

**CANCER CARE FOR THE NEW MILLENNIUM—
INTEGRATIVE ONCOLOGY**

HEARINGS

BEFORE THE

**COMMITTEE ON
GOVERNMENT REFORM**

HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTH CONGRESS

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CANCER CARE FOR THE NEW MILLENNIUM— INTEGRATIVE ONCOLOGY

WEDNESDAY, JUNE 7, 2000

HOUSE OF REPRESENTATIVES,
COMMITTEE ON GOVERNMENT REFORM,
Washington, DC.

The committee met, pursuant to notice, at 1:10 p.m., in room 2154, Rayburn House Office Building, Hon. Dan Burton (chairman of the committee) presiding.

Present: Representatives Burton, Morella, Ros-Lehtinen, Horn, LaTourette, Walden, Norton, Cummings, and Schakowsky.

Staff present: Kevin Binger, staff director; David A. Kass, deputy counsel and parliamentarian; Mark Corallo, director of communications; S. Elizabeth Clay and Nicole Petrosino, professional staff members; Lisa Smith Arafune, chief clerk; Robert A. Briggs, assistant clerk; Robin Butler, office manager; Michael Canty and Toni Lightle, legislative assistants; Josie Duckett, deputy communications director; John Sare, staff assistant; Phil Schiliro, minority staff director; Phil Barnett, minority chief counsel; Sarah Despres, minority counsel; Ellen Rayner, minority chief clerk; and Jean Gosa and Earley Green, minority assistant clerks.

Mr. BURTON. Good afternoon. A quorum being present, the Committee on Government Reform will come to order.

The ranking Democrat, Mr. Waxman, is on his way. He said he would be a little bit late. We thought we would go ahead and get started.

I ask unanimous consent that all Members' and witnesses' written opening statements be included in the record.

Without objection, so ordered.

I ask unanimous consent that all articles, exhibits and extraneous and tabular material referred to be included in the record.

Without objection, so ordered.

Today, the Committee on Government Reform begins the first of 2 days of cancer hearings. During the 2 days of our hearings, over 3,200 lives will be lost to cancer and 6,575 individuals will be told that they have cancer. This hearing will address four issues.

Pediatric cancers and the challenges parents face in making treatment decisions, racial disparity in cancer treatments, reimbursement issues related to complementary therapies in an oncology setting, and anti-tumor drug development from natural products.

Probably the only thing more difficult than personally being diagnosed with cancer is the diagnosis of cancer for your child. A recent New England Journal of Medicine article stated that one out of

four children diagnosed with cancer will die from the disease—one out of four. Unfortunately, many of them will die without a referral to a hospice and with poor pain management. The referral to a hospice can reduce the pain and fear of children who are terminally ill.

In 1999, it was estimated that 7,800 children in the United States would be diagnosed with cancer. Forty-two families in United States will be told their child has cancer during the 2 days of our hearings. They will have to make care and treatment decisions based on what their physicians and oncologists tell them and what they can learn on their own from their family and friends and on the Internet. Fortunately, the recent addition of the Clinical Trials data base on the National Institutes of Health's Web site makes it easier for families to learn about clinical trials.

Today, my colleague and friend, Congresswoman Deborah Pryce, will share with us her experience about losing a child to neuroblastoma this past fall. Neuroblastoma is a rare nerve cancer that strikes 500 children in this country each year.

Michael and Raphaela Horwin lost their only child, 2-year-old Alexander—that is a picture of him up there—to medulloblastoma last year. Medulloblastoma is a brain cancer. They have done an excellent job of putting together a chronology of quotes drawn from peer-reviewed medical journal articles on cancer research. The statements show that, as parents, they were justified in their concern about the effects of the drugs offered as “state-of-the-art.”

We will also hear from James Navarro, the father of Thomas. Last summer, when Thomas was barely 4 years old, he was diagnosed with medulloblastoma. That is a picture of him. After researching their options, the family decided that the best course of action for Thomas was a non-toxic treatment available through a Food and Drug Administration-approved clinical trial. Unfortunately, the Food and Drug Administration denied Thomas access to this clinical trial because he had not first gone through and failed chemotherapy and radiation.

Many of you may recall a hearing 2 years ago when Dustin Kunnari—that is a picture of Dustin—testified. Dustin, who was the last child that the Food and Drug Administration allowed to receive this treatment as a first choice, is healthy and without having suffered the life-altering side effects of chemotherapy and radiation. He is not alone in surviving cancer through the use of antineoplastons and not suffering the irreversible side effects of other more toxic treatments. You might take a look at him and his family.

I think we have some other slides. These are children that survived.

Thomas' story struck a chord with many Americans who feel strongly that the decision to access another treatment protocol outside the “standard” cancer protocols of chemotherapy and radiation should be the patient's choice and not the decision of a government agency. In fact, I have introduced, and many of my colleagues have cosponsored, H.R. 3677, the Thomas Navarro Patient's Rights Act as a remedy for this situation.

This bill would assure that patients would have the option to make an informed decision to participate in clinical trials after

being fully informed of all of their options, rather than being forced to accept a treatment with known toxic side effects.

Unfortunately, right now, the FDA can put a clinical trial on hold for a treatment that is safe and has no serious side effects because the FDA is satisfied with existing treatments, even treatments that can cause serious adverse events including sterility, stunted growth, hormone disorders, blindness, hearing loss, mental retardation and secondary cancers.

H.R. 3677 is a first step in assuring medical freedom in the United States.

There is something inherently wrong with a system when doctors threaten to have a child with cancer taken away from parents and put in State custody when they refuse to subject their child to chemotherapy as a means of forcing treatment. How can it be that in the United States of America a doctor can and will have the State's Child Protective Services take a child with cancer away from his or her parents, with charges of child neglect and abuse, when those parents love their child enough to question administering drugs that can do severe and irreparable harm? These children are then placed in foster care so that the child can be subjected to chemotherapy and radiation. This is exactly how the Navarros and other families have been threatened by government agencies.

These threatening tactics by the medical profession on families must stop, and they must stop now.

In his State of the Union address on January 22, 1971, President Richard Nixon declared a war on cancer. The thought was that if we took the same approach with curing cancer as we did with putting a man on the moon, pouring lots of funding into the issue, then we could beat cancer. In 1984, the National Cancer Institute's director predicted that cancer deaths would be reduced 50 percent by the year 2000. There is a slide showing what the actual situation is.

The American taxpayer has invested over \$43 billion in the National Cancer Institute, the primary government cancer research agency, during the past 29 years. What has that taxpayer investment accomplished? Dr. Robert Wittes will be updating the committee on the activities of the National Cancer Institute, focusing on the areas of complementary and alternative medicine and natural product drug development.

Dr. Steven Straus, the new Director of the National Center for Complementary and Alternative Medicine, is appearing before the committee for the first time. Surveys indicate that the majority of cancer patients will use some form of a complementary or alternative medicine treatment during the course of their disease, some will integrate complementary therapies with conventional approaches, and others will choose a treatment as an alternative to conventional medicine. What has the Center accomplished to date and what are the Center's research plans for the future?

Earlier this year, Dr. Straus announced his intentions to develop a frontier sciences research program. Frontier sciences can be defined as areas of science and medicine outside the mainstream, including consciousness studies, subtle energies in biology, the scientific basis of alternative and complementary medicine, and the interface of science and spirituality. Research in this area of

science will offer significant advances in how we treat and prevent cancer in this new millennium. At some point in the future, we will have a hearing looking specifically at this field.

We have asked Dr. Jeffrey Kang of the Health Care Financing Administration to outline the current and planned activities in reimbursement of complementary and alternative therapies for cancer patients under Medicare.

Dr. Robert Pazdur will present testimony about clinical trials in alternative cancer treatments on behalf of the Food and Drug Administration. He has been asked to provide information about the number and types of calls received regarding these types of clinical trials. We have received complaints from families who, when calling the FDA to gain information about possible inclusion in the antineoplaston clinical trials, were offered negative information about Dr. Burzynski's clinical trials. These individuals felt that the FDA staff was attempting to dissuade patient participation.

We will also hear from Dr. Jeremy Geffen, who we asked to return and specifically address reimbursement challenges from the perspective of an oncologist in private practice who integrates complementary therapies in his treatment.

Mr. Roger Cary, the chief operating officer of Cancer Treatment Centers of America, has learned that patients fare better when allowed to select an integrated treatment approach, including therapeutic nutrition, spiritual care, exercise and massage therapy programs, and naturopathic medicine. Unfortunately, as long as most complementary therapies are not reimbursed, the best approach to treating cancer, an integrated approach, remains available only to those who have the means to pay out of pocket. The poor people just do not have a chance to be involved in that.

Dr. George Devries, president and chief executive officer of American Specialty Health Plans, will share with us how 25 million Americans have been able to access companies' complementary and alternative therapies through complementary and alternative benefits programs, network programs and discount network programs, have been beneficial.

The challenges of cancer are immense and complex and at times very emotional. Anybody who has had anybody in their family that has had cancer knows what I am talking about. Last year, within a 2-year span, I lost both of my parents to lung cancer. My wife is a 6-year survivor of breast cancer, in large part, I believe, due to her participation in a clinical trial to test an alternative cancer protocol. As a committee and a Congress, we must remain vigilant in our oversight of the war on cancer and look for ways to improve research, access and care.

The hearing record will remain open until June 21 for those who would like to submit a statement for the hearing record.

Mr. Waxman is not year here. Ms. Schakowsky, would you like to make an opening statement in place of Mr. Waxman?

Ms. SCHAKOWSKY. Not speaking on behalf of Mr. Waxman, but if I could just say a few words, Mr. Chairman.

