

WHITE HOUSE COMMISSION
on
COMPLEMENTARY and ALTERNATIVE MEDICINE POLICY

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CAM In Self-Care and Wellness

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Volume II

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400 New Jersey Avenue, N.W.
Washington, D.C. 20001

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P R O C E E D I N G S

[8:15 a.m.]

DR. GORDON: I am Jim Gordon, and I am the chair of the White House Commission on Complementary and Alternative Medicine Policy. Those of us seated around this table are commissioners and staff.

So if we could sit, everyone could sit for a minute and take a moment of silence before we begin, just to bring ourselves together within ourselves and together with each other, and be in this room. So if we could do that just for a moment.

[Moment of silence observed.]

DR. GORDON: Okay, thank you.

Michele, do you want to call up the first panel.

MS. CHANG: Good morning. Could the following speakers please come up to the table: John Astin, Adrian Sandler, Marc Micozzi, David Larson.

I would just remind the speakers to please speak into their mikes and turn them on when you speak. Thank you.

DR. GORDON: The first speaker will be John Astin, please. Welcome.

Overview of CAM in Wellness and Self-Care

DR. ASTIN: It is a pleasure to be here this morning. I am very excited about the possibilities of this commission and really pleased that I can hopefully play some role educational role for you, or at least serve as a resource.

I have been given the charge of providing an overview for today, sort of a larger context, if you will, to begin our dialogue, looking at CAM, wellness, the links between those two areas, as well as the self-care and prevention which are sort of all embedded within one another in many respects.

I wanted to start by defining a couple of terms, recognizing that these are not necessarily the final word on what these terms mean, but maybe as just a starting point for us. They come from several sources, including my own understanding of the term.

First, is how do we define wellness. When you look out there in the wellness literature, you see several definitions. It focuses around this notion that health involves more than merely the absence of disease. I think another way to put that is that human beings are capable of realizing or manifesting higher or more optimal levels of energy, creativity and psycho-physical well being.

The second part of the wellness definition is the belief that health more broadly conceived, encompasses not merely physical well being, but mental, emotional, social, environmental, relational, spiritual and existential well being as well. The term "self-care" took a shot at defining this:

"The myriad ways in which individual families and communities address health-related issues without the use of, or in combination with, the services of health care professionals."

Self-care, of course, can involve the decision to utilize professional services. That is a statement of self-care, oftentimes.

These concepts of wellness/self-care, and also prevention, are frequently embedded, as I said, within one another, if you look at part of the definition from the University of California, Berkeley Wellness Letter, a well known resource in the more conventional wellness domain, which includes the following. Wellness is defined as:

"A preventive way of living that reduces, sometimes even eliminates the need

for remedies. Wellness emphasizes personal responsibility for making the lifestyle choices and self-care decisions that will improve the quality of one's life."

A crucial tenet is that preventing illness is even more important than treating it, especially since many chronic diseases are not treatable.

I want to initially turn to the question of, if you are trying to understand the links between CAM and wellness, let's take a look at these two trends of wellness and self-care, and examine to what extent they are related to CAM. There are clearly strong thrusts of both wellness and self-care orientations, as I defined them, within much of CAM.

In fact, it is interesting that these very dimensions of many CAM therapies, that is, the emphasis on achieving more optimal states of well being, their tendency to address the whole person, as well as their focus on empowering patients, that these components appear to be what motivate many patients to actually use complementary and alternative medicine, based on some of my own work.

Let's look at a little bit more at these three dimensions and how they interface with CAM for a minute. Looking at optimal well being, there is certainly an emphasis in many CAM modalities upon not simply overcoming, or even preventing illness or disease, but actually on realizing more optimal levels of functioning.

Maybe this is where one of the greatest distinctions between the conventional approaches, I think, lays. Many CAM therapies hold either explicit or implicit beliefs that humans are capable of very high levels, even extraordinary levels, of physiological, mental, emotional, and spiritual well being.

In fact, many approaches in CAM posit that our so-called ordinary relatively disease-free state of functioning is in many respects sub-optimal. In other words, we are not maximizing our human potential, if you will. Not surprisingly, there is a historical link between a lot of the CAM holistic health movement and the human potential movement, as many of you may know.

This orientation towards optimizing well being is particularly evident in many of the mind-body therapies, which I am most familiar with in my own area of interest and expertise. You see this in therapies such as meditation, yoga, tai chi, and qigong, just to name a few.

In fact, most of these practices were developed not so much to treat disease, but to facilitate the development of various positive states of health, such as equanimity, harmony with oneself and the world, compassion, mental clarity, heightened perceptual sensitivity, and spiritual insight or realization.

It is interesting that even in some of their more secularized versions, if you will, a good example being some of Herb Benson's work, for many individuals, the practice of these approaches appear to give rise not merely to improve physical health and functioning, like lowering blood pressure, but to actual life-transforming experiences and insight. So again, you see this thread of emphasis on optimizing health, not just making one better or addressing some health-related problem.

I think this has been less studied, but in the whole area of nutraceuticals and supplements and herbs, you also see a similar emphasis in many areas on optimizing well being, and that people are actually using these therapies not simply to address some health-related problem but to optimize functioning, C, for example, in a product like ginkgo, where perfectly healthy people who have well-functioning brains and

memories are actually taking these products, at least with the belief that they can somehow optimize their, in this case, memory or cognitive function. It has nothing to do with treating an illness, per se, or a condition.

The second component of whole-person care, as we know, is a strong thrust in a great deal of CAM. You can see not only in mind-body medicine, which obviously has more of a whole-person approach, just by its definition, but even in approaches such as acupuncture, homeopathy, Ayurveda, Traditional Chinese medicine, and various forms of bodywork. It is not an exhaustive list.

But within these different CAM approaches, there is a fundamental recognition that non-physical factors play a vital role in the maintenance of good health. As a rule, one also sees in CAM therapies a greater appreciation on the part of the practitioners upon the role of behavioral lifestyle factors in shaping health.

In terms of the third component of self-care or empowering patients to care for themselves, my friend and colleague, John Kabat-Zinn, originated mindfulness-based reduction, one of the more prominent mind-body therapies being integrated right now in conventional health care settings. He suggested that the medicine of the future, as exemplified by those kinds of interventions, will really be participatory medicine, a medicine in which patients are actively engaged in the process of becoming well and discovering their own inner and outer resources for maintaining health and wholeness.

Along these lines, one sees, in many CAM therapies, a focus on patients becoming proactive participants in their own health care. In fact, a huge portion of CAM is self-care. The vast majority is not provider-based, but is self-care. You see this particularly in the area of supplements and herbals, most of which are used without any input from providers or professionals. As you can see in this brief discussion, both wellness and self-care are certainly key components of many CAM therapies.

I want to turn now to the questions, looking at it from the other direction, which is, to what extent is CAM, or CAM approaches, being included as part of the more conventional wellness and self-care movements. I think that, for the most part, the answer to this is, at least my read of it, is, not very extensively, although I believe this may be changing, and maybe this may be a role that the Commission, in terms of its recommendations, can help foster and facilitate.

To give you an example, there is a very well known book written by Vickery & Friese, "Take Care of Yourself." It is sort of, in some ways, the bible of the more conventional self-care movement. This book has over 10 million copies sold. It is in its 37th printing.

I looked at this book before doing my talk, just kind of looking at what, if any, mention of CAM was made in this book. It is very interesting, but virtually no mention of CAM approaches is made in the entire book, with the exception of a few very minor references to relaxation stress reduction, and I say very minor.

As an example, at the outset of the book, the authors state that there are "only seven major ingredients in a plan for good health." These are exercise, diet, not smoking, alcohol moderation, weight control, avoiding injury, and professional prevention practices like immunization and screening for breast cancer.

When you look at this list, you can see a marked difference between this orientation to wellness, and that typically seen in much of CAM, in that, no mention is made of how we interface psychologically, emotionally, and/or spiritually with ourselves and the world in terms of this also being a potentially

important ingredient of good health.

I think this really does point to the need for greater dialogue between the CAM community and those people who are part of the self-care movement within conventional medicine. There appears to have not been a lot of dialogue, as far as I can tell.

In my closing statements, I want to point you, if I can, in the direction of some potential recommendations that you might be making in these areas to the President and Congress. First, and I think this is really, really crucial, is that the medical research community begin to examine the efficacy of CAM in terms of the prevention of disease.

It continues to astound me when I travel around the country speaking at CAM conferences that, honestly, the word "prevention" almost is never mentioned. It is interesting to see that this is, in many ways, kind of paralleling what we see in conventional medicine, which is a terrible under-emphasis on prevention, both in terms of how we allocate resources, research, and in terms of third party reimbursement.

As an example, despite massive amounts of research showing the clinical cost effectiveness of work site health promotion, insurers remain reluctant to invest in such services. I think that some of the mind-body therapies may hold particular promise in terms of prevention, since they are aimed directly at transforming psychological, attitudinal, and attentional patterns, such as excessive stress reactivity, that have been shown to negatively impact health. Again, we have tended to look at these more from the standpoint of treatment, not prevention.

Given the well documented effects of mind factors, such as depression, anxiety, loss of sense of control, and anger-hostility upon disease states, positively transforming these through such mind-body practices as meditation, yoga, and relaxation, could have profound public health implications, from a prevention standpoint.

It may also be fruitful to examine the potential for other CAM modalities, such as acupuncture, various forms of bodywork, to be used as preventive health care. In other words, not simply to treat symptoms or disease. Similar to dialoguing with the self-care community, this points us in the direction of the CAM research and clinical community needing to dialogue with people within preventive medicine.

A second point that I think is very important is to begin looking at CAM in healthy individuals, and see if in fact, from a research standpoint, we can document that CAM optimizes health along several different dimensions; do we see that people receiving CAM, healthy individuals receiving CAM therapies, evidence greater levels of energy, vitality, creativity, and overall well being, and we don't have the answer to that question. That has not really been looked at.

Lastly, and I think this is really, really crucial, that the CAM community really needs to begin to break down rather than create barriers between themselves and the conventional medical communities. I really think it is a mistake, and I see it happen too often at conferences I am at, of sort of pitting CAM, whether ideologically or practically, against conventional medicine.

As an example, I recently gave a keynote address at a chiropractic conference where the chiropractors were trying to figure out if they could come up with a unifying sort of conceptual framework for their profession, which is, in many respects, very frayed right now, and they continuously painted this picture, like, "This is what we believe, and this is what conventional medicine believes," in terms of, "We are holistic and conventional medicine is not."

I think, quite frankly, that that is wrong. No. 1, CAM can be practiced in a very non-holistic fashion. I think herbs are a great example. They can be used quite reductionistically in much the same way that pharmaceuticals are used. Second, it is important for the CAM community to recognize that they do not have a corner on the holistic health care wellness market, if you will.

In other words, there are strong currents within the conventional medical community that are interested in wellness, that are interested in whole-person care, and it is very important for the CAM community to partner with those people within conventional medicine who share much of those common foundational principles.

So thank you very much, and hopefully I will be able to answer some questions after our panel speakers.

DR. GORDON: Thank you, John, and particularly thank you for stretching to accommodate our large mandate to you to give an overview.

DR. ASTIN: My pleasure.

DR. GORDON: We really appreciate it.

One of the things I want to say, particularly to John, but also to others who are coming forward and testifying to us, is that this really is an ongoing dialogue, and we want to hear from you, obviously today, and we want you to stretch to tell us what you think and what you see, and we want you to keep coming back to us and telling us what your responses are to our questions, and our responses to you. So thank you for being part of this part of this dialogue.

Adrian Sandler.

Integrative Approaches to Wellness: Children, Families

and Community

DR. SANDLER: I am Adrian Sandler. I am a practicing pediatrician. I am in the field of developmental pediatrics, that is, I see children with chronic illness and developmental disabilities, and I am here representing the Academy of Pediatrics. I am the chair of the Committee on Children with Disabilities for the American Academy of Pediatrics. I am also a member of their Task Force on Complementary and Alternative Medicine, and I am the lead author of a policy statement which was published quite recently, entitled "Counseling Families Who Choose Complementary and Alternative Medicine for Their Child With Chronic Illness or Disability."

Parents' exposure to information about complementary and alternative medicine has dramatically increased, and this is especially true among parents of children with chronic illness. For example, it is known that among children with autism, perhaps almost 50 percent of those children are using some form of CAM.

The policy that we wrote is neither a rejection nor an endorsement of CAM, but just an acknowledgement of the growing use of CAM and an effort to guide and advise pediatricians to listen to families, and to maintain an objective and unbiased viewpoint with regard to CAM.

Children are taking a lot of nutraceuticals. Children are taking supplements, herbs. They are being treated by acupuncturists, by herbalists, by chiropractors. We know that this is all very widespread. The question before the panel, I think, is, what is the role of CAM in wellness and self-care and prevention. As far as child health care is concerned, I would say we simply don't know.

I can tell you more about conditions that I know a lot about, like autism and cerebral palsy. In conditions such as those, the most commonly used CAM therapies are not really alternative therapies but unproven biomedical therapies. So the distinction between biomedical treatments and CAM becomes very blurred, particularly in the field that I am familiar with.

Nutritional supplements that are used very commonly in autism, such as DMG, vitamin B6 and magnesium, these are probably safe, but they are ineffective, based on research known to date. Secretin injections, there was dramatic media coverage of the potential for secretin in the treatment of autism, and large numbers of families spent a lot of money obtaining these injections in the hope that this would be really quite dramatically helpful for their children. Several subsequent double-blind, placebo-controlled trials have demonstrated that secretin is not only expensive but it is not better than placebo.

Hyperbaric oxygen for cerebral palsy is extremely expensive, and perhaps unsafe, based on some evidence. So these are really biomedical treatments. I think if I can say that most pediatricians would perhaps think that there are two kinds of treatments, proven and unproven treatments. The status of treatments rests on hierarchy of evidence, and for most CAM treatments, with regard to child health, we simply don't know.

Why are so many parents of children with chronic illness seeking CAM? I think that, certainly, uncertainty or lack of cure, the complexity of conventional therapies, their risks, their side effects, the pain or inconvenience associated with them.

I think it is true that conventional medical care often fails to recognize and respond to individual differences among children, and particularly, doctors fail to spend enough time. I think that some CAM approaches are perceived as more natural and more safe, and clearly, the Internet has dramatically increased families' exposure to sophisticated marketing and claims of effectiveness.

So parents are clearly trying to gain a sense of control over the threat of an illness and to improve the quality of life for their children. I think that pediatricians have an imperative role to assist them by providing family-centered care. This is where the policy statement comes in.

How do pediatricians reconcile this commitment to providing family-centered care with an ethical responsibility to safeguard the welfare of children? How do we counsel families about CAM while maintaining our commitment to evidence-based practice? Our policy statement helps to answer some of those questions for the practicing pediatrician.

And so, I would like to spend the remainder of my time just covering the essential recommendations that were made in this policy. Firstly, we advised pediatricians to seek information, seek information and be prepared to share it with families.

Secondly, to evaluate the scientific merits of specific therapeutic approaches, and to maintain an open mind and use the skills that pediatricians have in evaluating treatments. Many CAM approaches may be based on inconsistent or implausible biomedical explanations. Claims of effectiveness may rest on anecdotal information or testimonials. I think that that second point was really just to evaluate the merits

of specific approaches, whether they emanate from the field of alternative medicine, or from conventional medicine.

