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INTEGRATIVE CARE: A PATHWAY TO A HEALTHIER NATION

HEARING

OF THE

COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS

UNITED STATES SENATE

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

ON

EXAMINING INTEGRATIVE CARE, FOCUSING ON A PATHWAY TO A HEALTHIER NATION

FEBRUARY 26, 2009

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INTEGRATIVE CARE: A PATHWAY TO A HEALTHIER NATION

THURSDAY, FEBRUARY 26, 2009

U.S. SENATE,
COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS,
Washington, DC.

The committee met, pursuant to notice, at 10:01 a.m. in Room SD–430, Dirksen Senate Office Building, Hon. Tom Harkin presiding.

Present: Senators Harkin, Mikulski, and Enzi.

OPENING STATEMENT OF SENATOR HARKIN

Senator HARKIN. The Senate Committee on Health, Education, Labor, and Pensions will come to order.

Good morning, everyone. This is the latest in an ongoing series of hearings that will guide us as we craft comprehensive healthcare reform legislation in the months ahead.

In his speech to Congress Tuesday evening, President Obama made clear that he expects Congress to pass a bill this year, and we fully intend to take him up on that challenge. I might also point out that President Obama, in his speech the other evening, clearly mentioned prevention and said that prevention must be a central part of it, and it was only through prevention that we could keep people healthy and reduce costs. That was a welcoming comment by the President.

I want to thank our committee Chair, Senator Kennedy, for giving the go-ahead for this hearing. Of course, we look forward to his speedy return to this committee.

I am pleased to co-chair this morning's hearing with Senator Mikulski. Senator Mikulski and I have worked for a long time on what might be called integrative health, alternative health practices. We have worked and our staffs have worked together on this for many, many, many years.

I am eager to continue to work with Senator Mikulski, as we have said before, to make sure that alternative, complementary, or integrative medicine is a key part of our healthcare reform.

I am eager to hear our distinguished witnesses' ideas on using integrative care to keep people healthy, improve healthcare outcomes, and reduce our costs. It is fashionable these days to quote Abraham Lincoln. So, I guess I will.

[Laughter.]

In his 1862 address to Congress, Lincoln said,

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> "The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty. As our case is new, so we must think anew and act anew. We must disenthrall ourselves, and then we shall save our country."

Well, clearly, the time has come to "think anew" and to "disenthrall ourselves" from the dogmas and biases that have made our current healthcare system—based overwhelmingly on conventional allopathic medicine—in so many ways wasteful and dysfunctional. It is time to end the discrimination against alternative healthcare practices.

It is time for America's healthcare system to emphasize coordination, continuity of care, patient-centeredness, and prevention. It is time to adopt an integrative approach that takes advantage of the very best scientifically based medicines and therapies, whether conventional or alternative.

This is about giving people the pragmatic alternatives they want, while ending discrimination against practitioners of alternative healthcare. It is about improving healthcare outcomes. It is, yes, about reducing healthcare costs. Generally speaking, alternative therapies are less expensive and less intrusive, and we need to take advantage of that.

We need to place much greater emphasis on preventing disease and keeping people healthy rather than merely treating people once they become sick, and integrative care can help us achieve that goal. This has been a priority of mine going back many years.

In 1992, I authored legislation creating the Office of Alternative Medicine at the National Institutes of Health. I might just say that this wasn't something I just woke up one morning and decided to do. It was because of a friend of mine that I had known for many years and served in the House with, who had left the House of Representatives because of an illness, who sought out alternative care and became well.

That was Congressman Berkley Bedell, who is with us today. Former Congressman Bedell, who led the charge and got me thinking about it. I hope Berkley doesn't mind me telling this little personal story. I saw Berkley—this was around 1988. He had left the House. He was very ill. I had seen him once, and I went home and told my wife, Ruth, I said, "You know, I think I have seen Berkley for the last time."

That was 1988. Look at him now.

[Laughter.]

He used alternative therapies, and that got me thinking about it. What are we missing? So, because of that and talking with Berkley, I set up this Office of Alternative Medicine through the Appropriations Committee.

In 1998, working with then-Senator Frist, we sponsored legislation to elevate the office to what is today the National Center for Complementary and Alternative Medicine.

Now, again, I must say that one of the purposes—when we drafted that legislation back in 1992 and continuing in 1998—of this center was to investigate and validate alternative approaches. Quite frankly, I must say publicly it has fallen short. The focus—I think, quite frankly, in this center and previously the office before

it—most of its focus has been on disproving things rather than seeking out and approving things.

Since 1992, the field has evolved and matured. Today, we are not just talking about alternative practices but about the integration between conventional and alternative therapies in order to achieve truly integrative health. We need to have practitioners talking with each other, collaborating to treat the whole person. This is the model we intend to build into our healthcare reform bill.

On several occasions, I have laid down a public marker, saying that if we pass a bill that greatly extends health insurance coverage but does nothing to create a dramatically stronger prevention and public health infrastructure and agenda, then we will have failed the American people.

This morning, I want to lay down a second marker. If we fail to seize this unique opportunity to adopt a pragmatic, integrative approach to healthcare, that, too, would constitute a serious failure. I know both Senator Mikulski and I do not intend to fail in that effort.

We welcome our witnesses. We look forward to hearing their best ideas, and I will recognize Senator Mikulski and then Senator Enzi.

STATEMENT OF SENATOR MIKULSKI

Senator MIKULSKI. First of all, we want to welcome both Dr. Oz and our other distinguished panel that will come. I am going to be brief in my remarks because there will be a vote at 10:30 a.m. We want to hear from Dr. Oz and then be able to move very quickly to our second panel.

Senator Harkin and I each chair a working group in terms of the healthcare debate. Senator Harkin chairs the one on prevention. I chair the one on quality. We both feel that that is almost an artificial barrier on many of the topics because not only should medicine and healthcare be complementary, but we need to begin to change the paradigm and have a continuum of healthcare.

This is why we are doing a joint hearing this morning because we are talking about prevention, and we are talking about quality, and we are talking about improving the health outcomes of the American people.

This is the second set of hearings in what is really a week-long discussion in Washington on the concept of integrative medicine or integrative healthcare, which is to be patient-centered, focused on health outcomes, and how do we offer to marshal the resources of what our current system has to offer to think differently and also to empower the American people to also take better charge of their own healthcare? This is what the dialogue this week is all about.

What is the sound science involved? How can we better identify the elements that are involved in prevention of disease, but also not only the prevention of disease, but the promotion of healthcare? If we promote healthcare, whether it is fresh fruits and vegetables in our schools, all the way through a variety of other things, we will be actually promoting healthcare.

We have a lot to do in this committee, and we don't want to just focus on the status quo or the stagnant quo. I want to compliment

my colleague from Iowa because he has been bold and innovative and has already changed the paradigm over his work.

We also joined together to include women in the protocols at NIH and then also helped change the protocols there, using the best of Western medicine. Now, we want to use the best of healthcare thinkers to know that when we do our reform that we are doing not only insurance reform, but we are doing healthcare reform and actually healthcare transformation.

I look forward to hearing the witnesses. They have already made a major contribution. I will be able to say something complimentary about each one.

But, Dr. Oz, you are already the surgeon general of the airwaves. You have done more to promote healthcare and sound living, and also we want to hear so much more about your HealthCorps, which is these wonderful, talented young people helping us achieve these healthy, what is it, healthy habitats and healthy people.

Senator HARKIN. Thank you, Senator Mikulski.

Senator Enzi.

STATEMENT OF SENATOR ENZI

Senator ENZI. I want to thank the co-chairs for holding this hearing and for their tremendous effort and work in healthcare and all of the other areas that this committee does. I think this committee has one of the biggest jurisdictions on the Hill, and we have been very productive at getting through those.

I look forward to the testimony of today's hearing, and I want to also welcome Dr. Oz. I first met you in New York City at the time your first book came out and have been following those books and television and some other things. I am still a little surprised that people have you come into their home and clean out their refrigerator for them.

[Laughter.]

I can see where the advantage would be on that.

I do have a full statement to submit for the record, but I primarily wanted to comment today that yesterday the President made a statement that he was going to have a $634 billion reserve for healthcare. I am on the Budget Committee. So, I know how the reserves go, and I know that isn't real money. It gives us some room to play with.

I am a little disappointed that the figure was so precise without showing us exactly—it makes it sound like there is an exact plan out there. Of course, he promised us that he would let us work through a process, and that is what makes it bipartisan, when we can work together at the beginning. A number of us have been doing that in a number of different ways.

I think that Senator Baucus kind of put out a white paper earlier that a lot of people have been working off of. Senator Wyden has had a plan. Everybody has had a plan. I have been busy collecting all of those plans so that we could put everything on the table and arrive at something that will take care of every American if we can get all of it done.

I noticed that we do things comprehensively around here, and it gets weighted down by the parts that people don't like. I hope that

we can put together pieces—large pieces—but pieces that will make it through the process and get things solved for people.

I also, every time I come here, will be encouraging us to do roundtables. We really ought to have a roundtable on the Massachusetts plan and have a bunch of people in, that have been involved in that, that can tell us where it went right and where it went wrong. Because I can see that we are going to be fashioning things after a lot of those things.

The reason I mention a roundtable, is when we do a hearing, one side gets to pick all the witnesses but one, and the other side picks the one. Both sides come to pick on each other.

I prefer the roundtables where we invite in people that have actually done things in the field, and quite often, we have that. It is a joint invitation and with just a few questions that can kind of bring out what they have done, and then they discuss how their idea would work with someone else's idea. I think that really helps to expand our capability to make the right kind of decisions when the time comes instead of concentrating on clever questions.

I thank you for doing this hearing and the other hearings that we have been doing this year. They are extremely helpful.

[The prepared statement of Senator Enzi follows:]

PREPARED STATEMENT OF SENATOR ENZI

Good morning and thank you for joining us today. The HELP Committee has spent ample time conducting hearings to gather information about our healthcare system to answer questions about the best way to move forward on health care reform.

Today we will learn about alternative ideas for keeping people healthy. Dr. Oz will discuss a holistic approach to our health and provide suggestions on how to engage more people in their own health care decisions.

Before we begin I would like to comment on the process in which Congress will move forward on healthcare reform. I was told by Senator Tom Daschle in his confirmation hearing that healthcare reform would be a bipartisan effort. I have also heard from Senator Baucus on the Senate Finance Committee that he would like 80 votes for a healthcare reform package. I hope that other members of Congress will begin to echo their colleague's commitment to a bipartisan process for health care reform.

Unfortunately, the HELP Committee has not been conducting bipartisan hearings, and as a result there has been less participation. Members of the committee need to come up with the hearing topics on health care reform together, and not conduct hearings that only interest a few.

I also want to note my concerns about the President's budget blueprint, which came out today. $634 billion is a lot of money and a very precise number. The message the President has sent is concerning. His budget blueprint does not send a bipartisan message. A health care reform proposal pushed by the White House will undercut the will of Congress and I strongly encourage him to allow Congress to act first. I am not encouraged by the President's blueprint and hope he will echo his colleagues support for a bipartisan health care reform package in the future.

Working together on a plan means agreeing where we want to go, and then being willing to take different paths to get there. Paving a highway and then dragging people down it is not bipartisanship. The bipartisan road is built together and it's built with action more than words.

Today we will hear from individuals about ways in which we can improve the health of our Nation through ideas that require individuals to take personal responsibility for their actions and inactions. I look forward to hearing the testimonies and want to thank the witnesses for their time and dedication to improving the lives of others.

Senator HARKIN. Thank you very much, Senator Enzi.

I see this hearing as sort of the beginning of a process, and I take your advice to heart that perhaps the second round ought to be some kind of roundtable discussions where we bring in more integrative practitioners.

I can assure you, I know each one of these individuals who are here today, and they are all practitioners. These aren't people who are just sitting behind ivory towers some place. Every one of them are active practitioners.

Senator ENZI. I wasn't referring specifically to this hearing.

Senator HARKIN. Oh, OK.

Senator ENZI. Some of the others have been a little bit more focused on a particular direction that somebody wants to go, and we need to be examining a lot of different directions.

Senator MIKULSKI. Colleagues, we vote at 10:30.

Senator HARKIN. Well, this is it. This is it.

Dr. Oz, welcome. We have a vote at 10:30, so we will probably break and then come back right after that vote.

STATEMENT OF MEHMET C. OZ, M.D., DIRECTOR, CARDIOVASCULAR INSTITUTE AND COMPLEMENTARY MEDICINE PROGRAM, NEW YORK-PRESBYTERIAN HOSPITAL, NEW YORK, NY

Dr. OZ. Well, I want to thank the Senators very much for allowing some of us to offer some insights on how to get more value for the money that we are already spending in healthcare.

I am not going to talk about insurance. I am going to talk about the broader philosophy of the personal responsibility we each have. Tip O'Neill often quipped that all politics was local. I think all healthcare is personal. I am going to speak a bit about the smart patient movement and what we should be empowering Americans to be able to do.

I was sent last fall by The Oprah Winfrey Show to look at places around the world where people live the longest and live the best. These are places like Sardinia and Costa Rica, Loma Linda in this country as well. What we learned in these countries where people have a four times greater chance of living to age 100 than they do in this country—think about that. Four times more chance of getting to age 100 in Costa Rica or Okinawa than in this Nation.

We learned that the reason they are able to do it is because it is easy to do the right thing. It is easy to make the right decision.

I did a show recently with Ms. Winfrey, where we recommended that folks eat 100 percent whole grains. One of the most common

comments we got on the show was, "We can't find 100 percent whole grains where we live." I went out and started looking, and in many parts of this country, that is the case.

How do you make it easier for folks to make those decisions? I think the complementary and alternative medicine movement has, in part, been about that—empowering people to take charge of their own health, and because they are doing that, they begin to play a more active role and they find paths, sometimes serpentine paths to health that they wouldn't have normally expected to run into.

I started in this field not because I was interested in massage therapy, but because I was putting in these kinds of little heart pumps. This is a device that we use to support the heart of a person who is dying from heart failure. These people were just barely gripping the oppressiveness of life, about to fall into the chasm of death.

I began to realize that they wanted more than just a pump that kept the blood moving forward. They wanted vitality. They wanted that more holistic approach. They began calling in their massage therapists, and they want to have aromatherapy around. Pretty soon, I was calling the social workers to see if we could have Reiki masters in the operating room.

As the story sort of progressed, we created a complementary and alternative medicine program that was not designed to advocate for these therapies. It was designed to evaluate them.

As we began to create that and I traveled around the world, I finally recognized what many of my colleagues were already talking about is the globalization of medicine. Taking therapies that have worked in other parts of the world and offering them as a possible solution to Americans who suffer similar ailments.

We have global finance. We all know that from the current environment. We have global media. The books that we write, the Oprah show, they are in many different countries. We don't have global medicine. Medicine has remained remarkably provincial in many ways.

With this in mind, I wanted to push us to think about what the smart patient movement is all about. We actually worked with the Joint Commission, which is the Nation's health/safety watchdog organization, to write books on this topic. This is one of them.

These texts, that are given out at hospitals, are designed primarily to help people to understand what responsibility they have. Now the first question people ask, and this is true of complementary medicine, whether you are going to take bypass surgery or medical therapy for heart disease, it is all about being an insightful and inquisitive member of the healthcare team.

The first question people ask is, "My goodness, aren't I going to get shot if I put my hand up and ask about this alternative approach?" You know what Senators, if you are the only one who puts your hand up, you might get labeled as the troublesome patient in room 21. But, if we create a movement and make it easy for people to access some of these therapies, it becomes the norm.

I believe that if we can get about 10 percent of the population to shift the mindset, their responsibility that they perceive in this healthcare system, we can drive quality. Because if you are going

to put an extra quarter in to go first class as a practitioner by bringing in an acupuncturist to your practice or understanding nutrition in a bit more sophisticated way and building a team to do that, you ought to get people to come to you because they value quality.

We need to create a market mechanism, and I have a couple of suggestions of how we can do that. First, I think it is important that we allow people access to better information about what the healing options available to them are. The major problem we have in academic medicine right now is we are asking the wrong questions. Because the questions being asked in trials are generally funded by endeavors that can profit from the answer.

So we ask you, is this a better tool, or is this a better tool? What we really want to ask you is, is this a better tool, or is nothing really needed for you to get better and allow the body to heal itself?

Second, I think we need to have the information systems that will also help the healers, people like me. The information systems that we talk about don't just benefit the patients, they benefit the people who are using information to judge whether or not you can get better from one therapy or another, and they ought to incorporate many of these complementary and alternative medicine therapies.

Third, we need a culture of wellness. By that, I mean, very specifically, we should not be tasking physicians necessarily with some of the chronic care issues that plague our Nation. I mean, we spend twice as much per capita on healthcare in this country than most European countries, in part, because we are almost twice as sick.

We should have health extenders play an active role in this and the health coach movement that would allow people who have that care-giving personality, maybe they are social workers or they are physical therapists or, actually, they could come from the army of alternative medicine practitioners that are already out there.

Let us create mechanisms to let this health coach movement prosper, move forth, and provide them as sources to patients. All of a sudden, these people become their health advocates, their health advisors to try to control the system.

And fourth, and my final recommendation, is that we think about this ServiceNation movement that you are already debating. Why ServiceNation? Because when we make it the norm for an 18-year-old leaving high school to serve his country, he or she doesn't have to do it just through the military, they can serve by becoming members of organizations that actually serve the Nation by teaching, among other things, health.

We have created a program called HealthCorps, which has spread quite quickly around the country. We are in seven different States. We touch about 15,000 different lives. The basic principle is this.

Think of the Peace Corps, right? The Peace Corps, we took energetic, passionate kids who were just graduating from college, and we sent them all over the world as foreign policy advisors pretty much for this Nation because we learned a lot about those countries, but we put our best foot forward.

Take those same energetic kids, harvest that American talent, and put them in schools around the Nation. It is inexpensive. It is

scalable. We estimate that the cost is about $1 per year of life lived per child. What is really cool about it is we have young people advising young people. It is pure mentoring.

Then what happens? You have got activists being created. You have got high school students who now think, my goodness, they taught me about how to eat, and they are giving me advice about physical activity. Now I am not getting fat anymore. It helps with the obesity epidemic.

More importantly, you have taught me mental resilience. You have taught me how I can be in charge of my own body because if I can't be in charge of my own body, I can't change the world out there either.

These kids become activists. They fight for changes in their communities. They will go to a local bodega and say, "You know what, we need to have 100 percent whole grains in our communities. If we don't have them, then people can't eat right. Let us make that change happen."

These are the kinds of changes that I think HealthCorps can afford, as we have done randomized trials to show efficacy. I am very passionate about it, as you can probably tell. I think it is a great way to build another generation of people who are savvy about health to do service learning and teach this Nation about health.

By doing that, we create this complementary approach to holistic wellness that we have seen looking around the world that I started my conversation with in countries that really have great value for the healthcare they are offered.

[The prepared statement of Dr. Oz follows:]

PREPARED STATEMENT OF MEHMET OZ, M.D.

EXECUTIVE SUMMARY

America must find new ways of addressing the poor health record and staggering health care expenditures gripping our country, especially in light of the growing ranks of uninsured people. We spend roughly twice as much per capita on healthcare than our counterparts in Europe, but do not appear to derive value for this investment. Part of the reason is that Americans are twice as sick as Europeans as a people because of our chronic disease burden. Since lifestyle choices drive 70 percent of the aging process, we should focus on what we put in our mouths (food and addictions), how we tune our engines (exercise and sleep) and how we cope with stress (community and psychological growth). A key solution is support for a Smart Patient movement that integrates complementary and alternative medical (CAM) approaches to conventional medical treatment. We can combine the best of modern American medical practices with alternative approaches to wellness and harvest the natural healing powers of our bodies.

As Vice-Chair and Professor of Surgery at Columbia University and Director of the Heart Institute at New York Presbyterian, I'm in the operating room every week and have performed thousands of heart operations utilizing the most state-of-the-art equipment and innovative approaches of science to save lives. My specialty was mechanical heart pumps and transplantation and my patients were barely gripping the ledge of life. To survive, they needed a pump to replace their failing organ, but also wanted to return to a fulfilling life, so they introduced me to their "other" healers-hypnotherapists, massage therapists, spiritual healers, and energy experts like Reiki masters.

I soon realized that CAM is really the globalization of medicine, a field which has remained remarkably provincial. The globalization of medicine mandates that we incorporate Eastern approaches like traditional Chinese and Ayurvedic healing practices into Western medicine.

A major driver of chronic disease in this country is obesity and the increase in childhood obesity rates is twice as fast for adults. No single remedy will make America well. Instead, public/private partnerships will produce the most successful vehi-

cles for educating and empowering children and families to make healthful decisions and value their bodies. With this in mind, 5 years ago, I founded HealthCorps® *www.healthcorps.org*, an in-school peer mentoring program for teens that focuses on nutrition, fitness and mental resilience. It reflects the message of the ServiceNation initiative to make volunteerism part of mainstream American life and we hope to bring it to all 50 States by 2012. We've even proven benefits of the program in randomized trials.

The HealthCorps model is fashioned after the Peace Corps and can be duplicated in other areas like broadening the reach to seniors of CAM and physical fitness approaches that are proven to reduce the burden of dementia and improve function. HealthCorps Coordinators, who are the heart of the program, are typically recent college graduates who defer graduate studies to participate in public service by leading fun daily seminars on practical life skills associated with integrative health.

The mechanism whereby we can institutionalize the concept of "HealthCorps" and take it quickly to all 50 States already exists at the Federal level—AmeriCorps. An AmeriCorps/HealthCorps partnership also represents investment in a broad nationwide movement. HealthCorps is strategically partnered with leading like-minded private and public initiatives such as The Tiger Woods Foundation, ServiceNation, the Center for Disease Control, and the David Lynch Foundation, among others.

We need to support systems that empower our citizens to get personally involved in improving the health of our Nation. There is no free lunch in health; instead you need to act for yourself to gain the vitality you desire. Our leaders need to deliver this honest message which is why I support the WIN proposal outlined by Dr. Jonas that would create a White House office focused on lifestyle-based chronic disease prevention. And please remember that we cannot have a wealthy nation if we are not a healthy nation.

I commend the committee for reaching out to find new ways of addressing the poor health record and staggering health care expenditures gripping our country, especially in light of the growing ranks of uninsured people caused by the economic turndown.

We spend roughly twice as much per capita on healthcare than our counterparts in Europe, but do not appear to derive value for this investment. Part of the reason is that Americans are twice as sick as Europeans as a people because of our chronic disease burden.[1] Since lifestyle choices drive 70 percent of the aging process, most experts agree that we should focus on what we put in our mouths (food and addictions), how we tune our engines (exercise and sleep) and how we cope with stress (community and psychological growth). A key solution is support for a Smart Patient movement that integrates complementary and alternative medical (CAM) approaches to conventional medical treatment. We can combine the best of modern American medical practices with alternative approaches to wellness and harvest the natural healing powers of our bodies. CAM is not just about extreme treatments for advanced disease when no other solutions are available. It is about taking a population that has gotten comfortable living with half of the energy and sense of physical well-being that they should have at their age and moving them up the spectrum to live at full vitality.

I saw this first hand when we traveled to the oldest populations on our planet for the Oprah Winfrey Show. Dan Beuttner helped us understand why the odds of living to age 100 with the vitality we desire was four times higher than the United States in places without advanced health care technology like Okinawa, Costa Rica, and Sardinia. These people live with simple habits like daily arduous physical activity, eating whole foods, and relying on local healing practices that are minimalistic yet effective. We also found a similar cluster of centenarians in our own country, Loma Linda, CA.