There was a fascinating story in yesterday's Wall Street Journal about a treatment for a kind of leukemia and clinical trials that were being used in a limited way. This information got out over the Internet where patients now are engaging much more in their own

research and their own discovery of alternatives. Suddenly, there was this vast number of people who wanted to participate in this clinical trial which presents new opportunities but also a lot of new challenges. The manufacturer, how are they going to produce in quantity, what is the role of government in regulating that?

On the other hand, I completely understand why, as a cancer victim or a family member, I would certainly want this option available.

So I think your legislation and this discussion and this hearing about what is the balance of protecting health and safety and making sure that life-saving options are available to people and that we are not interfering with that in an unreasonable way is most important. So I want to thank you, Mr. Chairman, and the witnesses today for this important hearing.

Mr. BURTON. Thank you.

Do any other Members have statements they would like to make at the beginning here?

If not, I would like to welcome our dear friend and colleague, Congresswoman Deborah Pryce, one of the leaders here in Congress, to come forth and testify. We welcome you. This is the second time I have seen you today, with our good friend Dave Thomas, and I am glad to have you. You are recognized to make an opening statement.

**STATEMENT OF HON. DEBORAH PRYCE, A REPRESENTATIVE
IN CONGRESS FROM THE STATE OF OHIO**

Ms. PRYCE. Thank you, Mr. Chairman. My statement is somewhat lengthy, and I will do my very best to cut it down and stay within the committee's timeframe.

Mr. Chairman, we have been together twice today, once to celebrate the unveiling of the adoption stamp, which we both worked very hard on, and now to talk about cancer.

Adoption and cancer. Those are two issues that have profoundly touched my life, one in a very happy and joyous way and the other in the most heartbreaking. As many of you know, my family recently waged a battle against cancer that eventually claimed the life of my adopted daughter Caroline. Today, I would like to share with you my own experience navigating our health care system in an effort to provide Caroline with the best care possible.

After three trips to the pediatrician's office to determine the cause of pain in her left leg, Caroline was finally diagnosed with cancer in September 1998. I cannot begin to describe the horror and confusion that a parent faces. Unfortunately, the initial diagnosis of the cancer was incorrect. But, based on this misdiagnosis, we brought Caroline to the National Institutes of Health, where there was a study under way focused on Ewing's sarcoma, which we were told was the disease with which she suffered.

After a couple of weeks of testing at NIH, the doctors began to doubt Caroline's diagnosis. We then learned an even worse fate was in store for us. Caroline had neuroblastoma, a very rare nerve cancer with a survival rate of less than 20 percent of children like Caroline.

Once again we had to start over and make decisions about where to seek treatment, what treatment, who to believe and who to

trust. NIH provided a list of neuroblastoma programs across the country, but the doctors were reluctant to make a decision, and everybody had their own way of treating it, and we had to decide which was the best course.

After much research, phone calls and networking, we seized on what we thought was our best opportunity at Memorial Sloan Kettering in New York City. Caroline bravely endured months of chemotherapy, radiation, surgery, and even a brief clinical remission before the cancer claimed her life.

So, in my view, there are a number of improvements that need to be made in the manner in which our current health care system treats pediatric cancer.

First of all, I believe that pediatricians and parents need a wake-up call. Cancer strikes over 10,000 children in this country every year. It is the leading cause of death by disease in children. It is the leading cause of death by disease in children. Parents have to be aware of this fact, and pediatricians should be trained to look for even the most subtle signs of cancer and improve screening of children for the disease.

Children are much more likely to have their symptoms dismissed. We were told at first it was shin splints, and then we were told that it was growing pains. They are much more likely to have their symptoms dismissed, and that delays treatment, and it certainly delays diagnosis. In children, this is especially detrimental, because pediatric cancers spread rapidly. Pediatricians must resist tendencies to offer a perfunctory examination of children with seemingly innocuous symptoms and just dismiss them. A simple x ray or blood test would only add a small cost to our health care system and could have the invaluable benefits of timely and successful treatment.

Of course, once cancer is diagnosed, it is crucial that the type of cancer be correctly identified so the appropriate course of treatment may be initiated as soon as possible. Through my interactions with other parents, I have discovered we were not alone in our misdiagnosis. In fact, Memorial Sloan Kettering confirmed that misdiagnoses of small round cell tumors at an atypical age is not uncommon and perhaps is as high as 20 percent.

Now, I know that this committee is looking at alternative and complementary therapies, so let me just address that very briefly. In our own experience, these therapies were not overtly presented at all. Chairman Burton, I think you were the only person in the whole course of our treatment to even suggest we look into it, and I appreciate that. But we did not seek them out. We had our hands and heads full enough just wading through the many options that traditional therapies offered. However, therapies such as exposure to music and art and play, medical play especially, and other distractions to keep the patients focused on something other than treatment and/or pain were available through the institutions where Caroline was treated, and I view them as very positive influences in her care.

Beyond treatment decisions, knowledge is crucial to parents, because they are the ones who must be the advocates for their children in the cancer system.

In the judicial system, which I am more familiar with, we are making more and better use of court-appointed special advocates [CASAs], to help coordinate and protect the interests of children. There is no such animal in the health care system. If we had not made it our business to know and understand every step of every procedure, many irreversible mistakes would have been made, I believe, some of which were as serious as having the wrong kind of catheter inserted into our daughter surgically, to as minor but every bit as significant to a little child as having a nurse have to stop placing an IV that wasn't necessary, because she could have drawn blood from the catheter. Every step of the way you have to be vigilant.

Unfortunately, palliative care is also a very real part of cancer treatment that has, to a certain extent, been neglected. As a parent watching my child suffer, I could not understand why more relief could not be provided in the hospital setting at the end of care Caroline's life compared to what was available in hospice care. In my mind, there is absolutely no reason that there has to be such a bright line between pain relief offered at the last stage of aggressive treatment in a hospital and that offered when alleviating pain through the hospice system. Sadly, studies based on parental reports show that 89 percent of children experience substantial suffering in the last month of life.

This study also shows a discrepancy between what parents and physicians perceive about children's symptoms. There are a number of obstacles that stand in the way of effective pain management for children, including perceptions about their threshold for pain, the ability of children to effectively communicate their pain, and concerns about addictions. That is just to name a few. There is great need for more training and research in this area.

I myself believe there is a need for more home hospice care for children. While we were fortunate enough to have this option, it is not often available in many communities for many reasons. The demand is oftentimes low, thank God, but it is also difficult to staff these organizations as people generally don't want to even think about hospice care for children. In the interest of these kids, we have to improve education; and, through knowledge, we have to change attitudes.

Thankfully, not all children suffer Caroline's fate. Tremendous progress has been made in its last 30 years, and today childhood cancer is a very curable disease in three-quarters of the patients. I have to qualify this by saying that it is largely due to great strides in the cure for leukemia. Solid tumor cancers are still horrible killers and claim a great number of our children.

Continued research is the hope for cancer patients in the new millennium. The triumphs over childhood cancer are to be celebrated, but there continue to be limitations on pediatric research. Each child diagnosed with cancer is getting only one-sixth of the Federal research support allocated to each patient afflicted with AIDS; and for every dollar spent on a patient with breast cancer, less than 30 cents is spent on a child with cancer. We need to invest more resources in pediatric cancer, with a focus on increasing survival and accessibility to care.

We need also to do more to provide incentives for new drug development, which is currently lacking due in part to a very small market and to liability issues that we are all aware of. Cooperation among medical institutions, philanthropic organizations and the Federal Government can move us toward the day in the new millennium where there is hope for all children and no child need fall victim to the scourge that is cancer.

I thank the committee for their indulgence. I appreciate the opportunity to be here.

[The prepared statement of Hon. Deborah Pryce follows:]

Testimony of the Honorable Deborah Pryce (R-OH-15)
U.S. House of Representatives
Committee on Government Reform
Integrative Oncology – Cancer Care for the New Millennium
June 7, 2000

Mr. Chairman and members of the Committee, thank you for the opportunity to testify today about a subject that is of great personal importance to me and which affects the lives of thousands of American families each year who are introduced to the horrors of cancer.

As many of you know, my family recently waged a battle against cancer that eventually claimed the life of my daughter, Caroline. Today, I would like to share with you my own experience navigating our health care system in an effort to provide Caroline with the best care possible, as well as put my family's experience into the context of the broader cancer care system in our nation, or at least my view of it.

After three trips to the pediatrician to determine the cause of the pain that my daughter was experiencing in her left leg, Caroline was diagnosed with cancer in September of 1998. I cannot begin to describe the horror and confusion that a parent goes through upon learning that his or her daughter has cancer. But, I am sure like most parents, my husband and I decided not to dwell on the time lost or our own fear. We knew we had to be strong for Caroline. We immediately set out to determine the best course of treatment for our daughter's cancer. Unfortunately, the initial diagnosis of Caroline's cancer was incorrect. But, based on that misdiagnosis, we brought Caroline to the National Institutes of Health, where there was a study

underway focused on Ewing's sarcoma, which we believed to be the disease from which Caroline suffered. However, after a couple of weeks of testing at NIH, the doctors began to doubt Caroline's diagnosis. We then learned that an even worse fate was in store for us. Caroline had neuroblastoma, a rare nerve cancer, with a survival rate of less than 20 percent for children like Caroline. Again, we had to make decisions about treatment, and the NIH provided a list of neuroblastoma programs across the country, but the doctors were reluctant to make a recommendation. It is overwhelming to make this type of decision for a loved one. While we had access to information, each doctor we spoke with had a different idea of what was best for Caroline. They all had their own treatment. Finally, we made the decision to take Caroline to Memorial Sloan Kettering in New York to participate in a clinical trial led by Dr. Nai-Kong Cheung. Dr. Cheung thought Caroline would have a 50 percent chance of long-term survival if we started treatment immediately. We seized on what we thought was our best opportunity. Caroline bravely endured months of chemotherapy, radiation, and surgery, and even a brief clinical remission, before the cancer claimed her life almost a year after she was first diagnosed.