Thirdly, identify the risks or potential harmful effects. We are talking here, of course, about direct toxic effects, as well as the potential harmful effects of postponing biomedical therapies of proven effectiveness. There are also indirect harmful effects that I think need to be considered, the financial burden of alternative therapies, unanticipated costs that come with strict adherence to treatment protocols.

Fourth, we advised that pediatricians provide families with information on a range of treatment options.

Fifth, that we educate families about how to evaluate information that they may be receiving. I think that there is an imperative to give people the skills that they need to be able to be vigilant for exaggerated claims of cure, to particularly watch out for treatments that may require intense commitment of time and energy and money.

Sixth, to avoid dismissal of CAM in ways that communicate a lack of sensitivity or concern for the family's perspective. So respectful, family-centered care really rests on the pediatrician's willingness to listen carefully and to acknowledge the family's concerns. Also, if CAM is chosen against the advice of the pediatrician, to go on, of course, providing care for the child.

Seventh, to recognize the feeling of feeling threatened, which perhaps I felt before I came up to the panel this morning. Feeling threatened and guarding against becoming defensive.

And lastly, if the particular CAM approach is endorsed, offer to assist in monitoring and evaluating the response, try to establish some particular outcomes, try to assist with measures, try to determine whether or not Treatment A is helpful for Condition B in Child C. That is the sort of paradigm that we want to try to encourage members to implement.

Those were all of my prepared comments. Thank you.

DR. GORDON: Thank you very.

Mark Micozzi.

DR. MICOZZI: Good morning. As most of you know, I have been quite involved in medical education in complementary medicine over the years. In fact, many of the distinguished members of this panel have been helpful to me in those efforts, and I want to thank you all for that at this time, as well as all of you for your service in this important commission.

But in keeping with today's theme, I am going to direct my comments to the work of the College of Physicians, particularly through our Division of Public Services and our C. Everett Koop Community Health Information Center, which we call the Koop CHIC. Andrea Kenyon, who directs the Division, is with me today.

As you know, it is customary for people about to give testimony in Washington to provide details, charts, graphs, or other visual aides. In 1993, at the request of Senator Harkin, I appeared before a senate subcommittee with an entire iron lung. This was to help make the point that federal support for biomedical research had eliminated the need for it, but today, the only visual aide I brought with me is

small enough to fit in my pocket. I am holding up a library card for a

C. Everett Koop Community Health Information Center. This is a free resource that provides authoritative and timely information on a host of diseases, conditions, and health concerns.

In communities across the nation, accessing reliable information on complementary and alternative medicine and other health-related topics should be as simple as owning a library card. The foundation for such a development is being established in a unique alliance between the College and the Free Library of Philadelphia. The College has a strong history in advocating improved public health since its founding.

The Free Library of Philadelphia was founded by a physician and member of the College, Dr. William Pepper, in 1891. Fueled by support from Andrew Carnegie, library branches also soon sprouted in neighborhoods throughout the nation. Today, with 50 branch libraries and 2 million card holders, the Free Library system in Philadelphia constitutes one of the most important networks for diffusion of knowledge and information in the eastern U.S. With this large client base and convenient access to cities, the fifth largest city, the Free Library is the right partner to distribute accurate public health information.

The generation born between 1946 and 1957 has transformed America, with the freedom to make real substantive choices in various fields, this group applies the concept of choice in health care as well. They sought alternatives to medical procedures which they perceived as expensive, invasive, and increasingly technological.

Coupled with the determination of the active partners in protecting their health, and through the power of the marketplace, the cohort is changing the nation's health care system as well. Complementary medicine has become one of the most significant consumer movements in modern times. Millions care enough about these approaches to pay for it out of their own pockets, and more visits are logged to alternative practitioners than to primary physicians.

Different parts of the federal government have begun to conduct clinical trials to test the effectiveness of promising complementary approaches. Medical schools have begun to educate their students about the history and clinical significance of alternative treatments. Health insurance plans, which once avoided complementary approaches as experimental, now sometimes cover them and aggressively market their availability. It seems that these approaches have gone from being taboo to a marketing tool of choice in little more than 10 years.

Several years have passed since the FDA reclassified the acupuncture needle from an experimental to a therapeutic device, based upon evidence. Yet, many Americans who suffer from chronic pain remain unaware that acupuncture may be an effective, non-addictive form of pain relief.

Time has marched on since the AHCPR concluded that spinal manual therapy provides more effective relief for acute lower back pain than do drugs or surgery. Yet, the nation's workers and employers confronted daily with this most common of all injuries are often not aware that manual therapies can save them money while providing relief.

We have all read about recent efforts by state legislatures around the country to legislate safety in the schoolyard. We have known for years that meditation relaxation techniques associated with different traditions, such as Ayurveda, for example, can be effective in reducing tension and stress, and also

aiding academic performance in schools. You may have seen the January 15th article in the Washington Post which discussed the growing popularity of acupuncture as well as a means of reducing stress among students.

We could cite many more examples about the disconnect between the results of clinical research conducted or supported by the federal government in current public practice in many spheres of life in the U.S. So what is to be done?

In my experience, those physicians being trained today are often aware of these facts and may offer appropriate advice to individual patients and institutional clients alike. One problem is that older physicians differ greatly in their awareness of these facts and their willingness to accept them. Perhaps the surgeon-general might send a letter to the nation's doctors reporting briefly on those complementary approaches which have been validated by clinical research within the last five years.

Also, many local school districts throughout the U.S. require some form of health education as part of their regular curriculum. Let's take a hard look at what is actually being taught in these classes. In communities where local school boards are open to it, let's begin to teach students and their teachers about meditation and relaxation techniques. We might also consider including more and better information about the ancient civilizations and diverse cultures which gave rise to many of these health traditions in the first place.

While focused on children, it is important to point out that pediatricians have a growing interest in complementary medicine. The wellness and health promotion orientation of most complementary medical systems and modalities provides a natural affinity for much of pediatric practice, taking care of the well child.

Our social view of complementary medicine for children is somewhat paradoxical, however. On the one hand, complementary therapies are seen as gentler, less invasive, and "more natural." They appeal to many parents as approaches to some childhood illnesses for these reasons. We often seem less willing to accept the often harsh side effects of conventional treatment in children than we do in adults. On the other hand, because much of complementary medicine remains untested by the standards of contemporary research, there is a natural reluctance to feel as if one is experimenting on children with unproven remedies.

So again, this can be answered by research, and the NIH has begun to create programs specifically focused on children in more recent years. Also, practitioners in certain fields, such as homeopathy, nutrition, and manual therapies, have been conducting pediatric research on their own for many years.

President Bush is a firm believer in the idea that the private sector and the states are the true engines of innovation and experimentation in the U.S. States might be willing to offer incentives to employers to start new workplace health and wellness programs, incorporating, appropriately, complementary and alternative medical modalities. If states save as much in Workmen's Comp payments as might be anticipated, others will choose to participate as time goes on.

At the College of Physicians, our own Koop Center was established for two reasons: patients want and need to be more involved in caring for their own health. Doctors responding to the realities of managed care are now expected to see more patients, spending less time with each. Our goal in the Koop Center is to help empower patients by providing them with credible knowledge and accurate information to help make the most of the time they do have with their physicians, and to interact more effectively with the

health care system as it is.

Our members, and physicians generally, are very concerned about the inaccurate and misleading health information which is currently available on the Internet and through commercial sources. This information constitutes a public health problem of its own. This is one reason a growing number of physicians are taking advantage of, we call it, Prescription for Knowledge Program. Under this program, doctors send patients to our Community Health Information Center at the time of diagnosis to access additional information.

One cornerstone of this system is that a trained medical reference librarian is always present. Although labor intensive, it makes it much easier for patrons to take advantage of the resources that the CHIC offers.

The U.S. Centers for Disease Control did a survey to learn more about the information needs of our patrons and our ability to serve them. We found that 49 percent of our respondents want information on a specific disease or condition -- that is the time of diagnosis, often -- 20 percent wanted wellness information, 13 percent want physician information, 11 percent had questions about complementary medicine, and 8 percent sought information on specific medications.

The CDC evaluation found the CHIC to be the most credible, thorough, and accurate source of health information in greater Philadelphia. I believe that the developing alliance between our medical library and the public health library system in Philadelphia, as a model for elsewhere in the nation, will be able to serve a multitude of different audiences with different health information needs. If replicated across the U.S., it should constitute a major advance in making credible and timely information about complementary medicine, as well as health promotion and disease prevention, available to a broad audience.

Thank you.

DR. GORDON: Thank you very much, Marc.

David Larson.

DR. LARSON: I would like to thank Commission Chairman Gordon, and the other Commissioners for inviting me to participate in this important panel on complementary and alternative medicine in wellness and self-care.

I am Dave Larson. I am a psychiatrist, an outcomes epidemiologist, and president of the National Institute for Health Care Research, which is a private, not-for-profit research institute focusing on analyzing and disseminating published research on the relationship between spirituality and physical and mental health, and well being.

You might say I sort of stumbled into this relevant health care factor of spirituality some 20-plus years ago, then continued to study it while at the National Institute for Mental Health in the 1980s, and I have been studying it ever since. I must admit this was not initially a very good career choice. It was kind of like bowling alone for the last two decades.

By the way, I must admit I didn't, obviously, respect the separation of church and state, working in the federal government and studying religion and spirituality. I did find out a reason for doing it. I found that

people actually mentioned God a lot in the federal government, especially "goddamit" was a frequent phrase in the federal government. So I felt that, since they were actually talking about God anyhow, I could study it.

I have been asked by the Commission to look at this issue of spirituality, which I think is very relevant in clinical prevention, coping with serious and chronic illness, as well as enhancing treatment outcomes for those who already possess or have strong spiritual religious beliefs. These numbers are sizeable. When you are talking about people with serious and chronic illness, 70 to 80 percent want their spirituality addressed. We are not talking about minority numbers here.

I have been asked to comment on the relationship between spirituality and health, as the relationship between spirituality and CAM. I have also been asked to comment on what I perceive to be some of the significant barriers and opportunities to incorporate spirituality into clinical care, and provide recommendations for steps and approaches that can bring this spirituality more into health care.

What is the relationship between spirituality and wellness? It would be impossible, in the amount of time I have been given, to discuss all of the various areas of wellness, whether physical, mental, or social health, to which religious beliefs, practices, and behavior have been found to be linked.

I have a book, which Harold Koenig and I just published, Oxford Press, which reviews more than 1,200 studies on the relationship between religion and/or spirituality and a variety of mental health and physical health outcomes. Also, if you have a sleep problems, it is a good thing to try and read.

I have chosen to focus on one area in the relationship between spirituality and religion, and one substantially illustrative of wellness, longevity or mortality. In other words, the rate of death in a given study or sample population.

For us epidemiologists, it is kind of the gold standard of a dimension-like spirituality. We like to look at potential protective factors and see if they predict longer or shorter life. Thus, mortality studies are a good place to start. It also tends to be a reliable, valid measure that most people do not want to experience. If HCFA can use it, why can't we, in terms of spirituality.

Now, early findings in association were first found by George Comstock when he was an editor at American Journal of Epidemiology, looking at samples in nearby Washington County, Maryland. Although, those samples where he found religion predicted longer life went unnoticed for about five to 10 years. Those studies were then followed up on, and further research happened in the early 80s.

The methods improved and the number of sites where we looked at this variable continued to grow. What we found, for example, in '97, in Alameda County, with a 28-year follow-up -- Bill Strawbridge -- of over 5,000 people. By the way, Alameda County, you could not call bible belt, Alameda County, California. Those who attended church had lower mortality rates than infrequent attenders, with a relationship stronger for women than it was for men. He controlled for a variety of predictors.

By the way, Bill has a recent piece in Annals of Behavioral Medicine that frequent worship attenders were in better health at the start of the study, but more importantly, those who didn't have good health habits were more apt to develop healthier habits if they attended church more frequently.

In 1998, Doug Oman and Reed also looked at Marin County, again, not known for its bible belt relationship, and again, they controlled for multiple factors. They found a 24 percent lower risk for a

premature death for frequent attenders compared to non-attenders. They did not find that other community activities substituted for church and predicted longer life, but they did find a complementary effect, that is, both attending worship and volunteering helped people to live even longer.

More recently, Koenig, again, demonstrated 28 percent decrease in relative hazard of dying for frequent attenders, and demographers Hummer and colleagues had a national sample. All the other ones I just talked about were regional or local. What he found is, in essence, when you compare frequent attenders versus non-frequent attenders, it is like adding seven years to your life, and for African Americans, it is like adding 14 years to your life. So my wife and I are now going to an African American church.

[Laughter.]

DR. LARSON: Finally, in meta-analysis, where a summary of the studies were done, was published in Health Psychology in June 2000, and Mike McCullough and I found overall about a 29 percent greater survival for the follow-up periods of all studies looked at, and to reverse the findings would take about 1,400 studies of no relationship.

So this is a pretty strong, although moderate, effect. But you must remember how frequent this is in the U.S. population. About 60 percent go to church, synagogue, or mosque on a monthly basis.

Now, it should not be a surprise to us that there is also going to be harm. Religion and spirituality, although most of the studies find it is beneficial, can be harmful as well. To illustrate, Garrison Keillor said, "Religious guilt is the gift that keeps on giving."

We have also found that there can be negative coping, as Ken Pargament has illustrated, where people feel rejected by God or alienated. A recent study on mortality shows that those people live shorter life spans, a recent study just published by Koenig and Pargament.

The interesting thing is that most of the studies that have been done to date have been, usually, single-item measures of worship attendance. Those are not the best measures of spirituality. Indeed, again, Keillor, to quote him, has said, "If you think going to church makes you a Christian, sit in your garage and you will become a car."

[Laughter.]

DR. LARSON: We epidemiologists are superficial and don't mind using such variables, and so we continue to use them.

Now, what is the relationship between spirituality and CAM? As David Eisenberg has well illustrated, people frequently use prayers to help them when they are coping with their illness. His levels are lower than most studies have found, about 30 to 40 percent. Most studies, with serious and chronic illness, find 60 to 80, some studies, 95 percent. Prior to bypass surgery, one study showed almost 98 percent of the people pray.

The use of spiritual practices can become even higher in ethnic populations such as Hispanics and Native Americans, as well as among the elderly. Furthermore, there is a significant spiritual component to many of the systems of medicine that are typically classified as CAM, Ayurvedic, Traditional Chinese and Oriental, and Native American medicine.

What are the significant barriers? I think there are several that are there. First of all, traditional medicine is getting with spirituality. Seventy of 126 medical schools now have courses frequently required in spirituality in medicine. This has been an amazing change that has happened, especially with the support of AAMC. The National Institutes of Health is beginning to fund things in spirituality, but there is really only one institute, the Alcohol Institute, that has been looking at this.

In essence, to date, CAM has been, in terms of spirituality, approximately a wing and a prayer in this arena, and yet this is a very important dimension of CAM as it is becoming a traditional medicine as well.

We look at this as a health care factor of choice. We don't force this on people, but for many, this is already a health care factor of choice; how do we support it if it is there, or, if it is conflictual, how do we get spiritual care providers, like chaplains, involved.

Research is now beginning to look at mechanisms of how spirituality can aide in maintaining health, as well as helping those who are ill to assist in recovering or coping more effectively with their health problems. There is evidence that social support, better health behaviors through a promotion of positive emotions, hope and optimism, the relief of guilt and anxiety, and even better immune functioning may all play a role in the effects that spiritual and religious factors have on health outcomes.