COMPLEMENTARY AND ALTERNATIVE MEDICAL PRACTICES

We can combine the best of modern American medical practices with alternative approaches to wellness and harvest the natural healing powers of our bodies. If successful, we can provide our population with the vitality that we crave. Please let me explain this vision by explaining how I got involved in the movement.

As Vice-Chair and Professor of Surgery at Columbia University and Director of the Heart Institute at New York Presbyterian, I'm in the operating room every week

[1] Kenneth E. Thorpe, David H. Howard, Katya Galacionova, *Differences in Disease Prevalence as a Source of the U.S.-European Health Care Spending Gap* (Data Watch, October 2, 2007) 678–686.

and have performed thousands of heart operations utilizing the most state-of-the-art equipment and innovative approaches of science in order to save lives. I spent much of my life past the cutting edge as I operated on the bleeding edge of medicine. My specialty was mechanical heart pumps (See Appendix A—Visual of Mechanical Heart Pump) and transplantation and my patients were barely gripping the ledge of life as they pulled themselves up from the crevice of death. To survive, they needed a pump to replace their failing organ, but this was not enough. They also wanted to return to a fulfilling life, so they introduced me to their "other" healers-hypnotherapists, massage therapists, spiritual healers, and even energy medicine experts like Reiki masters. Clearly these patients had not read the same books that I got in medical school.

We began offering massage and meditation, and even audiotapes in the operating room with some internal resistance, but general support from a medical community that recognized that conventional medicine alone could not offer the robust, holistic approach that our patients deserved. We started a center where we paid salaries of complementary and alternative medical (CAM) practitioners to offer free services to all of our heart surgery patients. We had two goals. First, introduce patients to new powerful lifestyle approaches that they could do on their own after discharge. Second, evaluate rather than just advocate these unconventional approaches to see what works and spread the word by publishing in mainstream journals. We researched if we could reduce pain medications with hypnosis, if we could improve survival after heart procedures with prayer, and if we could alter memory with what patients hear during their operations. As we merged high-tech to low-tech approaches, folks around the hospital started to notice, and so did the media as evidenced by this early piece in the New York Times Magazine.[2]

My interest in incorporating these CAM techniques began to spread as I followed the literature and traveled overseas to perform heart surgery in China, visit medical facilities in Turkey and train in France. Foreign patients and practitioners had different expectations from their health care systems than Americans. In fact, I realized that CAM is really the globalization of medicine. My testimony today will be quickly available all over the world with other news from today. Financial services are clearly global, which is part of today's economic turmoil story. Medicine has remained remarkably provincial. The globalization of medicine mandates that we incorporate foreign approaches like traditional Chinese and Ayurvedic healing practices into Western medicine.

GLOBALIZATION OF INTEGRATIVE HEALTH TREATMENTS

In fact, people are crying out for the opportunity to play a greater role in their own well-being. We need to take the experience of a few and make it the norm for all. What we are really speaking about is morphing the current sophisticated health care system into one that is continually audited and improved by Smart Patients. What we have built are remarkable highways that carry people towards health. But to create a superhighway that is safe, we need better driver's education. And we need Smart Patients to spread this approach throughout the system. We even wrote a YOU book with the Joint Commission, our Nation's health safety advocate, to serve as a metaphorical driver's education pamphlet. (See Appendix B for reference to *You:The Smart Patient.*) The book hit the New York Times best-seller list, demonstrating the voracious appetite that our population has for information if presented in an accessible fashion.

So how do we provide a booster rocket for improving our population's awareness of complementary and alternative medical (CAM) and lifestyle solutions? First, we need to incorporate CAM into the conventional health care economy, including insurance company reimbursement when appropriate. This means we need simple means for credentialing all these practitioners and easier access to research money for unconventional therapies. CAM treatments often cannot afford major investments into proving their efficacy because the potential profits are limited. Ironically, the most cost-effective therapies are the most difficult to research for the very reason that our government and other payers desire them.

HEALTHCORPS®—A PEER MENTORING MODEL FOR A HEALTHIER AMERICA

Second, let's support the ServiceNation initiative that seeks to make volunteerism part of mainstream American life. Many of these volunteers could help spread health lifestyle information throughout our Nation, as we have proven through the HealthCorps® *www.healthcorps.org* peer mentoring initiative in our Nation's high schools. I founded HealthCorps in 2003. (See Appendix C–HealthCorps Summary)

[2] Chip Brown, *The Experiments of Dr. Oz* (The New York Times Magazine) 21–23.

Here was our rationale. The major driver of chronic disease in this country is obesity and the increase in childhood obesity rates is twice as fast as the adult rate. I am seeing this first hand as we have started operating on obese 25-year-olds with artery blockages. I have been invited to Department of Health and Human Services panels to brainstorm solutions and contend that no single remedy will make America well. Instead, public/private partnerships will produce the most successful vehicles for educating and empowering children and families to make healthful decisions and assume responsibility for the most valuable asset they'll ever inherit—their bodies.

The HealthCorps model is fashioned after the Peace Corps and can be duplicated in other areas like broadening the reach to our seniors of CAM and physical fitness approaches that are proven to reduce the burden of dementia, as well as offer improved function.

As you most likely know, children and teens like to make their own decisions and often reject the advice of parents and elders. HealthCorps Coordinators, who are the heart of the program, are typically recent college graduates who defer graduate studies to participate in public service. Our Coordinators represent a cross section of demographics, talent and achievement. Coordinators are assigned one school where they serve as a positive role model leading fun daily seminars on practical life skills associated with integrative health. They teach kids about nutrition and exercise and the tremendous power of positive thinking.

The mental resilience portion of the curriculum is arguably the most important—especially in light of the disturbing rise in teenage suicide in this country. The tenfold increase in depression that we have seen in young people since the 1950's is not a result of genes. It is most likely attributable to significant societal changes such as lessened sense of community, a lessened sense of social purpose greater than oneself, as well as a shrinking familial base of support. By empowering kids to take charge of their own bodies as well as effect change in their communities, we believe we can contribute to their sense of purpose, community and confidence.

Our Coordinators serve as a nexus for school-wide and community health events and activities, such as helping to script local health policy and working with other wellness non-profits to execute large-scale community health fairs. And the wonderful thing about service programs is that they not only influence those served, they influence the people serving, a new generation of doctors, health practitioners and future policymakers who disseminate a philosophy of integration.

PRIVATE/PUBLIC PARTNERSHIPS

Instead of the expensive tests, procedures, medications and interventions that we now use to try to cure our Nation, the methods HealthCorps proposes are attainable, affordable and sustainable with a long-term substantial return on investment. The mechanism whereby we can institutionalize the concept of "HealthCorps" and take it quickly to all 50 States already exists at the Federal level—AmeriCorps.

At a time when the job market is shrinking, young Americans have fewer choices after college. As an AmeriCorps program, HealthCorps could harness the power of thousands of amazing young people across the country to spread the message of integrative wellness and at the same time offer them a worthwhile job opportunity. HealthCorps can also partner with great Federal programs such as the National Association of Community Health Centers ("NACHC") to prospect for high school graduates interested in health careers who might devote a couple of years to service prior to considering college.

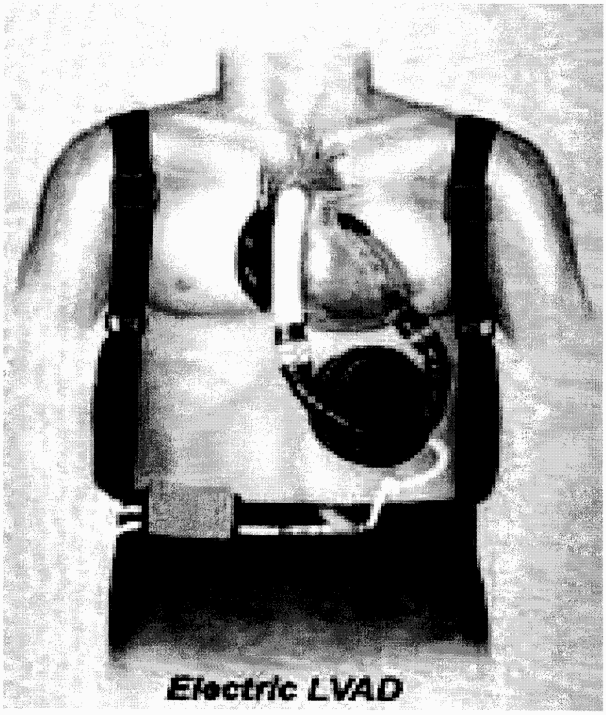
An AmeriCorps/HealthCorps partnership also represents investment in a broad nationwide movement. HealthCorps is strategically partnered with leading like-minded private and public initiatives such as The Tiger Woods Foundation, ServiceNation, the Center for Disease Control, the David Lynch Foundation, the International Health, Racquet and Sportsclub Association, Cleveland Clinic Initiatives, the Smart Choices Coalition, the Corporation for Public Broadcasting, the Human Neuroimaging Lab at Baylor College of Medicine, and the United Federation of Teachers ("UFT"), among others. HealthCorps also mobilizes a 20-member Advisory Board (which includes experts in CAM, conventional medicine, business and non-profits) to participate in programming and community outreach.

I know that our public/private partnership is a good investment because science is substantiating our gains. In June, I will present the results of an independently conducted 2-year efficacy study funded by Affinity Health Plan. Results of the study showed significant benefits of HealthCorps on decisions made by students.

CONCLUSION

We need to create systems that empower our citizens to get personally involved in improving the health of our Nation. In fact, the most important contribution of CAM therapies is that frequently no one is giving you a pill or procedure or quick fix answer. There is no free lunch in health; instead you need to act for yourself to gain the vitality you desire. Our leaders need to deliver this honest message which is why I support the WIN proposal outlined by Dr. Jonas that would create a White House office focused on lifestyle-based chronic disease prevention. And please remember that we cannot have a wealthy nation if we are not a healthy nation. Thank you for your valuable time, Mr. Chairman and committee members.

APPENDIX A: VISUAL OF MECHANICAL HEART PUMP



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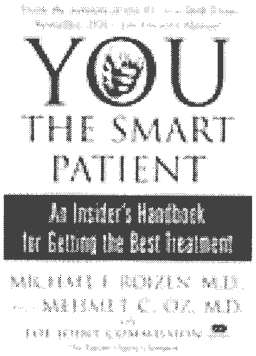
APPENDIX B:
YOU: THE SMART PATIENT



APPENDIX C: HEALTHCORPS SUMMARY.—PROGRAM SUMMARY

HEALTHCORPS RESPONDS TO THE NEED

HealthCorps' is a **proactive health movement** that responds to the obesity crisis through **school-based health education and peer mentoring**, in addition to **community outreach to underserved populations**—mostly Hispanic and African-American as well as groups with lower than average educational levels. HealthCorps (*www.healthcorps.org*) was founded in 2003 by cardiac surgeon, Dr. Mehmet Oz.

Along with educating students in healthy lifestyle principles, we extend our mission to their families and communities. Unlike the expensive tests, procedures, medications and interventions that we now use to *cure* our Nation, the methods we propose are attainable and much more affordable. Our goal is to shift the paradigm towards health and wellness now and for the future of our children.

PROBLEM STATEMENT

Obesity in the United States has reached epidemic proportions, with more than 35 percent of Americans classified as obese and an additional 30 percent as overweight. Obesity has been a steadily rising trend since the late 1970s. Experts now predict that, without an intervention, the majority of the country will be obese by 2012. Alarmingly, the steepest increase is in children and adolescents. Obesity is directly linked to high blood pressure, type 2 diabetes and atherosclerosis. In turn, these unhealthy conditions are the major cause of heart attacks, strokes and heart failure. We are now seeing cardiovascular disease in teenagers and the average age of first heart attacks has dropped by over 10 years in the overweight patient. Other morbid conditions linked to obesity are certain cancers and arthritis.

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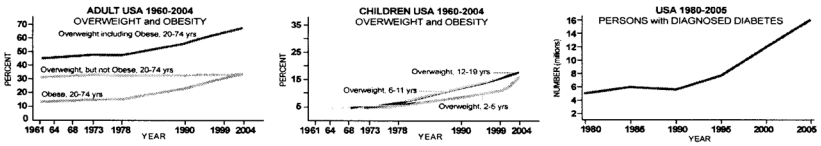

There are many regional, ethnic, and economic divergences across the population of obese and overweight people in the United States. Hispanics are the most overweight, although obesity is the highest among African-Americans.

% Prevalence of Overweight and Obesity US (1999-2002)

	OVERWEIGHT	OBESITY
White	36.8	24.2
Black	35.1	36.7
Hispanic	37.7	25.5
Other	31.9	18.7
Multi Racial	34.3	27

(Sources: Credit Suisse Demographics Research, 2008 CDC)

The American healthcare system is in crisis; unless we reverse the obesity epidemic, it threatens to exhaust the system's manpower and economic resources in caring for those suffering from diseases associated with obesity. To avoid these mostly preventable diseases, our Nation's medical emphasis must shift from illness to wellness. Healthcorps is a catalyst for that change.

THE HEALTHCORPS PROGRAM

HealthCorps is a national service program with tax-exempt status under Section 501(c)(3) of the Internal Revenue Code. The groundbreaking educational program currently runs in 44 high schools in seven States (CA, FL, NJ, NY, OH, PA, TX). HealthCorps' strategic plan calls for implementation in 1,000 high schools in all 50 States by 2012. The program impacts approximately 500 high school students per school per year.

The HealthCorps in-school program shows teens practical life skills through fun, interactive seminars focused on the value and power of students' bodies and minds. Teens become educated consumers and health activists and are encouraged to develop positive behavioral shifts that enhance self-esteem.

HealthCorps is based on a peer-mentor model, which has been shown to improve in a range of areas the outcomes of *littles*, including their academic performance, attitudes, and behaviors. HealthCorps *Coordinators* are typically recent college graduates who defer medical school or graduate health program studies to participate in public service.

Each Coordinator is assigned one school in which he or she lead seminars 5 days a week on fitness, nutrition and mental resilience. The seminars are taught through health or other academic classes or through after school clubs, as designated by the school principal. Seminar content is included in a 250-page curriculum and program guide developed by the HealthCorps Advisory Board.

In addition, we plan to introduce initiatives—through associations with the Tiger Woods Foundation and the David Lynch Foundation—to enhance the mental resilience portion of the curriculum in each HealthCorps high school.

HealthCorps' delivers its in-class curriculum to approximately 500 students annually in each school. The students share some of the messaging with their friends and parents—thus increasing the reach to 1,500 people per school. In 2009, we hope to launch an online *distance learning* program, which will most likely increase reach to an additional 1,000 people per school annually.

HealthCorps extends its message beyond the four walls of the classroom in unique and far-reaching ways. First, each semester, the Coordinators host a community health fair—with typically about 2,000–3,000 attendees. Second, through a program with Sirius XM Radio, HealthCorps Board Chairman, Dr. Mehmet Oz, periodically features lessons from the HealthCorps curriculum with his radio audience. In the coming year, Dr. Oz will continue to promote the HealthCorps curriculum to parents

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of students via the daily syndicated *Dr. Oz Show*, which launches in September 2009. These radio and television broadcasts will reach millions of American homes.

In addition to driving HealthCorps student and community outreach, HealthCorps sponsorship represents an investment in a broad nationwide movement. HealthCorps is strategically partnered with leading private and public initiatives such as The Tiger Woods Foundation, ServiceNation, the Center for Disease Control's Alliance to make U.S. the Healthiest Nation, the David Lynch Foundation, the International Health, Racquet and Sportsclub Association, Cleveland Clinic Initiatives, the food industry's *Smart Choices* Coalition, National Association of Community Health Centers, Channel 13 and the United Federation of Teachers (UFT), among others.

ORGANIZATIONAL CAPACITY

The heart of HealthCorps is the Coordinator. As noted above, Coordinators are recent college graduates who have deferred medical school or graduate programs in health. At their assigned high school, they are full-time, salaried advocates for healthy lifestyles. Coordinators work with teachers before, during and after school to lead interactive workshops based on the HealthCorps curriculum. In addition, they serve as positive role models—mentors who help students form healthy attitudes, lifestyles and action plans.

HealthCorps Coordinators, graduates of some of the most respected universities in the United States, represent a diverse cross section of talent and achievement. HealthCorps follows strict hiring guidelines for Coordinators and requires that all Coordinators undergo requisite school system background and fingerprinting checks prior to assignment. Many Coordinators will emerge as future leaders in medicine and public health policy.

For the 44 available Coordinator positions this year, HealthCorps received over 300 applications. We believe that we will have no difficulty recruiting and selecting Coordinators to facilitate our expansion.

The executive staff of HealthCorps consists of 10 full-time salaried employees based in New York City. The home office is responsible for the ongoing enhancement and evolution of the HealthCorps curriculum, Coordinator recruitment, relationships with and outreach to schools, community events and finance, marketing, and fundraising. The HealthCorps executive staff brings a wealth of public/private partnership, managerial, financial as well as educational experience to the organization. As we grow, we anticipate adding a few positions—primarily in finance, Coordinator recruitment and training.

A seven-member Board of Directors governs the organization. Members of the Board have expertise in finance, medicine, law, and entertainment.

A twenty-member Advisory Board, which includes experts in health, medicine, business and non-profits, participates in the ongoing enrichment of the programming and community outreach. We recruit these dedicated professionals from the entertainment, marketing, consumer products, human resources, finance and education communities. A list of board members is available at *http://www.healthcorps.net/boardofdirectors.jsp*.

HealthCorps' founder and Chairman, Dr. Mehmet Oz, is one of the world's leading cardiac surgeons as well as a best-selling author, and Health Expert on *The Oprah Winfrey Show http://www.healthcorps.net/droz.jsp*. He presides over the Board of Directors and guides the organization and its program.

At least 40 Celebrity Ambassadors—actors, musicians, athletes, authors—also volunteer their time to raise funds, generate media attention and build awareness for HealthCorps at community and fundraising events.

EFFICACY

In June, Dr. Oz will present the results of an independently conducted 2-year efficacy study overseen by a methodologist from Cornell University and funded by Affinity Health Plan. The focus of the study was to quantify the impact of the HealthCorps program on a predominately Hispanic New York City intervention group. Results of the study found significant benefits of HealthCorps on three dimensions: (1) soda pop consumption decreases by 0.61 times per week; (2) participants are 36 percent more likely to report that they are more physically active; (3) participants score 10.7 percent higher on the test of health knowledge. (These estimates assume zero benefit for dropouts; excluding dropouts results in larger effect sizes.) The Palm Healthcare Foundation, the leading healthcare foundation in Palm Beach County, FL, is currently conducting an efficacy study in five Florida intervention schools. Results from this study are expected in 2010.

The Baylor School of Medicine, Human Neuroimaging Lab is funding and launching a 6-month groundbreaking brain imaging efficacy study of the HealthCorps program in January 2009. Results from this study will be available by July 2009. HealthCorps will be seeking $1,500,000 in funding for the continuation of this study (to be overseen by Baylor through MRI lab strategic partners) over the course of the next 4 years in all HealthCorps States.

BUDGET

HealthCorps' total operating budget for fiscal year 2009 is $4.5 million. The New York City Council, through the Department of Health and Mental Hygiene, is funding $1,500,000 of HealthCorps programming in the current fiscal year (July 1 through June 30). In fiscal year 2009, The New Jersey Department of Health and Mental Hygiene is funding $225,000 of HealthCorps programming and New York State will be contributing $25,000. HealthCorps currently receives no Federal funding. Total funding is garnered through a combination of State, city, private foundations, corporate and individual contributions.

Each HealthCorps school program costs approximately $75,000.

HealthCorps projects it will be in 65 high schools in 12 States, including the District of Columbia (AZ, CA, DC, FL, GA, MS, NJ, NY, OH, PA, TN, TX) by fall 2009 (our fiscal year 2010).

Senator HARKIN. Whew. Oh, wow.

[Laughter.]

Dr. OZ. I had 5 minutes to deliver 4 years of work.

Senator HARKIN. Since it was Senator Mikulski who insisted that you be here and invited you, I want to turn to Senator Mikulski for questions first. Wow.

Senator MIKULSKI. Well, Dr. Oz, thank you very much for that very powerful presentation, and we know we will hear from others who are well known to us in their work or well known.

First of all, I am a social worker. I love to give case examples. I am going to give you a case example I think all too familiar with you and see how in your smart patient movement it would be different, and you could do that.

Let us take someone who is admitted to a well-known, well-established, well-respected hospital for heart disease. It could be for undiagnosed heart arrhythmia, or it could be for bypass. The medical intervention is brilliant—the appropriate diagnosis, the appropriate surgery.

Then they are ready for discharge. They are given a bag of drugs, and it is usually in a bag. Told to take them, and it could be everything from the blood thinner to the beta blocker to all the things that they have to take and a little side thing for acid reflux and so on. They are told to come back, and then they are also told that no matter what you do, because it is heart disease, it is diet and exercise.

They bring up somebody from the kitchen who gives you one sheet that says kind of fruits and kind of vegetables, scrub them well because you don't know what is on them. By the way, start an exercise program, even though you have been diagnosed with heart disease, and you are afraid to exercise. You are afraid to have sex. You are just afraid. You are afraid of the beginning of a very chronic and debilitating situation.

They have had smart care, but when they leave, they are usually depressed as they walk out the door about what lies ahead. Or saddened by what they have and often gripped by fear. What would be different in your frame of reference that we should be pursuing?

By the way, everything that I said is incentivized by the way we pay for it. We will pay for the drugs. We certainly pay for the care.

Yet we have two goals. One for chronic illness not to see it progress, and also if you have had a significant acute care hospitalization, you want to prevent recidivism and coming back for either that or the consequences of something you have had.

Dr. OZ. Senator Mikulski, as you know, we have lots of data to show that in exactly those situations, providing a broader holistic approach to the discharge process reduces re-admissions and increases the long-term value of what they have received.

We have a balkanized system. We all acknowledge that. With this balkanization, you also have reduction of trust in the system. When that happens, then you end up suffering because suffering is not just about pain. Suffering is lack of control over your destiny.

The best solution for someone like this who is going home, I think, is found through some of the things that we are actively investigating. One are programs that allow people to take their health records with them. HealthVault has one that we are spearheading later this month at New York-Presbyterian Hospital, where I practice.

That is built by Microsoft. Google is doing sort of the same thing. These programs are sort of like PayPal. You know, you are not giving them your medical record because you don't give PayPal—they are not buying the product for you. You just trust them to store the stuff so you can buy something on Amazon or eBay.

These HealthVault programs will give you your medical records, because we will give them to your personal Web site to own, and when you go home and it is confusing about what medications you are supposed to be on, you will have this site that your pharmacist will use to give you the right medications. You will have them to show your loved ones who have to help you back to full recovery.

You could use them to show to a massage therapist, for example, or physical therapist who is working with you, who is trying to make you better again, to achieve that health that you lost when you were admitted to the hospital with your cardiac ailment. That kind of a more robust approach that allows you to own the record and you to control where it goes also would allow you, if the reimbursement systems are effective, to be able to drive health through the system.

Also this is the kind of place where HealthCorps plays a role because now if you have got a group of people in the community making it easier to do the right thing—I am going to come back to that. If there is no sidewalk in your neighborhood, you are not going to go walking outside. If you can't find leafy green vegetables and cruciferous vegetables that we know are important for the liver to detoxify things like medications, you are not going to buy them.

We want these programs out there so we make it easy for you to make the right decision. That is partly the reason, by the way, that we have had such an earnest uptake by partners. The CDC is working with us on these issues, the National Association of Community Health Centers, the Tiger Woods Foundation, David Lynch Foundation. I mean, large endeavors that are parallel to us see this unifying approach to taking a generation that is normally not involved in this process and making them part of that foundation.