In my view, there are a number of improvements to be made to the manner in which our current health care system treats pediatric cancer patients, which I think could improve the survival rates and the quality of life of children who are victims of this dreaded disease.

First, I think pediatricians and parents need a wake up call. Cancer strikes over 10,000 children in the U.S. yearly. It is the leading cause of death by disease in children, accounting for 8 percent of deaths between age 1 and 19. Parents should be aware of this fact, and pediatricians

should be trained to look for even the most subtle signs of cancer and improve screening of children for the disease. While adults receive screening for a variety of cancers, such as breast cancer, cervical cancer, and colorectal cancer; children are much less likely to be screened and more likely to have their symptoms dismissed, thus delaying a diagnosis and treatment. In children, this is especially detrimental as pediatric cancers spread rapidly. Pediatricians must resist tendencies to offer a perfunctory examination of children with seemingly innocuous symptoms and dismiss them. A simple x-ray or blood test would add only a small cost to the health care system, but could have the invaluable benefit of timely and successful treatment.

Of course, once cancer is diagnosed, it is crucial that the type of cancer be correctly identified so that the appropriate course of treatment may be initiated as soon as possible. Through my own interactions with other parents, I discovered that we were not alone in our situation. In fact, Memorial Sloan Kettering Cancer Center confirmed for me that misdiagnosis of small round cell tumors at an atypical age is not uncommon, but that it is less likely to occur in state-of-the-art hospitals where advanced diagnostic tools are available. The discordance between primary hospitals that do not have such tools and the diagnosis provided by experts participating in clinical trials is as high as 20 percent.

The complexity of the cancer system, which mirrors our health care system as a whole, can certainly be overwhelming for a patient or parent trying to find the course of treatment that will provide them with the best chance for survival. There is certainly a wealth of knowledge available to the public on cancer, but harnessing this information and making the best decision

for a child or a loved one is an emotional and stress-filled task that must be quickly completed. I think it is likely that most individuals first turn to the physician who diagnosed the cancer for advice. Of course, you are then relying on that one physician's awareness of treatment options, which may not be very extensive if he or she is not an oncology specialist. In the best case scenario, a pediatrician will refer their patient to a pediatric oncology specialist, and most children end up in centers of excellence that specialize in childhood cancer. However, the worst case scenario all too often exists when an unqualified diagnosis is made and inappropriate treatment is pursued. Today, there is also the Internet, which offers a tremendous resource. For example, the National Cancer Institute has a comprehensive site where individuals can find information on types of cancers, treatment options, current clinical trials, and support groups, as well as links to other sites. What parents really need is a quick education and a candid and clear presentation of their options, in order to make the best decisions for their child that provide parents with some peace of mind.

In terms of alternative or complimentary therapies, in my own experience, these therapies options were not overtly presented, nor did we seek them out. We had our hands and heads full enough just wading through the many options traditional therapies offered. However, therapies such as exposure to music and art and other distractions to keep the patient's focus on something other than treatment and/or pain were available through the institutions where Caroline was treated, and I view them as positive influences on her care.

Beyond treatment decisions, knowledge is crucial to parents because they are the ones

who must be advocates for their children in the cancer system. In the judicial system, we are making more and better use of court-appointed special advocates (CASA) to help coordinate and protect the interests of children. There is no such animal in the health care system. If we had not made it our business to know and understand every step of every procedure, many irreversible mistakes would have been made, which were as serious as the insertion of single versus double-lumined catheter, to as minor as (but every bit as significant to a child) stopping a nurse from placing an unnecessary IV when blood could have been drawn from a surgically implanted catheter.

Unfortunately, palliative care is also a very real part of cancer treatment that has, to a certain extent, been neglected. Of course, the primary goal of any cancer treatment is to achieve a cure, and especially in children and young people, treatments are often very aggressive to meet this goal and may be prolonged even when little hope remains. No one wants to give up and considerations of long-term effects, quality of life, and even pain become secondary. In my view, there are many sacrifices we are willing to make to survive or see a loved one survive, but much of the pain involved seems unnecessary to me. As a parent watching my child suffer, I could not understand why more relief could not be provided in the hospital setting at the end of Caroline's life compared to what was available in hospice care. In my mind, there is no reason there has to be such a bright line between the pain relief offered at the last stage of aggressive treatment and that offered in hospice when alleviating pain toward death is the goal. Sadly, studies based on parental reports show that 89 percent of children experience substantial suffering in the last month of life. This study also shows a discrepancy between what parents

and physicians perceive about children's symptoms. I believe there is much work to be done within the medical community to alleviate pain throughout cancer treatment, as well as help cancer patients and their families deal with issues at the end of life. There are a number of obstacles that stand in the way of effective pain management for children, including perceptions about their threshold for pain, the ability of children to effectively communicate their pain, and concerns about addictions, to name a few. There is a need for more research and training in this area. I also believe there is a need for more home hospice for children. While we were fortunate enough to have this option, there are not many agencies in communities that provide hospice for children. In part this is due to low demand, but it is difficult to staff these organizations, as people generally do not want to talk or even think about hospice care for children. In the interest of these children, we must improve education, and through knowledge, change attitudes.

I would like to end on a positive note by focusing on the progress that has been made in childhood cancer that has earned it the distinction of being known as the "modern medical miracle." Thankfully, not all children suffer Caroline's fate. Tremendous progress has been made in the last 30 years, and today childhood cancer is now a very curable disease in three-quarters of patients. Overall the five-year survival rate for children with cancer is 74.5 percent and the ten-year survival rate is approaching 70 percent. This represents a 62 percent decrease in the mortality rate for children with cancer since 1960. I have to qualify this success by pointing out that it is due largely to great strides in a cure for leukemia. Solid tumor cancers are still horrible killers and claim a great number of our children.

Unlike most miracles, I think this one can be explained. Success in childhood cancer is the result of a cooperative effort of pediatric oncologists who are devoted to research through clinical trials and the high participation of children with cancer in this research. It is widely recognized that the progress in cancer survival rates among children is the result of successful clinical trials, where work from our nation's laboratories is translated into clinical application. For children, the standard of care today is to be treated in a clinical trial, and more than 70 percent of children with cancer participate. That compares to only about 3 percent of adults (and only 1.5 percent of Medicare patients) with cancer who are enrolled in clinical trials. In addition, children are normally treated in centers of excellence by a pediatric oncology specialist and a team of multidisciplinary health care providers. Further, the rapid dissemination of better treatments through a consortium of major teaching hospitals where new therapies can be tested has benefitted child cancer patients. In many ways, care for children with cancer is the model for what adult cancer care hopefully will become.

Continued research is the hope for cancer patients in the new millennium. The triumphs over childhood cancer are to be celebrated, but there continue to be limitations on pediatric cancer research. Each child diagnosed with cancer is getting only one-sixth the federal research support allocated to each patient afflicted with AIDS (when calculated per life year saved). And, for every dollar spent on a patient with breast cancer, less than 30 cents is spent on a child with cancer. We need to invest more resources in pediatric cancer with a focus on increasing survival and accessibility of care. We also need to do more to provide incentives for new drug development, which is currently lacking due, in part, to a small market and liability. Cooperation

among medical institutions, philanthropic organizations, and the federal government can move us toward the day in the new millennium where no child will fall victim to the scourge that is cancer.

Thank you, Mr. Chairman.

Mr. BURTON. Let me just say on behalf of the committee that we sympathize with you, and we pray for you and your family. I know it has been a very difficult time. I watched you go through that and all my colleagues did, and when you see a good friend go through that or somebody in your family go through that, you feel it, too, from afar. Not nearly like you did. But you are a heck of a woman. We are very pleased you are with us today. Thank you.

Does anybody have any questions?

Ms. SCHAKOWSKY. I just wanted to say thank you for your testimony.

Ms. PRYCE. I appreciate the opportunity. I think it is important that these personal experiences be related. Cancer has touched us all; and, Mr. Chairman and committee members, it is wonderful you are exploring this. I give you great credit. I appreciate the work you are doing here.

Mr. BURTON. I have just a few questions real briefly, if you don't mind answering them.

You testified about the need to improve hospice care for children. Can you tell us how existing hospices improve their services for children—how they can improve their services for children?

Ms. PRYCE. Well, I think that the hospice care that we underwent was excellent. Unfortunately, the problem that we experienced is that we were not really released from traditional treatment until 3 days before her death, although I think it was obvious to her physician that things were imminent and I wish we had sought hospice earlier. I think hospice care is something that I don't have any problems with as we experienced it, but I do know it is not available in some sectors of the country and in many communities, especially as it relates to kids.

People have a hard time seeing children be ill, and it is very difficult to watch a child die. That is what hospice nurses and hospice personnel do. I think it is just a matter of changing attitudes and better educating folks. It is such an important thing.

Mr. BURTON. I don't want to cause you any additional pain by asking these questions, but you talked about a difference between how her pain was managed while she was in the hospital and in the hospice care. Can you be a little more definitive on that?

Ms. PRYCE. Absolutely. We were giving Caroline a few last doses of radiation treatment before we left because we thought that would shrink the tumor in her brain and the spine and perhaps alleviate some of the pain. We were doing that to reduce pain. But the physician in control of anesthesia at the cancer center where she was getting the radiation would not even allow her to have a Valium for fear that, for whatever reason, she would not say, Caroline perhaps would die. We all knew she was dying, and therefore she couldn't relax, and she moved around, and it was extra painful for her. That was the afternoon that we checked out of the hospital and went home, and at that point she had large doses of Valium and other drugs to control her pain, which we were just asking for one small dose and it was denied her. That is when we said this is enough. This is definitely enough.

So there doesn't have to be such a bright line between what they can do in the hospital and what they can do at home. I don't understand it at all.

Mr. BURTON. Did anyone talk to you about alternative pain—possible remedies like acupuncture or anything?

Ms. PRYCE. No, that was never, ever broached.

