help with the way that you want to be, what you want to do differently, and/or what might get in the way of being or doing this.

(Allow 10 minutes for people to write. Watch your class, and see when most have stopped writing.)

Then, the course director can
a. suggest that people read what they have written aloud in a single large group
b. ask the group to divide itself into leaderless groups of six and read aloud to one another

Whatever the size of the reading group, ask people to read what they have written ......wait three seconds..., then read again so that everyone can really hear and take in what has been written. Suggest that the students listen GENEROUSLY to one another and simply hear and receive what is said.

The reading may go on for 45 minutes to an hour depending on the size of the reading group.

Once the reading is over, the director leads a large-group discussion of all students.

Reflection and Discussion:
The director may make some comments or observations or by inviting some comments from the class in response to the following questions:

What surprised you about this exercise?
What moved you about this exercise?
What inspired you about this exercise?

The director then asks people to make a copy of what they have written, and submit it—signed or unsigned—to be compiled and distributed to each student.

If appropriate the director may close this session by asking for a moment of silence to allow the class to wish each other well in their dream of service.
CHALLENGES IN PROGRAM EVALUATION
CHALLENGES IN PROGRAM EVALUATION

As we have seen in this guide, many schools have implemented curricula that reflect aspects of the Integrative Medicine competencies proposed by the Consortium. Evaluations of these efforts show the diversity typical of educational assessments in medical education. Some courses (e.g., UCSF, Duke University, University of Minnesota) employ measures (i.e., rating scales) that reflect the student’s level of satisfaction with the course content and faculty instruction. Some courses use focus groups and questionnaires that contain open-ended questions and reflective essays to assess a student’s perception of impact (e.g., Duke, Georgetown, University of Michigan). A few units include exam questions to assess knowledge, content, and clinical application (e.g. Jefferson Medical College, UTMB). Some courses include faculty ratings of student clinical performance (e.g. UCLA) and skill in problem-based clinical applications (e.g., Harvard, UMDNJ). Two (University of Maryland and Temple University) incorporate objective clinical performance assessments, using a standardized patient (SP). Few courses included multiple assessment tools.

The evaluation methods described in these units were developed mainly to collect learners' evaluations of specific coursework or to permit faculty assessments of student learning in a standardized way. Strategies were typically part of an overall approach that evaluated attitudinal shifts, specific content acquisition, and skill development within the context of conventional medicine.

Proceedings from a report of a 2002 national conference on curricular evaluation in complementary, alternative, and integrative medicine demonstrate that many strategies used to evaluate Integrative Medicine in these new curriculum initiatives are at a very early stage. Many of the current strategies do not capture the development of more complex, problem-solving skills or growth leading to proficiency. The lack of attention to the development of comprehensive evaluation strategies stems, in part, from the absence of articulated learner outcomes in integrative medicine as well as medical educators’ preoccupation with curricular development and implementation. Ideally, course and program evaluation strategies need to be linked to a broad set of competencies or expected learning outcomes appropriate for the level of learner. Similarly, consideration of learning outcomes should be undertaken prior to the design and implementation of learning activities within a curriculum.

As the social climate changes and patients clamor for integrative medicine therapies, medical educators are responding by giving greater attention to building and evaluating these skills in medical students. Similar to other domains of traditional “Western” medical education, the design and implementation of integrative medicine curricular activities and evaluation strategies have preceded the delineation and adoption of widely approved competencies. To date, a comprehensive approach to defining competencies in integrative medicine has not been described. Studies that focus on medical professionalism have not investigated the developmental trajectory of physicians who practice integrative medicine or the attributes that would comprise their competency base. There have been no national consensus panels that used assessment processes, such as the Delphi method, to create competency-based standards for integrative medicine. As a result, faculty and curriculum developers have been designing courses and embedding material within existing courses in the absence of any clearly defined core competency standards. Only a small set of academic institutions have developed specific learner outcomes in this area; fewer yet have attempted to address the full realm of complex competencies that represent the broad domain of integrative medicine.

The proposed set of competency-based standards for integrative medicine, developed by consensual agreement among CAHCIM members and presented in this curriculum guide, may lead the way for medical schools and academic institutions to incorporate these competencies into their broader set of mastery objectives. As such, it should encourage the rigorous design of new instruments and processes to assess changes in medical students’ knowledge base, clinical performance, or attitudes. Ultimately, these strategies to assess integrative medicine competencies
would be embedded within each institution’s existing evaluation framework, conveying to students and faculty alike the clear message of an integrated curriculum.

Surveys that evaluate students’ knowledge base and attitudes toward integrative medicine pre and post-curriculum implementation may prove useful for assessing student competency and tracking student learning. A number of schools have designed surveys for this purpose and have begun to administer them on yearly basis (e.g., University of Michigan). This longitudinal approach can constitute a foundation for continued focused assessments and refinements of a more comprehensive educational program in integrative medicine.