I started off by paraphrasing Tip O'Neill. I don't think we can do this if we don't empower people to do these things in their homes because, ultimately, that is where the real decisions are made. When I tell you something on the Oprah show, don't eat junk food, that doesn't work unless you take that information when you hear it and tell others. That is where real communication happens in our society.

Senator MIKULSKI. Well, I know my time is up, but if the Chairman would permit to just summarize. Under the scenario that I said, there would be the hospital admission. As one gets ready—and there would be a health record established. Technology will be our tool and our friend and help provide for the case management and the case follow-through.

Then, as you are ready to be discharged, hopefully, with somebody who you love and cares about you, you will, first of all, learn about your prescriptions. That is an important part of staying well. You do need that medication to help you. You would not only learn what you are going to take, but even the sequence for taking it.

I mean, I have heard stories where men—gals take it maybe one at a time. Guys might take all 15 pills at the same time, get the darned thing over with. You would learn what to take, the order, the sequencing.

Then, as you leave, you might even have technology to monitor your heart to see what you can do for those first 2 weeks home. You lowered the fear for activities of daily living and starting an exercise program.

Then, as you hook up with your cardiologist and your primary care doc, you would be hooking up with other people in the community for additional nutritional help, for real exercise stuff, and so on. That would be the continuum. Am I correct in that?

Dr. OZ. A hundred percent correct.

Senator MIKULSKI. That is where the health coach comes in. Not somebody with a baseball cap going, "Hoo-ha, hoo-ha."

[Laughter.]

Someone who is actually saying this is what we need to help you comply with your regime, but these are the things that will make the difference that you can be in charge of. What you physically do, what you eat, how you take your medicine—you are the one in charge working with this great health team.

It is not only a medical team, but it is a health team.

Dr. OZ. It is the exact vision. I think what we need to push for most is that people on the front line who are living this, making this decision every day, appreciate that is a possibility and then demand it.

We have to delight our customers in medicine. We have historically not treated our patients like customers. There is a special covenant that we have with our patients. You give us rights as doctors to do things that other people in society get arrested for, like opening your chest.

That stated, I think we have the opportunity, if we make it the norm, that people will say, "You know what, I know they do that down the street. How come you don't do that?" That is what would drive the competitive forces of healthcare to creating better value

in the system for each of us. It is not going to just be because we pay for things differently.

Senator MIKULSKI. OK. I will come back, if we have time for a second round, on the HealthCorps.

Thank you, Mr. Chairman.

Senator HARKIN. Senator Enzi.

Senator ENZI. Thank you for all of your words of wisdom and the way that you are changing our culture from "sick care" to truly healthcare. I appreciate your comments about health records, and you have expanded them. We passed that out of this committee twice. We haven't been able to get the whole thing done yet. There is part of it in the stimulus package.

You expand on that to the person—and we have talked about this, but we haven't included it, having the person have access to it themselves. That would make a tremendous difference in what Senator Mikulski was talking about, about people being able to actually read the sequence they are supposed to take things.

You started out by saying there were three points, I think, and you gave us the first one, which was the health IT. I want to go back to the HealthCorps thing that you mentioned. I think you said you have that in seven States.

How do you fund that, and how do you train them?

Dr. OZ. HealthCorps volunteers, who we select from a large group of people who apply over the Web for the positions, are college graduates. We bring them to New York City, where the training center is. We put them up in dorms for 2 months. Just like the Peace Corps trains its volunteers, we give these kids education not just in health, but in how to teach.

We have a several hundred-page syllabus of lesson plans. It is well vetted by folks who are professional educators, and they help these young, enthusiastic, passionate folks—as they go back into their schools—understand how to pass along this key information.

Once the kids go back to their schools, and they are in New York and Pennsylvania and New Jersey and Florida and Texas and California. I mean, they are spread all over the country, Ohio. Once they go back to their home States and enter into the schools, we work with principals to figure out how we can best help the school.

For example, in some schools, we will just teach the health class. We will take 1 day and go through the whole program, and we will teach. We will bring organs to the school from a local hospital and show kids what really happens inside your body when certain things happen. We will explain it in a hip and a little bit of an edgy way, with a little attitude, some of the things you can do, if you are a 15-year-old, to be healthier.

Because if we just lecture you, if I gave the lecture with my calcified neuronal processes, kids won't want to hear that. I have tried that already. I failed with my own four kids. I think if we go in there with energetic kids who are 4 years older than the person they are talking to, it is a very different dialogue.

We set the agenda of what is talked about, but in fairness, a lot of it is how you deliver the message. By doing it at lunchtime and after-school programs or together with teachers within the day, we have had huge and very successful uptake.

In fact, the teachers unions are often very supportive of our endeavor because we supplement what they are doing. We don't move in there and try to take away positions or tasks that are currently being fulfilled by the members of their groups.

Senator ENZI. I think I am going to switch directions completely here because one of the things that comes up at town meetings a lot is somebody that has had several operations, and they have several different specialists that are out there. Unless there is somebody from their family that is kind of coordinating that, things can go awry, and nobody has any responsibility for it.

We place a lot of emphasis through incentives to having specialists rather than primary care and, as you are mentioning, kind of a primary care coordinator who wouldn't necessarily have to be the doctor, although we would probably get in a lot of trouble if we start talking about any other field.

Are you running into that same thing, and is there a way that we can involve more of these people in doing this kind of coordination for people?

Dr. OZ. It is probably the most straightforward way to improve the healthcare system is to build a culture of health advocates. Call them health coaches for now. I think frequently they probably should not be M.D.s. Not because doctors can't do it, but it is probably not what doctors are passionate about doing usually.

I went to medical school because I was curious about the physiology of the heart. I liked the tension, the exhilaration of being in an operating room. If you put me in charge of managing hypertension in the chronic ailment, I probably wouldn't do it as well.

Studies done on this topic have demonstrated that nurse practitioners will often manage chronic illnesses more effectively for that reason. They love doing it. That is what they get up in the morning thinking about.

I think my brethren within medicine don't see that as a threat. It is a physician extender. You are helping me. I think, within the hospital care system, we are now beginning to use these models.

In my hospital, New York-Presbyterian, my physician's assistant is the healthcare coordinator, not me. Because at 2 p.m., when they have a problem with a test that hasn't been done on time or they don't quite know what the neurologist is going to say, I am in the operating room. So they can't get to me. It doesn't work for me to have that power base. I would rather delegate it to someone who I trust, train them to do it, and let them do a better job than I would do.

I think the value of health coaches across the platform is that it is less difficult for people to train to be health coaches. People are passionate about doing that level of help can do it, and it takes advantage of a resource we have for the American public and a need that we have, this coordination of the healthcare system.

Senator ENZI. My time just expired. I wish there was a lot more time because this is just such a tremendous resource.

Senator MIKULSKI. We will be able to pick it up in the second panel, and if Dr. Oz has time to stay. As we said, there is an Institute of Medicine summit going on right this very minute to talk about this concept of integrative health, which was the hearing we kicked off on Monday, and the summit is going on.

It is really a week-long conversation, and we will be getting the report of the summit so that we can talk about this.

Dr. Oz, I want to come back to the conversation on HealthCorps, which we will draw the distinction to a health coach. To me, the health coach is someone where we will have an established body of knowledge and even a certain level of credentialing so we don't have quacks out there saying, "I am your health coach," and all they want to do is push bottles of something.

But the HealthCorps, we are going to be working on national service legislation. To me, the HealthCorps is really a very dynamic idea. Do you see the HealthCorps—you have established it. You, through a foundation, I believe. Is that correct?

Dr. OZ. That is correct.

Senator MIKULSKI. My question would be, would you see that as also part of national service, or should we do it the way, if I could use Teach America and AmeriCorps? Teach America, as you know, is such an outstanding organization, and now for its 20-plus years of operation has really changed public education. Changed the lives of children in the classroom and have gone on to be reformers themselves.

Then we have AmeriCorps that goes into classrooms, does tutoring and so on, but they are different than Teach America. Would you encourage us, as we do national service, to have some type of grassroots HealthCorps component to it? But you, meaning HealthCorps, as you have established it, keep on going the way Teach America has kept on going?

We are trying to look at some of the public policy. Senator Enzi, you know it is something to really be thinking about in national service from everything from even how we use agricultural agents differently. You know we have in the Department of Agriculture, which Senator Harkin has guru status, we use agricultural agents to go out to talk to farmers about growing it.

Maybe we need food extension agents to come into our communities to talk about food, and maybe we need a department of food?

Dr. OZ. You want a hybrid approach. You want to have HealthCorps—by the way, HealthCorps is funded by public and private funds. It is a 501(c)(3). We collect money from folks who want to give back to the system voluntarily, but we also have support from the city of New York. We have support from other Government agencies and local States. I think that HealthCorps ideally would fit into AmeriCorps.

The reason HealthCorps works is because it is a service-learning model. By that I mean if we had the educators within AmeriCorps—so they are funded, they know that they have a long-term strategy and a tasking of what to do—and then the people they bring to do a lot of the change in communities are volunteers, it takes time and money to train volunteers to give their time back.

I think that we can combine the two of them together, we have the perfect model. We are already working with ServiceNation. I feel very strongly about the things they are doing that are so valuable for this Nation.

Let us make it easy for folks who want to give back by making the country healthier to do that, but to build an infrastructure within AmeriCorps or Teach for America, one of these programs

that already has so much experience, that is already within the Federal jurisdiction.

Senator MIKULSKI. Well, thank you, Doctor.

We are going to temporarily recess because there is a vote going on. Senator Harkin will return to pick up the hearing. Don't go anywhere.

He has already voted and on his way back. Could you, though, introduce your HealthCorps director?

Dr. OZ. Sure. The whole HealthCorps team is here. We have got them lined up. Michelle Bouchard to my right.

Senator MIKULSKI. OK. And Michelle—we will introduce others. When we have our national service hearing, we are going to ask Michelle to participate and really devote part of our national service hearing—because we are going to have public hearings, Senator Enzi, as you have so rightfully encouraged—and we would like to hear your experience in a more in-depth way than we can go into today.

The committee stands in temporary recess until Senator Harkin returns.

Dr. OZ. Thank you.

[Recessed.]

Senator HARKIN. Well, such is life around here with votes and all that kind of stuff. The committee will resume its sitting.

I am going to use this break period to ask the other people to join us. It was just kind of an interesting arrangement. We have such learned and distinguished practitioners, as I mentioned to Senator Enzi, of alternative medicine, integrative medicine. I am going to ask them all to come up at this time.

Dr. Mark Hyman, I just saw Dr. Hyman earlier. Dr. Andrew Weil, Andy and Dean Ornish. Dean, if you could join us? If all of you could come up. Good.

I welcome you all here. I will wait until my colleagues get back for a more formal introduction. I thought I just might use this point just to finish or to ask a couple of questions of Dr. Oz before they come back.

I guess some of this was covered a little bit while I was gone. I need to know more about this ServiceNation, about the HealthCorps model. You started this. There are already some integrated with AmeriCorps now?

Dr. OZ. Well, we have spoken with AmeriCorps.

We have spoken with Federal organizations. We work more with city programs, but we are working with a couple of elements of the Federal Government. The CDC has asked us to partner on some endeavors because childhood obesity is causing chronic disease. They have gotten involved in these endeavors.

The National Association of Community Health Centers, also a group that is charged with, to a certain extent, bringing health into communities, has recognized HealthCorps as a potential ally. We have spoken with AmeriCorps because I think it is a logical place for the program to live.

Right now, it is funded in part by private philanthropy, in part from city and State organizations that give us grants. We have some money coming through States from the Federal Government to support the program. It would make sense to take this model,

as it grows, and we purposely, by the way, started and grew this outside the Government because we were advised to do that by people inside the Government.

They said go out and do it, show that it works, get some data for us so we understand its efficacy and its costs. Then, when it makes sense, bring it back. Then if it is the right thing for the American people, we will adopt it.

I think one of the beautiful things about this whole HealthCorps model is that it allows us to bring service into the equation. It allows us to help people who want to give back to our country to play that role. Whether it is getting involved and bringing farmer's markets into communities or playing an active role getting kids in the school to have physical fitness as part of what they think is part of their life.

Senator HARKIN. I guess that is what I was wondering about, training. I mean, what kind of training would they have to undergo before they could become a part of this HealthCorps?

Dr. OZ. The training process is the exact same one that they use for the Peace Corps. We take these college graduates after they finish school, and we put them in a 2-month intensive program where we teach them not only about health, but also how to teach.

After this 2-month period, they are put into schools, which we have already selected for them, where they have partners with local teachers and principals and understand the culture of the school. Then because they are embedded in there, like a mentor, they play an educational role that is very different from that of the teachers, and they will mold to whatever is needed by the school.

The key for us is not just to let it end there. It is to teach high school kids so then they can go and teach middle school kids, or go home and audit their refrigerator, or get involved in opening the gym on the weekend so the kids can play sports.

They can make a difference because they become activists. They want to be part of change, and we are teaching them how to do that.

Senator HARKIN. Well, I love the concept. I don't know, I need to know more about how we might expand on that in the future.

One other thing, in your testimony, you support the WIN proposal outlined by Dr. Jonas that would create a White House office focused on lifestyle-based chronic disease prevention. Last year, along with several cosponsors, I introduced legislation to create a high-level task force on prevention and public health that would coordinate efforts among Federal departments.

Now you mentioned earlier about if you don't have sidewalks, people don't walk. I tried in the last authorization, reauthorization of the highway bill to put a simple amendment in, Doctor. All it said was that if you receive Federal moneys for highways and streets and stuff like that, you had to incorporate in your planning—you just had to incorporate. I didn't say you had to do it.

You just had to incorporate it in your planning, bike paths and walking paths. I lost that amendment. I am not going to lose it next time. We have got another reauthorization.

But the idea being in the Department of Agriculture, this year we have the reauthorization of the child nutrition bill. We have got to do something about getting better food for our kids in school.

This is a theme I want to be coming back to with you, Andy and Dean and Dr. Hyman. We have got to start thinking about our kids and in schools and what they are eating and the junk food and the vending machines and how you change that. And get whole grains and the other things in our schools.

It is transportation, it is education in schools, it is Department of Agriculture. All of these things need to be coordinated. Again, I ask if you could expand on the role that you envision this office having, this office of lifestyle-based chronic disease prevention?

Dr. OZ. Well, one of the reasons I am supportive of this initiative to put someone in charge of integrating these different health-touching divisions and departments that are currently in a silo mentality, often ignoring the health costs of their decisions, is because if one person is not in charge of it, if it becomes some additional task you throw at an individual who has got 15 other things to be graded on, it seems to fall through the cracks over and over again.

Having one individual—and by the way, you could make a separate office. You could also empower the surgeon general to do this and make it their job description, as much as anything else, to make sure that transportation is talking to health and health is talking to education. So that elements of this cascade that you are so aware of, but many of us on the outside don't see, become force. Because it doesn't make any sense to have a community without a playground.

I know the challenges you face in the agricultural committee. We have spoken about them on the show. It is difficult to envision how complex it must be if there is a health cost to these decisions that often gets ignored because no one is sort of on top of that as their primary task. I think unifying that and having that person reportable to you, to the Senate, to the White House would make it on the front burner.

Senator HARKIN. Well, I am going to go ahead and introduce the rest of the panel, and at least we can start. I assume my two people will be coming back very soon.

I welcome all of you, and I will just go by the list—Dr. Mark Hyman, Dr. Dean Ornish, Dr. Andrew Weil.

Dr. Mark Hyman, I will start with you first. Editor-in-chief of Alternative Therapies in Health and Medicine, one of the most prestigious journals in the field of integrative medicine. Dr. Hyman is the medical editor of Natural Solutions. He is on the editorial board of Body and Soul and Integrative Medicine: A Clinician's Journal.

Dr. Hyman collaborates with Harvard Medical School's Center for Complementary and Integrative Medicine and other leading medical schools. I don't need to introduce you any further than that because everyone knows who all of you are, as a matter of fact, around the country.

I will say this, that all of your written testimonies will be made a part of the record in their entirety. I didn't mention that earlier, Dr. Oz. Perhaps if you could just summarize your testimony, Mark. Then we will move on then to Dr. Ornish and then to Dr. Weil.

Welcome, Mark.

STATEMENT OF MARK HYMAN, M.D., FOUNDER AND MEDICAL DIRECTOR, THE ULTRAWELLNESS CENTER, LENOX, MA

Dr. HYMAN. Thank you. Thank you, Senator Harkin and committee, for this opportunity to share the dramatic changes in medical thinking and practice that must be the center of healthcare reform.

Is solving the problems of reimbursement, improving delivery of care, implementing electronic medical records enough for successful healthcare reform? Is providing access to the uninsured enough to improve the health of our population? I don't think so.

We must also change the content of care. We must move from 19th to 21st century medicine.

My name is Dr. Mark Hyman, and as a practicing functional medicine physician, I am on the front lines of a scientific medical revolution.

You are all painfully aware of the problems on healthcare today. Today, I will provide effective solutions embedded in the stories of real patients.

Cris Scoufos, a 40-year-old woman, came to see me with 5 years of uncontrolled ulcerative colitis with bloody diarrhea, joint pain arthritis, cystic acne, which started after four rounds of antibiotics for respiratory infections. She was treated unsuccessfully at the Mayo Clinic with the most advanced, dangerous, and expensive immunosuppressive therapies.

Just before returning to Mayo Clinic to start a new investigational drug, she saw me. We didn't treat her disease, but we optimized her function, her immune and digestive function, by eliminating the triggers of inflammation and supporting her digestive function with real food, nutrients, enzymes, and healthy bacteria.

After just 6 weeks of treatment, she went back to the Mayo Clinic and was found to have a completely normal bowel. Her joint pain, fatigue, and cystic acne resolved completely by treating the upstream triggers instead of the downstream symptoms.

Can we get to the solution for chronic disease with our current methods of diagnosis and treatment? I don't think so.

Enclosed within my testimony is her e-mail to me shortly after her visit to Mayo Clinic. With permission, here is her before and her after photographs.

My testimony will show that the current medical and scientific paradigm of acute care medicine has been unable to effectively address the epidemic of chronic disease and associated costs and that there is a new paradigm of systems or functional medicine, which addresses the fundamental underlying causes of chronic disease and can form the basis for a more effective model of medical education, practice, and research that, over time, will generate dramatic cost savings and improved health outcomes.

Also that there are specific initiatives and strategies based on this new paradigm that can help quickly transform our sick care system into a healthcare system.

Even if we get everything else right in healthcare reform, it won't matter unless we address the underlying causes of illness that drive both costs and the development of chronic disease. If we improve the wrong type of care, then we will simply be doing the wrong things better.

We must change not only the way we do medicine, but the medicine we do. This new paradigm or functional medicine is a system of personalized, patient-centered care based on how our environment and lifestyle choices impact on our genes to create imbalances in our core biologic systems. Those imbalances show up as the signs and symptoms we call disease.

It is the best solution for our healthcare crisis. The solution is not our current acute care model, which, though extremely effective for acute disease, leads to worse outcomes and higher costs when applied to chronic disease because it doesn't address why people are sick. Functional medicine is not a new specialty. It is not a new test or treatment or procedure, but a new operating system, a method of problem solving and thinking and processing complex clinical information.

It is a fundamentally different way of thinking about the origins and the mechanisms of disease, and it encompasses all the tools of healing and medicine, both conventional and integrative. It provides a common language, a map, or GPS system for navigating through the puzzle of chronic illness.

Let me show how this works with real people. At the University of Minnesota, Dr. Anne Kelly developed a model of care based on functional medicine called "U Special Kids" program. It was for the 5 percent of the sickest children with asthma, multiple medical conditions, who generated 60 percent of the costs, mostly from unplanned hospitalizations.

In 1 year, the costs incurred by that population dropped from $4 million to $250,000, $50,000 per enrollee or a 16-fold reduction in cost. Yet the program was canceled in November 2008 after 1 year because less than 10 percent of the high-science, low-tech, high-touch approach was reimbursable.

We cannot control costs by reducing access to effective programs. We must increase access to integrated healthcare teams that include a variety of health professionals, including health educators or coaches, all of whom are trained in the appropriate chronic disease model. Both the science and technology exist to utilize functional medicine for such teams on a wide scale.

Now I also saw a little boy, Clayton Lampert, to illustrate another case. He was 12 years old, on Ritalin for severe ADD. He also had behavior problems, severe handwriting difficulties, as you can see here. He also had other unrelated symptoms—asthma, stomach aches, headaches, anxiety, muscle cramps, frequent antibiotics, and infections.

He had seen five specialists, on seven medications, and yet no one asked how was everything connected or how his diet of junk food and sugar made him sick. His immune system was activated, his digestive system not working, and he was nutritionally deficient. We simply restored his normal biologic function by removing the impediments to health and providing the ingredients necessary for optimal function.

In 2 months, he returned without any physical or psychiatric symptoms, was off all his medications, and with permission, here is his handwriting sample before and 2 months after. You can see the changes, and it illustrates dramatic change in his functioning

without necessarily occupational therapy or any other treatment, but simply by affecting his biological function.

How many children suffer needlessly when we have the solutions to these problems? What is the social and financial cost of not changing the medicine we do?

Now there are some key avenues for change and recommendations that I am going to make. There are three. Now while there are many questions still to be answered and research to be done, it is time to act. Based on the changes in the medical paradigm, I submit that public investment must be made in the following areas.

No. 1, we must retool medical education and research to match the science of systems medicine. I recommend the immediate establishment of a sustainably funded institute for lifestyle and systems or functional medicine that would be the national center and prototype for the development of a scalable training program for medical schools, residencies, as well as postgraduate certification and training in functional medicine for existing practitioners as well as ancillary health professionals and health coaches.

No. 2, I recommend the creation of functional medicine demonstration projects in Federally Funded Community Health Centers, with integrated healthcare teams focusing on treating chronic disease and providing education about lifestyle and wellness.

And No. 3, I support the establishment of a White House and/or congressional office for health and wellness to coordinate all efforts in this area, as detailed in the WIN proposal submitted by Dr. Wayne Jonas. I would be glad to provide the committee with more information at your request.

Here is a white paper on 21st century medical education and practice that provides the blueprint for a new kind of medicine, which I will submit along with my testimony.

Thank you.

[The prepared statement of Dr. Hyman follows:]

PREPARED STATEMENT OF MARK HYMAN, M.D.

EXECUTIVE SUMMARY

EFFECTIVE HEALTH CARE REFORM: ADDRESSING THE DRIVERS OF COSTS AND CHRONIC DISEASE

- The current medical and scientific paradigm of acute care medicine has been unable to effectively address the epidemic of chronic disease and its associated costs.
- There is a new paradigm which addresses the fundamental underlying causes of chronic disease, and can form the basis for a more effective model of medical education, practice, and research that over time will generate dramatic cost savings.
- There are specific initiatives and strategies based on this new paradigm that can help transform our sick care system into a health care system.

THE RIGHT SOLUTION FOR THE PROBLEM OF CHRONIC DISEASE

- This new paradigm is personalized, preventive, participatory, predictive, and patient centered. It is proactive rather than reactive. It is based on addressing the causes of disease and optimizing biologic function in the body's core physiologic systems, not only treating the symptoms.
- It is based on systems biology or medicine. That model exists today, and is called ***Functional Medicine***.

• Functional Medicine is a system of personalized care, a **new "operating system"** that directly addresses **how environment and lifestyle influence our genes to create imbalances in our core biologic systems that, over time, manifest as disease.** It is this kind of medicine that is needed to create real successes in 21st century medicine.

• Even if we get everything else right in health care reform, it won't matter unless we address the underlying causes of illness that drive both costs and the development of chronic disease.