The small amount of funds that are currently available from private foundations, such as Fetzer [ph] and John Templeton Foundation, are not sufficient to either look at the mechanisms or begin to look at issues of causality, as the recent piece in Annals of Behavioral Medicine did.

There is a need for better access to information. These studies were not keyworded until the mid 90s. It is very hard to find studies in this book that have been published in peer review journals, almost all of them.

Finally, a major obstacle is still there. Although the next generation of medical students are getting it and looking at spirituality, this is still a bit of an anti-tenure factor for those who are our generation. They are still afraid and reluctant to look at it. Often, looking at it is either irrelevant or harmful, or causing problems. For our patients, it is a very important variable, and they would like it addressed. The research shows that it tends to be a beneficial thing, something that we can be looking at more effectively.

Recommendations. Based on what I have said, I would recommend, first, the establishment of at least one, if not two, research centers for health and spirituality by the National Center for Complementary and Alternative Medicine. We do not have a center now looking at spirituality. There are plenty of medical centers out there wanting to look at this area.

Providing grants for both basic research studies on studying the mechanisms of how spirituality impacts health and prospective studies assessing causal relationships, both good, bad, and ugly in terms of spirituality.

Providing grants, secondly, for model research programs that attempt to integrate this knowledge into clinical practice and research preventives, spiritual support coping or interventions that might improve patient outcomes and also reduce cost.

Third -- let me just finish -- the development of a centralized database, very important, so researchers can find this research on spirituality and health, that would contain not only the many extant and

growing number of clinical research studies, but also information on how to obtain funding, and also what are model care and educational programs already out there. Such a database would go a long way toward bridging the gap between research and clinical application.

Finally, the support for and development of continuing education conferences and other educational materials to help make the clinical and research communities better aware of the research linking spiritual and religious factors to various aspects of health.

Finally, there remains a critical need for forums where doctors can have the opportunity to interface and interact with clergy, chaplains, and pastoral care professionals, so that clinicians can develop a better understanding of the potentially important role religious professionals play in promoting health and healing. Many of the medical school courses are employing such models where physicians are closely collaborating with chaplains. The same can be done to assist practicing physicians to realize the importance of a frequently forgotten part of the health care team, the chaplain.

In closing, I thank the Commission for requesting me to come to present today. It has been my pleasure to highlight and recommend a few needed steps in advancing the research-based integration of spirituality, health, and well being.

DR. GORDON: Thank you very much, Dave. We very much appreciate that overview.

Panel Discussion

Questions from Commissioners? Yes, Dean?

DR. ORNISH: First, I just want to thank all four panelists. I thought all four presentations were exceptionally interesting, informative, and useful. So, thank you.

I want to direct my question to Dr. Larson. It seems clear in these studies that you have cited, and in many others, that spirituality, social support, all these factors play a really important role in not only the quality of life but in the survival, the quantity of life, but you haven't really speculated on why you think it is true, and I am curious to know that.

Also, if you could address the issue of spirituality versus religion; spirituality, which often tries to find commonality in religion, which often tries to find differences. Particularly, since we are a White House Commission, the kind of sticky wicket of church-state separation when you have a governmental panel.

DR. LARSON: Two good questions. Well, first of all, as you, I think, noted quite well in one of your books, love might be a very important issue. That is some of the positive psychology, and it might be a very important part of social support, as you document, that love or other positive psychology elements that are coming out now, forgiveness. We have a piece coming out in Psych Bulletin in June on gratitude, that it might play a role in better health.

So that might be one mechanism, some of these positive psychologies. Another social support, as your book again highlights, and others have done as well, where social support looks to be a mediating factor, a way of looking at this and saying, it does look like people give and take better; they are there to help each other during times of stress. I think that is the thing, that this adds to one's stress-coping strategies, that stress is there, as you know better than me.

So, how do you have resources like social support, like some of these more internal social supports like love or forgiveness or gratitude, as well as better coping, the work of Ken Pargament in psychology, that seems to add to one's model of coping.

And finally, health behaviors, that, as Strawbridge just recently highlighted, it seems to change people's views so, in essence, as John was bringing out, spirituality seems to improve their health behaviors. They seem to want to do something about it to change, whatever their Eastern or Western tradition.

Now, I briefly ran through mechanisms to get to the second one. The definition of spirituality and religion, actually, in a consensus conference we did, we really tried to work on this. We had a consensus conference three years ago, an NIH-type consensus conference. Wayne was aware of this. Jim Swyers was actually involved in this.

One of the things that researchers really struggled with was the definition of spirituality, and that that is really the broader base. That is where we think the research needs to go. Despite the fact that we have a book on religion, that is where the research has generally been, with these single-item kind of primitive measures of religion.

We think the vital thing is spirituality, and that it fits within different types of structures, religion for some, AA for another. For others, it might be small groups where they go. For some, it is their music. For some it is small groups where they get to garden, gardening groups, things like that, but that, it is what gives them meaning and purpose, and in terms of medicine, especially during times of stress.

Bob Emmons has written a book on ultimate concerns, taking from a Tillic concept, and I think that is a nice way to look at it; what are those things that really impact our ultimate concerns and where we find strength and meaning. So we think the functioning thing is spirituality, but you definitely need multidimensional measures to begin to look at spirituality. So we need to look at spirituality outside of religion, and spirituality inside religion, and also harmful spirituality as well.

Again, I am running quickly, sadly. The last question is a very important one. Obviously, the issue of church and state has been recently heightened with the faith-based initiative, as we are probably all aware of, and I found that when I was in the federal government, people were very receptive to my looking at this area because it was a population-relevant area.

I think the key is to really look at this as a health care factor of choice, to have a very tight wall in any way of forcing this on people. You have to stay totally away from that, proselytizing, forcing this on people. That must not be happening, but I think that if it is a health care factor of choice, something where the patient would like this addressed, especially where they have very few resources, serious illness, chronic illness, then I think we really should be addressing it.

One of the reasons I think we should is, that is where health care costs are, and I think if we were more intentional about addressing this and supporting it where it is a problem, where it might need more health care costs, addressing it with chaplains or appropriate personnel, I think we might be actually reducing health care costs, again, where it is an appropriate factor for the patients.

I went through that very quickly.

DR. GORDON: David.

DR. BRESLER: I also want to thank all of the panelists. I thought your comments were outstanding and very thought provoking, but this is also for Dr. Larson.

If you think about it, we psychologists and psychiatrists, looking at the root meaning of the word, should be soul doctors. I remember, in my training, two discussions of spirituality. One had to do with religious cults, the other had to do with religious hallucinations and delusions and how they were treated, psychopharmacologically. Short of that, there was very little training about spirituality for health professionals, and especially for mental health professionals.

Do you have specific recommendations about this? Do we know enough about spiritual counseling to be able to train our contemporary health professionals in how to do this?

DR. LARSON: Yes. It is a very good question. Given the success, we were surprised that the tradition med school courses got so interested in this. We basically had small awards that we started to announce in '95, and the number of courses went from three in '95, to now over 70. So we decided, oh, what the heck; why not try psychiatry. So with support of some of the people within the APA, we now have about 40 places where they have courses on spirituality, where they are training residents.

One of the things we had to do, though, first, unlike medicine, was actually come together. Whenever spirituality is done, this is an important way to do it, where people of different faith traditions came together and agreed on, in essence, a model curriculum for psychiatry. They needed a handle to hold in psychiatry because of just what you were saying. It was a little bit more primitive in psychiatry, and the views were a little bit more strongly that this is a harmful factor.

The research really didn't show that. I did a review that was published in the American Journal of Psychiatry that surprised me. I got into this field because I wanted to see why it was such a harmful variable, and I thought it was. I am Episcopalian, so, no problem. I mean, you know, religion is harmful.

So I got into this and I looked at the American Journal in the archives, and I found out in 80 percent of the findings, it was beneficial in the two tenure-granting journals of psychiatry. So it began to reverse some of the changes that were there, DSM-4, most of the illustrations of pathology. You probably are aware of that.

Now psychology has begun to get an interest, too. There was a recent piece in Psych Annals that Cherfransky [ph] did that showed both psychologists and psychiatrists, about 10 percent are having this issue addressed, and these are people in the field, but about 70 percent wish they had it addressed in their training. So we are starting to see in the psychiatry movement, and psychology as well, due to the researchers getting on, but we still think there is a lot more that needs to be done in this area.

DR. GORDON: Thank you.

I have Joe Pizzorno, George Bernier, and Joe Fins.

DR. PIZZORNO: Dr. Astin, thank you for your presentation. I especially liked your comment about asking the CAM and conventional medical community to stop being so polarized and antagonistic. I did need to make one comment, however, and that is, as long as the medical professions' political bodies continue to erect legal, financial, social barriers to CAM practitioners, it is going to be really hard for CAM practitioners to change their perspectives.

Something, I think, that has actually not been said within this body while I have been here, needs to be said, and that is, we need to correct this political problem because it makes it really hard for a CAM practitioner to function properly.

Going on, I think we are all aware that the principles we have been talking about, the promotion of wellness and such, are critical to changing health care, and people in this room are here because we believe that.

When I look at seeing how these concepts have been utilized in the public, probably public health has been most effective in these areas over the last century. However, when we look at the health care dollar, how it is spent, 98 percent goes to intervention and 2 percent goes to public health.

Being on the CL Board of Health, I can tell you that, of our budget, only 2 percent of our budget actually goes to health promotion, and the rest of the budget actually goes to things like to contagion control, which of course is important, but most of it is for providing services to underserved and low income populations.

So my concern is that while this is critically important, we actually invest very little resources in making this happen.

Do you have any recommendations about how we can practically give advice to Congress to change this formula to something that is actually going to work for everybody?

DR. ASTIN: Thanks for your question. In terms of a specific recommendation, I guess I have this sense of -- there was a recent series of papers, and I suggest that you folks take a look at these in the journal "Academic Medicine" -- I don't know if you have seen this issue -- published by the AAMC, Association of American Medical Colleges. It is a very visible journal in academic medicine.

This was bordering on a slanderous attack on alternative medicine, complementary medicine. I was really taken aback just when I was starting to feel like there is hope for dialogue. This was an example, I think, of what you touched on initially, that there are some significant bridges that need to be built. I think people who have a CAM orientation, are interested in this as a field, need to do their utmost to really build dialogue with these people and recognize that that is the only hope.

I think that this includes practitioners, in terms of really speaking the language of evidence-based medicine, which is the doctrine that is pounded into those of us who work in CAM over and over again. Although, in this series in "Academic Medicine" there is a huge amount of double standard that is going on, in this series, around requesting that CAM be evidence-based on the one hand, and yet providing no evidence at all in the claims that are being made that it isn't evidence-based, which is a real catch-22.

In terms of recommendations, let me just say that I think maybe one of the most enduring contributions that CAM will make to medicine as a whole is in reminding the whole of health care about these important themes of caring for the whole person, of prevention, of wellness. Maybe that will be its enduring contribution, that it will push that dialogue and be a force for reform in terms of the whole of health care, to move it more in those directions.

DR. GORDON: John, I just want to follow up for a second on Joe's question. What about specific steps, in terms of reaching out?

You mentioned the gap between conventional notions of wellness, and the notions of wellness that come out of CAM. How do you see specific steps, aside from accumulating evidence, in terms of us as a commission reaching out to that community and trying to bridge those gaps?

DR. ASTIN: It may be hindsight, but leaders in the field of self-care, for example, somebody like Jim Friese at Stanford or people who are at the forefront of preventive medicine. There is a "Journal of Preventive Medicine."

I think they are becoming more interested in CAM, and really reaching out to those people who are visible within the wellness/self-care movements, within conventional medicine, that may not be linked into the CAM community at all, and bringing those people into your dialogue and discussion, and really picking their brains, in terms of what do they see their field's perspective on CAM is, and where they think there might be important linking points.

DR. GORDON: Great. Thank you.

George?

DR. BERNIER: I have a question for Dr. Larson. Really interesting findings about the life-expectancy link to spirituality. You also made a nice reference to Garrison Keillor and the idea that, at least for some groups, guilt seems to drive the process.

Has anyone studied a small number of major religions to see if within one of those, or all of those, or some of those, the issue of life expectancy could be really linked to what they have undertaken, the kind of religion that they have entered?

DR. LARSON: There are two. Most of the studies that have been done have been U.S. samples. Most of them have either been Muslim, Jewish, or Christian samples, most of the studies that have been done, just because it is hard to get samples of smaller groups in the U.S.

Now, there have been international samples done in some areas, and what it looks like is that findings that we are finding usually are of other faith traditions. It looks like the findings we are finding here with Western are similar for Eastern. That is our expectation and hypothesis, but one of the recommendations is that people really begin to look at other Eastern and Western traditions as well.

So there have been some studies done, and it is looking like, and it is not a surprise, that religious traditions across the board probably may have the same health benefits in terms of that.

I also just want to respond quickly to Jim's comment. I think it is a point that is well taken. I think one of the things we found in spirituality, which really should be a more difficult and challenging area than CAM, if you think about it, given the history of religion tending to war and fight with people. This is not a good place to go if you are a scientist or an academician. I think highlighting patient need, which the Eisenberg piece really did, is very, very important.

And then, the gap. I mean, we understand marketing. You had media people here yesterday. To really show the gap between how many physicians are addressing it, the point that they are not telling their physicians and it is not being addressed. We found 60 to 70 percent of patients want spirituality; 10 percent of physicians are asking. That is a huge gap. For a marketer, you can drive a truck through that one. That is something we emphasize.

The other thing we do that is very important, that I think alternative medicine people should be doing this more, is systematic reviews of different fields showing how much they are studying CAM. If they are not studying it, as researchers they shouldn't be talking about it. That is the rule they play by. So what we have done in religion and spirituality is to go field after field and look at systematic reviews, showing they are not studying it. And so, please hold back your comment or try not to be subjective, but more objective.

Finally, to really establish relationships within the AAP, or the American College. Recently, the American College had a very strong position on death and dying where one of their main recommendations is on spirituality and religion.

So I think personal links are the very important ones that we have been successful with.

DR. GORDON: Thank you for that.

I have on my list Joe Fins, Tieraona, Charlotte, Wayne, Conchita, and Effie.

DR. FINS: Thank you. I have just two questions, one for Dr. Larson, and then one for Dr. Sandler.

Dr. Larson, what can you say about medicine as a priestly tradition?

Given the rise of this interest in spirituality, I am reminded of this book by Cassidy about American medicine in the colonial days, and most medical practice outside of the major cities, Philadelphia, New York, were provided by clergy because they were literate. Going back to the Greco-Roman times, doctors and priests were the same thing.

The rise of spirituality, the decline of the priestly tradition in medicine?

DR. LARSON: Or priestess. Actually, I think one of the things that has really changed in medicine is the increased number of women, because I hate to say this but I have actually found that there is a gender sensitivity, where women are receptive physicians to this a little bit more than us XY chromosomes. So that is one thing that I have noticed.

The other thing I have really noticed, where we have seen the explosion, is family medicine, internal medicine. The awards there, some of the courses there -- we just started there -- have really been quite amazing.