Mr. BURTON. Never even talked to you about that.

You mentioned your daughter's cancer was misdiagnosed repeatedly. Do you feel that doctors don't think of serious illnesses such as cancer when a child comes in with symptoms like pain?

Ms. PRYCE. I absolutely feel that way. Our pediatrician group saw her at least twice, and I think three times, with this complaint in her leg, and there was never so much as an x ray ordered or anything. They did some manipulation and questioning of my daughter. Other than that, they just dismissed it outright as just the growing process or shin splints or whatever. She was even dragging her leg behind her. She couldn't put pressure on it at all. Those symptoms were clearly stated, but dismissed.

Mr. BURTON. The gentlelady from Florida?

Ms. ROS-LEHTINEN. I just want to thank my good pal Deb for the grace and dignity which she has bestowed upon this institution with the way that she conducted herself through these difficult times. Like you said, Mr. Chairman, our prayers are with her and Randy. You know we love you, Deb.

Ms. PRYCE. Thank you. I felt that all along the way from my colleagues. It is so much appreciated.

Mr. BURTON. Any other questions or comments?

If not, thank you very much for being here and sharing that with us.

We have some votes on the floor. We will stand in recess until the votes are over, and we will come right back.

For those who are going to be testifying, I understand we will have five or six votes on the floor. We will have 15 minutes on the first vote, followed by five 5-minute votes. We will be gone for about an hour.

I really apologize for the time problem. I can't control the floor. So we will be back as soon as possible. Thank you. You can rest or take a little time off.

[Recess.]

Mr. BURTON. The committee will reconvene. Mr. Elijah Cummings, one of our members, is not here today, but I wanted to extend condolences on behalf of the committee because his father passed away yesterday. I hope those in the minority will be sure to extend our condolences to Representative Cummings. I know it is a tough time for him.

Our second panel is Dr. Straus, Dr. Wittes, Dr. Kang and Dr. Pazdur. Would you please come forward.

While they are coming forward, I would like to thank the ladies and the families that gave me this pin who lost their children to cancer. I will wear this with great pride, and I want to thank you very much for thinking of me. I will try to make sure that your loss was not in vain. Maybe we can get some things done that will make sure this sort of thing doesn't happen in the future, or at least it is minimized.

Would you gentleman—do we have everybody? Dr. Kang, Dr. Wittes we do not have yet, Dr. Pazdur. Are they still here? They were downstairs having coffee? Is there anybody that can run and

grab their coffee cup and lead them up here? Coffee drinkers will follow their coffee cup.

We will have more Members come as time progresses. I ran back here. That is why I am perspiring, because I didn't want to hold you folks up any longer.

So we have now Dr. Wittes with us, and we are waiting on Dr. Pazdur. Is he down having coffee? Hello? Does anybody know?

Why don't we go ahead and get started. I will swear him in when he gets back.

Will you gentleman please rise? Are you Dr. Pazdur? Oh, he is in the men's room. Have a seat. We will wait just a minute.

Dr. WITTES. After all that coffee.

Dr. PAZDUR. Sorry, Mr. Chairman.

Mr. BURTON. Dr. Pazdur. Well, we understand you had coffee and made a stop on the way. We are glad you are prepared for the hearing. I apologize to you once again for the delay in our hearing.

Will you please rise, please.

[Witnesses sworn.]

Mr. BURTON. Thank you, and let the record reflect that the witnesses responded in the affirmative.

On behalf of the committee I want to welcome you all here today. You are all recognized to make an opening statement, if you please.

We will start with Dr. Straus.

STATEMENTS OF DR. STEPHEN E. STRAUS, NATIONAL CENTER FOR COMPLEMENTARY AND ALTERNATIVE MEDICINE; DR. ROBERT WITTES, NATIONAL CANCER INSTITUTE; DR. JEFFERY KANG, HEALTH CARE FINANCING ADMINISTRATION; AND DR. RICHARD PAZDUR, FOOD AND DRUG ADMINISTRATION

Dr. STRAUS. Thank you, Mr. Chairman. It is an honor to appear before the committee for the first time and to address the opportunities that complementary and alternative medicine have to offer in the management of cancer.

As you commented in your opening remarks, about two in five Americans rely on some forms of complementary and alternative medicine, and more than four in five cancer patients do so, by the survey conducted by our new colleague in NCCAM, Dr. Mary Ann Richardson, when she was our grantee at the University of Texas in Houston.

The vast majority of this use is complementary in nature to alleviate the terrible symptoms and complications, and the minority of use is as alternative therapy.

I can tell you, as one who has lost loved ones to cancer, that I understand the desperation and the needs of patients, but I wouldn't attempt to be as eloquent as the honorable speaker was prior to the break in commenting upon the needs of her child.

As a physician, however, I can say that I understand the frustration that we face on a daily basis, knowing that we cannot provide our patients everything that they truly deserve.

My responsibility as a scientist and as the first director of NCCAM, however, really requires me to take the long-term look to invest in a rigorous fashion, in approaches that will provide the American public the definitive answers they need for the future.

There are very good reasons to think that some CAM modalities would be beneficial. We know that to be the case with some botanicals, such as St. John's Wort for depression, but in studying these modalities we become increasingly aware of unanticipated adverse reactions. The imperative to study them carefully is even greater.

For example in today's New England Journal of Medicine, there is a cautionary tale from Europe of a Chinese herb that not only failed to alleviate suffering, but caused cancer in women.

So this is a complex and challenging enterprise, and NCCAM's approach is to harness the tools of rigorous science in a very open-minded fashion. Our strategic plan for doing so is now posted on our Web site for public comment, and it outlines the tiered approach we are going to use.

Cancer is one of our most important targets. We survey the entire field of medicine in our efforts, but by virtue of the needs of cancer patients, this is a priority for us.

Shortly after assuming directorship I met with Dr. Richard Klausner, the Director of NCI. We have met multiple times since then. I have met with Dr. Wittes and Dr. Jeff White, his colleague, on a monthly basis to discuss a joint portfolio to make sure we are harnessing our collaborative resources as well as possible.

Our portfolio is still evolving. We have just completed our first year in NCCAM having been established in February 1999, and our budget for this year invests in cancer at three times what it did last year, and our best judgment for our budget-expected potential for 2010 would be an additional doubling.

We are already funding a collaborative project with the NCI the first large definitive trial of shark cartilage as a therapy for non-small-cell lung carcinoma. We are investing in controversial therapies as well, such as the study at Columbia University of Dr. Gonzalez's nutritional approach to the management of pancreatic cancer, for which the standard therapies are suboptimal.

With the NCI we have agreed to use a novel and expedited review process known as the quick trials mechanisms for funding grants, and we jointly benefit from the availability and the advice of the Cancer Advisory Panel on Complementary and Alternative Medicine [CAPCAM], which has the responsibility, among other things, to advise us about novel therapies through the best-case series mechanism. We are currently funding two such best-case studies, and we are looking forward in the September meeting to additional ones.

This very week we reviewed for the first time applications to fund large centers dedicated exclusively to CAM approaches to cancer.

All of these efforts combined need to be communicated effectively to the American public, and we do so with a very aggressive communications and outreach portfolio. In my first months in NCCAM I realized that our fact sheets and our written material provided by the NCCAM clearinghouse is inadequate. We are currently engaged in writing an additional 46 of them, including 10 on cancer alone, together with the NCI.

We are also funding, starting today, Dr. Jim Gordon's Conference on Comprehensive Cancer Care, which I have the pleasure of addressing Saturday.

So, in my first several months, I have joined an active and dynamic group. We have doubled its size already in the past 7 months. We look forward to building an aggressive and very excellent scientific portfolio addressing CAM and cancer.

Thank you, Mr. Chairman.

Mr. BURTON. Thank you, Dr. Straus.

[The prepared statement of Dr. Straus follows:]

DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH

NATIONAL CENTER FOR COMPLEMENTARY
AND ALTERNATIVE MEDICINE

Statement by

Stephen E. Straus, M.D.
Director, National Center for Complementary and Alternative Medicine
before the
House Committee on Government Reform
June 7, 2000

Mr. Chairman and Members of the Committee:

I appreciate the opportunity to appear before you today to address the application of research on complementary and alternative medicine (CAM) to cancer therapy, and the ways that the National Center for Complementary and Alternative Medicine (NCCAM) collaborates with the National Cancer Institute (NCI) to advance our common desire to improve public health.

My presence here today, and NCCAM's very existence, reflects the growing public interest in CAM. By some estimates 42 percent of Americans spent \$27 billion on CAM therapies in 1997. In recognition of this growing consumer trend, Congress in 1998 elevated the NIH Office of Alternative Medicine (OAM), expanded its mandate, created the NCCAM, and afforded it administrative authority to design and manage its own research portfolio. The Congress has continued to reflect the growing interest in CAM by further increasing funding for the Center in FY 2000 to \$68.4 million. The FY 2001 President's budget requests \$72.4 million for NCCAM. We are indeed appreciative of this support.

NCCAM's Broader Mission

As CAM use by the American people has steadily increased, many have asked whether reports of success with these treatments are scientifically valid. A number of practices, once considered unorthodox, have proven safe and effective and been assimilated seamlessly into current medical practice. Practices such as meditation and support groups are now widely accepted as important allies in our fight against disease and disability.

In the absence of definitive evidence of effectiveness, however, some practices may impart untoward consequences. It is critical that untested but widely used CAM treatments be rigorously evaluated for safety and efficacy. Promising new approaches worthy of more intensive study must be identified. In addition, I am energized by this opportunity to help provide the American public the guidance it seeks.

NCCAM's strategy for taking on this challenge is somewhat different from that used by other NIH Institutes and Centers (ICs). While the research of other ICs is usually driven by basic scientific discoveries, NCCAM has chosen to focus most heavily on designing and carrying out definitive clinical trials of widely utilized modalities that, from evidence-based reviews, appear to be the most promising. We are mindful of the responsibility to do so in a manner consistent with established ethical standards and federal guidelines – so as to ensure patient safety and public confidence to the maximum possible extent.