CLINICAL EXAMPLES: SYSTEMS MEDICINE IN THE CLINIC

• Case examples of Functional Medicine in chronic disease in autoimmune, digestive, behavioral, and hormonal disorders illustrating the power and implications for transforming the quality of our health care and reducing the economic burden of chronic disease.

• Report on pilot program for children using functional medicine showing a 16-fold reduction in costs from dramatically better health outcomes with integrated health care teams based on Functional Medicine.

KEY AVENUES FOR CHANGE: RECOMMENDATIONS

1. Re-tooling medical education and research to match the science of systems medicine. This would involve funding the development of training programs in medical schools and residencies, and supporting initiatives for certification and training in functional medicine for existing practitioners through establishing a fully funded university-affiliated Institute for Lifestyle and Systems Medicine.

2. Creation of Functional Medicine demonstration projects in federally-funded community health centers, with integrated health care teams focusing on treating chronic disease and providing education about lifestyle and wellness. These would form the foundation for the development of clinical practice networks of Functional Medicine for education and research.

Chairman Kennedy, Ranking Member Enzi and distinguished members of the committee, thank you for this opportunity to share the dramatic changes in medical thinking and practice that must be the central focus of health care reform. My name is Dr. Mark Hyman. I am a practicing physician and vice chair of the board of directors of the Institute for Functional Medicine. As a practicing functional medicine physician, I am on the front lines of a scientific medical revolution.

EFFECTIVE HEALTH CARE REFORM: ADDRESSING THE DRIVERS OF COSTS AND CHRONIC DISEASE

My testimony will show that:

• The current medical and scientific paradigm of acute care medicine has been unable to effectively address the epidemic of chronic disease and its associated costs.

• There is a new paradigm which addresses the fundamental underlying causes of chronic disease, and can form the basis for a more effective model of medical education, practice, and research that over time will generate dramatic cost savings and improved health outcomes.

• There are specific initiatives and strategies based on this new paradigm that can help quickly transform our sick care system into a health care system.

Even if we get everything else right in health care reform, it won't matter unless we address the underlying causes of illness that drive both costs and the development of chronic disease. This innovative approach to chronic disease cannot only prevent but also more effectively TREATS chronic disease.

We must change not only the WAY we do medicine, but also the medicine we DO. We must improve not only financing and delivery of health care, but also our fundamental scientific approach to chronic disease—an epidemic that now affects 133 million Americans and accounts for 78 percent of health care costs.

This way of doing medicine, or Functional Medicine, is a system of personalized, patient-centered care based on **how our environment and lifestyle choices act on our genes to create imbalances in our core biologic systems. Those imbalances show up as the signs and symptoms we call disease**.

It is the best solution for our health care crisis. The solution is not our current acute care model, which though extremely effective for acute disease, leads to worse outcomes and higher costs when applied to chronic disease because it doesn't address WHY people are sick.

This new paradigm is personalized, preventive, participatory, predictive, prospective, and patient-centered. It is proactive rather than reactive. It is based on addressing the causes of disease and optimizing biologic function in the body's core physiologic systems, not only treating the symptoms. It is based on systems biology or medicine. That model exists today, and is called ***Functional Medicine***.

THE RIGHT SOLUTION FOR THE PROBLEM OF CHRONIC DISEASE

Our current model of medicine is unsustainable because it cannot stem the rising tide of chronic disease. Relying only on reforms in access, financing, electronic records, malpractice, reduction in medical errors, coordination of care, and research on new drug therapies—while retaining the acute-care model—will be untenable. These reforms are necessary but not sufficient to avoid the collapse of our health care system that may soon mirror our current financial crisis. These reforms do not alter the fundamental approach to prevention and treatment. If we focus on improving the way we practice the medicine of the past, we will still have the medicine of the past. If we improve the wrong type of care, then we will simply be doing the wrong things better.

Acute-care medicine is designed for acute illness, trauma, and end-stage disease for which it is the best in the world. It is disease-, drug- and procedure-based. Our current medical education focuses on sickness rather than health; journals publish about disease management not causality. Disease-based acute care medicine is the WRONG model to address chronic illness, because it doesn't address WHY people are sick, or the underlying mechanisms and biologic causes. That is why we spend more than any other industrialized nation and are near the bottom of the list for all major health outcomes, and are witnessing a decline in life expectancy for the first time in history.

Functional Medicine is not a new treatment, test, or procedure but a new **"operating system"** or method for problem solving and processing complex clinical information. It is a fundamentally different WAY OF THINKING about the origins and mechanisms of illness. It encompasses all the TOOLS of healing and medicine, both conventional and integrative. And it provides a common language, a map or GPS system for navigating through the puzzle of chronic illness. A growing coalition of practitioners, educators, and scientists is dedicated to advancing this model. We have introduced 20,000 physicians and health care providers to functional medicine since 1991, and we wrote the *Textbook of Functional Medicine* in 2005 to describe both the underlying science and the practical clinical strategies and tools that comprise this new model.

We have begun a certification program in functional medicine and are building key educational programs for residencies throughout the country. We are partnering with Harvard in strategic research to document the extent and scope of practice as well as the efficacy of this model as a better roadmap for chronic disease.

Through a scholarship program funded by one of my patients, we have trained over 50 academic faculty and fellows from major institutions who are part of the Consortium of Academic Health Centers for Integrative Medicine (funded by the Bravewell Collaborative) including Harvard, Yale, Duke, Johns Hopkins, USCF, and the University of Arizona. We are also collaborating with the American Academy of Family Practice and the American Dietetic Association. We collaborate and advance the foundational work of James Gordon, M.D. at the Center for Mind Body Medicine and Dean Ornish, M.D. at the Preventive Medicine Research Institute.

CLINICAL EXAMPLES: SYSTEMS/FUNCTIONAL MEDICINE IN THE CLINIC

Let me illustrate how this works with real people.

A Pilot Program For Functional Medicine: Reducing Costs 16-Fold in Sick Children

At the University of Minnesota, Dr. Anne Kelly developed a model of care based on Functional Medicine called the *U Special Kids* program. It was for 5 percent of the sickest children who generated 60 percent of the total costs, mostly from unplanned hospitalizations. In 1 year, the costs incurred by that population dropped from $4 million to $250,000, or more than $50,000 per enrollee, or a 16-fold decrease in costs. Yet the program was cancelled in November 2008 after 1 year because less than 10 percent of the high-science, low-tech, and high-touch approach was reimbursable.

We cannot control costs by reducing access to effective programs. We must increase access to integrated health care teams that include a variety of health professionals, all of whom are trained in the appropriate chronic disease model. Both the science and methodology exist to utilize functional medicine for such teams on a wide scale.

Reform must also encompass re-structuring financing and financial incentives to prioritize health care, not just sick care. We cannot afford incremental change. The health of our Nation, our future generations, and the health of our economy depend on addressing the explosion of chronic disease and associated health care costs.

A Woman With Treatment Resistant Autoimmune Disease

Cris Scoufos, a 40-year-old woman came to see me after 5 years of uncontrolled ulcerative colitis with bloody diarrhea, joint pain and cystic acne, which started after 4 rounds of antibiotics for respiratory infections. She was treated unsuccessfully at the Mayo Clinic with the most advanced, dangerous and expensive immunosuppressive therapies. Just before returning to Mayo to start a new investigational drug, she saw me. We simply eliminated common food sensitivities, treated yeast infections, and normalized the function of her digestive tract with probiotics, digestive enzymes, fish oil, and vitamin D. After just 6 weeks of treatment she went back to Mayo and was found to have a completely normal bowel, and her joint pain, fatigue, and cystic acne resolved by treating the upstream triggers instead of the downstream symptoms. We cannot get to the solution for chronic disease with our current methods of diagnosis and treatment.

Here is her e-mail to me shortly after her visit to Mayo Clinic. Her before and after photos are attached.

DEAR DR. HYMAN: I am so thankful for all that you are helping me with. I prayed for God to guide me to someone who could show me how to properly care for my body so that I could heal and that the honor and glory would belong to Him. Instead of asking for God to just heal me, like I had for 4½ years, I asked for guidance on what I needed to do.

After failing all conventional drug treatments I was told I would have to go into an investigational drug study next. My trip to Mayo Clinic had been planned and I was nervous about the choices I was going to have to make. My colonoscopy in April 2008 showed 45 cm of ulceration.

The trip to see you the last week of August was planned in 1 week and everything fell together so easily. It seems like it was meant to be. I started following your recommendations right away, even though I haven't incorporated all of the supplements in yet, the change has been amazing.

My colonoscopy at the Mayo Clinic in Rochester, MN was last Monday, October 13. My physician, Dr. Sandborn, who is highly regarded in the gastroenterology field as one of the best in the country, told me that there is no ulceration left in my large intestine and there was only some scarring. I have completely healed! It is amazing! I was still bleeding just 2 months ago and now I am completely healed. It has been a very long 5 years and I thought you would want to know just how much your help has made in my life. Thank you very much. You have been the instrument that God has sent into my life for healing.

Unending blessings to you and your loved ones,

CRIS SCOUFOS.

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A Doctor With Autoimmune Arthritis

A 57-year-old vascular surgeon was seen with debilitating autoimmune psoriatic arthritis that had been unsuccessfully treated with Humira, methotrexate, and NSAIDs; he also had migraines, reflux, constipation, and fatigue. He was symptom free and off all medications only 6 weeks after changing his diet, fixing nutritional deficiencies, and addressing imbalances in his digestive system, which is home to more than 70 percent of the immune system.

A Woman With Multiple Chronic Diseases

A 46-year-old woman, having seen a dozen doctors over a dozen years, came to me with 29 different diagnoses, including depression, hypertension, obesity, polycystic ovarian syndrome, migraines, heavy uterine bleeding, asthma, sinusitis, irritable bowel syndrome, fibromyalgia, osteoarthritis and psoriasis. Each disease was treated with the best available conventional treatment. But she was still sick, despite nine medications.

Of course, she didn't have 29 separate diseases. She had imbalances in a few core networks of physiologic function—digestive, immunologic, and hormonal—that gave rise to all her symptoms. The underlying cause of all her "diseases" was an autoimmune response to gluten, leading to autoimmune thyroid disease and severe vitamin D deficiency because of malabsorption. Six weeks after eliminating gluten, improving her diet, replacing thyroid hormone and vitamin D, her 29 diseases were completely gone, along with 21 pounds.

A Boy With Attention Deficit Disorder and Asthma and Allergies

Clayton Lampert was a 12-year-old boy with severe attention deficit hyperactivity disorder, behavior problems, and poor school performance on Ritalin for years. He also had illegible handwriting or dysgraphia. He also had apparently "unrelated" problems of asthma, allergies, hives, stomach aches, headaches, insomnia, muscle cramps, and anxiety. He had a history of frequent infections and antibiotics. He had seen five specialists (lung, GI, allergist, psychiatrist and neurologist) and was on seven medications for allergies, asthma, pain, and ADHD. No one asked how everything was connected, or how his diet of junk food and sugar made him sick.

His immune system was activated, his digestion not working and he was nutritionally deficient in zinc, omega 3 fats, magnesium and vitamin B6. We simply normalized his function by removing impediments to health (junk food diet, food sensitivities, overgrowth of yeast, and lead) and providing the ingredients necessary for optimal biologic function—whole foods diet, additional nutrients including B6, magnesium, zinc, omega 3 fats and probiotics. In 2 months he returned without any physical or psychiatric symptoms and was off all his medication. How many children suffer needlessly when we have the solutions to these problems? Here is his mother's e-mail to me about his progress. Below is his handwriting sample before and 2 months after treatment.

DEAR DR. HYMAN: We had a 504 meeting at Clayton's school this morning (where the teachers, school counselor, parents, and principal all get together to review "the plan" for kids with special educational needs—in Clayton's case prompted by the ADHD diagnosis). This was the first time in his entire schooling history that everything seems to be going well. The input from his teachers was that he is "a different kid" than they saw in the first half of the year and that they're amazed by the difference. The school nurse hasn't seen him since March (and he used to be in her office several times a week). The school psychologist said his social skills are very good, age appropriate, and that she sees no problems at all. She also noted that Clayton seems very proud of himself and his new health and that he's taking good ownership of all the changes in his diet. He even seems to be shrugging it off when the other kids at school tell him he's an "alien" because he doesn't drink soda.

This was just such a fantastic meeting and I wanted to pass along the good news and say, Thank You!

Name Clayton Lamperis Date

Chapter 7 Lesson 2 Notes

New Taxes for the Colonists

Sugar Act WAS A law that said colonists had to pay a tax on sugar

Tells A tax on sugar brought

What bothered the colonists the most was The sugar act

- loyalists - tories
- mercy Otis warren and James Otis

The Stamp Act

Stamp Act when people put a stamp on to show they paid taxes

Representation no one acting or speaking

- Treason - working against for them
- Public opinion or what people think
- more people bought stuff than
- Less - hand bought stuff without
- went to court to fight the stamp act

People Protest in Different Ways

Petitions requests for action sent to king

Two groups that formed after Stamp Act were sons and daughters of liberty

Liberty freedom to make own laws

- boycotters refuse to buy.
- [illegible]

King ignored the colonists

47852-7.eps

CLAYTON LAMPERT

Clayton Lampert 136

1. I wrote this sentence.
2. I, have several radios.
3. Since when do you have an x box?
4. I am thinking of something.
5. I am better at math than my sister.
6. Though the cat was old, it was still very playful.
7. We're all in this together.
8. The water was calm until the alligator attacked.
9. Usually it is quiet in my room.
10. I am very happy most of the time.
11. While you were at school, I went skiing.
12. You ate the whole cake!!!
13. I went on a cruise on the English canal.
14. I am good at mathmatics.
15. I listen to music alot.
16. My Dad took a physical.
17. I have an education.
18. The old man was not very

47852-8.eps

Recovery From Dementia

The power of this approach is that it can be often applied without the intervention of a trained professional. Below is the story of a woman's whose husband recovered from dementia by following the principles of Functional Medicine. This recovery was likely due to a reversible nutritional cause. Other causes of dementia, which is not a homogenous disease, may respond differently, however the social and economic impact of this method can no longer be ignored.

Eight years ago, at the age of 42, I met and married the love of my life, Robert Foster. We both have felt that "we" were absolutely "meant to be together." Two years ago I began worrying whether or not the "moments" of forgetfulness meant the beginning of dreaded Alzheimer's disease. I began to educate myself obsessively, and came to the conclusion that the traditional route of pharmaceutical drugs was the wrong approach to combat this beast. I would not accept that the "only" outcome was a horrible death sentence. My beloved husband's cognitive function took a sudden and alarming spiral downward this past fall. The formal diagnosis of "Alzheimer's" was no less heartbreaking, but I felt lucky to have had those 2 years to do the precious research and reading, where I was given the extraordinary gift of awareness and respect for Functional Medicine.

Knowing instinctively that this was the only answer to the war we needed to fight—it was here that I sought help. I was made aware of Dr. Hyman by another Functional Medicine doctor a couple of years ago, and have followed his work and have read several of his books. Having a program to follow, was the answer to a prayer . . . literally. The actual "turnaround" has been so dramatic that I have been hesitant to share the results, not wanting to offer unwarranted "hope" to others, as it sounds "too good to be true." I do not want this to sound like "hype"—or as the "magic pill" that cured Alzheimer's, but I do think it would be irresponsible not to share our astounding results.

The bottom line—5 days after starting the program, my husband had gone from not being able to hold a thought, constantly misplacing any number of objects, repeating questions and thoughts, and not being able to drive (as he would get lost), to the normal functioning man I married. The "comeback" is NOT 100 percent—it IS over 90 percent. He is able to hold his concentration on a project for hours at a time. He is able to get into the car and run errands flawlessly. He carries out a conversation and relates to it hours or days later. He is able to recall telephone numbers and addresses. I have my husband back. I have no doubt the change in diet, addition of specific supplements, the detox program, and the addition of regular exercise, are responsible for these results. I pray that the miraculous results are multiplied a million times over, and others feel the joy and relief that I have had. Dr. Hyman—our eternal thanks and gratitude.

KEY AVENUES FOR CHANGE: RECOMMENDATIONS

While there are many questions still to be answered, and research to be done, it is time to act. Based on the aforementioned considerations, I submit that public and private sector investment must be made in the following areas:

1. Re-tooling medical education and research to match the science of systems medicine. I recommend the establishment of a sustainably funded university affiliated ***Institute for Lifestyle and Systems Medicine/Functional Medicine***. This would be the national center and prototype for the development of training programs in medical schools, residencies, and postgraduate certification and training in Functional Medicine for existing practitioners and ancillary health professionals. Sixty-seven percent of the 250,000 primary care doctors are currently dissatisfied with medicine and 80 percent are seeking new ways to practice based on this emerging model of medicine. The goal should be 20,000 fully trained practitioners in 5 years.

2. Creation of Functional Medicine ***demonstration projects in federally-funded community health centers***, with integrated health care teams focusing on treating chronic disease and providing education about lifestyle and wellness. These would form the foundation for the development of clinical practice networks of Functional Medicine for education and research.

3. The establishment of a ***White House and/or Congressional Office for Health and Wellness*** to coordinate all efforts in this area as detailed in the WIN proposal submitted by Dr. Wayne Jonas.

CONCLUSION

Most chronic disease today is not necessary. While conventional medicine has been great for acute disease, Functional Medicine is the model for easing the heavy burden of chronic disease from which our society—indeed, the whole world—suffers today.

Thank you.

MARK HYMAN, M.D.,
Institute for Functional Medicine.

Senator HARKIN. Well, thank you very much, Dr. Hyman.

Now, I will turn to Dr. Ornish. I am kind of embarrassed to try to introduce all of you. Since you are so famous anyway, I don't know what I can say.

Dr. Dean Ornish, founder and president of the nonprofit Preventive Medicine Research Institute in California, clinical professor of medicine at the University of California—San Francisco.

For over 30 years, Dr. Ornish has directed clinical research demonstrating, and I was witness to this in New York many years ago, for the first time that comprehensive lifestyle changes may begin to reverse—not just stop, but reverse even severe coronary heart disease without drugs or surgery.

And as I said, I can list all the books that all of you have written and everything. But you are much better known than what I could add to here at this hearing.

Dr. Ornish, again, welcome. Thank you for all that you have done, and please proceed.

STATEMENT OF DR. DEAN ORNISH, M.D., FOUNDER AND PRESIDENT, PREVENTIVE MEDICINE RESEARCH INSTITUTE, SAUSALITO, CA

Dr. ORNISH. Well, Senator, thank you for all you have done. I am very grateful to be here with such distinguished colleagues and the pioneering vision that you have shown. First, I want to thank you for what you have done and what you are doing.

I just came from speaking at the summit on integrative medicine at the Institute of Medicine and the National Academy of Sciences. I think this represents a watershed event. I think the world is catching up with the kinds of things that you and I and my distinguished colleagues have been saying now for some time.

As you have talked about very eloquently, our healthcare system is really a disease care system. We spent over $2 trillion last year on medical care, but 95 cents out of every dollar has gone for treating disease after it has already occurred. It is not the most efficient way to spend our money.

It turns out that just four diseases—heart disease, diabetes, breast or prostate cancer, and obesity—account for 75 to 80 percent of all these costs, all of which are preventable and, as we have shown, even reversible simply by making simple changes in diet and lifestyle.

If we want to make affordable healthcare, true healthcare available to the 45 million Americans who don't have it, then we need to address the more fundamental causes of illness rather than just literally or figuratively bypassing it.

At the Institute of Medicine, I just showed a slide of doctors busily mopping up the floor around a sink that is overflowing, but nobody is turning off the faucet. That is the problem. The same prob-

lem keeps coming back again, or we get a new set of problems where we have painful choices.

Many people tend to think of breakthroughs in medicine as being a new drug or a laser, something really high tech and expensive, and they have a hard time believing that these simple choices that we make in our lives each day can make such a powerful difference. But they do.

In our studies for the last 32 years, we have used very high-tech, expensive, state-of-the-art measures to prove how powerful these very simple and low-tech and low-cost interventions can be. We have shown that, for example, you can reverse heart disease, as you mentioned earlier. We have also shown that we can reverse early prostate cancer and, by extension, breast cancer.

We have shown that people with diabetes and high blood pressure and elevated cholesterol can often, under their doctor's supervision, get off of these medications that they are told that they have to take for the rest of their lives.

It is like if you don't turn off the faucet, we give you all these mops to keep mopping up the floor. If we can treat the cause, your body has, on many cases, a remarkable capacity to begin healing itself and much more quickly than people had once realized if we turn off the faucet, if we treat the cause. These causes are largely the lifestyle choices that we make each day.

Now as you know, heart and blood vessel diseases kill more Americans now almost in every country in the world each year than virtually everything else combined. Yet studies have shown that it is completely preventable today for 95 percent of people, knowing what we know now. We don't need to wait for a breakthrough. We just need to put into practice what we already know just by changing our lives.

You can say, "Well, how is heart disease generally treated?" It is treated with things like angioplasties and stents and bypass surgery. Yet with all this talk about evidence-based medicine, what does the evidence really show? The randomized trials of angioplasty show that they don't, unless you are in the middle of having a heart attack, which 95 percent of the people who get them are not, they don't prolong your life. They don't even prevent heart attacks.

We spent $60 billion in this country last year for an intervention that is dangerous, invasive, expensive, and largely ineffective. Again, unless we have really severe heart disease, which most people that get bypass surgery don't—the 2 percent to 3 percent of people who have left main disease or equivalent and left ventricular dysfunction—they don't prolong life either.

You say, "Well, they make your angina go away." We found over 90 to 95 percent reduction in the frequency of angina or chest pain in weeks just by changing lifestyle. It is dramatic, and people who literally are riding a wheelchair around Wal-Mart or can't get to their mailbox or can't make love with their wife, you know, within weeks are generally pain free.

That is why I am so passionate about doing this work. I have seen this over and over again. These approaches are not only medically effective, they are usually cost-effective. We have done three

demonstration projects, as you know, many of which you have helped us with.

One of which was we have trained, through our nonprofit institute, hospitals throughout the country, and we have trained now tens of thousands of people in this program since 1983. Because I thought if we just did good science, that would change medical practice. Then I realized that was naïve. It wasn't enough to change science. We had to change reimbursement.

The first demonstration we did with Mutual of Omaha. We found that most of the people who were told they needed a bypass or angioplasty were able to safely avoid it by changing lifestyle, and they saved $30,000 per patient in the first year.

The second study was done with Highmark Blue Cross Blue Shield of Pennsylvania. We found that compared to a matched control group that they cut their costs in half in the first year and by an additional 20 to 30 percent in subsequent years, again just by changing lifestyle.

We have developed—like Dr. Oz has developed his healthcare model, which is beautiful and inspiring—we have developed a model that works in hospital. We have learned how to train teams of people, as Senator Mikulski was talking about, not only just doctors, but nurses, social workers, clinical psychologist, yoga teachers, exercise physiologists, registered dieticians.

They all work together in a team approach, where the doctor is the quarterback, but he or she doesn't have to spend as much time as working with these other people, as Mehmet was talking about. We found that it works.

We have done a demonstration project with Medicare that you helped us with and Senator Mikulski helped us with. It took us 14 years to finally get Medicare to cover this, but they are now paying for interventions like this, which we are now and others are training people in how to do this.

We have a model that works. It works because it is based on joy of living, rather than fear of dying. It is medically effective, and it is cost-effective, and we want to get it out to Americans at a time when the limitations of high-tech medicine are becoming so clear.

The power of these very simple and low-tech and low-cost interventions can transform people's lives for the better, save tens of thousands of dollars in the first year, and provide a new model for healthcare that is both more caring and compassionate as well as more cost-effective and competent.

Thank you.