Thirdly, that we have found medicine generally pretty receptive. Thomas Kuhn talks about a pre-paradigm phase where you are trying to bring something new into something old, that there are often struggles, whether it is CAM or spirituality, but we found with the research that medicine has generally been pretty receptive to bringing it back.

Now, if we use the term "priestly tradition," it could actually be offensive because for some religious traditions, that isn't the right word. So we really try to recognize diversity as much as possible.

So you are right, in the colonial days that was okay because they had to be all things to all people, kind of like the utility infielder in baseball, but I think that what we are trying to do is not say, let's become a priest -- let's use the chaplains -- but rather, let's just learn.

Matter of fact, it will scare them off if you tell them you should be doing too much. Let's just get the basics down: what is a spiritual assessment; when do you refer; when do you support; when is it a conflict, just some basics. That seems to work a lot better.

DR. FINS: I have much more to say about that. I would like to talk to you more.

DR. LARSON: Yes.

DR. FINS: Dr. Sandler, I really enjoyed reading the March pediatrics article. I think your recommendations of how pediatricians should deal with children and families addressing CAM is a nice, ethical formulation for adult medicine as well.

I want to ask you, though, about your research involving children related to CAM and whether it is ethically appropriate, and under what context; should we consider a Phase I trial.

Did your committee look at the research dimensions for children?

DR. SANDLER: No, we didn't. There is, of course, a lot of interest, currently, in increasing the variety of research with children. I think that a lot of the drug studies have really neglected, specifically, the pediatric age group, and I think that that is being redressed. With that, there is a growing awareness of the need to protect the rights of children.

I am not aware of any Academy policy that specifically addressed the issue of research on CAM in children, but I would say that it would be appropriate as long as it is done with due regard for the rights of the child, as far as assent, and with the necessary protections that institutional review carries.

DR. GORDON: Tieraona.

DR. LOW DOG: There are too many questions for all of you. Being a mom and a family doc with a lot of adolescents, actually, in my practice, I just wanted to pick your brains for a moment about recommendations, possibly, for children, but especially adolescents and young teenagers with whole health care and self-care.

It is much more difficult to take 25-, 35- and 40-year old people who have had traumatic experiences in school and have had a lot of stress and poor diet, and all of these things, and try to help them become healthy, and the schools themselves, with more and more violence.

How do you get stress management, and how do you get meditation, and how do you impact food, and how do you make schools more whole-person oriented? Spiritualism, I mean we just tried to get a tai chi class going in the morning, and that just invoked all these red flags from all over. It was frightening, absolutely, the response from people that found that threatening, spiritually.

This is a big area of concern for me. I think if we are talking about healthy families, we do have to talk about healthy children. They spend eight hours a day in school, a tremendous amount of stress. I just wanted to know if I could have some of your thoughts on any recommendations that we might have for those groups.

DR. SANDLER: I think that the primary responsibility must come in the earlier years. That is, chaotic

family home situations and highly stressful early home environments are going to be the biggest obstacle to young people learning about wellness.

I think that with growing demands in schools for accountability and testing and other such pressures, I think it is going to be very difficult to make a case for a significant shift in the amount of curricula time to really teach children about these issues. I think that it is a case worth making, but I think it would be an uphill struggle. I don't have, at this point, any other specific ideas to help with that endeavor.

DR. ASTIN: If I could say something, just briefly, in response to that. In thinking about this, the rise of violence in the school system. Dan Goldman wrote this marvelous book on emotional intelligence.

I really think that there is a key there around giving children skills of handling emotion, self-awareness skills of dealing with powerful emotional states, and that many children don't have those skills. Certainly, a lot of adults don't have those skills, but I think there is a linking point there, in terms of CAM, with many of the mind-body practices that have a focus of really deepening self-awareness, and to expose children to some of those kinds of practices.

I know one example in Salt Lake City of a largely Mormon population where there is a woman -- I am forgetting her name now -- actually has introduced mindfulness meditation into the public school system in Salt Lake City with, apparently, enormous success. She actually frames it differently. She doesn't say she is teaching meditation to children, but she is teaching them to become intimate with themselves, to really learn about themselves and their own inner lives.

Apparently, the results there have been quite remarkable in terms of outcomes, both academically and behaviorally, with the kids, and it might be worth finding out some more information about her. I know that John Kabat-Zinn's group could probably connect with her.

DR. MICOZZI: Thank you. In addressing the aspects of children, families, and communities, we have necessarily been addressing the social institutions of churches, schools, and libraries because most children spend more time interacting with those institutions than they do with the health care system.

So I think there are some opportunities, from experience there, where you can impact on the knowledge and attitudes of children. Measuring change in behavior is more difficult in these contexts, but we know that extracurricular activities outside the schools can really provide not only education but inspiration and motivation.

For example, using the field trip exercise that is very popular with both students and teachers. To access museums and other culture institutions are great opportunities to enhance science literacy, for example, to develop health career-type of programs. I am not aware of attempts to begin to introduce skills like meditation, but certainly the models are there for effectively reaching both teachers and students outside the classroom, using our nation's great cultural institutions through the honored tradition of the field trip.

I think a lot more could be done with that extracurricular time. I am not an expert on what goes on in the schools, but we have some good experience about what goes on outside the schools. Whether it is AIDS, nutrition, these topics have all been explored, many of them with support from the U.S. Centers for Disease Control and other federal agencies, and the Department of Education.

So I think that presents a lot of opportunity, particularly in introducing teachers and students to other health traditions as they look at the wonderful things that we like to see in our cultural institutions from

other cultures around the world. So there are opportunities there.

DR. LARSON: Briefly, medicine has been relatively very open to spirituality. I don't understand why education really has a lot of fears, except, again, the issue of forcing kids to become religious. I think that can, again, be dealt with, where we look at kids where, already, this is an important factor. It is a very protective factor when you begin looking at the research. A national sample recently done showed that kids were very spiritual, and when they practice it, a much lower risk of violence. Big surprise.

I think that what you really need to do within education is get some leaders to buy onto this, and say, the time has come for education not to treat this as something worse than pornography. I don't understand why education is so afraid of this variable. I mean, they are even allowing it in prisons now. The personal touch that was mentioned before, I think, is going to be a very important step. I just think there are some fears out there that are not research-grounded.

DR. GORDON: Charlotte.

SISTER KERR: Thank you for your presentations. My question has to do with language as it relates to the level of purpose and meaning.

One of the experiences in this world of CAM that we have had has been the evolution of the naming of who are we as a group; what shall we be called, and what does it mean or reflect. When we started at NIH, we were Alternative Medicine, and then we became Complementary, and then Alternative and Complementary. Some people have suggested Integrative Medicine. Though my Latin has totally left me this morning, I am thinking of the word "Ecumenism."

I am wondering, maybe particularly Dr. Larson, has anyone suggested, since it has helped in the relationships in the area of religion and spirituality, is ecumenical medicine that speaks to -- what I am concerned about, in terms of our grounding, even here, of, what are the values when we get into the caring component, the ground from which we speak.

So I am coming at it with a word like "ecumenical medicine," but what do you think about that?

DR. LARSON: Well, it is not bad. I mean, it is really not bad, although you don't always want to ask an epidemiologist, who are the most superficial of all researchers that exist, to try and do a definition. You need more a philosopher or someone, like from the American College. See, I can also pinch hit.

Let me say that the problem with the ecumenism, is it seems to relate to religion, and the spiritual non-religious may not be included. So that is the reason we really like to talk about spirituality as the functioning, to make a separation, and ecumenism is not a bad approach, but the other thing is people may not understand. They will think you are working with the World Council of Churches because it is so linked with them. They already have the advertisement on that.

So you have to be very sensitive. Believe us, working through on these issues, we stumbled a lot. What seems to be what people understand is, they understand spirituality across most religions, most. Then they understand, if that is the functioning thing, then it fits within structures within different religions.

But my off-the-top response is, they might think you are working with the World Council of Churches.

SISTER KERR: I agree with you, and I have the question, again, of, we talk about body/mind/spirit as

the hallmark, and I like to include environment also, being in public health, but I think this languaging and naming is going to be very important for us.

DR. LARSON: Yes, it is.

SISTER KERR: So I am just inviting you to join us on that.

DR. SANDLER: If part of your thinking about that term is the emphasis on the relationship with the healer, the caring, the compassion, then I think in attempting to bridge the gap, you perhaps widen it, because I think many physicians would say that this has always been key, this has always been at the very heart of what it is I do, and that others in my profession, have done for centuries.

I think that the issue that you raise about meaning and terminology is critically important in trying to bridge these gaps.

DR. GORDON: Wayne.

DR. MICOZZI: I just wanted to respond.

DR. GORDON: Please.

DR. MICOZZI: I would just say in terms of ecumenical medicine, I think it is a very interesting way of describing a process that we are going through. On the one hand, you could think of ecumenical medicine as the common denominator, identifying all those aspects that are shared among different systems, because every society throughout human history has had people and materia medica and procedures associated with what they would think of as taking care of people who are ill.

The other way to look at it is really to look at all these healing traditions as sources of wonderful new therapies that may benefit all people. I think one of the interesting points that was brought out was the formulary-type modalities, which can be seen as a reductionist application. Yet, if you take it out of context and apply formulary, acupuncture, herbalism, or homeopathy -- and the research is now showing that formulary approaches work -- that provides an interesting clue about human physiology that may have been overlooked in our own scientific paradigm.

DR. GORDON: Wayne.

DR. JONAS: One very short question and another somewhat longer question, both of which require month-long responses from every panel member.

A brief question for you, David. Is there any evidence that the effects that are observed in the epidemiological studies of religion, spirituality, and wellness health effects, is anything more than applied psychology? That is the short question.

And if so, what is it? And if not, why do we even bother with it in NCCAM? Why isn't NIMH or some other group studying this, or the Office of Behavioral Science?

DR. LARSON: Can you say a little more about applied psychology before I put my foot in my mouth?

DR. JONAS: Well, a lot of the mechanisms that you mention, and I think are commonly accepted and

are researched, are behavioral medicine approaches that, we now have conceptions in psychology to deal with; we don't need the concept of spirituality.

It is only when you have a different explanatory model that comes out of that, for example, an Ayurvedic model which says universal consciousness is this, does it become something different, or when you say it is supernatural in some way, does it get out of the psychology realm.

I haven't heard, nor have I see much research on any of that addressed.

DR. LARSON: It is a very good question. I get a little afraid when Wayne Jonas asks about spirituality, because he knows too much.

Let me say that one of the problems that I didn't highlight as much as I wanted is, all of these have been done almost as labors of love, if you don't mind me using Dean Ornish's. I mean, they have been labors of love. People haven't had funding. They have done the longitudinal study. It has been a variable they have thrown in.

Now, to start to doing mechanisms in longitudinal studies takes faith, yes, but money also. So what we need is some funding to begin to look at these mechanisms. Now, people like Bruce Raybun [ph] at Pittsburgh, and Gail Irenson [ph] as well. In long-term survivors, she recently found that those people who were spiritual at the time -- long-term survivors of AIDS -- spiritual at the time, over time, had lower urinary cortisol. These were 24-hour collection of cortisol.

Now, we are starting to have studies like this, and IL-6 might be something, interleukin-6, also that is relevant. We need more. If you are going to have this long of life, well, aging is looking at social support or these psycho-social mechanisms. They are there, but when we control for them, does much go away? No. There isn't much that goes away.

So, guess where we are going to have to turn? There is something going on physiologically with this variable, but in order to start doing these physiological measures, you need funding to look at them. I think this is a very important way to go, and especially if this might have some implication for reduced care costs. When you are talking about serious illness, 30 to 40 percent of health care costs in the last year of life, and these people seem to do better, less depression, better quality of life, use inappropriate services less, there might be some health care costs here if we start paying attention to this.

So again, whether that is cancer or heart/lung/blood, the Lung Institute, or arthritis, we have something here, whether chronic or serious illness, that we should be looking at in terms of mechanisms because there might be costs for the health care system as well, if we are more intentional for this and we are not forcing this on people, we are sensitive ethically about this.

DR. JONAS: As you know, there has been a lot of criticism of the current research, saying it is way overblown, it is actually, maybe not on the bottom of the hierarchy but not much above the first rung, because of the type of research that can be done in this area, because it is a very complex area.

I think this really leads me into my second question, which is, how do we address, from our current models of evidence, very complex approaches that involve lifestyle, that involve behavioral practices, and apply that into a hierarchy of evidence that you mentioned, Dr. Sandler?

How do we put that? Because, in order to get at the top of that rung, you have to kind of isolate out,

based on your own theoretical conceptions of what works and what doesn't work, or how things work, and isolate those and try to separate those out, when what we are talking about here really may have as its fundamental basis non-specific and integrative mechanisms that can't necessarily be ferreted out.

I think there is an example, actually, from autism research from North Carolina that you are, I am sure, familiar with, in which they looked at institutional rates in various levels of integrated programs. Now, each of the components of the programs had not necessarily, when looked at by themselves, shown any specific effect. Yet, when there was an integrated program that took into consideration a number of behavioral factors, dealing with families in some cases, about feedback, nutritional therapies, much lower recidivism rates, using the lower type of hierarchy.

You would never get that, really, or it would be very, very difficult to get that up to the top of the pyramid. How do we deal with that?

Because this is an issue about wellness, I think, and why I have great reservations about whether CAM will really break ground in terms of wellness, because there is a lot of good work already, in conventional medicine, that has said wellness is very important, and CAM hasn't demonstrated itself scientifically in these areas, at least to the satisfaction of the current level of evidence that we require.

I am wondering if any of the panel members could address this in some way.

DR. GORDON: John, do you want to try?

DR. ASTIN: Thanks for your questions, Wayne. It is interesting. I am going to answer that in part by answering the first part of your question about, why would NCCAM be involved in this area if it is simply applied psychology.

I think I tried to touch on this in my talk, at least. If you look at the philosophical underpinnings of many CAM therapies, they very much point to these notions of more optimal states of well being. Then you begin to see an interface, I think, with some of the spiritual traditions.

Is it possible, for example, that a mechanism that psychology has been less focused on, but now increasingly so, is in areas of positive psychology; are there certain qualities, if you will, of gratitude, of compassion, that have not been looked at in terms of their health benefits, that may be partly what is going on here in this relationship between religious involvement and positive health, and that, in part, some of the CAM therapies are going to be interested to look at in terms of the extent to which they may actually play some important role in facilitating those kinds of states.

They may also be non-ordinary states of consciousness that you see spoken of across different spiritual traditions that might also play some role. So I think that there is actually important interface here with the CAM area that goes beyond the domains that psychology has, let's say, typically addressed.

DR. GORDON: I just want to interrupt for a moment. We have 10 more minutes. So if we can economize on questions and answers, there are a couple more people who haven't had a chance to ask. I am not trying to interrupt, I am just urging a little compression.

DR. JONAS: I agree with you completely, that this may be, in fact, a link where we are truly talking about integration on a conceptual basis. Studying these is extremely difficult, though, because these may, in fact, be non-specific. They may affect multiple conditions to a very small amount if looked at in

isolation. Thus, the problem of saying, all right, let's get better evidence, at least from the traditional concept of what we want in evidence.

DR. LARSON: I wanted to also make a comment. The Singer Report that came out in 2000 recommends that NIH still isn't looking at enough psychosocial mechanisms. There could be a lot of action here. So let's not minimize, just because NIH isn't look at it. You are quite right. There has been recommendation after recommendation that this could be where there is a lot of action.