Compelling and rigorous data and not just anecdotes must be provided to the public, and we must educate conventional medical practitioners about the panoply of effective CAM practices, so they can be integrated into medical practice, including cancer care.

NCCAM has developed a draft Strategic Plan – now available for public review and comment on our web site <http://nccam.nih.gov/> – to ensure that our continued growth,

development and research directions are consistent with the challenges set before us. Five strategic areas have been identified as: investing in research; training CAM investigators; expanding outreach; facilitating integration; and practicing responsible stewardship.

Concurrently, along with all other NIH ICs, we are developing a multifaceted effort to eliminate health disparities. Our health disparities plan will focus upon:

- identifying the extent and nature of CAM use among special populations;
- study of therapeutic interventions to reduce disparities;
- increasing participation of minority and under served populations in NCCAM-supported clinical trials;
- enhancing the ability of minority institutions to support CAM research.

The NCCAM is pleased to have recruited Dr. Morgan Jackson, most recently the director of the Minority Health Program at the Agency for Health Care Research and Quality, to finalize and help implement the plan.

It is to these ends, and in light of the breadth of CAM, that we have established close liaisons with all other NIH components and federal health agencies. Among these, our relationship with the NCI is paramount: my staff and I work closely and on an ongoing basis with the NCI. Early in my tenure as NCCAM Director, and a number of times since, I have met with Dr. Richard Klausner, NCI Director, to discuss prospective collaborations and matters of common interest. I also communicate frequently with Dr. Robert Wittes, who will testify here today. Moreover, our extramural program director and I meet monthly with Dr. Jeffrey White, who directs the NCI Office of Cancer Complementary and Alternative Medicine (OCCAM) and who is accompanying Dr. Wittes today.

St. John's Wort – An Example of NCCAM's Opportunities and Challenges

Already, NCCAM has developed a diverse research portfolio in partnership with the other NIH Institutes and Centers. Among these are some of the largest, and certainly the most definitive Phase III clinical trials ever undertaken for a range of CAM therapies. Allow me to highlight one of these studies.

Extracts of St. John's wort, a flowering plant, have become quite popular as a treatment for depression. In fact, by some accounts, St. John's wort is the number-one-selling nutritional supplement. Because of this intense interest, NCCAM, the National Institute of Mental Health (NIMH), and the NIH Office of Dietary Supplements (ODS) are collaborating on a study of the safety and effectiveness of St. John's wort in treating depression.

A recent report in *The British Medical Journal* showed that St. John's wort is more effective than placebo in treatment of depression, and perhaps as effective as an older generation

anti-depressant drug Imipramine. NCCAM's larger and longer-term study compares St. John's wort with placebo and with Zoloft, currently one of the most commonly used anti-depressants.

The potential benefit of St. John's wort, however, comes with previously understudied, and therefore unappreciated risks. An NIH study published February 12th in *Lancet* found that St. John's wort, when taken together with the important HIV protease-inhibiting drug indinavir, increased the rate at which Indinavir was eliminated from the bloodstream, to the extent that blood levels fell below the desired level for effective AIDS treatment. More recent studies have suggested that St. John's wort has a similar effect on some types of birth control medication and on cyclosporin A, a drug used to prevent the rejection of transplanted organs. Other studies have shown that the use of St. John's wort may also increase an individual's sensitivity to exposure to the sun. These findings illustrate vividly both the promise and challenges presented by CAM therapies. Only through rigorous research on these CAM modalities will we be able to determine not only to what extent each is safe or effective, but under what circumstances an effective CAM modality may be contraindicated.

CAM and Cancer

The prospective application of CAM modalities to treat cancer is a major interest of the American public, as reflected in the over 2,000 inquiries which the NCCAM Clearinghouse receives each month. The committee's consideration of the subject today is especially timely, for the NCCAM is pleased to sponsor -- along with the NCI, the University of Texas-Houston, and Dr. James Gordon's Center for Mind-Body Medicine -- the Comprehensive Cancer Care 2000 conference beginning this week in Arlington, VA. I appreciate and concur with the goals articulated by conference organizers: to bring together "those who are conducting the most innovative research on CAM therapies for cancer...with the most distinguished mainstream oncologists to evaluate promising therapies and how they can be successfully integrated into comprehensive cancer care."

Simply put, CAM-Cancer research, and rigorous, scientific evaluation of CAM therapies for cancer, are among our highest priorities. With this in mind, we recently recruited Dr. Mary Ann Richardson to our extramural program staff. Dr. Richardson comes from the University of Texas -- Houston School of Public Health and will direct our research portfolio and stimulate new initiatives in the area of oncology. She brings expertise and experience as director and principal investigator of our first exploratory research center focused solely on cancer and co-sponsored by NCI. In her new role in the NCCAM, Dr. Richardson is meeting today with NCI staff and the National Brain Cancer Foundation. I am confident that she will build upon her developmental and field work and extensive network of conventional and CAM practitioners to move the field forward on a national and international level.

In Fiscal Year 2000, the NCCAM plans to spend over \$4 million in support of cancer research studies. This represents a three-fold increase in a single year. We expect to augment our support for cancer studies again in 2001. Against that backdrop, I would like next to

acquaint the committee with our activities involving the integration of CAM and cancer in particular. The portfolio, directed at CAM therapies appropriate to the treatment of cancer as well as its complications, encompasses both the study of cancer interventions and palliative care.

Specialty and Botanical Centers

Specialty Research Centers form an historical foundation for conducting CAM research through the NIH, and provide the setting for ongoing collaborative research. In this regard, our Centers assemble critical masses of basic and clinical scientists to conduct clinical studies into CAM approaches for a variety of health conditions. They also encourage CAM practitioners and researchers to conduct relevant joint research projects. Each focuses on one of several areas, including pediatrics, addiction, cardiovascular disease (CVD), minority aging and CVD, aging, neurological disorders, craniofacial health, arthritis, and chiropractic medicine. Average funding for our new Centers exceeds \$1 million annually for five years. In addition, NCCAM supports three Botanical Research Centers in collaboration with the ODS, the National Institute on Environmental Health Sciences (NIEHS), the National Institute on General Medical Sciences (NIGMS), and the Office of Research on Women's Health (ORWH).

Currently, NCI and ODS have joined NCCAM in a solicitation for a new Center to focus on cancer related research issues. This center will focus on basic and clinical studies; Phase I and II clinical trials of botanicals; drug-botanical interactions; unconventional nutritional approaches and dietary supplements that either augment conventional cancer therapies or diminish side effects; and studies of the potential effect of mind-body modalities (e.g., relaxation, imagery, meditation, psychosocial support groups, and the like). I am pleased to report the receipt of a substantial number of applications that will be reviewed this summer, and from which we expect to make as many as two awards.

Various substances present in natural products, including botanicals, have been shown to inhibit cancer in animals. However, little information is available on what may account for their apparent anticarcinogenic effects. Even less is known about interactions among these substances and other dietary components. Research is also needed to provide better understanding of the potential impact of natural products on the treatment of precancerous conditions or early-stage cancerous lesions. Research that examines the potential use of such products for the treatment of conditions which may accompany or follow cancer (pain and loss of appetite, for instance) or side effects of conventional therapies (e.g. nausea, vomiting, and neuropathy) are obvious undertakings for new CAM Cancer Centers.

These Centers are only a part of our expanding research portfolio, which includes a rapidly increasing number of investigator-initiated grants, some of which I will briefly describe.

Studies of Cancer Among Specific Populations

The NCCAM is already supporting studies of CAM therapies for cancers which predominantly affect women. According to the CDC, 175,000 women will be diagnosed with breast cancer this year; some 40 percent will die of the disease. A University of Texas study, conducted in collaboration with the National Institute on Nursing Research (NINR), introduces strategies of self-transcendence among support group members to improve well-being and immune function and to increase understanding of the relationship between survival rates and support group participation. Also, the NCCAM-funded Center for Alternative Medicine and Women's Health at Columbia University is supporting trials that evaluate the use of Traditional Chinese Medicine to treat uterine fibroids and breast cancer. At the same time, the Columbia University group is conducting evidence-based reviews of the literature regarding CAM approaches to the prevention and treatment of breast cancer.

Our cancer research portfolio also includes:

- *Studies of shark cartilage that are funded jointly by NCCAM and NCI.* These include an ongoing Phase III clinical trial involving as many as 500 lung cancer patients in both the United States and Canada. A second trial will examine safety and efficacy of shark cartilage in patients with a variety of advanced cancers.
- *Investigations of cancer prevention and treatment strategies.* Clinical trials at the University of Texas Center for Alternative Medicine Research are examining herbal, nutritional, mind-body, and biopharmacologic treatments for lymphoma, lung, and esophageal cancer.
- *Basic research studying the effects of magnetic fields on cancer cell growth.*

Controversial CAM Cancer Regimens

Many CAM approaches are controversial, particularly those used as strict alternatives to conventional regimens for treating life-threatening diseases such as cancer. Nonetheless, NCCAM will pursue rigorous investigations of any such therapy for which there is adequate preliminary data and a compelling public health need. Our commitment is illustrated by our support of a study of the therapy advocated by Dr. Nicholas Gonzalez, in which cancer patients are treated with dietary supplements including pancreatic enzymes, magnesium citrate, papaya plus, vitamins, minerals, trace elements, and animal glandular products, as well as with coffee enemas. There are very preliminary data suggesting the therapy might be effective in prolonging life-expectancy for those individuals suffering from cancer of the pancreas. Given that conventional regimens for pancreatic cancer only moderately prolong life, from a public health standpoint there is sufficient argument to evaluate the Gonzalez protocol in a rigorous scientific fashion. For this reason, the NCCAM and NCI are funding a substantive pilot trial in 90 patients with pancreatic cancer according to Dr. Gonzalez's protocol, at the Columbia-Presbyterian Cancer Center in New York City.