[The prepared statement of Dr. Ornish follows:]

PREPARED STATEMENT OF DEAN ORNISH, M.D.

EXECUTIVE SUMMARY

Our "health-care system" is primarily a disease-care system. Last year, $2.1 trillion were spent in this country on medical care, or 16.5 percent of the gross national product, and 95 cents of every dollar were spent to treat disease *after* it had already occurred. Heart disease, diabetes, prostate/breast cancer, and obesity account for 75 percent of health care costs, and yet these are largely preventable and even reversible by an integrative medicine program of comprehensive lifestyle changes.

If we want to make affordable health care available to the 45 million Americans who do not have health insurance, then we need to address the fundamental causes

of illness, and provide incentives for healthy ways of living rather than reimbursing only drugs and surgery.

Many people tend to think of breakthroughs in medicine as a new drug, laser, or high-tech surgical procedure. They often have a hard time believing that the simple choices that we make in our lifestyle—what we eat, how we respond to stress, whether or not we smoke cigarettes, how much exercise we get, and the quality of our relationships and social support—can be as powerful as drugs and surgery, but they often are. Often, even better.

We used high-tech, state-of-the-art measures to prove the power of simple, low-tech, and low-cost interventions. We showed that integrative medicine approaches may stop or even reverse the progression of coronary heart disease, diabetes, hypertension, obesity, hypercholesterolemia, and other chronic conditions. We also published the first randomized controlled trial showing that these lifestyle changes may slow, stop, or even reverse the progression of prostate cancer, which may affect breast cancer as well.

Our latest research shows that changing lifestyle changes our genes in only 3 months—turning on hundreds of genes that prevent disease and turning off genes and turning off oncogenes associated with breast cancer and prostate cancer as well as genes that cause heart disease, oxidative stress, and inflammation. We also found that these lifestyle changes increase telomerase, the enzyme that lengthens telomeres, the ends of our chromosomes that control how long we live. Even drugs have not been shown to do this.

The choices are especially clear in cardiology. In 2006, 1.3 million coronary angioplasty procedures were performed at an average cost of $48,399 each, more than $60 billion; and 448,000 coronary bypass operations were performed at a cost of $99,743 each, more than $44 billion—i.e., more than $100 billion for these two operations. Despite these costs, angioplasties and stents do not prolong life or even prevent heart attacks in stable patients (i.e., 95 percent of those who receive them). Coronary bypass surgery prolongs life in less than 2–3 percent of patients who receive it. Studies have shown that changing lifestyle could prevent at least 90 percent of all heart disease. Thus, the disease that accounts for more premature deaths and costs Americans more than any other illness is almost completely preventable, and even reversible, simply by changing lifestyle.

Finally, it's worth pointing out that what's good for your personal health is good for the planet's health; what's personally sustainable is globally sustainable. For example, eating a diet high in red meat increases the risk of heart disease and many forms of cancer. It also increases global warming: livestock cause more global warming than all forms of transportation combined due to methane production, which is 21 times more powerful a greenhouse gas than carbon dioxide.

As Senator Harkin said, "To date, prevention and public health have been the missing pieces in the national conversation about health care reform. It's time to make them the centerpiece of that conversation. Not an asterisk. Not a footnote. But the centerpiece of health care reform."

Chairman Kennedy, Ranking Member Enzi, Senator Harkin, Senator Mikulski, distinguished colleagues—thank you very much for the privilege of being here today. My name is Dr. Dean Ornish, founder and president of the non-profit Preventive Medicine Research Institute and Clinical Professor of Medicine at the School of Medicine, University of California, San Francisco (UCSF). I appreciate the opportunity to appear today before this committee.

I just came from speaking at the "Summit on Integrative Medicine and the Health of the Public" convened by the Institute of Medicine of the National Academy of Sciences and the Bravewell Collaborative. This represents a watershed event in recognizing the power of integrative medicine and the synergy of systems approaches in enhancing health and preventing illness.

The theme of my presentation is this: if we want to make affordable health care available to the 45 million Americans who do not have health insurance, then we need to address the fundamental causes of health and illness, and provide incentives for healthy ways of living rather than reimbursing only drugs and surgery. Otherwise, the Congressional Budget Office indicated last week that this number is likely to rise to 54 million in the next 10 years, if not before.

President Barack Obama and Senator Harkin understand this. As Senator Harkin recently said, "We don't have a *health* care system in America; we have a *sick* care system. The problem is that this current system is all about patching things up after the fact. We spend untold hundreds of billions on pills, surgery, hospitalization, and disability. But we spend peanuts—about 3 percent of our health-care dollars—for prevention."

Last year, $2.1 trillion were spent in this country on medical care, or 16.5 percent of the gross national product, and 95 cents of every dollar were spent to treat disease after it had already occurred. Heart disease, diabetes, prostate/breast cancer, and obesity account for 75 percent of these health care costs, and yet these are largely preventable and even reversible by changing diet and lifestyle.

Our research, and the work of others, have shown that our bodies have a remarkable capacity to begin healing, and much more quickly than we had once realized, if we address the lifestyle factors that often cause these chronic diseases. Medicine today focuses primarily on drugs and surgery, genes and germs, microbes and molecules, but we are so much more than that.

For the past 32 years, I have directed a series of research studies showing that changes in diet and lifestyle can make such a powerful difference in our health & well-being, and how quickly these changes may occur, and how dynamic these mechanisms can be.

Many people tend to think of breakthroughs in medicine as a new drug, laser, or high-tech surgical procedure. They often have a hard time believing that the simple choices that we make in our lifestyle—what we eat, how we respond to stress, whether or not we smoke cigarettes, how much exercise we get, and the quality of our relationships and social support—can be as powerful as drugs and surgery, but they often are. Often, even better.

We used high-tech, state-of-the-art measures to prove the power of simple, low-tech, and low-cost interventions. We showed that integrative medicine approaches may stop or even reverse the progression of coronary heart disease, diabetes, hypertension, obesity, hypercholesterolemia, and other chronic conditions. Four years ago, we published the first randomized controlled trial showing that these lifestyle changes may slow, stop, or even reverse the progression of prostate cancer, which may affect breast cancer as well.

In our randomized controlled trials, published in the *Journal of the American Medical Association, The Lancet*, and other major medical and scientific journals, we found that 99 percent of people with severe coronary heart disease were able to stop or reverse it by making comprehensive lifestyle changes, without drugs or surgery. There was some reversal of coronary atherosclerosis after 1 year and even more improvement after 5 years, and there were 2.5 times fewer cardiac events. Most of the patients with severe angina (chest pain) became pain-free within only a few weeks, and quality of life improved dramatically.

In June of last year, the *Proceedings of the National Academy of Sciences* published our newest study showing, for the first time, changing our lifestyle changes our genes. We found that improved nutrition, stress management techniques, walking, and psychosocial support changed the expression of over 500 genes in men with early-stage prostate cancer. We found that oncogenes associated with breast cancer and prostate cancer as well as genes that cause heart disease, oxidative stress, and inflammation were downregulated or "turned off" whereas protective genes were upregulated or "turned on."

In September, we published a study in *The Lancet Oncology* showing that these integrative medicine changes increased telomerase, the enzyme that lengthens telomeres, which are the ends of our chromosomes that control how long we live. We found that telomerase, and thus telomere length, increased by almost 30 percent in only 3 months. Even drugs have not been shown to do this.

These findings are capturing the imaginations of many people. Often, people believe, "Oh, it's all in my genes, there's not much I can do." Now, we understand how dynamic these mechanisms are, even on a genetic level. These findings are giving many people new hope and new choices.

Incentives are often perverse. For example, insurance companies pay more than $30,000 to amputate a diabetic foot even though most amputations are preventable by scrupulous foot care which is usually not covered by insurance. A RAND study projected nearly $81 billion in annual national health expenditure savings due to prevention and disease management programs.

These choices are especially clear in cardiology. In 2006, for example, according to the American Heart Association, 1.3 million coronary angioplasty procedures were performed at an average cost of $48,399 each, or more than $60 billion; and 448,000 coronary bypass operations were performed at a cost of $99,743 each, or more than $44 billion. In other words, Americans spent more than $100 billion in 2006 for these two procedures alone.

Despite these costs, a randomized controlled trial published in April 2007 in *The New England Journal of Medicine* found that angioplasties and stents do not prolong life or even prevent heart attacks in stable patients (i.e., 95 percent of those who receive them). Coronary bypass surgery prolongs life in less than 2–3 percent of patients who receive it, those with the most severe disease.

In contrast, the INTERHEART study, published in September 2004 in *The Lancet*, followed 30,000 men and women on six continents and found that changing lifestyle could prevent at least 90 percent of all heart disease.

That bears repeating: The disease that accounts for more premature deaths and costs Americans more than any other illness is almost completely preventable simply by changing diet and lifestyle. The same lifestyle changes that can prevent or even reverse heart disease also help prevent or reverse many other chronic diseases as well. The only side-effects are good ones.

So, Medicare and other insurers and individuals pay billions for surgical procedures like angioplasty and bypass surgery that are usually dangerous, invasive, expensive and largely ineffective. Yet they pay very little—if any money at all—for integrative medicine approaches that have been proven to reverse and prevent most chronic diseases that account for at least 75 percent of health-care costs.

When I lecture, I often begin by showing a slide of doctors busily mopping up the floor around an overflowing sink, but no one is turning off the faucet. Similarly, Dr. Denis Burkitt (who discovered Burkitt's lymphoma) once described that paying for ambulances and a hospital at the base of a cliff is not as smart as building a fence at the top to keep cars from falling off.

It's important to treat not only the problem but also its underlying causes. Otherwise, the same problem often recurs (for example, bypass grafts or angioplastied arteries often clog up again), a new set of problems may occur (such as side-effects from medications), or there may be painful choices.

President Obama's health plan states, "This nation is facing a true epidemic of chronic disease. An increasing number of Americans are suffering and dying needlessly from diseases such as obesity, diabetes, heart disease, asthma and HIV/AIDS, all of which can be delayed in onset if not prevented entirely." Senator Ron Wyden has sponsored the Healthy Americans Act, which emphasizes prevention and has bipartisan support.

For example, most people can significantly lower their cholesterol levels and blood pressure by making comprehensive lifestyle changes that are free rather than by taking a lifetime of drugs that are costly.

In our research, we found that comprehensive lifestyle changes caused a 40 percent average reduction in harmful LDL-cholesterol levels in men and women during the course of a year without drugs. This randomized controlled trial was published in the *Journal of the American Medical Association* in 1998. Last year, over $20 billion were spent in this country on cholesterol-lowering drugs such as Lipitor, so the potential cost savings would be very significant if more people made comprehensive lifestyle changes in lieu of drugs. While cholesterol-lowering drugs have clear therapeutic benefits, patients should also be offered more intensive diet and lifestyle interventions that have been proven to lower LDL-cholesterol by approximately the same amount at a fraction of the costs and with similar therapeutic benefits.

Cost savings can be greatest and can be seen most quickly in those who are at highest risk or who have chronic diseases. For example, my colleagues and I at the non-profit Preventive Medicine Research Institute conducted a demonstration project in collaboration with eight hospitals to determine if comprehensive lifestyle changes could be a safe and effective alternative to bypass surgery or angioplasty in those who were eligible to receive it.

After 1 year, almost 80 percent of people were able to safely avoid heart surgery or angioplasty, and Mutual of Omaha calculated saving almost $30,000 per patient in the first year. This study was published in the *American Journal of Cardiology*. In a second demonstration project with Highmark Blue Cross Blue Shield, these comprehensive lifestyle changes reduced total health care costs in those with coronary heart disease by 50 percent after only 1 year and by an additional 20–30 percent when compared to a matched control group.

In our third demonstration project of more than 2,000 patients enrolled in our lifestyle intervention at 22 hospital sites, we showed dramatic improvements in angina in more than 83 percent of patients reporting angina symptoms, and most became completely pain-free. This study was also published in the *American Journal of Cardiology*. These reductions are even greater than those achieved by coronary bypass surgery or angioplasty/stents. Direct health care costs of angina alone cost over $1 million per person over a lifetime. Clearly, if relatively simple lifestyle changes achieve similar or even greater reductions in angina pain than costly invasive surgical procedures, the potential savings are enormous.

An ounce of prevention really is worth a pound of cure.

The rapid growth of companies offering personalized genetic testing such as Navigenics, 23&Me, and deCODE Genetics, makes it possible to identify people who are at highest risk for chronic disease and to tailor prevention prescriptions to those who most need it. Finding out that you are at higher risk for illnesses such as heart

disease or diabetes is a powerful motivator for making comprehensive lifestyle changes. Also, those at high risk are more likely to show cost savings from prevention.

Prevention is also cost-effective in healthier people, although the cost savings per person are not as high. For example, 3 years ago, Steve Burd (CEO of Safeway) realized that health care costs for his employees were exceeding Safeway's net income—clearly, not sustainable. We discussed redesigning the corporate health plan for his employees in ways that emphasized prevention and wellness, provided incentives for healthful behaviors, and paid 100 percent of the costs of preventive care.

Overall health care costs decreased by 15 percent in the first year and have remained flat since then. Many other worksite wellness programs have shown cost savings as well as a happier and more productive workforce. This approach is bringing together Democrats and Republicans, labor and management.

In each of these studies, significant savings occurred in the first year—medically effective *and* cost-effective. Why? Because there is a growing body of scientific evidence showing how much more dynamic our bodies are than had previously been believed.

Many patients say that there is no point in giving up something that they enjoy unless they get something back that's even better—not years later, but weeks later. Then, the choices become clearer and, for many patients, worth making. They often experience that something beneficial and meaningful is quickly happening.

The benefit of feeling better quickly is a powerful motivator and reframes therapeutic goals from prevention or risk factor modification to improvement in the quality of life. Concepts such as "risk factor modification" and "prevention" are often considered boring and they may not initiate or sustain the levels of motivation needed to make and maintain comprehensive lifestyle changes.

In our experience, it is not enough to focus only on patient behaviors such as diet and exercise; we often need to work at a deeper level. Depression, loneliness, and lack of social support are also epidemic in our culture. These affect not only quality of life but also survival. Several studies has shown that people who are lonely, depressed, and isolated are many times more likely to get sick and die prematurely than those who are not. In part, this is mediated by the fact that they are more likely to engage in self-destructive behaviors when they feel this way, but also via mechanisms that are not well-understood. For example, many people smoke or overeat when they are stressed, lonely, or depressed.

What is sustainable is joy, pleasure, and freedom, not deprivation and austerity. When you eat a healthier diet, quit smoking, exercise, meditate, and have more love in your life, then your brain receives more blood and oxygen, so you think more clearly, have more energy, need less sleep. The latest studies have shown that your brain may grow so many new neurons that it may get measurably bigger in only a few months—this was thought to be impossible only a few years ago. Your face gets more blood flow, so your skin glows more and wrinkles less. Your heart gets more blood flow, so you have more stamina and can even begin to reverse heart disease. Your sexual organs receive more blood flow, so you may become more potent—the same way that drugs like Viagra work. For many people, these are choices worth making—not just to live longer, but also to live better.

In other words, the debate on prevention often misses the point: the mortality rate is still 100 percent, one per person. So, it's not just how *long* we live but also how *well* we live. Making comprehensive lifestyle changes significantly improves the quality of life very quickly, which is what makes these changes sustainable and meaningful.

Finally, it's worth pointing out that what's good for your personal health is good for the planet's health; what's personally sustainable is globally sustainable. For example, eating a diet high in red meat increases the risk of heart disease and many forms of cancer. It also increases global warming: livestock cause more global warming than all forms of transportation combined due to methane production, which is 21 times more powerful a greenhouse gas than carbon dioxide. This causes acid rain, damaging the external environment, as well as causing your blood to be more acidic, which damages our internal environment and promotes inflammation and chronic diseases. Livestock cause rain forest deforestation due to clear cutting for grazing land at a time when the rain forest survival is at a tipping point. This also creates water shortages at a time when water is increasingly scarce.

Sometimes, our problems seem overwhelming. Many people find that knowing that the personal choices we make in our lives each day have such a powerful effect on our external environment as well as our internal environment make it more meaningful and thus more motivating to make more healthful choices.

In summary, integrative medicine approaches bring together liberals and conservatives, Democrats and Republicans, because they are both medically effective and,

important in our current economic climate, cost-effective. These approaches emphasize both personal responsibility and the opportunity to make affordable, quality health care available to those who most need it. They can be an important part of health reform.

As Senator Harkin said in our recent *Newsweek* interview, "To date, prevention and public health have been the missing pieces in the national conversation about health care reform. It's time to make them the centerpiece of that conversation. Not an asterisk. Not a footnote. But the *centerpiece* of health care reform."

Senator HARKIN. Thank you very much, Dr. Ornish.

Now, we will turn to Dr. Andrew Weil. At present, Dr. Weil is the director of the Arizona Center for Integrative Medicine at the University of Arizona, where he holds the Lovell-Jones Endowed Chair in Integrative Rheumatology and is clinical professor of medicine and professor of public health.

The center is the leading effort in the world to develop a comprehensive curriculum in integrative medicine. Graduates serve as directors of integrative medicine programs around the United States, and through its fellowship, the center is now training doctors and nurse practitioners around the world.

It was Dr. Weil who first told me a long time ago, and it stuck with me ever since, that the natural state of the human body is to be well. Most times, we interfere with that rather than helping it along, and I have always remembered that advice you gave me many years ago.

There is nothing more I can say. As I said, you are all so well known around this country and around the world, I wouldn't add anything other than just to thank you again, Dr. Weil, for your great leadership, welcome you to the committee, and please proceed.

STATEMENT OF ANDY WEIL, M.D., DIRECTOR, ARIZONA CENTER FOR INTEGRATIVE MEDICINE, UNIVERSITY OF ARIZONA, VAIL, AZ

Dr. WEIL. Thank you, Mr. Chairman, Senator Mikulski. Thank you for giving me the opportunity to testify here today.

Even before the current financial meltdown, people were predicting that the healthcare crisis had the potential to sink our whole economy. This is a very high priority.

All of this is even before the baby boomers get into the age ranges where they develop the diseases of aging and become the major burden on our healthcare system, or the generation of fat kids that we are raising, something entirely of our own creation, develop the long-term complications of obesity, especially of type 2 diabetes.

We are likely to see an epidemic of coronary heart disease in young men, something we have never had to deal with. I think these two things coming at the same time give us very little hope unless we do things very differently.

Now I think it is common knowledge today that we have got to move in the direction of disease prevention and health promotion. The reason that our healthcare costs have become unbearable is that we are locked into a system of disease management, and most of the disease that we deal with, as Dr. Ornish said, is lifestyle related and, therefore, preventable.

I think it is less obvious, and I am very happy to hear you articulate this today, that we also have to have a transformation of medicine as part of real healthcare reform. Unless we change the nature of the kind of medicine that we do today, there is no way that we can pay for healthcare in the future because the high-tech interventions that medicine depend on are simply too expensive.

Also, those high-tech interventions, in my experience, are really appropriate only for a minority of cases of disease. When we are dealing with life-threatening illness, with disease involving vital organs, with trauma, with medical crises, surgical crises, I think there is nothing finer in the world than American medical technology.

We are trying to use this for everything that comes in the door, and that is why we have these unbearable costs. The root problem, as I see it here, is that our physicians and allied health professionals are not trained to use low-tech methods of interventions that are cheaper, safer, and that I think can produce, in many cases, outcomes as good or better than those of conventional medicine.

Let me just give you two examples of what I mean by low-tech approaches. I mean aside from the obvious ones of dietary change and lifestyle change and so forth. There is an awful lot else out there that is not even on the radar screen of conventional medicine that I think we can identify and use.

Over the years, I have become known as an unusual physician who teaches breathing techniques to patients, and I did not learn this at Harvard Medical School. I learned this from two sources. One was from studying yoga, because there is a whole division of yoga that places great emphasis on breath, and I learned it from working with old osteopathic physicians, old-timers who did manipulation as their main technique and also place great emphasis on breathing.

There is a simple breathing method that I teach to most patients that takes all of about 30 seconds twice a day to do. I think this is the single most powerful medical intervention I have ever come across in my studies in many cultures over many years.

I have seen—I now have five cases of people who have stopped atrial fibrillation with it, something I wouldn't have thought was possible. People who have had chronic digestive diseases who are now cured, just by working with this breathing technique. People who have stopped the most severe forms of panic disorder and other forms of anxiety disorder, and there are people who have solved insomnia problems.

This is a technique that uses no equipment. It is absolutely free, makes use of something right under your nose, and nobody thinks of using it. Just imagine if we brought this one method into mainstream medicine how much money this could save in terms of drugs that didn't have to be prescribed, adverse reactions to drugs that wouldn't have occurred, and so forth.

There has been essentially no research on breathing as a health intervention. Why? It is not taken seriously. When I try to talk to colleagues about it, it seems too simple. There is no drug involved. It doesn't use a device. It is just too simple.

I will mention another intervention that I have become fascinated with. You may have heard of a technique called "laughter yoga" developed by an internist in India. We are calling it—laughter therapy—to dissociate it from yoga. This man's discovery was that there is an easy way to induce laughter in groups of people by having them simulate laughter.

There is interesting research showing that real laughter, I mean laughter where people tear and it becomes involuntary, lowers levels of serum cortisol, stabilizes blood glucose levels, has a powerful antidepressant effect.

A colleague of mine, Dr. Gulshan Sethi—a cardiothoracic surgeon in Tucson, is a recent graduate of our integrative medicine fellowship—and I are proposing a research project with a group of Iraq war veterans in the VA hospital out there who suffer from posttraumatic stress disorder to look at this intervention, which I think holds great promise of success to deal with that terrible condition, which is now so costly to manage.

These are examples of kinds of things that integrative medicine can discover and bring into mainstream medicine to help us lower costs.

Now I am an educator, and so I have great faith in education as something that can save us. The model of integrative medicine that I and my colleagues have developed at the University of Arizona, which is now recognized as the international standard of training in this field, I think holds tremendous potential for us.

We need a new generation of health professionals. We need a new generation of doctors. We need a new generation of nurses and nurse practitioners, a new generation of pharmacists and allied health professionals. For example, you said that I once told you long ago that the body wants to be well, that this is its natural condition. I was taught nothing about health and very little about healing in my medical school education.

The fundamental principle of integrative medicine is that there is this tremendous innate healing capacity that we all have. When I sit with a person who is sick, always at the back of my mind is the question, what is blocking healing here? What is preventing it? What can I do from outside that can facilitate that process?

That perspective is missing from the training of our health professionals, and that is where it has to start. In addition, we have to look at patients as more than physical bodies. We are also mental, emotional beings. We are spiritual entities. We are community members. Those other dimensions of human life are very relevant to health and illness.

If we cut ourselves from them and only focus on the physical body not only do we miss out on understanding the real causes of health and illness, but we cut ourselves off from all these interventions that may be cheaper, safer, and more effective than those just directed at the physical body, like pharmaceutical drugs.

Integrative medicine also insists that we pay attention to all aspects of lifestyle and understanding health. I know this is certainly centered on Dr. Ornish's and Dr. Oz's work. I think an educated body of health professionals can be great allies to you and people in Government in bringing about the kinds of changes that are nec-

essary if our society is going to make these choices easier for people rather than harder for people.

Let me just give you an example. If you look at the success we have had with smoking reduction. This is an interesting case to look at because if you go back to the 1920s and 1930s, there was a totally different cultural value placed on smoking. This was the year in which everybody who was anybody smoked. Athletes smoked. Artists smoked. Physicians smoked. All movie stars smoked.

Just rent a movie from the 1930s and look at how everyone on the screen smokes all the time. How could you have grown up in America at that time and not wanted to smoke? If you were an unfortunate person who didn't smoke and didn't like being exposed to it, not a chance. Smoking was considered a nuisance, not anything that was dangerous.