Linking the spirituality, as well, with NCCAM can be very important in terms of bridging a gap with the psychosocial researchers who know there isn't that much psychosocial research that is yet going on at NIH.

DR. MICOZZI: Wayne, I think part of your question also had to do with how we get to the point of having more research to substantiate complementary therapies in disease prevention and wellness. I think there is a model there over the last 20 years, which, I guess you will hear a lot more from Walt Willett this afternoon, about how we have been able to study nutrition and its role in disease prevention.

Some of the new epidemiologic techniques, with all due respect, their superficiality, such as factorial design, have been useful. The fact that nutrition is a behavioral factor as well as a specific variable that can be looked at. So there is a body of research that I am sure Dr. Willett will tell us more about.

DR. JONAS: We will talk about that, actually, the body of research and also major problems in trying to do that.

Could you address this issue of integrated approaches to autism? Because I know this has been discussed in the literature, the autistic literature.

DR. SANDLER: I am not sure that I can address that specifically, but I think that when you are talking about complex research with outcomes such as wellness, and with some preventive health outcomes, the complexities of the research sometimes, I think, make the research really impossible to accomplish.

I know that even something that seems circumscribe, like, does early intervention work for children developmentally at risk, or with developmental disabilities; does early intervention work, 30 years of the best research in that area is probably at the second rung of that pyramid as well.

So I think that the only kinds of research that really can be answered are those where the questions are very focused, very specific. Answers come very slowly and in a piecemeal way.

DR. JONAS: That means because of our methods, we are automatically limited in terms of being able to address these. In other words, we can't get, really, the kind of scientific evidence that we would like to have in some of these complex areas, is what you are saying, with our current approaches.

DR. SANDLER: I would agree.

DR. GORDON: Wayne, excuse me. You said it would take a month. We don't have a month. I think we should come back to this when we have the research meetings. I think this is clearly a really important area, and a complex one. So if we can move on.

DR. JONAS: Will we have a month then?

DR. GORDON: We have a month until then.

Okay, Conchita.

DR. PAZ: Dr. Sandler, I have a question regarding what kind of recommendations that we can provide in the event that a family decides to embrace some CAM therapies, possibly to the exclusion of some proven therapies.

What kind of recommendations can we provide to the family that can bridge that gap?

DR. SANDLER: One example, perhaps, of this, was a survey that was done in New England fairly recently of chiropractors. One of the questions that was asked, and these are chiropractors who are taking care of children: What do you do with a two-week old who has a fever? About 30 percent of them, I believe it was, said that they would go on treating by their methods.

There are situations that are of very high risk, in which I don't think there is any question about bridging any gaps. The CAM practitioners, if they are going to be taking care of children, then they need to know when there are situations that they need to act upon by referring to appropriate treatment resources.

Does that answer your question?

DR. PAZ: Well, what if it is the family that decides on that?

DR. SANDLER: Then the family should not be joined or supported in something that potentially puts the child at risk.

DR. GORDON: Effie.

DR. CHOW: Actually, my comments and questions will take a whole year to answer.

DR. GORDON: Uh-oh.

DR. CHOW: I appreciate the terrific dialogue. Our battle or our challenge is to really find out -- well, my challenge is -- the definition of CAM. Each one of you speak about CAM, and some of you have put spirituality outside of CAM or in CAM. And wellness, is wellness part of CAM? You mentioned the CAM practitioner. I am not getting a definition here, and that is one of our battles.

Now, answer briefly or write us some of your thoughts. That would be greatly appreciated.

Really, going back to the Chinese concept about, you pay the physician to keep you well, and if you get sick, then you don't pay them. That would be a great concept that we could operate on.

One thing I feel missing is the energetic concept. I haven't heard anybody mention anything about the energy concept, and all cultures refer to that in their practices. Can you make some comment? Does that enter into the wellness spectrum?

DR. MICOZZI: Well, there is also a Western tradition of energy and healing which has been called vitalism, and we set that all aside for a while, but it seems to be making a comeback.

So it really is common to all healing traditions, including the history of our own American medicine, that this is an important factor. I think some of the hard-to-classify attributes that we have spoken about today, that might be called optimal performance, optimal behavior, optimal wellness, those are hard to account for in a materialistic, reductionist basis.

So one is left with this vitalist interpretation that, again, is not necessarily foreign to Western ideas of healing over the centuries either.

DR. LARSON: I am going to be John Astin's setup. What you need in situations like this are meta-analysis published in Annals of Internal Medicine, where you begin to look at things that might have inferences for energy.

So, John, maybe you could comment on your meta-analysis, or, take it.

DR. ASTIN: Dave is just commenting on we did a review that did get published in the bastion of convention medicine that tried to review literature in some of these areas of distant healing and energy healing, like therapeutic touch. I see that as an example of trying to build bridges and use the methods of science to study these areas. Wayne is, I think, well versed in that.

Your question about the link between energy concepts and wellness, I think, is a good one. I only touched on it insofar as one of the qualities of optimal well being that is often spoken in various of the CAM practices as a greater sensitivity to subtle energies and to energies not currently understood, or even believed in, by the mainstream of science today.

So I think that it is certainly ripe territory for study. I actually just sat on the review panel for the frontier medicine grants that NCCAM is interested in funding. The fact that that is even happening is cause for great hope, that there is some growing interest and acceptance of these areas as domains that can be studied and investigated systematically. I think they may hold some important keys to understanding human wellness, and they are poorly understood from a scientific standpoint.

DR. CHOW: I guess my concern is that, as Marc here said, that the vitalization is understood, if it isn't stated, then I think many of the people who are not familiar with this area, and there is a great population that isn't, say, well, we are doing wellness. And it is the same old thing. This is what makes it new, I think.

I guess I encourage the utilization of the terms and all that, and the consciousness of energy as part of it. Thank you.

DR. GORDON: I want to give Linnea the last question, a brief question, and then we are going to have to stop.

MS. LARSON: I actually do brief questions. I actually want to make a comment. The first is that my experience has been working with inner city populations, poverty-stricken, homeless, and new immigrants, and actually employing those mind-body techniques with at-risk moms who are very, very comfortable in using their language to describe meditative states, and then teach them to their children.

However, there was no funding so we could document at-risk moms had healthier babies within just one pregnancy, but there was no funding. So this is to dovetail on what Joe Pizzorno was saying, with the

98/2 ratio, 2 percent of funding going into the prevention or wellness or certain types of models.

What specific recommendation could you help us make? Mine would be fund at-risk populations with specific mind-body techniques in a multiculturally competent. A lot of this is done on populations that aren't at risk.

Then my last statement will be, perhaps what William Wordsworth is, "We are murdering the ineffable to dissect it," and that should be a cautionary word.

DR. ASTIN: Let me just say briefly that the CDC and the Association of American Medical Colleges just has expressed some interest in funding one particular area directly related to what you are talking about, which is looking at at-risk women, and looking at the effects of stress reduction on pregnancy outcomes. That is an example of moving in that kind of direction.

So absolutely, it has to happen more. Hopefully, this body can play a role in encouraging the powers that be to direct funding in that direction. And I don't think you can ever kill the ineffable.

DR. LARSON: I have a quick comment. To follow up on your quote, Euripides said 2,500 years ago, "Necessity is the cause of trying anything." I find, politically, that where nothing is working, as very much what you are saying, people are very open to funding something that could work.

But there is some research beginning to make this case in the last two years. My colleague, Byron Johnson from Penn, and I, have been publishing studies that show that spiritual kids in at-risk populations are going to do better, have less delinquency. Mark Quineros [ph] just did one showing that they are going to do better educationally as well. So there are some studies starting to come out of at-risk.

Again, I like to make the case with research, and then say, yes, let us try something because nothing else is working here, and I find people very open. Where nothing is working, people are more open to trying something that possibly could.

DR. MICOZZI: In the context of this panel, I think that every single federal medical, research, training and other program throughout the federal government should be looked at in terms of the potential for application of these techniques. We have problems everywhere, and CAM modalities certainly appear to offer promising opportunities.

We had Senator Spector back in 1998 do a survey, or request HHS to do a survey, of all the federal agencies involved in medical R&D, and there are many. Perhaps it is time to update that survey and see where the opportunities and the interests are within this great federal and medical R&D program that we have.

DR. GORDON: Thank you for those suggestions. We are going to be working at looking at where the opportunities are, and thank you for helping us to find some of those opportunities.

Also, Dave, I would appreciate it from you if those studies that you just mentioned on spirituality and at-risk kids, if you could send us those.

Any other suggestions or documentation that any of you have, we would really appreciate. This has been very, very useful, very useful questions. We will pursue the research issue further down the line, and

may ask you back again to help us with that. Thanks again.

We will take a 15-minute break and then we will come back for the next panel.

[Recess.]

DR. GORDON: We will ask the next panel to come forward: Walter Willett, Kate Gordon, Michio Kushi, Jeffrey Bland, and Mark Hyman.

Are you Kate Gordon, or somebody else?

MS. REESER: I am here on behalf of Kate Gordon. My name is Cyndi Reeser.

DR. GORDON: Okay, great. Thank you.

We will begin with the first speaker, Walter Willett.

Integrative Approaches to Wellness: Nutrition

DR. WILLETT: Well, thanks very much for, first of all, taking on this great task, which is, I think, tremendously important, and also for inviting me to be with you here today.

First, when I was asked to talk about nutrition at a CAM meeting, it struck me a little bit strange. I thought nutrition was supposed to be part of mainstream medicine, not alternative medicine. But on thinking about it further, I think it is a sad reality that nutrition is not very much a part of mainstream medicine, and much represented by some of complementary and alternative medicine approaches.

I think there are several factors that underlie the reason. One is very important, just weakness of the body of evidence on nutrition and health. Often, people have asked me, why don't we get more involved in teaching medical students. There is a big problem, medical students don't get nutrition, but the sad reality is that I think, until quite recently, it has not been very clear what we should be teaching medical students about nutrition, just because our data have not been very good.

For example, just take the dietary pyramid, which really represents mainstream advice and mainstream nutritional opinion. In fact, this was put together on the basis of a lot of educated guesses, a lot of industry influence, to be sure, but really without a firm scientific basis. As the data have come in in the last several years, it has really pointed out the weakness of much of the dietary pyramid because many of the basic points that it is making have just simply not been supported.

So this, I think, puts the whole area of nutrition and health in a great turmoil. I think everyone knows that there seem to be contradictions and confusion, and things like that. To me, it is not too bothersome. This is the process of scientific sorting out of information, and I think we are moving toward much better information, much better clarity, but of course there is a lot of controversies, inconsistencies, and disagreements in the process.

We are going to have to come to the point of training physicians better in nutrition, and certainly there are some things we could be doing now, even while we don't yet have the final answers. Actually, teaching physicians about uncertainty, what we know and what we don't know is a very important part of the process.

Many people pointed out that physicians are not reimbursed specifically, usually, for talking about nutrition and giving guidance. That represents an impediment. Everyone knows physicians are under pressure and very often don't feel that they have time to devote to assessment and diet counseling as well.

Where CAM relates to nutrition in mainstream medicine is also hard to define because there is clearly a blurred distinction. Many of the things that were considered alternative medicine a few years ago are now mainstream research agendas, are sometimes even practiced in medicine. I think we will hear more about supplements, but there clearly is now a recognized role of supplements when they were completely dismissed when I was in medical school, to be sure.

So hopefully, this is the continuum. We might be moving some of the ideas brewing in alternative medicine with better data, and hopefully making them really mainstream medicine as well.

Just to, maybe, point out a few of things that have become, I think, clear. During the last two decades, my colleagues and I have been really focusing on trying to provide a better data source on how diet relates to long-term health. Clearly, it is important that we do look at these issues in the long-term because most chronic disease conditions take many years to develop.

Many of things that now seem to be important were not appreciated at all at the beginning of this process, and many of the things that we thought were important don't seem to be important. So we are, I think, undergoing a real learning process.

Just some examples. One of the factors that seems very important for cardiovascular disease is partially hydrogenated oils. In fact, I think it is now accepted and the FDA will be labeling trans-fat content of foods before very long, but it was extremely controversial just, even, three or four years ago.

In fact, this represents an area where the nutrition establishment, me included, was telling people to use margarine instead of butter when it turns out that many of these margarines were in fact worse than butter. But margarines don't have to be worse than butter, and there is a way to make them much better.

The benefits of whole grains for cardiovascular disease prevention and diabetes is now, I think, quite firmly established, but that was really thought to be a very fringe thing, that only unusual people would go to health food stores and get these kinds of grains. That is an area where there has been, I think, a really firm base established and a shift from alternative, and more and more, hopefully, to mainstream medicine.

There is some other areas where findings have become quite well established. For example, folic acid. The B vitamin has profoundly beneficial affect on reducing the incidence of neural tube defects, about 70 percent reduction in risk, and that really creates a shift in paradigm because it is an example where there was no clinical evidence, by standard criteria, of deficiency, yet additional vitamin supplement made a profoundly important impact on a very major health outcome.

There is now strong evidence accumulating that inadequate folic acid is also related in part to the incidence of breast cancer and colon cancer. Even some diseases that we had not thought to be related to diet at all, such as cataracts, seem to be, in part, influenced by our dietary intakes.

Are these important, quantitatively? That is one of the things that is just incredibly impressive to me. We

reported in the New England Journal a few months ago that we could reduce the incidence of coronary heart disease in the United States by over 80 percent, just on the basis of not smoking, regular physical activity, weight control, and good diet. That is obviously a huge percent, particularly when you consider that costly drugs, like statins, at best, do about a 33 percent reduction in coronary heart disease incidence.

So the potential here is really profound. We also found about a 70 percent lower incidence of colon cancer for following a fairly similar set of lifestyle and behavioral practices, and about a 70 percent lower incidence of stroke. These didn't require running marathons or extreme behaviors, just moderate weight control, moderate physical activity, for example, and moderate changes in diet, not extreme changes in diet.

In terms of what is going on nutritionally in the United States, on average, I suspect diets are not getting better. They are showing relatively little change, but that really masks some very great patterns that are happening by income and socioeconomic status.

Parts of the population are clearly much more attentive to their health, eating much better, exercising, not smoking, and getting much better, but major segments, probably the majority of the population, are not participating in these health-enhancing activities, and not making gains in terms of their health, and probably losing ground.

The largest and most rapidly growing nutritional problem, I think everybody is aware, is overweight and obesity. The magnitude of impact on health of overweight and obesity is really enormous, much greater than any specific aspect of diet.

Unfortunately, there is great debate about the aspects of diet that might be beneficial in terms of reducing obesity, but the relatively simple long-term studies on aspects of diet and how they related to weight control in the long term simply haven't been done. I find that really disappointing because these studies are not terribly expensive to do, they are not terribly hard to do. You don't need thousands of people, you need a few hundred people, and you need a year and a half or two years to get answers to these questions.

I know my colleagues who have been trying to investigate some of these relationships between diet and weight control just had a hard time getting funding. It is not rocket science or molecular biology. These are simple, straight, clinical important questions, and it is hard to sell sometimes at study sections.

Even though we don't know all of the answers to diet and weight control, though there still is a lot that we can do in terms of trying to get on top of the obesity epidemic. It will include a central role of health care providers, educators, parents, and governments to encourage regular physical activity, limit television-watching and promote healthy diets.

I certainly look forward to further help from this group as well. So thanks.