Steps to Expedite Our Research

I am also pleased to report that our National Advisory Council on Complementary and Alternative Medicine (NACCAM) recently approved our proposal to provide supplementary funds to existing NCI Cancer Centers to initiate new CAM research studies. NCI staff are currently considering our offer. This program will encourage communication and collaboration between CAM practitioners and outstanding conventional cancer researchers. Emphasis will be placed, where possible, on the study of minority and under-served populations. Preliminary data from this research will serve as the basis for subsequent, more definitive clinical trials. To be sure, some of the CAM interventions now used to treat cancer will not be validated in those trials, and just as likely some will emerge as important, adjunctive and alternative therapies.

The NCCAM and NCI are also embarking jointly upon a creative, new research grant mechanism – Quick-Trials for Novel Cancer Therapies – designed to simplify the grant application process and provide a rapid turnaround from application to funding. Its features include accelerated peer review, with the goal of issuing new awards within five months of application receipt. Initially announced for a pilot program in prostate cancer, the Quick Trial mechanism provides rapid access to support for pilot, phase I, and phase II cancer clinical trials testing new agents, as well as patient monitoring and laboratory studies to ensure timely development of new treatments.

The NCCAM has also announced our intent to establish the Frontier Medicine Program. This initiative will promote collaborations between conventional and CAM institutions, practitioners, and researchers to study promising and widely used CAM practices – including cancer therapies – that appear to produce benefits but for which there is no plausible explanation or existing scientific support.

CAPCAM

The federally-chartered Cancer Advisory Panel for Complementary and Alternative Medicine (CAPCAM) frames NCCAM's cancer-related activities broadly – and our collaborations with the NCI in particular. Its membership includes CAM practitioners and health care professionals from conventional medicine. CAPCAM represents a unique approach to enabling identification of promising CAM cancer treatments for which scant scientific data are currently available. It is intended to help move into the research stream those practices worthy of scientific study.

CAPCAM advises the NCCAM Director on the assessment of present and future cancer clinical trials and medical interventions, potential research opportunities, and means of communicating research results to key constituencies. The panel affords CAM practitioners world-wide the opportunity to submit retrospective analyses of data of patients treated with a specific modality in order to assess possible therapeutic benefit. This is formally known as the

Best Case Series (BCS). The Panel will recommend selected BCS cancer treatments to the NCCAM for further study as appropriate.

The NCI developed the BCS Program in 1991 because most alternative treatments had not been formally evaluated in prospective studies. The CAPCAM process and its predecessor, the Cancer Advisory Panel (CAP) were an outgrowth of the Practice Outcomes Monitoring and Evaluation System (POMES), developed jointly by the former NIH Office of Alternative Medicine (OAM) and NCI. I have already met with the CAPCAM twice, and will next meet in September. Already its members have recommended additional study of a specific dietary supplement as a treatment for non-small cell lung cancer, and further exploration of homeopathic cancer treatments, provided by the PB Homeopathic Research Foundation, Calcutta, India. Moreover, the CAPCAM recently advertised widely in journals and targeted materials its desire to receive best case submissions. We anticipate two additional best case reviews for the next meeting of CAPCAM in September, 2000.

NCCAM's Palliative Care Research

Whether palliative care involves conventional or complementary approaches, its purpose is to add scientifically verified evidence to our base of knowledge about appropriate and compassionate health care. Many of our current studies truly represent palliative care research as they focus on increasing patient comfort, diminishing pain, and rendering disease symptoms less intense or severe. Although some studies do not expressly focus upon cancer patients, research results may be beneficial to them, or others who may be near the end of life.

Our palliative care projects include an examination of the benefits of hatha yoga on cognitive and behavioral changes associated with aging and neurological disorders; evaluation of the effects of acupuncture on persistent pain and inflammation; the aforementioned study of St. John's wort and its effects on major depression; and the effect of acupuncture and moxibustion (heat applied at the acupuncture point).

Palliative care for cancer patients will also be an obvious interest of our evolving NIH Intramural Research Program. The Director of our program will interact closely with the newly appointed Director for palliative and pain care of the NIH Clinical Center, Dr. Ann Berger, who arrives this summer from the Fox Chase Cancer Center in Philadelphia.

I also want to briefly mention NCCAM's interest and support of the study of certain mind-body research modalities. Although CAM and mind-body medicine only partially overlap, NCCAM is pursuing investigations involving still undocumented CAM techniques; modalities for which there is little evidence in the conventional medical research community; and unorthodox uses for otherwise conventionally-accepted mind-body techniques. In this context, the NCCAM looks forward to evaluating the effectiveness of selected mind-body approaches in cancer treatment. We currently support one such project – a study examining whether self-transcendence strategies affects immune function, well being and survival rates among breast cancer patients.

I note parenthetically that one key aspect of mind-body research involves studies of the “placebo effect.” In November, NCCAM, in collaboration with NIDDK, NCI, and other ICs, will convene a major trans-NIH conference on this subject. Goals of the conference include providing a scholarly assessment of the state of the field; identifying areas for which there is scant research, but considerable opportunity; and recommending a formal research agenda to move the field forward, in particular projects to be pursued by interested ICs through individual or joint initiatives with NCCAM. Elucidating the nature of the placebo effect will help us better harness the healing power of the mind.

Integrative Medicine Research Training, and Communications

Medicine is an ever-evolving discipline. It integrates or rejects approaches based on scientific evidence. The results of rigorous research in CAM, including studies of its efficacy in treating cancer, and the disease’s many complications will enhance the successful integration of safe and effective modalities into mainstream medical practice. We have initiated a series of specific activities to facilitate this. In particular, NCCAM recently solicited applications to incorporate CAM information, including that which relates to cancer care, into model curricula of medical and allied health schools and continuing medical education programs through Education Project grant awards.

Also, the NCCAM must educate eager students about CAM so that they may knowledgeably guide their future patients toward safe and effective CAM applications. In addition, we must work to overcome the reluctance of conventional physicians to consider validated CAM therapies and to assimilate proven ones into their practice. With this in mind, we established a Clinical Research Curriculum Award (CRCA) to attract talented individuals to CAM research and to provide them with the critical skills that are needed. NCCAM also plans to solicit applications for applied research on identifying barriers to the use of CAM modalities by conventional physicians, including oncologists; strategies to incorporate validated CAM interventions into standard medical practice; and evaluating the effects of this incorporation.

Integrative medicine (of which the field known as “integrative oncology” is a subset) is also a key aspect of NCCAM’s planned Intramural Research Program and a component of NCCAM’s Specialized Research Centers. Research training is conducted by these Centers, in part to advance our goals in integrative medicine, but also to assist us in building a cadre of skilled CAM investigators. Some of NCCAM’s Centers spend as much as ten percent of their budget on training.

Public Outreach and Collaboration with NCI

Specific statutory authority enables NCCAM to reach out directly to the public and practitioners to provide them with critical and valid information regarding the safety and effectiveness of CAM therapies, including cancer. This information dissemination involves extensive and ongoing interaction with NCI.

A focal point for information about NCCAM programs and research findings is the NCCAM Information Clearinghouse, which develops and disseminates information that reflects the state of the science of various CAM modalities. To this end, NCCAM and NCI have undertaken a collaboration to develop – within the coming year – as many as 10 fact sheets which discuss CAM use as therapy for specific cancers.

Assembled by NCCAM from the National Library of Medicine's (NLM) MEDLINE database, the CAM Citation Index (CCI) affords the public access to approximately 175,000 bibliographic citations from the NLM Medline. The CCI is searchable by CAM system, disease, or method. For most types of cancer, the CCI contains many references to alternative medicine research published in the medical literature. Users can access the CCI on the NCCAM Web site at: <http://nccam.nih.gov/nccam/resources/cam-ci>.

In February 1999, NCCAM joined the federally supported Combined Health Information Database (CHID), which includes a variety of health information materials, including nearly 1,000 CAM citations not available elsewhere. The CAM subfile of CHID contains extensive information on therapies for cancer.

The NCCAM Information Clearinghouse receives more than 250 cancer related inquiries from the public per month. The Clearinghouse identifies the NCI as the Federal Government's lead agency for cancer research and training, and routinely directs consumers and practitioners to the following NCI resources:

- Information specific to CAM, including CAM clinical trials and studies, found in CancerNet on the NCI Web site at: <http://cancernet.nci.nih.gov/treatment/cam.shtml>
- The information sheet, "Complementary and Alternative Medicine: Treatment Options."
- The NCI Web site: <http://www.nci.nih.gov>
- The Cancer Information Service at (800) 422-6237
- NCI Public Inquiries Office
- NCI Office of Cancer Complementary and Alternative Medicine (OCCAM).

The NCCAM Web site has already been linked to the new Cancer CAM web site just launched by the OCCAM. It provides the NCI and NCCAM with an interface with the general public, health practitioner and research communities regarding CAM cancer issues. Among other things, the new NCI site states that it is "designed specifically for people with cancer and the people who care about them." I applaud this valuable contribution by the NCI to enhancing public knowledge of CAM and cancer care.

Conclusion

In closing, I would like to share with the Committee my vision of where I expect complementary and alternative medicine to be in the years to come. NCCAM's leadership will

stimulate both the conventional and CAM communities to conduct compelling and open-minded scientific research. Several therapeutic and preventative modalities currently deemed elements of CAM will prove effective. Based on rigorous evidence, these interventions will be integrated into conventional medical education and practice, and the term "complementary and alternative medicine" will be superseded by the concept of "integrative medicine." The field of integrative medicine will be seen as providing novel insights and tools for human health, and not as a source of tension that insinuates itself between and among practitioners of the healing arts and their patients. Modalities found to be unsafe or ineffective will be rejected readily by a well-informed public.