Two attitude assessment tools that have psychometric reliability and show promise for longitudinal measurement of competency acquisition in integrative medicine are included in this section. The IMAQ initially developed by Schneider to assess differences between holistic physicians and conventional internists can be adapted for use at the undergraduate level. The APP-CAM developed by Benn and her colleagues at the University of Michigan has been specifically designed to measure medical students’ practice attitudes toward incorporation of complementary, alternative and allopathic medicine. The factor structure underlying this questionnaire explicitly addresses integrative, conventional, and relationship-focused dimensions and can be used to track both individual changes in a student’s attitudes over time, and programmatic changes resulting from more comprehensive inclusion of curriculum material related to integrative medicine.

Specific integrative medicine assessment instruments (attitudinal or knowledge-based) are useful for measuring learner outcomes. Assessment of specific courses or components in the curriculum and associated learner outcomes for medical education in integrative medicine should, however, include a variety of evaluation tools and approaches. Ideally, the instruments used should have rigorous, established criteria, such as appropriate design (e.g., time, length, unambiguous questions, matching scales), and good psychometric properties (i.e., an assessment of the validity and reliability of scores from the instruments). In addition, they must be responsive to the specific questions that need to be answered within a program or institutional context and assess elements designed to meet specific competencies. In the proceedings of the 2002 national conference on CAM curricular evaluation, Creswell¹ suggests that the curriculum evaluation plans reflect not only traditional course measures (e.g., pre- and post-test multiple choice exams, objective performance-based assessments, graduation surveys), but also emerging means of learning in these educational settings. These methods might include, at different points across the four-year curriculum, the use of 1) qualitative data collection consisting of personal narratives from participants (e.g., students, faculty, practitioners), 2) one-on-one interviews or focus groups (e.g., about beliefs with students, faculty), 3) multiple observations of student behaviors (e.g., with simulated patients or reactions to standardized patients), and 4) student reflections captured in journals (e.g. in regard to patient encounters, problem-based learning scenarios, CAM providers, self-care practices).

Measuring the foundation and patient interview skills that support development in integrative medicine skills across the realm of medical school education requires not only a session and course approach, but also a broad program evaluation orientation. A recent report by the National Academy of Sciences² suggests that three questions should guide any model of program evaluation: a) What occurred?—a qualitative description of the activity (e.g., curriculum course unit details), b) What were the outcomes?—a quantitative measure of the results (e.g., exam results, frequency behavior checklists), and c) What explains the outcomes—a qualitative assessment (e.g., interviews, journaling) of individuals who participated in the activity and can offer explanations for the results. Together with conventional medical education evaluation measures, these qualitative approaches can contribute to not only evaluating student learning but also to understanding the processes that account for observed effects. Applying a multimethod evaluation plan ultimately will enable faculty and curriculum designers to revise content and activities in ways that better align integrative medicine competencies to student learning and learner outcomes.

REFERENCES
INTEGRATIVE MEDICINE ATTITUDE QUESTIONNAIRE (IMaq)

Craig Schneider, MD
Maine Medical Center

Absolutely disagree 1 2 3 4 5 6 7 Absolutely agree

1. A patient is healed when the underlying pathological processes are corrected or controlled. item1

2. The physician’s role is primarily to promote the health and healing of the physical body. item2

3. Patients whose physicians are knowledgeable of multiple medical systems and complementary and alternative practices (i.e., Chinese, Ayurvedic, Osteopathic, Homeopathic, etc.), in addition to conventional medicine, do better than those whose physicians are only familiar with conventional medicine. item3

4. Physicians should warn patients to avoid using botanical medicines (herbs) and dietary supplements until they have undergone rigorous testing such as is required for any pharmaceutical drug. item4

5. It is appropriate for physicians to use intuition (“gut feelings”) as a major factor in determining appropriate therapies for patients. item5

6. The spiritual beliefs and practices of physicians play no important role in healing. item6

8. The spiritual beliefs and practices of patients play no important role in healing. item8

8. It is irresponsible for physicians to recommend acupuncture to patients with conditions like chemotherapy-related nausea and vomiting or headache. item8

9. End-of-life care should be valued as an opportunity for physicians to help patients heal profoundly. item9

10. It is not desirable for a physician to take therapeutic advantage of the placebo effect. item10

11. Healing is not possible when a disease is incurable.  

12. Physicians knowledgeable of multiple medical systems and complementary and alternative practices (i.e., Chinese, Ayurvedic, Osteopathic, Homeopathic, etc.), in addition to conventional medicine, generate improved patient satisfaction.  