Of all the things that we have tried to reduce—we have raised taxes on cigarettes. There have been lawsuits against cigarette companies. We have restricted sales of cigarettes. There have been incessant public service messages about it. What has worked, and what hasn't?

We have significantly reduced smoking in some groups. We still have a ways to go because it is up in other groups. We have made a lot of progress.

It seems to me that the lawsuits are irrelevant. Attempts to restrict tobacco advertising I don't think are very successful because if you block the companies in one area, they find other ways around that to do it in other areas. I think raising taxes has had an effect, and that is something to consider in looking at changing food behavior.

To me, the single most important thing that has made progress is a consistent, informed message coming from the healthcare community about the hazards, the health hazards of cigarettes. It is that which has enabled us to pass laws getting smoking out of public places. Because as long as smoking was just considered a nuisance, there was no chance of progress. Now that people realize that this is a real health hazard to people, it is possible to legislate against it.

I can't overemphasize the importance of having on your side an informed community of health professionals who understand the lifestyle influences on health and can really work as powerful social/political agents to bring about the changes in priorities that we have to have in the society if we are to be working to facilitate people making the right lifestyle choices, not the wrong ones.

My bottom line is that we must have a transformation of medicine as part of real healthcare reform, and I would say that having new educational models, such as the integrative medicine training that we offer at the University of Arizona, which, by the way, we are scaling up to really make a required accredited part of all residency training and all medical specialties. This is fundamental to the kinds of changes that we have to see.

Thank you.

[The prepared statement of Dr. Weil follows:]

PREPARED STATEMENT OF ANDREW WEIL, M.D.

Mr. Chairman and members of the committee, thank you for the opportunity to speak to the committee about the vitally important issue of health care reform. My name is Andrew Weil, and I am founder and director of the Arizona Center for Integrative Medicine at the University of Arizona's College of Medicine, where I am also the Lovell-Jones Professor of Integrative Rheumatology, Clinical Professor of Medicine & Professor of Public Health.

Everyone agrees that functional, cost-effective health care must be built on a foundation of disease prevention and health promotion. The main reason for the impending collapse of the American health care system is its lopsided focus on intervention in established disease, much of which is lifestyle-related and therefore preventable.

It is less obvious that meaningful health care reform also requires a transformation of medicine. The high-tech interventions that conventional medicine primarily uses, including pharmaceutical drugs, are simply too expensive. American health professionals are not trained to use low-tech, cost-effective treatments that work well for many common disease conditions.

Integrative Medicine (IM) can solve both of these problems. As developed and taught by the University of Arizona Center for Integrative Medicine, it addresses all aspects of lifestyle to promote health and alleviate illness. Our national educational models are taught online and can be scaled to deliver training to large numbers of physicians, nurse practitioners, and allied health professionals to make them agents of lifestyle change. Furthermore, by identifying and employing a range of therapies from dietary adjustment to breathing exercises to carefully selected methods currently outside the medical mainstream (for example, acupuncture and osteopathic manipulation), IM can offer low-cost alternatives to pharmaceutical drugs and surgery for many conditions that now drain our health care resources. We emphasize proven, low-risk, low-cost interventions to treat disease, progressing to high-cost, high-tech interventions only when the severity of conditions demands them or after simpler measures have failed.

For practitioners of IM, preventing disease is not an afterthought, it is the cornerstone of our practice—the physician and patient form an ongoing partnership to maintain health, rather than fight illness, and IM practitioners are trained to be agents of lifestyle change. We treat illness promptly and aggressively when appropriate, but always seek to maximize the body's innate capacity to stay healthy and resist disease and injury.

My message today is that this system, integrative medicine, must be a key part of American health care reform.

Here is why: The citizens of the United States spend more per capita on health care than do the citizens of any other nation in the world—by a long shot. Costs of medical care have spiraled out of control, rising at such an accelerating rate that they are now a leading cause of personal bankruptcy. Every 30 seconds, an American files for bankruptcy as a result of health care costs.

Despite the magnitude of this crisis, when I listen to discussions about health care reform, I hear next to nothing about the real causes of the crisis or the real changes required to solve it. Most commentators assume that the root problems are (a) how to give more people access to the present system and (b) how to pay for it. I strongly disagree.

Why? If we were the healthiest people in the world, perhaps our massive expenditures for health care would be justified. The sad fact is that by virtually every measure of health outcomes—including longevity, infant mortality, fitness, and rates of chronic diseases—the United States is at or near the bottom compared to other developed countries. We are paying more and more for health care, and have less and less to show for it. Clearly, we are spending all that money in wrong ways.

Please consider the following myths, and the realities that they conceal:

• **Myth #1:** Because America has the most expensive health care in the world, it must have the best.

Reality: The World Health Organization recently rated America 37th in health outcomes, on a par with Serbia.

• **Myth #2:** American technology makes it possible for us to achieve medical excellence.

Reality: We have powerful technology, but we misuse it and overuse it, driving up costs and worsening health outcomes. To choose just one small example, expensive cholesterol-lowering statin medications, which may have serious side effects, are being recommended for millions of healthy women and healthy men over 69 years of age, but an analysis in the January 2007 issue of the medical journal, *The Lancet*, concluded that such medications did not reduce total deaths in those groups.

[source: *The Lancet, Volume 369, Issue 9557*, Pages 168–169, 20 January 2007, *http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(07)60084-1/fulltext*]

• **Myth #3:** Our medical schools and scientific facilities produce the world's finest physicians and conduct the most productive research.

Reality: Our medical and scientific infrastructure is extensive, but it is controlled by an almost fundamentalist orthodoxy that limits our ability to understand and promote health and to prevent disease. Medical education today omits whole subject areas of great relevance to those ends, including nutrition, mind/body interactions, and environmental effects on health. We train researchers to think simplistically and focus narrowly on single interventions directed at the physical body, especially pharmaceutical drugs. (The manufacturers of those drugs strongly influence researchers, practitioners, and the journals that report research results.)

In short, we do not have a "health care" system at all. Instead we have a disease management system that is deeply dysfunctional and getting more so by the day. Our national health is deteriorating, and we have the highest percentage of uninsured citizens of any democratic society; no other nation is close. With unemployment rising at an alarming rate, great numbers of Americans are losing their health insurance along with their jobs, further swelling the ranks of the uninsured. This is unacceptable.

So what must we do?

Let me say again: The challenge is not figuring out how to give more people access to the present collapsing system. The challenge is to envision what we can create to replace it.

I have long taught that health is an individual responsibility. It is up to you to learn how to maintain it and to protect your body's potential for self-healing as you go through life. No doctors, no treatments, no system can do this for you or force you to do it on your own.

Medical professionals and institutions can help, however, by improving your understanding of health. They can inform you about the influence of lifestyle choices on your risks of disease. They can provide preventive medical services to protect you from common, serious conditions, for instance, by immunizing you against infectious illnesses and screening you for forms of cancer that are curable if detected early. They can identify and explain problems that require expert diagnosis and treatment, then guide you in selecting the best therapy. They can help you if you are a victim of trauma or suffer a heart attack or need other emergency medical or surgical attention.

I believe—strongly and passionately—that every American has a right to good health care that is effective, accessible, and affordable, that serves you from infancy through old age, that allows you to go to practitioners and facilities of your choosing, that offers a broad range of therapeutic options. Your health care system should also help you stay in optimum health, not just take care of you when you are sick or injured. You should expect and demand this of your country, whether you are rich or poor, whatever the circumstances in which you live. A free, democratic society *must* guarantee basic health care to its citizens—all of them—just as it guarantees them basic security and safety. It is in society's interest to do so: the healthier our population, the stronger and more productive we will be as a nation.

It comes down to this: Our long-term goal must be to shift our health care efforts from *disease intervention to health promotion and disease prevention*. That does not mean withholding treatment from those who need it; those with existing conditions need to be treated effectively and compassionately. My concept of prevention goes well beyond immunization, sanitation, and diagnostic screenings. *I am suggesting that the time has come for a new paradigm of preventive medicine and a society-wide effort to educate our citizens about health and self care*.

Breaking dependence on costly high-tech medical interventions will require fundamental changes in medical education and practice, as well as rethinking the nature of health and healing, the role of treatment, and our expectations of medicine. Without a transformation of medicine we cannot have the health care we so desperately need: health care that is effective, serves everyone, and does not bankrupt us individually or collectively.

It can happen. It is happening. Federal mandates can only serve to speed an ongoing, natural evolution that is well underway. I lead an effort at the University of Arizona to train doctors in integrative medicine, which, as I have said, values inexpensive, safe and effective, low-tech treatments as alternatives to outrageously priced pharmaceutical drugs. In fact, my work to advance this new field has provided part of the inspiration to testify here today, because its early success makes me absolutely certain that it is the key to getting American health care back on course.

Consider: Integrative medicine is quickly gaining momentum. I founded the first integrative medicine training program at the University of Arizona in 1992. Today, 42 academic health centers, including those at Harvard, Duke, Johns Hopkins, and the University of California as well as the Mayo Clinic, have IM initiatives. [source: *http://www.imconsortium.org/about/home.html*] At the University of Arizona alone, we have trained over 400 physicians, nurse practitioners, and medical residents, many of whom are now leading their own programs at other institutions in this country and around the world. We are expanding our trainings as quickly as we can, because demand for them is increasing rapidly, and are working to make a comprehensive curriculum in IM a required, accredited part of all residency training in all medical specialties. I can assure you, that more and more doctors and allied health professionals want to practice this kind of medicine, because they see it as the medicine of the future: cost-effective medicine that can revitalize American health care and make it truly the best in the world.

Consumers have already embraced integrative medicine, but skeptics still question whether it really works. We need good outcomes studies to convince them, but we already have data showing that patients do indeed achieve better outcomes and are more satisfied with their care when treated by integrative physicians. For example, a 2008 study of patient experiences at the University of Michigan's Integrative Medicine Clinic showed that over 62 percent of responding patients called the clinic's care either "excellent" or "best care ever." An amazing 81.2 percent of respondents reported partial or full effectiveness of their patient plan in achieving their primary objective. [source: *http://www.liebertonline.com/doi/pdf/10.1089/acm.2008.0154*] That is a success rate most conventional clinics could not match.

Health care reform can and should extend beyond the clinic. It must also include the creation of incentives and disincentives to encourage people to make better lifestyle choices in their daily lives that reduce risks of the chronic diseases that now absorb so many of our health care dollars. This is a tall order, requiring that the government, private sector, and individuals all pull together and move in the same direction. It must be done.

Thank you again for inviting me to testify today. I would be happy to assist the committee as it considers health care reform and suggest that the Arizona Center for Integrative Medicine is well positioned to reach out to other health care leaders who share our belief in the importance of transforming medicine in order to secure the health and future of our society.

Senator HARKIN. Thank you very much, Dr. Weil. Thank you, all.

I guess what I think about listening to all of you is that here we have in four individuals real pioneers, each one of you. You have written many books. You are very famous. Americans know your names. They have read your books. They have read your articles. They have seen you on television.

We are right now trying to reform, healthcare reform. As Senator Enzi said, the President just sent up his budget proposal for this reserve fund and all that. I am just wondering how do we harness you all in advising us and advising the President and moving us in the direction you have all talked about? I mean, there isn't a hair's width of difference between what any of you are talking about.

How can I put you in great positions of power so that you can dictate changes in our system? I am so frustrated with this. You have such a great following among the American people, and you are doing wonderful things.

How do we take this and then move all the things you are talking about into this sphere here of healthcare reform so people start thinking, yes, this is what we have got to do? Rather than just, as many of you mentioned, we are going to jiggle a little bit on the repayment and jiggle a little here and that kind of thing.

Dr. WEIL. There is so much that has to change, though. Look at the whole—the mindset that prevails in this culture on the part of both doctors and patients that the only legitimate way to treat disease is by giving drugs.

Senator HARKIN. Yes.

Dr. WEIL. You know, you can blame the pharmaceutical companies, but they are just capitalizing on this deeply established mindset. You could talk to a patient until you are blue in the face about lifestyle change and so forth, but if they had a chance to buy a pill that they thought would help them lose weight, they would go for that.

Senator MIKULSKI. Absolutely.

Dr. WEIL. Again, to me, this is a matter of education, and the education has to start—it has got to be K through 12. I would also love to see, in the Department of Education, an Office of Health Education that would be well-funded, that could really work to get creative health education beginning in kindergarten.

I think there is huge possibilities today of using, for example, this new generation of interactive videogames and harnessing this for real health education. It has got to be throughout society. I am focused on education of physicians and health professionals, but we need education of the general public to change a lot of this underlying mindset.

Senator HARKIN. Dean.

Dr. ORNISH. First of all, I appreciate the question. The answer is how can you get us involved? Ask us. Because we have all seen what a powerful difference these changes can make, how they can transform people's lives. We have been looking for leverage, how can we make this available?

We have learned because we have trained, now, hospitals around the country. Senator Mikulski, I want to make sure that I honored you, now that you are back, to talk about the major difference you made in Medicare doing the demonstration projects so that we could demonstrate that we can work with teams of people, with social workers like yourself, with clinical psychologists, dieticians, yoga teachers, exercise physiologists, nurses, and doctors working together as a team.

We have shown that we didn't know if it would work as well in Omaha or Columbia, SC, where they told me gravy is a beverage. You know, this will be a big change for lifestyle.

[Laughter.]

As it would in New York or San Francisco or Boston. But it did. We were able to train teams of people to do it. Just like Dr. Oz is doing with HealthCorps, we are doing this in a parallel way. We have been doing it now for 16 years, and we have shown that it works.

We have learned what works to motivate people to make sustainable changes. We have shown we can motivate people to make bigger changes in lifestyle, get better clinical outcomes and even larger cost savings.

Now it is a little like people say, "Well, why would you mess around with all this touchy-feely stuff? Why don't you just take a pill?" It is like that scene from Raiders of the Lost Ark, when the guy comes out and does all his martial arts and kung fu, and Indiana Jones just takes out a gun and shoots him. Like, why don't you just take a pill? It is going to do it.

The idea that taking a pill is easy and everybody will do it, but changing lifestyle is impossible is not really what we are finding.

You might say, "Well, why is that?" It is because we normally try to scare people into change. You know, use fear of dying. If you don't quit smoking, you are going to get lung cancer.

That doesn't work because it is too scary to think about, and people don't want to think that something bad may happen to them. So they don't. Taking a pill to lower your cholesterol doesn't make you feel better. You are taking something today to prevent something really awful like a heart attack or a stroke that you don't want to think about. So you don't.

When you change your lifestyle, when you change what you eat and how you live, most people—your brain gets more blood. You think more clearly. You have more energy. Your brain can actually grow so many new brain neurons your brain gets bigger in just a few months.

Your sexual organs get more blood flow, the same way that Viagra works. Smoking actually is marketed to make you look beautiful and sexy, and it makes your skin, the vessels constrict. So you wrinkle faster. Half of the guys who smoke are impotent. It makes you ugly and impotent. How fun is that?

In fact, the most effective anti-smoking ad was when the Department of Health Services had these billboards that dressed the guy up like the Marlboro Man, and the headline was "Impotence" and had a limp cigarette hanging out of his mouth.

Part of what we are learning is that if we really want to make sustainable changes, we need to talk about the feeling that there is no point in giving up something that you enjoy unless you get something back that is better. Because these mechanisms are so dynamic, most people find they feel so much better so quickly it reframes the reason from changing from fear of dying to joy of living.

Senator HARKIN. Yes.

Dr. HYMAN. I think your question, Senator Harkin, was very important, which was how do you take advantage of the science that we know and put it into practice? How do you make science policy?

I think what we are talking about is really based on new evidence that shows that lifestyle is the most effective, and these therapies are the most effective and cost-effective to create change.

A way to do that is partly in Dr. Jonas's proposal to create a White House office or a congressional office. More importantly, within that was to create an advisory council of leaders who can advise Congress and advise the White House on these approaches and how to implement them into policy.

We are fighting a huge uphill battle. There is $30 billion spent by pharma educating physicians, "educating" on the use of medications through direct marketing and other sources. That accounts to $30,000 per doctor in this country to educate them on how to use medications.

There is $30 billion spent by the food industry to educate people about how to eat junk food. That is $60 billion. If we took a fraction of that, we could make enormous impact in changing consciousness and putting in programs that are effective and demonstrate benefits. Based on the work of Dr. Ornish and Dr. Oz and Dr. Weil, these are the kinds of things that can make enormous impact, and providing the infrastructures to do that is key.

It doesn't take a lot of money. We are talking about small amounts of money for demonstration projects, maybe $5 to $10 million per demonstration project in three or four centers around the country in different demographics to implement this model and show that training integrated healthcare teams works in this way to deal with chronic disease. Implementing not just the way we do medicine now better, but a different way of doing medicine.

We really need to foster and develop the things that Andy has developed and other kinds of institutions that extend the education. I completely agree with Andy that we have to train a new generation of practitioners. Because if we just have the ones that we have now doing what they do better, that is not going to solve the problem.

I think putting funding on that, and that could be a small amount, relatively, to the budget. A hundred million dollars could establish a really profound change in medical education.

Dr. ORNISH. Just to build on what they are saying, Andy is completely right—Dr. Weil—that we doctors do what we get trained to do and we get paid to do what we get trained to do. So, if we change reimbursement, we change medical practice and medical education.

Most doctors are not happy with the current model. The studies show that most doctors wouldn't recommend medicine as a career for their kids because it is not fun to practice medicine when you have to see a new sick patient every 6 minutes. It doesn't work.

If we change reimbursement and we reimburse these kinds of integrative approaches, the kind of programs that we have shown in hospitals are much more cost effective than using drugs and surgery, that will change the practice of medicine. We could do a million studies with 10 million patients, and it will always remain on the fringes unless we change reimbursement.

Dr. WEIL. Again, I just see education as the fundamental here. At the moment, our physicians, other health professionals are not trained in practical nutrition. They are not trained in mind-body interactions. They are not trained in the use of botanicals. They are not trained in the use of dietary supplements.

There are huge areas of omission here. The education of pharmacists, because they are not trained in the use of natural therapeutic agents, they have abandoned all this territory to health food store clerks. As an assignment, I used to send medical students to health food stores, and I asked them to loiter and listen to the conversations that went on and observe the extent to which health food store clerks have replaced pharmacists as practical dispensers of health information.

I have met some very intelligent health food store clerks. As a group, they have no standardized training, and they often dispense information that comes to them from the manufacturers and distributors of products. The pharmacists need to take this territory back.

So, this is something again. At our center, we work with our College of Pharmacy to develop educational modules in these areas that are now omitted. Similarly, we go around to all the allied health professions, and these big defects need to be corrected.

Dr. OZ. I could offer just one quick thought and that is we sort of need a martial arts approach to this. A small effort with a big impact. I think one of the benefits of health coaches movement or HealthCorps, which deals with young kids, is that you take people whose basic instinct is going to be lifestyle based, and you get them to touch the lives of 50 people around them. So you leverage it.

The first recommendation becomes, don't have the procedure on your heart, do the lifestyle approach. The three other members of this panel have the technology, the know-how to build the system. If we build it and we have the knowledge base of people incentivized to think about it, they will come.

I think you have got the raw material here to change education. We have to have that leverage element to make it into a movement. I think the things we have talked about are inexpensive ways of doing that.

Senator HARKIN. Is HealthCorps getting any Federal funds at all?

Dr. OZ. We get moneys that are given from the Federal Government to States and then to us. It goes through Federal grants, although we are, as I mentioned, working with one Federal agency, which we will hopefully get some funding from.

But you know what? I am a pretty good fundraiser. I will raise money for HealthCorps for now. What we really need is the opportunity to do what you offered earlier, was to play a role. It is hard to help sometimes.

When I had this discussion with Mayor Bloomberg of New York City, ironically, they want people to help the school system. The average citizen who lives in New York City, where I work, doesn't know how to help. I think we sort of feel that way sometimes.

Dean, over dinner with beer, will tell me it took him 14 years to get his project into Medicare.

Dr. ORNISH. We had a discussion with the head of Medicare, the administrator, I guess it was now 10 years ago. And he said, "Well, we will do a demonstration project, but you have to get a letter from the head of the National Heart, Lung, and Blood Institute saying that your program is safe."

I said, "You mean safe as an alternative to having your chest cut open?" And he said, "No, that it is safe." I said, "You want me to get a letter from the head of the NHLBI saying it is safe for older people to walk, meditate, quit smoking, and eat vegetables?" And he said, "yes," and that is what we had to do.

With all this talk about evidence-based medicine, I mean, even knowing, for example, the studies, the randomized trials that have shown that angioplasties for 95 percent of people don't prolong life or prevent heart attacks has not diminished the rate at which angioplasties are done because it is reimbursable.

You have cited, Senator Harkin and Senator Mikulski, the diabetic foot. They will pay the $10,000 to amputate it, but not the few hundred to prevent it.

We have just published some studies showing that when you change your lifestyle, it changes your genes. It turns on the disease preventing genes and turns off the genes that cause heart disease and breast and prostate cancer.

Dr. HYMAN. That is right. Quickly.

Dr. ORNISH. The point is that if we can change reimbursement, we are all here to serve in whatever way you think we can be helpful to you. And the time is now.

Dr. HYMAN. Yes. I would just emphasize the whole aspect of health coaching. I think the things that Dean has done for almost two decades, training teams of people to work together, and what HealthCorps does has also amplified other programs that are existing.

For example, like first-line therapy, based on the NIH recommendations for therapeutic lifestyle changes, already trained 12,000 lifestyle educators in over 7 years in 50 States that are implementing this program. They are able to do this within doctors' offices and practitioners.

There is no model for reimbursement. There are actually practitioners who are sending their staff to go get trained in this so they can be lifestyle educators, and they are sucking up the cost from their practice because they believe in this. I think that kind of effort needs to be amplified and expanded on and funded.

Senator HARKIN. Have any of you ever met with Peter Orszag?

Dr. ORNISH. Well, Peter Orszag was instrumental when he was the head of the CBO in doing a thorough review, looking at our program for reversing heart disease, and determining that, in fact, it was cost-effective, because that is always the concern.

I am a great fan of Peter Orszag. I think he is brilliant, and I am glad he is in the position that he is in now.

Senator HARKIN. The reason I ask that is because, unfortunately, and I have talked with him, as I talked with Senator Daschle about this, the problem is the scoring that we have here.

Dr. ORNISH. Yes.

Senator HARKIN. The CBO does not give us any savings for anything like this, and so it is always just a cost additive.

Dr. ORNISH. Well, we have actually shown that it does save money, and that is what is interesting. Because these mechanisms are so dynamic, you don't have to wait years to see the payoff. In the first year, we found we cut costs in half. Blue Cross Blue Shield of Pennsylvania had a very skeptical, hostile head of informatics, was sure that this wouldn't save money. And compared to a matched control group, in the first year it cut their costs in half.

Now you multiply that by the $2 trillion or whatever it is that we are spending on healthcare, that is a lot of money. It adds up quickly.

Dr. HYMAN. That is right.

Senator HARKIN. Free flowing.

Dr. ORNISH. We just want to say how much we are so grateful to be here, and we—I know, speaking for all of us, we really appreciate what you are doing. We know how hard it is.

Senator HARKIN. Well, we appreciate what you are doing out there. We have just got to figure out how we—if you will excuse the phrase, how we integrate you——

[Laughter.]

Senator HARKIN [continuing]. Into this health reform debate.

Senator Mikulski.

Senator MIKULSKI. Well, first of all, I, too, want to be enthusiastic in my welcome of all of you who are here. Senator Harkin and

I have had a reputation for being reformers and also not reformers of, again, the status quo or the stagnant quo, but really bringing new thinking in. His work is well known.