My vision is an optimistic one. However, I am confident that the NCCAM, building on a foundation of superb science and consumer service, and collaborating with such outstanding partners as the National Cancer Institute, will be a world leader -- not only in complementary and alternative medicine as a whole, but in addressing the painful and tragic disease of cancer that touches the lives of every American family.

I will be pleased to answer any questions that you may have.

Mr. BURTON. Dr. Wittes, would you like to address the committee?

Dr. WITTES. My name is Robert Wittes. I am the Deputy Director of Extramural Science at the National Cancer Institute. With me is Dr. Jeff White, who is the Director of the Cancer Institute's Office of Complementary and Alternative Medicine. It is a pleasure for us to be here as well to tell you about some of the progress we have made in the areas of interest to the committee.

The title of the hearings today, Integrative Oncology, is an interesting way of expressing the notion that our object really in medicine, in oncology specifically, is to put together everything that we know for the benefit of the patient, whatever it is and wherever it comes from.

Now, in order to do that in the best way, you have to have high standards for evidence, because ultimately things hang on the answer to the question, does it work? It has seemed to us, and it seems to many people, this is not a unique insight, that there can't be multiple different standards surrounding the issue of how rigorous evidence needs to be.

It is probably worth commenting that that is actually a rather recent notion in medicine—if medicine is 4,000 or 5,000 years of age—in the last half century or so, and it has pervaded the medical community, actually, gradually over that period of time. I would say also perhaps somewhat unevenly. Different people have for themselves different standards of evidence for what—the judgment of what works.

So when one is talking about the mainstream medical community and the complementary and alternative medicine community, there is sometimes the assumption that there is a two-cultures issue here. But I think times are changing, and my own observation is that there are enough like-minded people on both sides of the mainstream in alternative communities to meet in the middle and to interact productively in ways that will really move the evaluation of evidence in the direction that I think most of us think it ought to be moving.

There is evidence that this is already happening, I think, and one can see the establishment of complementary and alternative medicine units in academic medical centers and in some medical school curricula.

The meeting here in Washington that Dr. Straus just referred to is, I think, an example of an organizational effort that has really made an effort to bring all of the various people and constituencies that are interested in the care of the patient together to see whether this kind of integration can occur at the care level and also at the research level. There have been multiple actions by the NIH. There are parts of the NIH to bridge the gap between mainstream NCCAM communities, and Dr. Straus already mentioned several of them, and I have summarized these, the NCI contribution to this, in my written testimony which I am, of course, submitting in parallel with these oral comments.

The organization of the Office of Complementary and Alternative Medicine in the Cancer Institute is actually sort of an organizational embodiment of our belief that it would be wrong for us to isolate complementary and alternative medicine from the activities

of the rest of the Institute. The reason we were interested in setting this up as a coordinating office within our Institute was so that everywhere that it made sense within the Institute, the various programs that we have, could begin to address matters that are currently called complementary and alternative. I think we have started to do this. The organization of the CAPCAM, jointly with the NCCAM, is an example of how we are attempting to integrate expertise from both communities.

We have a very aggressive best-case series program which we started a number of years ago, actually, to try to elicit from the community of complementary and alternative practitioners evidence, bodies of evidence, that they have obtained in the process of their practices that should be considered by the medical community at large for action. We are trying to aggressively advertise the existence of this process in the hope that people will come forward and bring ideas that they have, evidence they have, about interventions to us.

Dr. White has done a terrific job of writing letters to about 150 different people about this. We have a leaflet that is going to be distributed at the conference here. We have a Web site now that advertises the details of this and will go into further detail as it is developed.

This is actually a major focus of our impetus that we have to try to bring these communities together and evaluate evidence that looks promising.

We have started a clinical trials effort, and Dr. Straus has mentioned some of the examples of this. I also have to mention that there is a new evaluation panel, a peer review evaluation panel for clinical oncology proposals, that spans the spectrum of clinical oncology that I expect will be the perfect place for complementary and alternative medicine investigators to come in with clinical proposals. My expectation is they will get a fair review in that setting, and I have asked Dr. White to pay particular attention to the flow of applications into the Institute and to make sure that CAM issues are adequately represented on that committee.

In the matter of providing information, we are working closely with the NCCAM about this. Our protocol data base CancerNet, part of which, PDQ, has been in existence since the mid-1980's or so, has recently been totally revamped and updated; and as part of this a couple of years ago we decided to take down a lot of the information that we have on complementary and alternative approaches for the reason that Dr. Straus already mentioned, that we just considered them inadequate, and we have been rebuilding this and putting it back up and attempting to have fair-minded and complete evidence-based reviews of what is going on in the CAM area.

So let me just in the interest of time move on quickly to the natural products area, because I know that is of interest to you, Mr. Chairman, in particular. This is an area, of course, that is very old in medicine, it is about as mainstream as you can get, but with important conceptual links, interesting conceptual links to the world of complementary and alternative medicine.

For natural products, one thinks of a whole variety of medicines in medicine—morphine for pain, quinine derivatives for cardiac

irregularities, digitalis for heart failure, any number of antibiotics for bacterial infections, and the statins for cholesterol lowering; and, of course, vincristine, vinblastine, doxorubicin, camptothecins, taxol, taxotere and other anticancer drugs all come from one or another corner of the natural world.

Now, the notion of the natural world as a repository of medicinal chemicals actually provides a pretty clear conceptual link between the world of hard science on the one hand and the world of alternative practices on the other. There is nothing complementary or alternative about natural products' chemistry. What you have there is a body of really rigorous science that can be used to explain, if we are clever about it, real observations that are made with natural substances that may come out of the experience of practitioners that are doing empirical kinds of therapies that they have a feeling work and they have observed seem to work.

The issue for us is to really tack this down as much as possible and make it as rigorous as possible. There are some interesting complexities and differences in the approaches between these two worlds. Natural products chemists tend to be really interested in pure compounds. They are interested in fishing out pure compounds from impure extracts and trying to define what is active and what is not within these extracts. Whereas traditional practitioners and traditional kinds of medical practice frequently emphasize the efficacy of complex mixtures.

So one of the things we are going to have to confront as an Institute in the not-too-distant future is this matter of how we can rigorously evaluate the kinds of complex mixtures that may come to the best-case series and may possibly look good to the people doing the evaluations in the best-case series.

So where do we want to go with all of this? We actually feel that the natural products effort is so important even in the changing scientific context that we are in now that we really want to strengthen it.

The search for new drugs involves basically the answer to two questions: Where do you look for the new drugs and how do you look for them? The traditional answer to the where question is in the natural world. That is why natural products are so important. People look there.

The traditional answer to the how do you look question is you set up screens, you set up assays of some sort based on some empirical effect, in the case of cancer, like cell killing, and then you expose the assay to mixtures of natural products or synthetic chemicals and you see what happens. That is how a lot of drugs have been discovered. Both these things are changing now, actually. They are changing in remarkable ways.

The answer to the where question is now not only natural products and pure chemicals, it is complex libraries that clever chemists can actually synthesize in their laboratories, generating huge amounts of chemical diversity there. The answer to the how question is now no longer empirical but involves concentration on molecular targets.

In the Wall Street Journal article yesterday that was already mentioned with the new compound for leukemia is an example actually of a synthetic search for a ligand to a molecular target. The

key point about this and the reason I am bringing this up in this kind of detail is that these changes, the increasing amount of science in cancer drug discovery now, do not make natural products less important. In fact, sometimes they probably make them more important, because the natural world is probably the best single place to find a diversity of structures that no chemist, no matter how smart, would ever have had the insight to synthesize a ligand to a particular target that might be as useful against cancer.

So we are currently thinking about ways to increase this resource and broaden it so it is not only an internal resource for the Institute but it is made available on a competitive basis, to discovery laboratories across the country that wish to employ natural products in their own discovery efforts.

I think in the interests of time I will stop here.

Mr. BURTON. Thank you, Dr. Wittes. We will get back to you with some questions shortly.

[The prepared statement of Dr. Wittes follows:]

TESTIMONY

Integrative Oncology : Cancer Care for the Next Millenium

Robert Wittes, M.D.

Deputy Director of Extramural Science
Director, Division of Cancer Treatment and Diagnosis
The National Cancer Institute
National Institutes of Health
Department of Health and Human Services

Hearing before the House Committee on Government Reform
June 7, 2000, 1:00 P.M.
2154 Rayburn House Office Building

WITTES

Good afternoon. I am Dr. Robert Wittes, Deputy Director of Extramural Science and Director of the Division of Cancer Treatment and Diagnosis, the National Cancer Institute (NCI), National Institutes of Health (NIH). Accompanying me today is Dr. Jeffrey White, Director of NCI's Office of Cancer Complementary and Alternative Medicine (OCCAM).

I am pleased to be invited to address the House Government and Reform Committee today to report on our progress in the fight against cancer and to discuss the future of cancer care in the new millennium. With the help of new advanced technologies we are entering the next decade in this new century with the ability to unlock critical information about the nature of cancer - what we know now to be a class of over 100 different diseases that share certain features. Because of this fact, it is unlikely that one magic bullet will solve the problem.

Many of us - scientists, health professionals, and health care providers - have devoted our careers to finding cures, and treating, and caring for the cancer patient. The network of concerned citizens is vast - from the community volunteer who drives a cancer patient to chemotherapy, to the cancer survivor who devotes his/her time to offer hope to others. We have seen our share of family members, friends, and patients lose their fight to cancer as we struggle to save them - to find the cure. Our losses, albeit painful, just intensify our resolve to find a cure - to stop the suffering it causes. Each year, we are seeing 1.2 million new cancer cases, and at least a half million cancer-related deaths.