DR. GORDON: Thank you very much.

Cyndi Reeser.

MS. REESER: Good morning. Thank you for this opportunity to provide testimony on behalf of the American Dietetic Association. My name is Cyndi Reeser, and I am a registered dietitian and lead

nutritionist at the Center for Integrative Medicine and the Women's Health Initiative at George Washington University Medical Center.

The ADA commends the Commission for its work to develop policy recommendations on the complex and, often, controversial issue of complementary and alternative medicine. The ADA represents 70,000 food and nutrition professionals who serve the public by promoting nutritional health and well being. The organization is guided by a philosophy to base its work on sound information drawn from peer-reviewed nutrition research and credible sources representing scientific consensus.

The issue of complementary and alternative medicine is of growing interest within the ADA. In a recent practice audit, over 50 percent of dietitians reported that they integrate some aspect of nutrition-related complementary care into the services they provide.

ADA's Nutrition and Complementary Care Practice Group has grown to nearly 2,500 members who are actively involved in providing educational resources and networking opportunities to members about complementary and alternative medicine. Last year, our board of directors identified complementary and alternative medicine and dietary supplements as one of five emerging areas in which ADA would focus its work.

While the ADA has not issued a formal position statement on nutrition and CAM, the Association has issued statements on nutritional aspects of CAM, such as dietary supplements and functional foods. Our members generally view nutrition-related CAM therapies as potential components of medical treatment and patient care where qualified health professional can work together to provide products and services supported by evidenced-based medicine.

ADA believes that patients and public are best served when dietetics professionals actively collaborate with other knowledgeable health care providers to integrate nutrition with appropriate preventive and treatment strategies. ADA believes continuing research is needed to provide the basis for evidence-based practice in all health care modalities.

Dietetics professionals are trained to carefully evaluate the emerging science, and to provide consumers with accurate, current advice upon which they can make informed decisions on matters related to food, nutrition, and health.

In this context, dietitians have the expertise to evaluate scientific evidence about nutrition-related CAM therapies, as well as the skills to integrate appropriate therapies into a patient's overall health management plan. However, to fulfill these roles, registered dietitians must have access to the science behind nutrition products and practices, and understand the research related to the psychology and demographics of CAM users.

One of the continuing challenges for health care professionals is the lack of information on some CAM practices, including their efficacy, safety, and how they relate to other treatment modalities. ADA believes it is most important to evaluate each product or practice, based on the level of scientific evidence available to

us.

We have science to verify the role of dietetics in conventional medicine, and outcomes research to demonstrate the effectiveness of nutrition services provided by RDs. These services include both

wellness counseling and disease treatment for existing health conditions, and fall within recognized scopes of practice. Where the data demonstrate the effectiveness of nutrition to prevent or manage disease, that nutritional intervention should be viewed as conventional care.

A good example of evidence-based nutrition care is medical nutrition therapy, or MNT, provided by a dietitian at the request of a physician. MNT has demonstrated benefits, both in efficacy and cost savings, for the management of diseases such as diabetes, renal disease, cardiovascular disease, osteoporosis, and cancer. Medical nutrition therapy applications range from diet modification for multiple disease states to the administration of specialized nutrition therapies to manage a condition or treat an illness or injury.

There is also a growing science showing the value of good nutrition to prevent or delay the onset of chronic diseases such as cancer and heart disease, age-related macular degeneration, and obesity. ADA believes in the power of preventive nutrition and urges greater public awareness of the importance of nutrition strategies to protect health.

The American health care system also should recognize the cost savings of prevention, and should provide medical coverage of preventive interventions where the data exists to support it. Some nutritional strategies intended to improve health are not equally well documented and supported in scientific literature.

For example, there are varying degrees of evidence to support the safety and efficacy of dietary supplements in the marketplace. Vitamins, minerals, and other nutrients delivered as dietary supplements can play an important role in preventing disease and promoting good health, but they are not a substitute for a well-balanced diet.

The nutritional value, efficacy, and safety of herbs, botanicals, hormones, and some other classes of dietary supplements are not fully known at this time. Despite this fact, their use is considered by most to be within the realm of nutrition. This is not to say that these products may not have a preventive or therapeutic role against certain conditions. Many may have strong physiologic effects, and scientific research has revealed phytochemicals that, when delivered in the right amount, have measurable health benefits.

As research programs and new supplements enter the market, health care professionals will need to assess the potential safety and efficacy benefits these substances may offer. In the current environment, the broad definition of dietary supplements and high consumer demand has increased the need for dietetics professionals who can help consumers make informed choices based on sound scientific knowledge.

Dieticians are trained to translate research into actionable steps for consumers. Discussing the potential benefits and risks of various interventions is an important role of dieticians and other health professionals. Dietetic professionals are taught that it is important to understand the perspective of the patient and the reasons that they may feel a particular wellness strategy or treatment modality is beneficial to their health.

To summarize, members of the ADA generally nutrition-related CAM therapies as potential components of medical treatment and patient care, in which qualified health professionals work together to provide scientifically sound, safe, or empirically proven therapies to better serve patient needs. We believe that patients who utilize nutrition-related CAM modalities should receive that care from health providers who have appropriate knowledge, training, and expertise to select suitable and appropriate strategies.

We also believe that dietetics professionals are valuable members of the extended team of CAM providers, and play an important role in the integration of nutrition with other modalities of treatment. Scientific data support both preventive nutrition and medical nutrition therapy as an essential component of a disease management strategy.

However, continued research is needed to evaluate fully many CAM practices and to provide the basis for evidence-based practice. Any preventive or treatment strategy, whether considered conventional or CAM, should be supported by sound science and evidence-based practice before being integrated into a health care strategy. Thank you.

DR. GORDON: Thank you very much.

Michio Kushi.

MR. KUSHI: Thank you very much. I would like to read my statement.

Dear Honorable Chairman and White House Commission Members, the era of humanity is now beginning.

DR. GORDON: Excuse me, could I ask you to bring the mike really close to you. Thank you.

MR. KUSHI: The era of humanity is now beginning. Alternative and complementary medicine is one evidence of the processing of this transition from the modern age to the new era of humanity.

While we appreciate the development of conventional medical technologies, both in diagnosis and treatment, we also know that modern conventional medicine has been largely symptomatic and divisional approaches.

We also appreciate all the various alternative and complementary approaches to health care, including exercise, breathing, meditation, vibrational, electromagnetic treatments, herbal medicine, supplements, acupuncture, moxibustion, shiatsu massage, polarity, traditional folk medicine, psychological and spiritual approach, and the various diets.

Diets alone vary, from juicing, raw food eating, high protein, vegetarian, high and low fiber, low sodium, and many others; and conventional nutritional theories with their concept of calories. Some of these approaches, however, while we appreciate their temporary effectiveness for certain symptoms, still maintain a fragmental view of human life.

The macrobiotic way of life and its recommended dietary practice is based upon human traditional eating, with natural organic foods and proper cooking in harmony with the environment, which has been practiced for many centuries in different climactic and cultural adaptations. A pyramid form of the standard macrobiotic diet in a temperate climate is herewith attached.

Through this practice in America, Europe, Japan, some Asian countries, and South America, an uncountable number of people have regained their health, even from terminal sicknesses, and have restored their loving family life and peaceful relations with people and society.

The approach of macrobiotics is to solve and correct the cause of physical and mental disorders in daily

diet and lifestyle. As examples, dietary causes of some disorders are briefly summarized here.

1.) Cancer. Because cancer has diversified symptoms, its dietary causes are also diversified. For example, prostate cancer is caused by over-consumption of heavy animal protein and fat, together with oily, greasy, and hard-baked food.

Breast cancer is caused by over-consumption of dairy fat and simple carbohydrates, such as sugar, chocolate, and honey, together with oily, greasy food.

Other cancer symptoms are summarized in the attached papers of causes, case histories, and medical research papers related to the macrobiotic diet, which were presented to the House of Representatives Government Reform Committee in June 1999, and the Asian Therapies Conference in March 2001, and in the book "The Cancer Prevention Diet."

2.) Heart disease. Though there are varieties of symptoms, the major causes are over-consumption of animal protein and fat, as well as hot, spices, simple carbohydrates, and oily, greasy food, as detailed more in the book "Diet for a Strong Heart." The macrobiotic approach can secure a blood pressure reduced by 10 percent from the national average, and a cholesterol less than 150. Average for macrobiotic persons is 126. These were studied already in 1976 by Harvard University Channing Laboratory and the Framingham Heart Study Center. A summary of medical research papers is attached.

3.) Allergies. The cause is generally over-consumption of dairy food, stimulants, and simple carbohydrates, as well as oily, greasy food, in various degrees.

4.) Arthritis. Several kinds of arthritis can be classified, such as osteo and rheumatoid, but overall, the causes are over-consumption of animal protein and fat, especially poultry, eggs, seafood, and dairy food, together with nightshade, vegetables, fruits and fruit juice, simple carbohydrates, and stimulants.

5.) Diabetes and hypoglycemia. For both, the underlying cause lies in a pancreatic hormone secretion disorder which is caused by excessive eating of animal protein and fat, especially poultry, eggs, and cheese. Contributing are heavy baked flour products and simple carbohydrates, stimulants, and oily, greasy food. Please see attached summary of medical research papers.

6.) AIDS and virus disease. Decline of natural immunity is caused by over-consumption of sugar, chocolate, and other simple carbohydrates, and refined flour, together with dairy food, tropical fruit and fruit juice, and stimulants.

7.) Emotional disorders are caused by irregular eating. Some are more over-consumption of animal protein and fat, such as inwardly depressive, paranoia symptoms, while over-consumption of sugar and simple carbohydrates, stimulants and spices, and soft drinks are causing more hyperactivity, excitement, irritability, and schizophrenia.

8.) Mental disorders. Violence and children's psychological problems, such as attention deficit disorder, ADD, are also caused by their dietary habits, which lack whole grain and vegetables as a major portion of their eating, and by excessive intake of animal protein and fat, sugar, oily food, spices, and stimulants. Please see attached summary of medical research papers, including a reference to the Tidewater Detention Center report.

9.) Body/mind/spirit relation. Mind, spirit, and body should not be considered separate. Natural energy is

received from the universe and the Earth and the environment, forming our image, mental and spiritual nature, as well as chakras and meridians. In addition, food also releases energy and vibration, affecting mind and spirit.

Practically all physical, mental, and spiritual disorders are caused by our food, our lifestyle, and our environment. Therefore, correction to a proper diet, lifestyle, and environment should be the center of any health approach, regardless of CAM or conventional medical approach. Please see the attached diagram where diet is at the center of all health and wellness approaches.

We recommend the following as the policy of the United States for alternative and complementary medicine, as well as for wellness:

- 1.) Allot and distribute available funds for research and education on the effectiveness of alternative and complementary solutions for both prevention and recovery, with diet and lifestyle at the base. We also recommend a pilot plan for clinical trials in some hospitals and health care centers.
- 2.) Establish community and school educational programs to recover healthy lifestyles and proper home-cooking, which is whole grain- and vegetable-based, including adult education and public schools in their home economics or health education programs.
- 3.) Hold industrial conference to guide food producers, distributors, and servers, including agricultural and marine products.
- 4.) Help facilitate the use of a proper diet and wellness plan in public dining facilities, and in government programs, such as Meals On Wheels for seniors, and in our prisons.
- 5.) Encourage hospitals, clinics, health care facilities, and medical schools to add dietary and wellness studies, counseling, cooking classes, and serving facilities with healthful menus.
- 6.) Apply adequate insurance policies to support our alternative and complementary guidance, health care, dietary counseling, and learning.
- 7.) Encourage the avoidance of daily consumption of food and water which are overly artificialized, chemicalized, irradiated. Encourage the proper evaluation of genetic modification, and encourage more respect for natural, organic, and traditional quality of food and drink.
- 8.) Promote improvements to secure a more clean, natural environment of our air, water, and soil, and encourage avoidance of technology which is environmentally harmful.

We would happy to cooperate with such government efforts by participating in research and education, and by dispatching well-experienced macrobiotic educators, counselors, and cooking instructors to any facilities. These policies would inevitably result in a great turning in the health care systems. We need vision, courage, and tireless efforts. On the process of turning, we may face opposition, hesitation, doubt, and misunderstanding. However, to overcome our health crisis, we need to urgently proceed in all domains related human life. Upon the achievement of this revolutionary turning, America will become a symbol of health, happiness, and well being for the future of the entire planetary mankind.

Thank you very much for this opportunity for presenting my humble statement. I would like to have your attention to page 5, the next page. This is the current standard macrobiotic diet in a temperate climate.

On page 6, my opinion on diet, wellness, and other therapies. The daily diet is at the center because that cover for everyone's day-to-day life, and then all various kinds of approaches.

DR. GORDON: Thank you very much.

MR. KUSHI: Thank you.

DR. GORDON: And thank you very much, also, for providing the best-case series and the other materials. It is very helpful to us.

MR. KUSHI: I would like to have your attention later, all those cases recovered from cancer. Thank you.

DR. GORDON: Jeffrey Bland.

DR. BLAND: I want to thank the Commission very much for the opportunity to present this perspective on the role that nutritional supplements might have in complementary and alternative medicine.

Medicine, as you know, is at a sea change right now, driven by the intersection of the changing consumer expectations, the aging baby-boomer demographic transition in medicine, the breakdown of the doctor-patient relationship as a consequence of the increase involvement in this relationship by third-party payers.

This revolutionary advance is occurring in biomedicine, in which, for the first time, we are starting to understand the ideology and origin of chronic, degenerative disease. The Price-Waterhouse Cooper's Health Cast 2010 Report indicates that there are three forces of change that are driving this sea change. No. 1 is health consumerism, which is, for the first time, involving the consumer with their own health care in a different way.

No. 2, E-Health Information that we heard about yesterday; and No. 3, the area that I will be speaking more about in my presentation, which is genomics, i.e. personalized medicine, the medicine of the 21st century.

The focus of this presentation is to help the Commission to better understand, I think, the role of how these forces play out in supplementation use by CAM providers.

When I look at medical education as it relates to nutrition, it has not been a friendly relationship over the past 40 years, since the Flexner Report of the 30s. As you know, originally, nutrition has been excluded from medical school education when there was bifurcation between the land grant colleges and university systems, with the land grant colleges being where agriculture and animal husbandry was taught, and where women got their education in home economics and nutrition.

y systems were where males got taught to be doctors. As a consequence, we had a very rich legacy of a division between nutrition and medical training, the university system, male-centered, becoming where one learned about medicine, and the land grant colleges, home economics and nutrition, as where women were taught about the reality of nutrition. It is only now that we are starting to see a re-annealing of that concept with the scientific foundations of nutrition starting to be more obviated.

James Goodwin, M.D. has recently pointed out in a 1998 article in the "Archives of Internal Medicine" -- this a November issue -- this was entitled "Battling Quackery: Attitudes About Micronutrient

Supplements in American Academic Medicine," in which he points out that nutritional supplements have been the most severely criticized concept in medicine for the past 40 years.

He explains that this is probably a consequence of what he calls the Galilean metaphor. Galileo was not the first person to present the heliocentric view of the universe; Copernicus did that earlier, but he was the first to take it to the people, out of the academic language of the guild, which was out of Latin, into the language of the average individual, which was Italian. He broke the rules of the control of the guild by taking it directly to the people.