I know, of course, Dr. Ornish personally. We had this discussion 15 years ago at a renaissance weekend.

Dr. ORNISH. That is right.

Senator MIKULSKI. All this is like an overnight, a 20-year overnight success.

Dr. ORNISH. We love you.

[Laughter.]

Senator MIKULSKI. First, I just want to say a word about language because language can be determinative, and also even the way these three working groups have been established within this committee reflects a dated paradigm.

We have something called coverage. So what are we covering? Something called prevention. Something called quality in systems. You can't separate the two out because you can't have quality unless it is prevention. You can't have prevention without quality.

That is why my little working group is called "Quality: The Pathway to Saving Lives and Saving Money." So that is dated.

The second thing is that we focus, if I could, using the term "prevention," it is the prevention of disease. That is dated. The real word is the promotion of wellness.

Dr. ORNISH. That is right because people don't really want to think about prevention because it means that something bad might happen to them. It is about joy of living, not fear of dying.

Dr. HYMAN. Most of our prevention is early detection, which doesn't really understand the mechanisms of disease and how to promote health and create health. Most doctors are not trained in what is health or how to create health. That is what these new concepts and principles that we are all talking about teach us to do, and that is a teachable, scalable thing that can be taught to a new generation of physicians.

Dr. WEIL. Can I just mention that as an example of starting to do this, the Integrative Medicine in Residency Program is now being piloted at eight residency programs around the country—in New York, Maine, Arizona, Connecticut, Texas, Minnesota, North Carolina. This is a 200-hour curriculum. All residents are required to take it. The goal is to extend this to all residency programs in all medical specialties.

Senator MIKULSKI. Well, we want to be sure that when they are trained, they have a place to practice, which——

Dr. WEIL. Right. Sure.

Senator MIKULSKI [continuing]. I want to come back to where I am heading with what I just said.

First of all, the vocabulary is dated.

Dr. ORNISH. Yes.

Senator MIKULSKI. So, if Senator Harkin chaired the working group on wellness, it would be viewed as woo-woo. He chairs the working group on prevention, and everybody thinks they get it. What the purpose of the hearing is if you get it, you have got to get a new way of talking.

That is our job here, and we could also go to quality. I can tell you, when I was given this assignment, quality was viewed as see

what you are going to do with health IT, even though we are going to dump a lot of money and the technology won't talk to each other, like we all don't talk with each other.

And second, go to the IOM famous study on quality. You know, that is a great beginning. But we are extending this beyond that.

Dr. ORNISH. Well, God bless you for that.

Senator MIKULSKI. Well, but—and we are going to need God.

[Laughter.]

We are going to need spirit, and we are going to need a lot of deep breathing. We are going to be spirit-filled, and we will wait for the air to come.

I want to go to some of the principles, if we could, because we have to be very pragmatic. There is an urgency that is being created, thanks to the presidential leadership of President Obama.

I would say, first, what you are recommending is that as we fashion health reform—and it is not health insurance reform. Get rid of the word "insurance," though you have to have sound fiscal underpinnings. Think about health and health outcomes and health promotion.

Second, there needs to be an ongoing place, particularly at the White House level, that really influences the thinking of the President, the Cabinet, and, therefore, the Congress.

Dr. ORNISH. Absolutely.

Senator MIKULSKI. One would be, and that is what came out also in our hearing on Monday, that there be—if there is going to be a health czar, that that health czar has to have an integral part of being a czar, that part of it has to be the wellness and prevention aspect of it.

And then the second, there is a lot of talk going on about the so-called medical or health home. If we look at that, this is where we could bring the principles of integrative healthcare in it. So we get the best of Western medicine.

Dr. ORNISH. Yes.

Senator MIKULSKI. We do need the mammogram test. We might need surgical intervention. That is where comparative effectiveness research comes in. So you have got that coming in.

As you go through the best of that and even where there is a pharmaceutical aspect to that, when that person is going to be living their life in their home, their family, and their community, there has to be ongoing support. It is not only a new healthcare nanny that says, "Have you gone to your ophthalmologist," if you are a diabetic. You do need that prompting, but that is all part of it.

Because, again, whether we are talking about the big killers—heart disease, diabetes, the other chronic conditions—that the way to deal with a chronic condition is either to mitigate its progressiveness or also to mitigate frequent acute care episodes.

That then takes the health coach, which really needs to have a substantial body of knowledge because, as we know from our work on complementary medicine—and again, Senator Harkin is the guru status on this—is, that where there is need, there is greed. Where there is need and greed, there are quacks. So we want to deal with that.

Do you agree with this? Are these the basic principles that, as we look at healthcare reform, we have to do that? And then really go back into the community because I would really like to ask a question about children, children, children.

Dr. ORNISH. Yes, well, if I can just respond to that? First of all, I think you very eloquently and beautifully stated—I agree with everything you have said. I would also include online. I chair Google's health advisory board. There are tremendous opportunities using some of the new technologies to provide people in the home these kinds of things that can highly leverage people that it gives the illusion that there is a health coach or there is a real person, but it can be done through software that makes it much more economically available at the push of a button.

The four of us here and many of the other people in the room have, in a way, done the hard part already. We have shown scientifically that these programs can reverse and prevent the diseases that kill more people and account for 75 to 80 percent of the costs—the diabetes, heart disease, prostate and breast cancer, obesity, and so on.

We have shown that it can save money. We have each developed our own way. Andy—Dr. Weil has developed the leading education system. Dr. Oz has developed the leading HealthCorps in terms of his approach. Dr. Hyman has developed—is the leader in functional medicine. We have shown in now 50 hospitals where we have trained around the country, from the most prestigious academic to community hospitals, that we have learned what motivates people to make and maintain these changes.

We know how to do this. We just need to work with you guys to develop systems that make what we have shown in our own work in different ways available to people throughout the country.

Senator MIKULSKI. That is going to be the hard part about what these systems are. I would like now, if I could, to talk about the children?

Dr. ORNISH. Yes.

Senator MIKULSKI. Which I know is very special to the members of this committee. We talked about the stopping of smoking, and Dr. Weil, you spoke about the interventions, etc. Well, one of the ways that we stopped smoking in this generation was to start with significant public education of the younger generation. From cartoon books, the kind of stuff even Joe Califano did, going back to the Carter days, etc.

Dr. ORNISH. That is right.

Senator MIKULSKI. Those children now are 40 years old, and they don't smoke.

Dr. ORNISH. One of the most powerful ways of getting parents to smoke is to realize that the most powerful——

Senator MIKULSKI. Stop smoking.

Dr. ORNISH [continuing]. Predictor of whether their kids are going to smoke is if they smoke. You know, I would jump in front of a train for my son, my 8-year-old, if I thought it would help him. Any parent would. It is not a red State or blue State issue. It is a human issue.

When people realize the impact they have on their kids, sometimes that can be a powerful motivator.

Senator MIKULSKI. Let me go to interventions, though—let me get to my questions. We are now going to talk about a new healthcare—universal healthcare, but we already do healthcare.

We do it through the Children's Health Initiative, and we do it through Medicare, and we control that. Just like we control the VA, and there is a lot of lessons to learn in the VA. I wonder even if today, if you could turn your thinking—because there is going to be a lot of talk about Medicare—we are the insurance company for Medicare.

Dr. ORNISH. Yes.

Senator MIKULSKI. It is not like you have got to get Hartford and Aetna and all to go along with it. Also we just expanded the Children's Health Initiative. To me, these are cornucopias of opportunity because these are "health insurances that the Federal Government controls."

Dr. ORNISH. Yes.

Senator MIKULSKI. We already control the reimbursement. We don't have to negotiate with a lot of people. We are it. Oh, yes, the States and the governors. I don't mean to minimize that. Also something that has had a moat around it, CMS, as you know, Dr. Ornish.

[Laughter.]

What I would like, as you go back and you are working on the summit and even among yourselves, if you would think about those interventions. While we are talking about the universal system, which, hopefully, we will do in the next several months, to where we could begin right now, right now with the expansion of the SCHIP.

Also then go, particularly with children. Children are a captive audience in the school system.

Dr. ORNISH. That is right.

Senator MIKULSKI. Not a captive, but we have—it is almost like——

Dr. HYMAN. It is an ecological problem.

Senator MIKULSKI. It is a place where we can enter, where we can actually have intervention and be able to draw upon community resources as well.

Dr. ORNISH. Part of the issue I find with kids is if you tell kids they are going to live longer if they don't smoke, that doesn't mean anything because kids think they are immortal. Teenagers even more so.

Providing information is important, but not sufficient. If it were, nobody would smoke. It is on every pack of cigarettes. It is not like people who smoke don't know it is bad for them. It is almost like riding a motorcycle. It is like it is cool because it is risky.

What we try to do is to take it out of the context of what might happen in the future and put it as what happens to you now. Do you want to taste like an ash tray when your girlfriend kisses you? That makes it much more meaningful than thinking you might get a heart attack or lung cancer or emphysema 30 years down the road.

And finally, we also found that we need—particularly for older people, we need to focus not only on the behavior like smoking, but the deeper issues. I would ask people, "Why do you smoke or over-

eat or drink too much or work too hard or abuse substances? These behaviors seem so maladaptive to me."

They would say, "They are not maladaptive. You don't get it. They are very adaptive because they help us get through the day." They talk about, "I have got 20 friends in this pack of cigarettes. They are always there for me, and nobody else is. You are going to take away my 20 friends" What are you going to give me?"

Or they use food to fill the void or alcohol to numb the pain. Part of what we are all saying in our different ways is that we need to look at these deeper issues that really motivate us, both kids and grown-ups, and work at that level.

Dr. WEIL. I think when you are talking about kids, you have to realize there are tremendous societal pressures on them to make the wrong health decisions. How do you combat that? How do you deal with the vested interests who are making a lot of money selling unhealthy products to kids, for example?

Another problem is that healthy choices aren't cool to many kids. How do you change that? How do you make healthy behavior cool?

I would again say that creative education is the key here. If you think about the kind of health education you got in school, which I am sure was the same kind that I got in school, it was——

Senator MIKULSKI. Thou shalt not.

Dr. WEIL. Thou shalt not.

Dr. ORNISH. That doesn't work.

Senator MIKULSKI. Then we went out and did.

[Laughter.]

Dr. WEIL. Exactly. That is right. Exactly. It was also really boring. Who taught it? In my memory, it was often physical education teachers who were presenting rote material they weren't interested in. I mean, it was a real bore for everybody, and then it was the "thou shalt not."

We can do a lot better than that. Here again is why I think that the creative use—I am just fascinated by videogame technology, these new games like the Sims and Spore in which people can really learn the consequences of behavioral choices. You can show them that one dietary choice leads to greater success, to chance of better jobs, more affluence, more girlfriends. I mean, this is stuff that can be modeled. People can learn the consequences of behavioral choices in that way.

I would love to see us create an Office of Health Education in the Department of Education that would explore this and other technologies for presenting the kind of information we have in creative ways.

Senator MIKULSKI. Well, I think we could. You know we are going to conclude now, and you have been so generous of your time.

Dr. Hyman, though, did you want to add——

Dr. HYMAN. Yes, I just had three things related to the children that I think are really key. No. 1, I think we need to leverage our influence in public schools to change nutrition in those schools, and we need to do it today.

No. 2, we need to enroll some type of sports and media figures in the campaign rather than promoting Pepsi and Coke and junk food.

And No. 3, we need to deal with the advertising that allows advertising of these foods to kids. In most other civilized and industrialized nations, this type of advertising, like cigarette advertising, is not allowed. We cannot fight the battle when a kid sees 10,000 ads for junk food every year, even if we talk to our kid three times a day at every meal. We need to change that.

Senator MIKULSKI. Well——

Dr. HYMAN. I know it won't be easy.

Senator MIKULSKI. No, it won't be easy. I was just reading the New York Times yesterday, where a well-known baked potato chip company—I won't use the name—is going to repackage itself to women because it seems women—both younger women and women of a certain age don't eat these baked chips or whatever.

They have just spent all kinds of research money on neuromotivation research, but the big ad campaign is going to be repackaged. It is going to say we are repackaged so you can have the kind of package you want. Well, there we go. Isn't this fantastic?

I am only saying that because look at all that work and all of that money and all of that. So, if you want baked potato chips, I am not going to tell you not to do it. What I am going to say is that we need to think differently, and we can't wait for Government to do this.

I don't believe that trickle-down economics works. Like our President, I am a grassroots community organizer. All of you, with these brilliant Western credentials you have, you have all been part of what is already a social movement.

See, the history of social movements are it always starts from the bottom. It meets a compelling need that is then organized and harnessed. When Government comes in, it is to institutionalize what you have started. We don't start anything. We are the benefit of what comes from the bottom up. That is what we are getting today. That is what we got on Monday and, hopefully, going on at the summit.

What I really hope to work with my colleagues on, and I really encourage you and anyone listening, is to harness what I am calling the "Obama effect," and it is not in any way to be disparaging to our colleagues from the other party. We have a President that is committed to a healthy lifestyle.

Dr. ORNISH. Yes.

Senator MIKULSKI. That works out every day. A commitment by the first lady of the United States on healthy food and nutrition. Their own personal devotion to their children I think is going to have a tremendous cultural effect.

Dr. ORNISH. I agree.

Senator MIKULSKI. It will now be cool to be like the Obamas, and being like the Obamas is pretty healthy. Maybe the campaign wasn't, with 19 hours of this and so on. I wish those 19 debates were aerobic. I would have signed up for the primary.

[Laughter.]

I think what the President offers is not only the opportunity for healthcare reform, but a very important cultural moment.

Dr. ORNISH. Totally agree.

Senator MIKULSKI. And to make it cool. Also with the Cabinet people, we can start a lot of this, particularly with children, through executive order and executive leadership, whether it is Secretary Vilsack on food and nutrition in schools, and I would like to bring that also to the Office on Aging.

You know, every county has these Eating Together programs, and the impact there, but also our dynamic Secretary of Education Arne Duncan. I think we could already start that activity now without even any legislative reform and because so much of what would be done is through Senator Harkin's Labor/HHS.

We got the Office of Women's Health in NIH because we worked together, an idea that could have only happened because Senator Harkin put it in the appropriations because of the hearings. I held hearings. He got into it. We all got into it and so on.

We don't have to wait for big, massive legislative change. I think the moment is now. I think the moment is now, and we must seize the moment and not wait for this "Jell-O thing."

Dr. ORNISH. How can we help? How can we be of service to you both?

Senator MIKULSKI. Well, how do you think you can help? That is a good—didn't I go to social work school?

[Laughter.]

Dr. ORNISH. This is like when I was an intern, and they said, "Well, what do you think, Dr. Ornish?" I thought, "Well, gosh, if I knew, I wouldn't have asked."

[Laughter.]

I think we can help in a number of ways because I think for each of us we see the time is now. The world has caught up with us. I think there is a health summit next week. I am sure each of us would be happy to be part of that.

We are all happy to get on a plane at any time if you have any people that you think——

Senator MIKULSKI. Actually, what I would like you to do, based on what we have heard, what you have heard, and also if we could share with you some other of the hearings that we have already had on some of this, is to think about the specific principles that, no matter what, you would want incorporated in legislation.

Also if you would think about the Cabinet as we have it, which I think is a very impressive group of people. Very impressive. That what are the initiatives the Cabinet could take without waiting for legislation that we could support through our mutual appropriations?

Dr. HYMAN. I think the demonstration projects is a key, easy to implement idea that can easily show changes in health outcomes and costs and be done in community health centers to serve underserved populations. If it works there, it is going to work everywhere.

Senator MIKULSKI. Well, I am thinking of Dr. Sharfstein in Baltimore, our commissioner of health, teaming up with our superintendent of education, who is already bringing fresh fruits and vegetables into our public schools. Well, we have a dynamic educational reformer, and Dr. Sharfstein has been a leader in the kind of negative things around cough medicine.

By those two guys getting into a room, actually doing it, Baltimore is shifting. We could do this and that. We don't have to wait for—demonstration projects, to me, are like clinical trials. You will do it incrementally.

I think what this moment, this Obama effect——

Dr. ORNISH. Totally agree.

Dr. WEIL. As I said, create an Office of Health Education in the Department of Education and fund it well, and I would love to have input into that. I have lots of ideas.

Dr. ORNISH. Well, when you have been asked to be put in charge of health reform in these different areas, in prevention and wellness and so on, what does that really mean in terms of what is your influence here?

Senator MIKULSKI. Well, we don't quite know that yet.

[Laughter.]

That is one of my big questions. Because what we know is that the President wants health reform, and there is going to be leadership out of the White House, and there is.

Senator Baucus has done a white paper from the standpoint of the Finance Committee, and each one of us have been busy holding our hearings. Now it is a question of how we are going to put the benefit of each one of ours together and actually forge a direction. This is why it was so important that we two do this together.

Dr. ORNISH. Yes.

Senator MIKULSKI. Senator Bingaman does coverage. This is not about pomp and circumstances here. Over the years, it has been us that have focused on health.

Dr. ORNISH. Yes.

Senator MIKULSKI. Senator Harkin, even during very dark days, kept a lot going through his Appropriations Committee when we had no leadership. This is where the moment is. The point of the hearing is to gather the ideas and, quite frankly, create the excitement.

Dr. ORNISH. Good.

Senator MIKULSKI. We were so pleased that Senator Enzi came and is excited. Now, based on this, if you could think in terms of specific principles that we could incorporate, recommendations, but even where through conversations we could get the Cabinet going on some of this, like food and nutrition in the schools.

Dr. ORNISH. Yes. Perfect. Thank you.

Senator HARKIN. It just seems that, first of all, I just want to correct one thing that Senator Mikulski said. Even though I was chair of the Appropriations Subcommittee on NIH, I had the usual male blindness that we grow up with until she came to me and pointed out how little we were doing in terms of women's health at NIH.

All of the trials and stuff were always men. It was Senator Mikulski who spearheaded that operation. As I said, I had the usual male blindness on that issue.

Senator MIKULSKI. It was take an aspirin a day, keep a heart attack away. And it was only men. Now we have included women. Now we take an aspirin a day. We are going to go on to fruits and vegetables.

[Laughter.]

I sure wish that good works were aerobic because then Oprah and I would be in better shape in more ways than one.

At each point, we learn and do something different. This is why I think the moment is here. Everything you have been doing, this is culminating for you. Again, you all have been really the bottom-up and at times facing a lot of criticism and naysayers.

Senator HARKIN. Maybe I will make one suggestion here that we always think about it in terms of the big picture and healthcare reform and what we do there. We have appropriations process every year, supposedly. We do reauthorize certain bills.

For example, this year is the reauthorization, as I think I mentioned earlier, of the child nutrition bill.

That happens to come under my Committee on Agriculture here, but it is on the Education and Labor Committee in the House. That is the school lunch, school breakfast, and the WIC—the Women, Infants, Children supplemental feeding program. We need to start looking at it from a health standpoint.

Dr. ORNISH. That is right.

Senator HARKIN. What is it, how do we want to change? If you want me to ask how you could be involved is to start taking a look at this. Giving us your advice, using your platforms—all of you have very big platforms out there—to start informing the public that we have an opportunity this year in the reauthorization of this child nutrition bill so that we can get healthier foods in schools and that type of thing.

Dr. ORNISH. Well, kids, as you know, perform better, as do many people, especially lower socioeconomic kids. That is their main meal of the day. That is their good nutrition meal of the day, and they perform better. We should get physical education back in schools. We have got one State that mandates physical education—Illinois.

Dr. OZ. The issue, though, Dean—and I think we all agree—is not what to do, it is how to do it. So, if I am understanding your request, we all have folks that we dialogue and should be dialoguing with, with your teams to understand what our action step is.

If I get a message from you saying there is a big vote happening on agriculture, you need to run a show again emphasizing that we have zero fiber in school lunch programs. We will do that. Everyone here, I think, has a platform to get that word out. Whether it is through the Web, television, or through professional educational programs, we can do that.

I think maybe one concrete action step would be for each of us to provide contact information to a member of your staff that could tell us what to do because, frankly, I can't keep up with the sometimes serpentine, often Byzantine-appearing process by which decisions are made.

If we actually get those messages clearly, we want to get out in front of the train for you.

Dr. ORNISH. Yes. We are your army.

Senator HARKIN. We have education. We have transportation that we talked about. Every time we think about transportation, we ought to be thinking about how do we change some of the structure so that people have bike paths, walking paths, ways of exercising, taking stairs?

I remember one little thing. I shouldn't go off on these stories. Tommy Thompson was Secretary of Health, and I went to visit him one day down at the department. I noticed when I went to the elevator, there was a sign by the elevator. It said, "The stairs are this way. If you climb one flight of stairs, you will burn calories." I don't remember how many.

I talked to him about this, and he said it is amazing that once he did that, people started taking the stairs. We are just creatures of habit. You go to the elevator, you punch a button, you get on it. People started climbing the stairs.

Well, I thought that was a pretty good idea. I called in the GSA, the General Services Administration. They run all of the Federal buildings in the United States. I said, "Why don't we start doing this in our Federal buildings around the country?" And they have, some better than others.

So, I put a little thing in legislation to try to get the Federal buildings at least to put different things in to encourage people to take the stairs rather than taking the elevator every day. I am thinking about just little things like that.

If people think, well, I don't have an hour a day to exercise. Well, we didn't say you had to exercise 1 solid hour. You could exercise 10 minutes here, 10 minutes there.

Dr. ORNISH. Absolutely.

Senator HARKIN. Five minutes here, and that kind of thing. Climbing stairs may take you 5 or 7 minutes, but that is pretty good exercise.

I guess what I am getting at is thinking about all the little things that we do here to keep focusing on wellness and how we promote it. It has transportation, education, and health.

How about Department of Defense? Look at all the money we put in there. What are we doing there in the department to encourage wellness among our service people, but also among those that are returning? I dare say not very much. Not very much.

I am just thinking. Elderly programs. I don't know, maybe it was one of you. I don't know. I talked to you so many times in the past. Someone said once that this Medicare Part D is both a blessing and a curse. Yes, we have gotten more drugs to elderly people, but the problem is elderly people are on too many drugs.

Dr. HYMAN. That is right. The problem is they are getting them.

Senator HARKIN. What?

Dr. HYMAN. The problem is they are getting them. I saw a patient the other day had 21 medications when she was discharged from the hospital. I was like "whoa."

Senator HARKIN. Mark, I have seen practitioners, mostly integrative practitioners or alternative practitioners, that take some elderly people, if they give them a better diet, give them exercise, sociability, you can get them off——

Dr. ORNISH. We have proven that. We have published it in peer-reviewed journals. In almost every case, we can reduce or get people off of most of these pills if they change the cause of what caused it in the first place.

Then it empowers them. Instead of three or four times a day they are reminded they are sick, they get off. Instead of saying these are blood pressure pills, cholesterol-lowering drugs, diabetes medica-

tions you have to take the rest of your life. The diabetes study published in the New England Journal a few years ago showed that lifestyle changes not only work as well as Metformin, one of the major drugs, but even better. The only side effects are good ones.

Dr. HYMAN. Yes, I am agnostic when it comes to the tool. I think we need to use the best tool, and most often, the best tool is diet and lifestyle therapies to not just prevent disease, but actually to treat it and reverse it.

Senator HARKIN. I guess I am thinking of getting all these targets and just keeping at it. Keeping at all these targets that we do every year, and then maybe that they will start to add up and people will start doing things differently.

That is sort of one way of looking at it rather than just thinking, well, we are just going to do this whole great big thing all at one time. I ask you to think about that. As we do these bills and things that come up, how do we keep focusing on health?