13. Therapeutic touch has been completely discredited as a healing modality.  

14. Physicians who model a balanced lifestyle (i.e. attending to their own health, social, family and spiritual needs, as well as interests beyond medicine) generate improved patient satisfaction.  

15. Quality of life measures are of equal importance as disease-specific outcomes in research.  

16. Chiropractic is a valuable method for resolving a wide variety of musculoskeletal problems (beyond back pain).  

17. The physician’s role is primarily to treat disease, not to address personal change and growth of patients.  

18. Massage therapy often makes patients “feel” better temporarily but does not lead to objective improvement in long-term outcomes for patients.  

19. The innate healing capacity of patients often determines the outcome of the case regardless of treatment interventions.  

20. A strong relationship between patient and physician is an extremely valuable therapeutic intervention that leads to improved outcomes.  

21. Physicians who strive to understand themselves generate improved patient satisfaction.  

22. Instilling hope in patients is a physician’s duty.  

23. Physicians should be prepared to answer patients’ questions regarding the safety, efficacy, and proper usage of commonly used botanical medicines such as saw palmetto, St. John’s wort, valerian, etc.  

24. Counseling on nutrition should be a major role of the physician toward the prevention of chronic disease.
25. Physicians should avoid recommending botanical medicines based on observations of long-term use in other cultures and systems of healing, because such evidence is not based on large randomized controlled trials.

26. Osteopathic manipulative therapy is a valuable method for resolving a wide variety of musculoskeletal problems (beyond back pain).

27. Information obtained by research methods other than randomized controlled trials has little value to physicians.

28. It is ethical for physicians to recommend therapies to patients that involve the use of subtle energy fields in and around the body for medical purposes (e.g., Reiki, Healing touch, Therapeutic touch, etc.)

29. Physicians who strive to understand themselves provide better care than those who do not.

Reverse-code the following items when scoring the IMAQ: 1, 2, 4, 6, 7, 8, 10, 11, 13, 17, 18, 25, 27.

Add demographic items as needed.
ATTITUDES TOWARD CAM

Rita Benn, Ph.D.
University of Michigan

Please indicate your response to each of the items using the following scale:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Somewhat Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

1. ___ Physicians should prescribe many CAM therapies because there is ample valid scientific evidence.
2. ___ Information about CAM obtained by research methods other than randomized controlled trials has little value to physicians.
3. ___ Physicians will benefit greatly from learning about the practices of medical systems that exist outside the dominant American culture.
4. ___ Most CAM therapies are not as effective as conventional approaches for the treatment of minor health conditions.
5. ___ The most important factor in facilitating patient healing is actively listening to a patient’s story.
6. ___ Most CAM providers have very limited formal professional training experiences.
7. ___ The quality of the physician-patient relationship is critical to the effect of therapy on the patient.
8. ___ One complementar therapy is as effective as another complementar therapy in the treatment of a particular disease.
9. ___ Physicians should avoid recommending most CAM therapies because they may be harmful to patients.
10. ___ CAM treatments should be covered in all health insurance plans.
11. ___ Few CAM therapies have professional associations that certify training of practitioners.
12. ___ Physicians should have knowledge of the licensing and certification requirements of the CAM therapies available in their community.
13. ___ There is no need for physicians to collaborate with specific CAM practitioners who also provide care for their patients.
14. ___ There are several reputable resources (e.g., peer-reviewed journals, books, etc.) that present reliable information on the scientific evidence for CAM.
15. Physicians should not recommend CAM therapies with patients because they can be held liable for malpractice.

16. The majority of patients who use CAM do so as a last resort.

17. Physicians should have as much knowledge of the basics of CAM as conventional medicine.

18. It is not important that physicians prescribe treatments that match a patient’s personal belief system about healing.

19. Most patients who use CAM are dissatisfied with their conventional healthcare.

20. It is important that physicians inquire about a patient’s spiritual beliefs and practices.

21. Physicians should have specific expertise in the actual practice of a CAM therapy.

22. Asking patients about their use of CAM should be standard clinical practice for physicians.

23. Most patients who use CAM no longer use conventional medicine.

24. Healing is different from curing.

25. Physicians should have sufficient knowledge to describe the most widely used CAM therapies and medical systems in their community of practice.

26. A physician’s personal well-being will have no bearing on the quality of his/her interactions with his patients.

27. More minority populations use complementary therapies than the Caucasian population.

28. Physicians who do not take personal time for relaxation are less effective in their medical practice.

29. The medical practice of all physicians ought to include treatment plans that integrate CAM therapies.

30. Complementary and alternative medicine is as effective as conventional medicine in modulating pain arising from chronic health conditions.

31. Physicians who are more self-aware of their strengths, biases, and limitations are more effective in their interactions with patients.