That is often what happens in nutritional supplementation, in which the doctors and researchers have taken it directly to the people, out of the guild, people like Irwin Stone, Frederick Klinker [ph], Evan and Wilfred Shoot, the cardiologist with vitamin E, Linus Pauling, Abram Hoffer, and Humphrey Osmond with orthomolecular in schizophrenia. Even Kilmer McCully [ph] with hyperhomocysteinemia B6 and folate, took it out of the guild, direct to the people. That was not the way to, obviously, win friends and influence people in medical education.

The medical institution watch words that are related to micronutrients have been, eat a diet of variety and moderation, and you will get adequate levels of micronutrients, as judged by the recommended dietary allowances. The RDAs are defined as the levels of nutrients needed by practically all healthy people to prevent undernutrition, as judged by the absence of scurvy, beri-beri, pellagra, rickets, marasmus, and anemias.

These are obviously not the conditions that most middle-aged individuals are worried about as they start to get into their aging years. The April 9, 1998, issue of the "New England Journal of Medicine" signaled a new change, and that was the editorial by G.D. Oakley, entitled "Eat Right and Take a Supplement," Volume 338; page 1660.

In this article the author points out that due to the recent understanding, the frequency of the hyperhomocysteinemia in the population, between 10 and 15 percent, that increased levels of folate B12 and B6 may be necessary beyond that of the balanced diet to prevent such conditions as coronary heart disease, stroke, or possibly neurological disorders and some forms of cancer in apparently healthy individuals.

This is a new era in medicine in which the vitamin, mineral supplement may play a new role in chemoprevention and in health promotion. This is not a new concept. In fact, in 1902, Archibald Garrod [ph], the father of the genetic metabolism of disease concept, wrote in the "Lancet" that "Disease may occur as a result of the variations in molecules, and their concentration in biological fluids."

As you know, Linus Pauling himself, in 1949, in a landmark article entitled "Sickle Cell Anemia: A Molecular Disease," was the first to propose that a new medicine would be born around these concepts, only now in the 21st century to be emerging.

In 1952, Roger Williams, the discoverer of the B vitamin pantothenic acid, wrote that biochemical individuality and the genotrophic theory of disease would ultimately prove to be useful in preventing diseases of nutrition by just dispersonalizing nutrition. In 2001 language, this is termed "functional genomics."

It has been found that through the advances made in the understanding of the human genome, our book of life, locked into our 23 pairs of chromosomes, our chapters of life, that we can modify the expression

of this book, based upon what we feed our genes. This is a remarkable new discovery and is reframing the whole of nutrition as we moved into the 21st century.

It is interesting to note that nutrition and micronutrients bathe our genes each day with information from which our phenotypes result. If health expectations of the aging boomers are to live eight, nine, or 10 decades of reasonably disease-free life, the new cost effective ways of getting healthy messages to our genes must be found. Micronutrients are part of the message that constantly bathe our genes that give rise to the expression of our phenotypes.

This starts with the proper diet, and it is coupled with levels of essential and accessory nutrients necessary to promote healthy aging. We are all polymorphic. We see ourselves as much more diverse than we previously thought in our functional genomics. The old rules, basically, are not working very well. We are moving into a new set of rules based upon these premises.

How long did it take to accept the observations of the Goldbergers, that vitamin B3 could be useful for prevention of, and even treatment of pellagra, or Captain James Cook and Dr. James Linde, in their revolutionary discussions that we could prevent the most dreaded disease of sailors, which was scurvy, by a simple concept of vitamin C. It took over 50 years for the British Navy to finally incorporate those concepts, when the rigorous scientific proof had already been done, and Robert Linde was credited with the first clinical trial in medicine, which he presented before the Royal Society in 1732.

We are now witnessing the first science-based examples of a functional genomic approach to nutrition. We are seeing such things as a methylene tetrahydrofolate reduction in gene polymorphisms in up to 30 percent of the population that require higher levels of folate B12 and B6. We are seeing differences in cytochrome p450 activity that relates to specific phytonutrients to improve detoxification, and how that relates to pharmacogenetics.

We are seeing different oxidant stress types as it relates to mitochondrial function as expressed through genetic factors such as NF-(kappa)B or other oxidant stress regulators that indicates increasing need for specific antioxidants. This is where the frontier of nutrition is changing. These observations are not coming from double-blind trials. They are coming from multivariate studies using complex bioinformatics, evaluating cohort analysis of outcome, and coupling these with evidence from gene expression arrays, some that also employ proteomics.

The nutritional laboratory of the future will analyze physiological function in gene expression patterns in a dynamic state, rather than just static pathology-based measurements. These will be done for just pennies per gene, analyzed from a single drop of blood.

In the meantime, coupling clinical observation and animal epidemiological studies in multivariate intervention trials will provide direction as to how to better manage the health expectations of the patient. Guided nutritional supplementation will be selective and guided by the 21st century physician to improve the function of the individual throughout their life so as to promote improved health span. The early data is already there shouting encouragement, with James Friese's Stanford alumni, and Dean Ornish with cardiovascular disease as examples.

We are moving rapidly from a descriptive to a mechanistic perspective of the understanding of degenerative diseases. As these advances in nutrition and selective micronutrient supplementation are being found, it will be increasingly important for the improvement of patient health outcomes to apply these in a cost effective way to produce, what I call, good medicine.

My recommendations taken away from this. I believe that the present sea change in medicine argues that clinical nutrition and nutritional supplementation needs to be taught in medical school courses, that we need to have clinical competency courses that are provided for practitioners. We need research across disciplines that are multivariate in nature, as well as placebo-controlled, that are funded, and we need insurance reimbursement that will be provided for these nutrition and dietary supplementation approaches that are involved with both assessment and intervention to provide good medicine.

I believe that we can prevent unnecessary premature deaths, increase the individual's functional health span, and reduce unnecessary medical expense if we would only hasten the integration of these revolutionary bodies of knowledge into nutrition and nutritional supplements into the general medical practice.

DR. GORDON: Thank you, Jeff.

Mark Hyman.

DR. HYMAN: I want to thank the Commission for inviting me, and my colleagues for making my job easier now, saying much of the things that I will emphasize in my talk.

I am the medical director at Canyon Ranch, which is a health resort. When people ask me what kind of doctor I am, I say I am resort doctor, a doctor of last resort.

I am actually a practitioner, not a scientist, a bridge builder. I work in a living laboratory for health promotion, optimizing health on function and managing chronic disease. I represent over 20 years of experience, and hundreds of thousands of guests and patients who have come through our doors in this living laboratory on health promotion and wellness.

The focus today I would like to have is on the aspect of nutrition, although it is only one fraction, one segment of what we do. It is based on the idea of nutritional intelligence, which may sound like an oxymoron, given our public health policy.

The idea for my talk today is to emphasize three points, which is that we need to shift from the idea of disease treatment and prevention to one of health promotion. This is really reframing the theory of medicine from one of disease to one of health, and it really provides a new context for understanding all the data that we have in medicine.

Secondly, I would like to introduce the concept of nutritional intelligence, which is a balanced, individualized approach based on a synthesis of our current data. It includes, basically, 15 principles and new a food pyramid, yet another one.

Thirdly, I would like to emphasize what the obstacles are and what the imperatives are for education, research, and public policy, so that we may shift from a focus on disease to that of health promotion.

Now, it has been said that science is the practice of knowing more and more about less and less until we know nothing about everything. Unfortunately, that has not often lead us in the direction toward health promotion.

I would like to quote from a recent book called "Concilliance: The Unity of Knowledge" by E.L. Wilson,

where he says that "Reductionism is the primary and essential activity of science." "Also crucial, he says, "are synthesis and integration tempered by philosophical reflection on significance and value.

"To make any progress, we must meditate on the hidden design and networks of causation. We must understand new patterns and recognize those patterns as a collective whole, rather than simply dissecting out the bits and pieces of data and looking at them separately. We create a new landscape that describes what is health, as opposed to what is disease. It is a phenomenological shift from descriptive to an understanding of the basic mechanisms of health, rather than the mechanisms of disease."

I would like to invite you to think about the idea of an operating manual for your bodies, and imagine how many of us were born with an operating manual strapped to our legs, or, how many of our children came with an operating manual. We don't, and we have to begin to ask the questions, what is the operating manual for our bodies; how do we care for them; what are the things that our bodies need to thrive; and what are the things that impede our health.

In terms of thriving, I think it is pretty clear. Nutrition plays an enormous role in terms of specific amino acids and proteins, specific essential fatty acids, fiber, specific types of carbohydrates, vitamins, minerals, essential nutrients, accessory nutrients, air, water, light, love, rhythm, touch.

These are all key elements that make up our thriving or our health, and we need to identify those things that impede our health, things that are antinutrients, things like excessive stress or inactivity or social isolation, lack of community and more. These are very critical issues we need to understand; what is it that creates health; what is it that impedes health.

The task of the Commission, I believe, is to blend together science and practice to create knowledge, which is very different from information. We need to deliver that knowledge to the public and provide a road map for our country.

My perspective comes from five years of work in this laboratory of health promotion in study and testing and treatment, in working with over 60 practitioners, nutritionists, doctors, exercise physiologists, movement therapists, and others, to blend together a new way of caring for people.

In terms of health promotion, I would like to emphasize that we are in a very sad state. A recent JAMA review asked the question: Is U.S. health really the best in the world, and the answer was a resounding no. We are 12th out of 13 industrialized nations in 16 health indicators. Our health care system itself accounts for 225,000 deaths due to health care related issues. It accounts for 77 billion in excess health care expenditures related to the adverse effects of outpatient care alone. That is a scary number.

So we have to say, what is wrong. We must ask why. The answer lies, I think, in reframing the question about what is health. We need to define health. We need to understand how to measure health and how to help people create health. We need to move beyond the conventional distinctions between allopathic and alternative medicine to just plain good, patient-centered medicine. We must remember what William Osler said to us over 100 years ago, "It is much more important to understand the patient who has the disease, than the disease that the patient has."

Now I would like to discuss a little bit about the idea of nutritional intelligence. There is a handout you received that outlines the 15 principles and a brief review of the pyramid. It is essentially a very balanced view that tries to integrate the science of nutrition into the practice of health.

It is very far deviated from our current public health care policy, which is written in one local Berkshire school that cares for wards of the state, where if you are under 12 years old, you can, if you are going out for lunch, have one cheeseburger, a small fries, and a small Coke, but if you are over 12, you can have two cheeseburgers, a large fries, and a large Coke.

It is sort of scary that this is our public, government-funded institutions that promote this policy. We have as the two top vegetables that children eat in this country french fries and ketchup. The top nine foods eaten by Americans are whole cow's milk -- this is a report by the USDA, 2 percent milk, processed American cheese, white bread, white flour, white rolls, refined sugar, colas, and ground beef. Now, that is not nutritional intelligence.

We need to think more about something that Jeff Bland mentioned at dinner last night, which is working, for example, with AIDS patients who have genetic polymorphisms in the way they respond to different antiretrovirals and how they affect their mitochondrial metabolism and energy production. They may need a particular high level of vitamin B2 to enhance mitochondrial energy production and relieve fatigue and symptoms related to the antiretrovirals. That is enhancing function. That is nutritional intelligence.

Food is information, as Jeff said; it is not only calories. It is a very foreign concept to doctors that nutrition actually affects our health. If we want to look at that aspect, we think of only the Pima Indians, who in one generation, have turned from an active, vigorous community of desert dwellers, well adapted to their environment, and have changed their phenotype from one of fit, thin people to one of an extremely obese, diabetic population. They are now one of the most obese populations in the world, and they have diabetes at a rate of 80 percent by the time they are 30, and a life expectancy of 46.

This is not an effect of God making a mistake or the wrong type of genes, or the gene for obesity. This is a phenotype-genotype interaction that is reflected in the white menace, which is not necessarily white men, although that is included. It is white flour, white sugar, and white fat, which is Crisco, as Dr. Willett was saying.

The nutrients are biological response modifiers, and we need to understand that. I have been in the practice, seeing chronic illness being dramatically affected by nutrition, reversing diabetes, improving irritable bowel syndrome, relieving chronic fatigue and fibromyalgia, managing menopausal and PMS symptoms, dealing with depression and anxiety, and multiple other chronic illnesses for which Western medicine has poor treatment, if any at all.

Besides simply treating chronic disease, nutrition has the power to simply make people feel better, to help us realize that health is not the absence of disease, but is something that is positive vitality.

Next, I would like to mention what the obstacles are for health care policy and what the imperatives are. The obstacles, I believe, are political, economic, personal, and social involved in medical industrial complex. Much as Eisenhower warned us that the military industrial complex was something to be wary of, I believe that the medical industrial complex, which is a loosely defined force of commercial producers, fast food purveyors, health institutions, the media, and pharmaceutical corporations, dangerously impacts our health. It causes excessive expenditure of health care dollars and thousands of unnecessary deaths.

So in terms of the other obstacles, I think it is medical education. I believe it is difficulties implementing science into the practice of medicine. It is a selective attention to data such as implementing the findings,

for example, of an L-Cystine into radio contrast-induced renal failure, how many hospitals are doing that. It was published in a peer review journal randomized control trial.

I would like to point out the limitations of randomized control trials, and help us to reframe the scientific and research agenda to one that understands basic mechanisms, rather than single-drug/single-disease approaches. We need to shift from anti therapies to pro therapies. We need to help the media from its misinterpretation of data. We need to help refocus marketing, which is very selective in research, by pharmaceutical and food companies.

We need to focus on the education of practitioners, of children, of the public, and shift our research agenda. We need to focus on new models of health care delivery, and we need to define and measure and create health in individuals and populations, create a new synthesis, an operating manual for the human body to enter an unparalleled opportunity, a new era in medicine, to create a bridge and a reduction of the burden of chronic illness by matching lifestyle to genes through appropriate interplay of nutritional intelligence, appropriate physical activity, social relationships, connection, spirituality, and the health of our environment.

Thank you very much.

Panel Discussion

DR. GORDON: Thank you. Thank you all for your various and complementary perspectives.

Questions, comments? Dean and George, to begin with, and then Don.

DR. ORNISH: Well, I first wanted to say what a pleasure it is to listen to each of you, and I am only sorry that isn't nationally televised because I think a lot of people would benefit from hearing it, and to thank each of you for taking the time to come here today. I really appreciate it.

I was struck by many things, but Dr. Willett, when you were saying that you wanted to get a grant to do a study of obesity in a few hundred people over a year and a half, and having trouble getting funding, I thought, god, if you can't get a grant, who can, with 650 publications, head of a major department at Harvard School of Public Health. It is like the canary in the mine, it is so illustrative of the problem, as a White House Commission where we are trying to make policy recommendations.

What would you suggest that we do, besides the obvious thing of saying increase funding? The NIH just got a huge increase in funding from President Bush, or a proposed increase, and yet the NIH has been very resistant to anyone directing to how that money should be spent.

How would you address that issue?

DR. WILLETT: First of all, to be clear about my comment, that was actually a junior faculty person at Harvard, not myself directly, but the point is the same, that this person should be even encouraged more so, because he is a junior faculty person, to take on important issues like this.

I wish I had the answer to your question. Though, I think there is a huge distortion in priorities. Certainly, we need a balanced research program that includes pushing molecular genomics as far as we can.

DR. GORDON: Could you come a little closer to the mike, please.