Senator MIKULSKI. Well, Senator Harkin, I think we were talking about that. I think you might have been out of the room. In the sense of let us go to the—which means even among ourselves is the culture of wellness and health promotion, and that every opportunity should be an opportunity.

For example, you are going to be doing the child nutrition bill. What a great opportunity for health promotion.

Dr. ORNISH. Yes.

Senator MIKULSKI. We are going to be doing the national service bill, which would be a great way to begin to incorporate this, including even into what will be a "green corps" because that goes to agriculture. It goes to the HealthCorps. It goes to lessons learned and service learning and so on.

If we could have essentially even among ourselves this consciousness because that is what a cultural change is, consciousness——

Dr. ORNISH. Yes, brilliant.

Senator MIKULSKI [continuing]. That whatever we have before us, how can we bring this thinking into that action? For national service, it would be how do we harvest that effect that young people want to participate? They are the ones that are going to be edgy and communicate with that.

The work that you will be doing in agriculture—it is really determinative—would be one of the opportunities. We could look at what is before the committee while we are also working on healthcare.

The other is, maybe we ought to go back and take a fresh look at what we have done in SCHIP and see how taking both what we are funding for health insurance, but also thinking about our public schools and—really, the wonderful work I think that Arne Duncan can promote.

We pass a bill, and what we have essentially done is provide access for children to physicians, an important thing. It is an important first step. But, if that is the only step, maybe we need to look at SCHIP and how we could do a medical home for children?

As Dean Ornish and everyone in this room said, people will climb mountains barefoot over glass for their children.

Dr. ORNISH. That is right.

Senator MIKULSKI. And so, that would be to look to the children, for they will be your best teachers.

Dr. ORNISH. Absolutely.

Senator MIKULSKI. I think that is what the culture is. And we can be the cultural leaders here. You could be a cultural icon.

Senator HARKIN. I have never thought about being an icon.

[Laughter.]

Dr. ORNISH. It is a serious problem.

Senator HARKIN. I am from Iowa.

[Laughter.]

Dr. ORNISH. What about the farm subsidies? As you have talked about so eloquently so many times, instead of subsidizing junk food and fat, salt, and sugar, to subsidize healthy food? You know, make that available.

Senator MIKULSKI. Aw, that salt and sugar.

Senator HARKIN. That is right. That is right.

Dr. OZ. Can I offer one radical thought? Just because I know when we grew our program——

Senator MIKULSKI. As compared to everything else you have said today?

[Laughter.]

Dr. OZ. Yet another radical thought.

Dr. HYMAN. What we are now talking is really common sense.

Dr. OZ. I know when we started the integrative medicine program at Columbia, we ran into a lot of resistance because many of my colleagues who were trained with typical test tube approaches to this experience were resistant to it because it was so difficult to prove it in a double-blind randomized fashion.

We actually changed the culture primarily by making it experiential. How many people do the deep breathing and laughter therapy? To get functional medicine analysis, to understand in a whole different way what lifestyle change could be. That it is actually something that you would crave because it is about vitality.

I don't do day-to-day—I do heart surgery. I don't do functional medicine and behavior modification. There are people on this panel who do. I think it might be worth having members of the Senate, House of Representatives, key decision leaders experience some of this, perhaps through some of these individuals or others that we could help recommend. I know this is a commentary that might not be received well by all, but it would be done altruistically.

If someone has a health problem, instead of going to an off-tackle approach of, let us say it is cancer, chemotherapy, surgery, and then radiation, and then we do it again. Maybe they experience it through one of these paths, and then you have more advocates like yourselves because they have been down the path.

Dr. ORNISH. Well, 15 years ago, we actually did a day-long retreat for Members of Congress, and it was cosponsored by Dan Burton and Charlie Rangel, which is about—in fact, they joked that this was the only thing they ever agreed on.

You are absolutely right. It is a brilliant idea because if people get the experience of it, then they understand it. It is not just a "yes, but." They really understand it from their own experience.

Senator HARKIN. Mm-hmm.

Dr. ORNISH. I think that would be a really good idea.

Dr. HYMAN. It works quickly. It doesn't take long.

Senator HARKIN. Yes.

Dr. HYMAN. I would just add two things. I think there are two areas of leverage that you have already in the stimulus package, which is the comparative research for effectiveness and the EMR.

I think just two points about that.

Senator MIKULSKI. That is the electronic medical record.

Dr. HYMAN. Right. No. 1, what are we comparing things to? Compare drug-to-drug, procedure-to-procedure? Or are we comparing the current medical practice with the best available things that we are talking about?

Senator HARKIN. You are right on. See, I believe, and we already tried to put that comparative effectiveness, and believe me, they wanted to yank all that out, and what has this got to do with stimulus and stuff like that.

I share your fear that it is going to be comparative analysis between this treatment and the other allopathic——

Dr. HYMAN. Within the old model.

Senator HARKIN. Right. In the old model. That is right.

Dr. HYMAN. The second thing is I am very fearful about using electronic medical records to replicate a 19th century medical practice model. We need to make it match current thinking in systems medicine and integrative care. If we don't, we are going to be missing an enormous opportunity. It is wasting billions of dollars. That is a huge fear of mine.

I think the solutions are there. There are people like Kaiser who have done these kinds of things. There are other people like Google looking at this and HealthVault. I think we need to really seriously look at this because if we simply replicate this, it is a problem.

Dr. Ralph Snyderman has written a lot about this. He is the chairman emeritus of Duke Health, and he has written about the prospective care in terms of a medical record and changing our medical record that was designed in the early 19th century and 20th century to 25th century needs of science and medicine.

Senator MIKULSKI. Much of this has to be done in the community, and you asked what you could do. I think, first of all, promote the concepts of public health and not only as an agency, but really what public health is. That is food, air, and so on.

We can do all this, but if those little children in Washington, DC or anywhere, like even in parts of my own hometown of Baltimore, if children are living in housing saturated with lead paint, breathing deeply is the worst thing you want them to do. Or drinking water that has got lead in it.

One is really the promotion of public health and having strong leadership at that. Then the other is the concept of living in a community.

Dean Ornish, I think that is where you have talked about it, with the "Healing Heart."

Dr. ORNISH. Yes.

Senator MIKULSKI. Dr. Oz and everyone here, the HealthCorps, because all of that is really in the community. You do not live alone.

Dr. ORNISH. Absolutely. Study after study have shown that people who don't feel that sense of community are many times more likely to get sick and die prematurely, in part because you are more likely to abuse yourself, in part through direct mechanisms.

The other thing you might consider is bringing together some of the heads of the big food companies. I have been consulting with people there, and they get it. They are starting to get it.

They are in the behavioral modification business, too. As you have pointed out, they can do it in negative ways. They know better than anybody how to make something fun and sexy and hip and cool and crunchy and convenient.

If they can use all that advertising and celebrities and marketing to make healthy food fun and convenient, to get away from this idea of, is it fun for me or is it good for me to say why can't it be both? To market to kids healthy types of foods and healthy lifestyles, I think there is a willingness now to do that because that is where they are finding their revenue growth.

Two-thirds of the revenue growth of Pepsico last year came from their healthier foods. Then it is really sustainable when it is good business, and I think there is a tipping point here that we can build on.

Senator MIKULSKI. We also have got some class issues here. If our water has lead in it, I can go buy water. But that single mother can't.

Dr. ORNISH. Right. I totally agree.

Senator MIKULSKI. I think when we talk about software and hardware, the fact is, a lot of families don't have computers in their home.

Dr. ORNISH. That is true.

Senator MIKULSKI. Then how are they going to do that? We also have to make sure that whatever we do is available for all Americans.

Dr. ORNISH. Everyone. Totally agree.

Senator MIKULSKI. That is why we are looking at things that are public institutions and what we can do. I am thinking, first of all, like public schools would be an area. First of all, it is community and so on.

Senator Boxer chairs the Environment and Public Works Committee. She is part of the healthcare team.

Dr. ORNISH. That is right.

Senator MIKULSKI. Senator Harkin chairs the Agricultural Committee. He is part of the health team. I mean not only excellent work here on this committee and Labor/HHS. We could go through what each and every one of us do.

I think that is what we need to do, think about how we are all part of the healthcare team. We cannot also create something new that changes the paradigm that only changes it for the upper middle class.

Dr. ORNISH. I totally agree. The lifestyle choices that we found that could prevent and reverse disease, it is essentially a Third World diet. You know, it is fruits, vegetables, whole grains, legumes, soy products. It is only because of these perverse incentives that it is cheaper to eat junk food than eat healthy food.

This food inherently is not expensive. Walking doesn't require any special equipment. Doing yoga and meditation doesn't require any special equipment. Quitting smoking saves you money.

These are things that we have found in our studies—that this idea is just for a bunch of rich white people, is not at all true. The

people in our studies, in our hospitals that we have trained that often benefited the most are the ones who have the least access. Ninety-two percent of bypass surgery last year was done on white upper middle class men.

Of course, heart disease is declining in that group. It is rising in women, minorities, and lower socioeconomic groups who are the ones who can benefit most from these kinds of approaches because they don't require high-tech, expensive drugs and surgery. They are things that people can do essentially for free.

Dr. WEIL. If you want to come back to talking about changing these subsidies, as you know, Senator Harkin, it was not until last year in all the history of the Farm bill that any effort was made to have input from the healthcare community about the health consequences of those subsidies.

To me, that, again, comes back to the lack of education, that we have a nutritionally illiterate medical profession and allied health professionals. If they understood the relationship between diet and health, they could weigh in as a powerful counterweight to the vested interests that now determine how that money flows.

Senator HARKIN. Well, I will tell you that I labored long and hard on this, and the 2001 Farm bill, I was privileged to be chairman for a brief span of time there, thanks to Senator Jim Jeffords. You may remember he came over and joined us, and we had a one-vote margin then. I was chairman during that Farm bill debate on this side.

That is when I started this program of the free fruits and vegetables in schools. Small. It started with $5 million. In this Farm bill, I got my chairmanship back again last year, and we boosted it from $5 million to $1 billion. We got $1 billion in this last Farm bill for free fruits, fresh fruits and vegetables to kids in schools.

Now that is going to ramp up. That is once it ramps up. Within 5 years, we will cover about 90 percent or more of all of the kids in free and reduced price schools, low-income areas.

The second thing we did in this Farm bill is the first time ever—in this last Farm bill, we put fruits and vegetables in, especially crops in the Farm bill. Never been in the Farm bill before.

There is one other hurdle we have in this. I don't know, I shouldn't go off like this—but in the child nutrition bill. You know, in the school lunch program, there is a prohibition against buying local foods.

[Laughter.]

It is very true. I know it sounds ridiculous, but it is.

Dr. HYMAN. Many of the kitchens don't have anything but fryers and microwaves. How can they cook real food?

Senator HARKIN. They have got to get big packaged foods that are processed and all that kind of stuff.

Dr. ORNISH. Senator, can you share with everyone the story that you told me about when you put the fruits and vegetables in school how the kids reacted to it?

Senator HARKIN. It was incredible, Dean. First of all, I have got to tell you a funny story when I first started on this. I had a hearing and I remember because I wanted it not in the lunchroom, but in the classroom. When kids get the growlies, when they get hun-

gry, they go get a fresh piece of fruit or a vegetable or something like that.

I remember I had testimony from the head of the principals association, who sat at the table and was talking about this. This is my interpretation of what he said, OK—"Harkin, you are crazy."

[Laughter.]

Don't you understand? These kids will be throwing apple cores at each other and banana peels, and we will have a mess in the classroom. If you are going to do anything like this, you have got to do it in the lunchroom.

Well, I said, "Look, it is all voluntary. Any school that wants to join, can join. If they want to drop out the next day, they can drop out the next day. So we started it. We picked 100 schools, 25 schools in each of four States and one Indian reservation.

Most of them came in in 2003. I can tell you, as of last year, not one of those schools asked to drop out, not one. I went and visited some of these schools in Ohio and Michigan. Iowa was one of those—strange. Anyway, the kids were incredible.

If kids have to put money in the vending machine, it will buy something sweet or sugary or a soda or something. If they get something free, that is something else. They were getting these free fruits and vegetables. I saw these kids eating kiwi fruit, never had kiwi fruit. Very high in vitamin C.

They were eating—I actually saw with my own eyes third grade kids eating fresh spinach. They were getting these little packages of spinach, and they liked it. Now they might have gotten a little dip with it. OK, fine. They got a little something with it. Eating carrots and broccoli, eating fresh stuff in these schools. These little kids, third, fourth, and fifth grade.

I remember I visited a school once in Michigan, low-income area in Detroit, and fifth grade kids in Detroit. They were having fresh oranges. Oranges. They had some device how to peel it, too. Anyway, the teacher said that some of these kids have never had a fresh orange in their lives. Fifth grade kids have never had a fresh orange.

They don't get fresh apples. When they come in, they are gone. They are just gone. One school I remember that they got the strawberries in before the school was out for the summer. The first crop of strawberries came in, and by 10 a.m., there wasn't a strawberry left in the school.

Dr. ORNISH. You know they get their taste preferences when they are young, too.

Senator MIKULSKI. Well, could I talk about taste preferences? I have a question because I think this story is so poignant and so to the point.

Dr. ORNISH. Absolutely.

Senator MIKULSKI. It is a question that I have had for some time which is about the introduction of fructose. Because it is not only what you eat, what you know, and what you see, but it is what you don't see. Because one of the things you learn in any kind of genuine and authentic nutrition counseling program is that which is hidden from you, hidden fats and hidden sugars. And you read labels.

Everywhere I turn, when I read the labels, I see fructose, fructose, fructose. There are some who really raise the question about the metabolic impact of fructose and also just the overall impact, particularly on children in their foods, etc, etc. Could you share with us——

Dr. HYMAN. Yes.

Senator MIKULSKI. Even there have been some who said when fructose was introduced so mainstream, that is when type 2 diabetes went up, particularly among children.

Dr. HYMAN. That is right. In 1980 was really when it found widespread introduction, and now we have gone from almost none to 66 pounds of high-fructose corn syrup consumed by the average American.

Senator MIKULSKI. Is that every year?

Dr. HYMAN. That is every year. That has been associated temporally, maybe not causally, with the increase in diabetes and obesity in children. What is concerning about it also is that it has different metabolic effects.

Now when fructose is part of fruit, it is different. It is with fiber, nutrients, and other things that slow its metabolism and so forth. Fructose doesn't have the same regulatory capacities as sugar, regular glucose, because it doesn't need insulin to enter the cells. It doesn't send back signals of leptin to the brain to say you are satisfied. So you remain hungry.

It increases triglycerides in cells that causes fatty liver. There are 70 million Americans with fatty liver from eating sugar and high-fructose corn syrup in this country now. It is an epidemic, which I didn't see when I was in training just 20 years ago.

We also have found recently in the environmental health perspectives that part of the processing of high-fructose corn syrup, and Michael Pollan wrote about this, he wasn't allowed by Archer Daniels Midland to go into the factories to see how it was processed. I think this may be why. This was through an FDA study. They looked at the way they process high-fructose corn syrup, and they use caustic soda, which comes from chlor-alkali plants, which are sources of mercury.

They found in many high-fructose corn syrup products relatively high levels of mercury, and in the small amounts, it may not be an issue. When you sort of say the average person has 66 pounds a year, what are the implications of that? That was just published a few weeks ago.

We also look at these foods and their impact on the brain. Dr. Kelly Brownell from Yale University has done work looking at the role of junk food and processed foods on brain function and found that there are the same addictive properties to these foods with high-fructose corn syrup, trans fats, and high sugars and fats as heroin or cocaine. The addictive property is huge.

Studies have been done on rats showing that artificial sweeteners actually slow metabolism and increase weight. Studies have shown on high-fructose corn syrup that these foods actually drive behavior that leads to eating more.

These are really important things to understand and deal with.

Dr. WEIL. The overwhelming concern about high-fructose corn syrup is, it is not mercury contamination, it is not addiction. It is,

it will be proved to be the single most potent provoker of insulin resistance in people who are genetically programmed to develop that, which is a substantial number of our population.

I would say there are two chief culprits in the American diet at the moment. One is high-fructose corn syrup. The other is refined soybean oil, which is the major reason why our diets are so overloaded with pro-inflammatory Omega-6 fatty acids that creates huge consequences for chronic disease.

Both of these products, both of these ingredients are ubiquitous in manufactured, refined, and processed food because they are cheap. They are cheap because the Federal Government subsidizes them. That has to change.

The issue of insulin resistance and the role of high-fructose corn syrup in that, I think this will be proved to be a chief culprit in the childhood obesity epidemic and in all of the health consequences that follow from childhood obesity.

Dr. ORNISH. When parents hear the statistics, I am sure you have heard repeated that this may be the first generation which our kids live shorter lives than some of their parents. That really gets people's attention, and there is an opportunity. Then they start to listen, as you were saying, Senator.

Senator Harkin, I just want to emphasize again, the story you told about getting fresh fruits and vegetables and giving them away to kids—think of it as an investment because you are not saying "Eat your fruits and vegetables" and wagging your finger. You are saying, "Hey, this is really fun. This is cool. It tastes good."

You don't have to tell them to eat the food. They love it. There is none left. Then they get it from their own experience because what I have learned in 32 years of doing this work is what is sustainable is pleasure and fun.

If it tastes good and people start to learn that these foods taste good, they start to eat that way, and then they continue to eat that way throughout their life. It is not because they think it is good for them because it just tastes good.

Senator HARKIN. The one thing, though—now that we have all looked at high-fructose corn syrup, refined soybean oil—would you address yourself to the huge amounts of sodium chloride, NaCL, that is put into all of our foods everywhere you go. I mean the sodium is just——

Dr. HYMAN. That is the way it tastes good, salt and sugar. That is the way it makes it taste good, sugar and salt and fat.

Senator HARKIN. I didn't hear that.

Dr. HYMAN. The way things taste good is salt, sugar, and fat.

Dr. ORNISH. They are modifiable. Studies have shown anybody who has ever tried to eat less salt, at first it doesn't taste good. Then it may taste fine. You go out to dinner. Suddenly, the food tastes too salty. The same is true if you switch from whole milk to low-fat or skim milk. At first, it doesn't taste good. Then it tastes fine. You go out to dinner. Suddenly, the taste——

Dr. WEIL. The bottom line nutritional advice that I give people, if I have just one sentence to tell them what to do, is to try to stop eating refined, processed, and manufactured food. It is, however, discouraging to see how popular that kind of food is wherever it gets put down in the world.

I know there was mention made here of Okinawa and longevity studies there. I made three trips to Okinawa to study healthy aging in the past 10 years, and in the short time that I made those visits, Okinawan longevity began to plummet. Okinawan men and women were the longest-lived people in the world. Okinawan men no longer are.

That change principally happened because of the introduction of American-type fast food, which instantly became popular. The New York Times had a front-page article about that a few years ago. I remember a quote in there from a middle-aged Okinawan man who said the first time he tasted a McDonald's hamburger, he thought he had died and gone to heaven.

I mean, how could that be? These people have one of the most interesting diets I have ever encountered in the world. I mean, filled with the most amazing fruits and vegetables and sea vegetables and fish and herbs. You see this everywhere, whether it is Russia, China, South America. Whenever this kind of food becomes available, people go for it.

It suggests to me that these big food corporations have invested a lot of time, money, and effort in figuring out basic combinations of fat, salt, sugar, crunch that are universally appealing. I think this food is addictive.

Dr. ORNISH. Yes, we are globalizing chronic disease. Other countries are starting to eat like us and live like us and die like us. It has all happened within one generation. There is an opportunity to do preventive medicine on a global scale if we can change that.

Dr. HYMAN. I think what is not recognized is that insulin resistance affects over 100 million Americans, and it is not just about obesity. It leads to hypertension. It causes cancer. Alzheimer's is called "type 3 diabetes." It is connected to depression, which is going to be the leading cause of disability very soon in this country.

These are problems that are directly related to our diet, and they are not going to be solved by finding the pill or magic cure for it.

Dr. ORNISH. When you figure the cost of what it costs to give free fruits and vegetables to kids, counterbalance that by what you are saving from all these costs that are directly tied to that, both directly and indirectly.

Dr. HYMAN. We are not passionate about this at all, you can see. [Laughter.]

Dr. ORNISH. We are so grateful to be here.

Senator HARKIN. Speaking for myself, I am just so grateful to all of you. I don't mean to be pandering or anything like that, but you are all my heroes. You really are, every single one.

Dr. ORNISH. Back at you.

Senator HARKIN. You have led the way. I read your books. I think, my God, why don't people get this? Why don't we start changing these structures and things like that?

We keep trying to do what we can and try to change these things. We really need you. I mean we need you badly to really be involved in this new healthcare reform process, looking at all the different aspects of it.

I don't know how. That is why I asked you earlier how we could use you and the platforms you have and the expertise you have,

the knowledge base you have to really start getting this thing moved.

I don't think that we can change it overnight. But by gosh, we can make some changes that over the next several years will really start moving us in a different direction.

Again, thank you for all the great work you have done. I just can't tell you how much I appreciate each and every one of you.

WITNESSES. Thank you, Senator Harkin and Senator Mikulski.

[Applause.]

Senator HARKIN. Thank you very, very much.

[Additional material follows.]

ADDITIONAL MATERIAL

STATEMENT OF SENATOR KENNEDY

The American health care system urgently needs repair and reform. Today as a Nation, we spend 16 percent of our gross domestic product on health care, more per capita than any other country in the world. Yet health outcomes of Americans are ranked 37th in the world by the World Health Organization. Our system is often called a "sick care" system, not a health care system, because it is designed to treat diseases and illnesses, instead of promoting good health and wellness over the lifespans of our people.

Genuine health reform therefore requires a major transformation in our national mindset on how we care for ourselves and others. It must incorporate and encourage disease prevention activities and lifestyle changes that promote long-term health and well-being. The current incentives in our health care system that lead to overtreatment and mistreatment must be changed to promote high-quality, appropriate, and coordinated health care. The Nation's alarmingly high and growing rates of obesity and chronic disease today are a clear call to action. By preventing diseases before they start and adopting a broader approach to medicine, we will actually reduce costs in the long run, and we will extend and improve the quality of life as we do it.

To achieve this fundamental shift in our Nation's health care mindset, it will be necessary to reform how medicine is practiced. Low-cost or even free health screenings and vaccinations will encourage individuals to take part in preventive medicine. Patient-centered and coordinated care that addresses the whole person—from genetic predispositions, to life-style choices to potentially harmful conditions—is essential for treating acute diseases and managing chronic conditions. We must also adopt a more integrated approach to medicine, through health care that addresses the mental, emotional, and physical aspects of the healing process in order to improve the depth, breadth, and patient choice in clinical practice.

Further, we must incorporate prevention, wellness, and more patient-centered approaches as fundamental components of medical education and the training of health providers. In order to reach the patient effectively, integrative practices must be accepted throughout our health care system, and especially in the education of health care providers and the consumers who will benefit.

Finally, we can look beyond the traditional health care system to the community itself—to local environments, where we can build sidewalks and bike lanes; to workplaces, where wellness programs can help employees include healthy nutrition and exercise in their lives; and to schools, where we can provide preventive screenings and lay a strong foundation for students to lead healthy lifestyles from an early age.

Americans deserve a health care system that provides this kind of high-quality, patient-centered care, and encourages individuals' choices and control over their health. The result, as I have said, of this new focus on prevention and health promotion will be lower health care costs and longer, healthier lives.

I commend Senators Harkin and Mikulski for their continuing leadership on this important issue, and I look forward to working closely with my colleagues on the HELP and Finance Committees and with President Obama to achieve our fundamental goal of improving the quality of health care, expanding access to such care for all our people, and reducing the financial burden of such care.

[Whereupon, at 12:30 p.m., the hearing was adjourned.]

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