DR. WILLETT: Sure. We clearly need a balanced program of research, but there are problems with the current criteria for funding grants and "innovation" is one of the key words that you have to be scored on, and if it doesn't include some molecular aspect, it is often very hard to get good scores for innovation. Essentially, it doesn't take much to push you down to a nonfundable level.

So that is one thing that this group might want to comment on, is making sure that these questions which have, potentially, enormous public health impact, are addressed by a balanced research program. Maybe you have better ideas.

DR. ORNISH: No. I really don't, above you and Mark Hyman, specifically, to talk in one way or another about this medical industrial complex and the forces that resist these kinds of issues even being looked at, much less being changed.

I guess I would ask the question -- Jeff, you're raising your hand. Do you have some thoughts about that?

DR. BLAND: Dean, one suggestion, just for consideration is, we don't often consider the industry which benefits from the sale of their products as being a device or an institution that can fund. There may be incentivization that we can do, just like there is in the genetic engineering recombinant industry, for the industry to take on a lot of its own responsibilities for some of this research.

I think we keep looking to government. Maybe we should look back at the industry, who are the beneficiaries of a lot of the profit of these products, to internally fund research in areas that are suggested through various bodies like the Commission.

DR. ORNISH: Can I just ask one follow-up, and I will be real brief?

DR. GORDON: Sure.

DR. ORNISH: This is for Mr. Kushi. Again, thank you for your testimony.

Mark also made reference to this fact, that with the Pima Indians, but certainly in Asian cultures, there is this globalization of illness. Japanese now have cholesterol levels higher than American boys, and I am wondering what implications for policy recommendations would you have about that.

MR. KUSHI: About Asian countries' health issues, especially like Japan, if we take examples, before the occupation began and World War II ended, and the American way of diet, eating pattern, was introduced, Japanese people maintained much lower cholesterol and had much, much less heart disease and much less cancers, but after they started to adopt Western style of eating, American way of eating, like the more high animal protein and fat and sugars and so forth, and dairy foods, then the same pattern like American people are suffering now, the same pattern has been experienced.

DR. ORNISH: Just one final question, which is a personal one. Why, with all the evidence coming out showing the beneficial substances that are in fruits -- I understand the limitation of fruit juice or dried fruits because they become more quickly absorbed -- but why do you limit whole fruits to optional, and then only sparingly?

MR. KUSHI: In my recommendation? Please see there on page 6. Page 6 is the current recommendation

there, right, the standard diet.

DR. ORNISH: But why?

MR. KUSHI: Fruits is occasional. That means weekly. You may have it two times, three times a week. That is okay. It depends on the person, seasonal fruit, and so forth, and not the fruits which grow in different climatic regions, because this is more traditional way of eating, even the American way of eating in the 19th century, and the European way of eating also, also Japan and the other countries way of eating.

We do not take, every day, fruit juice and fruits because the more increased the animal food and animal protein and fatty food for the recent 50 or 60 years, together with that, in order to counterbalance those fresh fruits and fruit juice have been increased.

So if we change our diet, a more whole grain-, vegetable-, bean-, et cetera, based diet, and animal food consumption reduced, I don't say negated, but reduced, then we don't need much fruits and fruit juice, just two or three times a week. It depends on optional ways. Then you can enjoy it. Thank you.

DR. ORNISH: Do you think there is something harmful in eating fruits more often than that?

MR. KUSHI: Yes. If you take too much fruits, that is also harmful in the outcomes, such as allergies or such as skin disease, such as it is very easy to get a cold, et cetera and so forth.

DR. GORDON: I just wanted a brief follow-up, Walter, to ask you, since you have had a lot of experience with this, where would you want to locate a program that would address itself to wellness, especially funding of wellness research, but perhaps also wellness clinical work? Where in the government do you see a home where there wouldn't be undue focus on molecular genetics and molecular activity?

DR. WILLETT: I haven't thought about that. So your question deserves more thought than I can give it as a response off the top of my head, but it is a very good question because the orientation of NIH is clearly disease-oriented. It is defined by the institutes on the basis of disease.

In that process, essentially the aspects of life that cut across disease, nutrition for one, and then physical activity, all the things we are talking about here, do fall between the cracks and become stepchildren.

I don't know. You almost wonder, really, should it be another institute that does that.

DR. GORDON: We could call it the National Institute of Health.

DR. WILLETT: Yes.

[Laughter.]

DR. WILLETT: Yes. It is a good point, that it really does deserve some exploration, I think.

DR. GORDON: Great. As you think about it, and also any other panelist, any thoughts you have based on your experience or your concepts of where this might go, would be very helpful to us.

George, and then -- yes?

MR. KUSHI: I would like to know, do we have well defined the definitions of what is wellness?

DR. GORDON: We are hoping you are going to help us. You are all going to be helping us with that today.

MR. KUSHI: Because using the word "wellness" is so vague and so undefined. What does it mean, feeling good, or that you are very active and energetic, or that it is preventive? What is it, healthy lifestyle? Even healthy lifestyle is vague. So there, I think we should have a clear idea of what is wellness?

DR. GORDON: Thank you.

Let me see who I have on my list. I have George DeVries, I have Don, I have Joe Pizzorno, I have Tieraona, and now I have Wayne. Anyone else? And David, okay, and George Bernier.

MR. DeVRIES: As the White House Commission, we are supposed to look at, among other things, access and reimbursement for complementary health care services, and it seems like, especially related to nutritional counseling, there is inadequate access in reimbursement for nutritional counseling services.

Cyndi Reeser, you used the term "medical nutritional therapy," MNT, in talking specifically as addressed in medical conditions such as diabetes, cardiovascular disease, end-stage renal disease, but it seems like there is a much larger list of medical conditions that good, solid MNT is going to support and enhance treatment. I guess that is a first point.

The second point is, it seems like in the whole are of nutritional counseling, let's call it lifestyle nutritional therapy, LNT, where you have people who hit 30 to 40, they are 20 pounds overweight, and they want to get some help in improving their diet. Where does America turn to get help with their diet? They go to Barnes & Noble and buy the latest book about the latest fad diet. It seems like we could have better access to nutritional counseling in American for both MNT as well as LNT, lifestyle nutritional therapy.

I guess, a question to Cyndi Reeser, Dr. Hyman, possibly, and anybody else on the panel, but how can we promote and support better access to both medical nutritional therapy and lifestyle nutritional therapy to help people to get access to good nutritional therapy services through a professional rather than a book that they happen to pick up off of their local bookstore?

MS. REESER: You have really raised all the important issues, and it is difficult to know where to begin to respond to all this. All I can do is share some of my concerns based on my experience in practice in the field of nutrition over the years.

I think today I am very pleased to witness the new model of care which emphasizes personal responsibility and the way the more educated consumers in our society are taking a more active role in pursuing the information that is available now by reading. I mean, this is a good thing, that people are accessing the Internet and books. Medical journals, even, are more accessible to the public than ever before.

The irony is that the burden is now on the individual to become self-taught because very few people can

afford or will spend money out of pocket to go see a nutritionist for some of their concerns. Many people I see one time, at best, and that is it, and thank you very much. You better tell me all I need to know in one session because I cannot afford to pay you, ongoing, to be my nutrition advisor.

Then, on the other hand, many people I see say that they have had a medical condition for years. They have known about their hypolipodemia for 10, 15 years. They have had diabetes for many years. Never have they been referred to a nutrition professional for counseling. At best, the physician may give some passing mention to, well, you should watch your diet, or something.

So I really think an important part of this is not only education of the consumer, but much more nutrition education of medical professionals and medical schools. That is just the beginning of an answer, but maybe someone else can take it from there.

DR. HYMAN: Yes. I would echo that. I think that fundamentally, in terms of getting access to this information, there has got to be a number of shifts; one is education of our practitioners; two is education of our children in the schools; three is education of the public, and that has to be linked to new models of health care delivery.

If I could, just for a moment, expound on those things. As echoed by Dr. Willett and others, the education of practitioners has to be focused on the basic principles of nutritional modulation of chronic illness and on lifestyle management therapies, much in the way that Dean Ornish's program outlines innovative approaches to reversing heart disease.

There are similar models that can be applied to other conditions and provided in group programs. It doesn't need to be one-on-one counseling. We need to really have focus based on the underlying principles of what health is, and understand more about accessing functional and appropriate methods of diagnosis and evaluation of nutritional status.

In terms of education of our children, there are three things we really need to know about we don't learn in school; one is the care of our relationships and our children; two is the care of our finances; and three is the care of our bodies.

I believe that we need to create programs in schools that help educate children about how to care for their bodies as they age that provide them the operating manual, so to speak, and then provide them the foundation for building a healthy life and is based on clear, fundamental research that shows that our diseases of aging begin in childhood, whether it is heart disease or cancer or osteoporosis and others.

Thirdly, we need to think about the education of the public. I think cigarettes provide a good example. It took decades before we started labeling cigarettes. I think that, unfortunately, nutrition labeling is really very much in the backwaters. Many years ago, Dr. Willett published a paper that estimated that 30,000 premature deaths occur every year because of the consumption of trans-fats, and there is no known benefit to these compounds, except for stabilizing foods on the supermarket shelves. There needs to be clear labeling of these foods.

I mean, there should be, for example, I believe, a label on a can of cola, a bag of french fries, a bag of chips, that says: "These products may increase your risk of obesity, heart disease, cancer, diabetes, and cause early, premature death." I believe that the research warrants that kind of labeling. That is a public health imperative.

We need to use the media, we need to use to the Internet, we need to use entertainment icons, media icons, sports icons to help communicate this message. How many people need to die, how many dollars need to be spent before we make these changes in public policy?

Lastly, just to mention, I think there are some new models of health care delivery we could use to gain access to this information for a larger public and deliver some of these ideas of nutritional intelligence, which can be communicated through the ways I just mentioned.

The anachronistic model of the Normal Rockwell, doctor-patient in the office focusing on that particular problem, doesn't go a long way with the six-minute office visit that we have now. We need to think about group sessions where doctors can educate patients who have diabetes or hypocholesterolemia or hypertension on lifestyle management of those and get reimbursed appropriately for that.

We need to think about new types of health centers, like the Continuum Health Center in New York, for healing, where there is an integrated group of practitioners, nutritionists, and so on. We need to think about supporting local centers of education on cooking, on fitness, on exercise, and somehow providing incentives for those centers to operate and flourish.

We need to really shift reimbursement codes from the ICD-9/CPT disease-based model to one that is based on health promotion and which is reimbursed, instead of by disease, by health. We need to shift, really, from our focus on acute and terminal care to focusing on early assessment and intervention to prevent and diagnose and treat and optimize health.

Lastly, we need to consider the development and encouragement of health resorts and spas, much as in Europe. People get six weeks of paid, government-sponsored retreats at health resorts to optimize their health every number of years. It is something to give us pause and think about.

DR. BLAND: Mr. DeVries, could I comment on this real quickly? Your point was very well made. Just a quick illustration from my experience with our functional medicine in a clinical research center where we saw 2,200 patients on five different protocols related to different chronic illnesses last year, and looking at some of these modalities that I have described in our patient-outcome format.

I think the thing that characterizes the difference between CAM and my previous incarnation in traditional biomedical research in a medical school environment is a distributive medical system in CAM. It is a hallmark to me as I have traveled around, in the way we both we do our work in the functional medicine clinical center and I see other doctors doing it.

What I mean by "distributive system" is that it is not centralized, it is not linear and hierarchical. It tends to distribute information and distribution of resources to a variety of different interlocked providers. Therefore, you cannot expect the primary care M.D. to have enough time to really do the nutritional counseling.

So going back to the previous comments about, how do we use dietetic services, we have dieticians, registered dieticians, in our facility; how do you use nutritional counselors; how do you use exercise counselors; how do you use body-mind therapists. It becomes a distributive network interaction, treating a network disease.

It is interesting how they map one against the other. If chronic disease is not caused by a single gene that has been mutated, but polygenes across multiple chromosomes, plunged into a harmful environment,

then do we treat that with a single therapy against multigene interactions, or do we have multipractitioners treating multivariate disorders as it relates to gene expression.

That makes it more cost effective, and it is a very different model than people were trained in traditional linear, reductionistic thinking about medicine, which means to know more and more about less and less. So I think that one of the characteristics of CAM is a distributive information system utilizing different resources, working together in team fashion.

DR. GORDON: Yes, Walter?

DR. WILLETT: Just in response to that question, I quite agree with Dr. Hyman's comment that if we are really going to attack the problems of health in the most effective way, it really does cut across all aspects of society, from schools to community organizations to the infrastructure and physical layout of cities and communities.

But just to focus it a little bit more, I think a question was raised as to one small aspect of, how do we provide the service of preventive medicine or nutritional lifestyle therapy that you really mentioned. Some HMOs have tried to do that. I know in our area, Harvard Community Health Plan, that was really one of the dreams before HMOs took off in the wrong direction as a major for-profit enterprise, because that was really the concept that a lot of people went in with.

The trouble is, those HMOs, the good ones, have had to compete against the cut-rate ones, and it is sort of the race to the bottom in terms of, how little can you provide. I think there are ways. Packages can be mandated, just as in many states there is now mandatory coverage of X number of sessions for mental health counseling. I think it would be very easy to require that every health care plan had 10 sessions per year of nutritional lifestyle therapies, something like that. It is a very concrete, simple thing that is relatively easy to do.

Of course, then the issue becomes, what is it that you are going to put in that package, but in fact, I think it is in the interest of most health plans to have it be a good quality package. It is not in their interest to have it be a totally wasted package. So I think there are some concrete steps that could be done in that direction. It won't sell the whole picture, but it is tangible, and maybe this group could think about that a little more specifically.

DR. GORDON: Thank you. That is very helpful.

Don.

DR. WARREN: I have got a couple of questions. One is about the perception of how this CAM movement came about in medicine, and one is that the perception in the alternative fields is that the CAM movement in medicine occurred because of the report on the number of patient visits going to CAM and the dollars spent.

Dr. Willett, do you have any comment about that?

DR. WILLETT: Well, no. Obviously, the evidence is very clear, that there are huge numbers of visits and huge amounts of dollars, and obviously people are looking for something that they are not getting. Then as we look underneath the cover, what is medicine, the establishment of medicine, providing. Obviously, it is hugely remiss in redressing many of these areas.

So this is great, that there is a force out there trying to correct the system, and in the end, hopefully, I think these will integrate and interdigitate. I guess that is the way progress is made, that there needs to constantly be some people outside of the system pointing out the flaws, the inadequacies of the system.

So this is really, I think, exciting and healthy.

DR. WARREN: Ms. Reeser, in Arkansas, we have the highest per capita, at least we used to have the highest per capita, of per day soda pop intake, a little over a gallon a day per person, man, woman, and child in the State of Arkansas.

In our schools, we have school programs, that the meals provided and dictated through the Agriculture Department, are high in carbohydrates. There is very little protein available. They have high sugar intake, completely, and the schools have soft drinks and candy available for the kids at breaks.

What can we do to counter this consumption of garbage in our schools? What type of policies do the American Dietetics think we could come up with?

MS. REESER: It is going to take an integrated effort on the part of the public and the government, I believe, and professionals on an unprecedented scale. I mean, there have been efforts in the past to come up with new guidelines for the USDA in the School Lunch Program to improve the delivery of healthy lunches. I am sure there have been improvements, but clearly, as you state, we are still far from providing the ideal food in the school environment.