But, as a nation, we are beginning to see results from our investment in cancer research. I am pleased we are able to report that cancer mortality continues to decline. The rate of new cancer cases and deaths for all cancers combined as well as for most of the top 10 cancer sites declined between 1990 and 1997. Drops continue to be seen for the four major cancer sites of lung, colorectal, breast and prostate. Overall, mortality rate drops are seen in both the black and white population. Remarkably, the magnitude of these drops are such that, for the first time, between 1996 and 1997, the total number of cancer deaths did not rise, despite a population that is growing and aging.

According to the most recent report from the NCI's Surveillance, Epidemiology and End Results (SEER) Cancer Registry Program, survival for children with cancer has improved dramatically since the early 1960s, when fewer than 10% of children with leukemia survived and when only 28% of all children with cancer were alive five years from their diagnosis. Today, over 80% of children with acute lymphoblastic leukemia (ALL) are surviving five years from diagnosis, with most of these children cured of their leukemia. Overall survival rates for children with cancer have increased to 75%.

Corresponding to improvements in survival rates have been substantial decreases in childhood cancer mortality, with the mortality rate decreasing nearly three-fold from 1960 (~80 per million) to 1997 (~25 per million). For specific cancer types such as leukemia and non-Hodgkin's lymphoma, there have been four to five fold decreases in mortality rates.

As most children with these diagnoses are treated in clinical trials conducted by the NCI-supported clinical trials cooperative groups, the improvements described above and illustrated in the attached figures largely reflect advances in therapy identified in these clinical trials.

Recent advances identified in NCI-sponsored clinical trials that have contributed to increasing survival rates include identification of the following improvements in treatment:

- Cis-retinoic acid, which is related to vitamin A, given following completion of high-dose chemotherapy and autologous bone marrow transplantation, improves outcome for children with high-risk neuroblastoma.
- Dexamethasone is more effective than prednisone for children with "standard risk" ALL.
- Intensive asparaginase treatment is important for favorable outcome for T-cell ALL.
- Wilms' tumor can be successfully treated with an intensive administration of chemotherapy over just 6 months, a much shorter period than for the previous standard chemotherapy regimen which was given over 15 months.

Despite the advances over the past 40 years, there remain approximately 1,500 children younger than 15 years of age and an additional 700 15-19 year olds who die of cancer each year in the United States. Only when all children are free from the threat of cancer can we be satisfied with our progress.

For adult cancers, the SEER report indicates that, by far, the greatest decline in cancer incidence rates has been among men, who, overall, have higher rates of cancer than women. Yet, certain recent trends threaten to undermine the progress we have made. The incidence of melanoma, an aggressive skin cancer, has been rising about 3% per year, although death rates have remained constant, and incidence rates for non-Hodgkin's lymphoma continue, inexplicably, to rise.

In addition, adolescents are now smoking and using tobacco products -- a major risk factor for lung and other cancers -- at a troubling rate, which may well reverse the currently falling rates of lung cancer in coming years.

Moreover, we are aware that the burden of cancer is not equally experienced across our population - that certain racial, ethnic, and socioeconomic groups continue to be disproportionately burdened by cancer. Monitoring rates and trends over time, by geography, by gender, age and racial and ethnic groups has been a priority for the NCI and we are particularly concerned about the disproportionate impact of cancer on the poor, the medically underserved and certain ethnic groups. We are committed to discovering the reasons why cancer disproportionately affects specific populations.

We know that appropriate decision making in science and in public health depends on

accurate, reliable information about the incidence and impact of disease. NCI uses data from SEER to identify and study trends, track the impact of cancer on the general population, and provide information to help researchers find out why certain populations are affected by cancer more severely than others. However, recent changes in health care financing and delivery, the revolution in informatics and computer programming technology, and the social and cultural diversity of our country present new challenges and opportunities in surveillance research. We plan to expand our data collection to include patterns of cancer care, as well as treatment and quality of life outcomes. In addition, new investments are planned to find tools that will improve the precision and expand the reach of cancer surveillance, and to encompass a broader spectrum of the racial, ethnic, socioeconomic, and cultural diversity of our country. Greater efforts are also planned to disseminate the results of NCI's surveillance research.

In his recent testimony before the House Appropriations Committee, Dr. Klausner, Director of the NCI, outlined a number of expansions in our programs aimed at the ability to assess, explain and affect the unequal burden of cancer. These expanded and new initiatives address the important message of last year's Institute of Medicine (IOM) report on the unequal burden of cancer. These new initiatives include:

NCI will expand the SEER Program to include populations with differential cancer rates that are currently under-represented (e.g., Non-Mexican Hispanics, rural African Americans, American Indians, high poverty, and high cancer death rates). Expansion will strengthen the existing national infrastructure for surveillance research, which in turn will improve understanding of health disparities in cancer outcomes among major ethnic populations, including rural whites and blacks, non-Mexican Hispanics and Native Americans.

We have signed a new Memorandum of Understanding (MOU) with the Centers for Disease Control and Prevention (CDC) to formalize collaboration and integration of the NCI's surveillance and surveillance research programs with the CDC's National Program of Cancer Registries. This will allow a strategic integration of the NCI's more intensive surveillance and research system with the CDC-funded state registry systems, to help develop data standards and tools for pooling data.

This year we have funded a new research program of Special Population Networks (SPNs) for cancer control and research. These new consortia will be based within various communities serving different segments of our diverse society in order to establish cancer control and research infrastructures to work within and to serve these communities. To support the activities of these SPNs, we are establishing a cancer control academy at the NCI for training and will link these community-based research networks to the full range of information and communication resources of the NCI. These SPNs, we hope, will provide the basis for a new national platform for cancer research to address the distinct cancer burdens of special populations. We are setting aside \$50-60 million over five years to fund about 17 SPNs (\$12 million in FY 2000), the largest program of its kind we

have ever funded.

This year, in collaboration with the NIH Office of Research on Minority Health, we began funding five research partnerships between NCI-designated cancer centers and minority institutions to create active and successful academic research programs linked to our most successful cancer research institutions. We plan to release a new Request for Applications (RFA) to sustain and enhance these new enterprises. A more complete description of our activities in this crucial area can be found at the NCI Office of Special Populations Research Web site (<http://ospr.nci.nih.gov/>).

Monitoring cancer incidence and mortality trends can help us formulate questions about the distribution of cancer control and care, as well as about possible causes of cancer. This year, the NCI released, for the second time in its history, 25-year cancer mortality maps. These cover all 3,100 United States counties and state economic areas, for 40 cancer sites, by gender and race. These maps are available on the NCI Web site in a user-friendly and dynamic format. They do not tell us causes of cancer or indeed whether a geographic pattern reveals either a localized environmental factor, a behavioral pattern or a socio-economic pattern. But, by providing the starting point for addressing these issues, these maps are crucial resources. The NCI will release a Request for Application (RFA) to support two types of studies linked to these maps: epidemiologic research to search for explanations for geographic and temporal cancer patterns, and methodologic research to develop Geographic Information Systems (GIS) for evaluating environmental associations with cancer. These maps are one part of NCI's extensive program in establishing environmental (exogenous) causes of cancer.

Recent Advances in Cancer Research

Progress in our understanding of the biology of cancer continues at an astonishing pace. We are learning more each day about how cancer arises from a single cell that behaves abnormally, dividing uncontrollably and leading, eventually, to the development of a tumor. We also are learning about the ways that genes, which direct the behavior of the cell, interact with a host of environmental agents to cause cellular malfunction and disease. This basic knowledge about the nature of cancer is providing us with critical insights into how we can prevent and detect cancer more effectively. And it is giving us the opportunity to improve treatment by enabling us to design therapies that target the machinery of the cancer cell. Powerful new technologies are permitting us to detect and diagnose cancer at an earlier stage, before it has had the chance to spread. People with cancer are living longer, and with a better quality of life, than ever before.

Altered genes and molecular pathways in a cell are already providing long-sought targets for new therapeutics. Identifying the specific molecular pathways that define each type of human cancer has allowed us to begin to replicate these changes in the genes of mice. These mice develop cancer that more accurately mimics human cancer. This will allow the development of mouse models of human cancer that more accurately predict the behavior of human disease and response to treatment than mouse models previously available.

The knowledge that cancer cells develop by changing their molecular profile has set the stage for a new and systematic approach to both early detection and accurate diagnosis. Three years ago, the NCI set out to establish a full index of all the genes that are altered in each type of cancer. This project, called the Cancer Genome Anatomy Project or CGAP, has been extremely successful, identifying tags for the vast majority of human genes, annotating what types of cells and cancers express those genes, developing catalogues of chromosomal changes in cancer and discovering common genetic variations that will help to explain why individuals are different in their risk of getting cancer, their sensitivity to diet and the environment and their response to therapy. CGAP has become one of the most widely used sources of information and reagents in the research world. Systematic gene discovery through CGAP and other projects is about to profoundly change our approach to the classification, and therefore the accurate diagnosis of, cancer.

For the past three years, the NCI has been redirecting its drug discovery program to one based on the success of basic research in identifying the precise molecular targets implicated in the development, growth, and spread of cancer. The preventive agents and therapeutics of the future will be aimed at these targets.

The recent encouraging results of Herceptin for the treatment of advanced breast cancer, Rituximab for the treatment of non-Hodgkin's lymphoma, STI 571 for the treatment of leukemia, tamoxifen for reducing the risk of breast cancer and a growing list of others, all point to the future face of molecularly targeted therapeutics and preventives. We have funded six new centers to develop new libraries of chemical diversity and test them against promising molecular targets. This year, we will fund an ambitious new Molecular Target Drug Development Discovery Program aiming at the validation of molecular targets that derive from advances in cancer biology.

Historically, natural products –chemicals derived from plants and microorganisms – have been a fertile source of new compounds for cancer and other areas of medicine. NCI is currently considering ways to enhance our activities in natural products drug discovery and to make our internal capabilities in natural products isolation and identification available to research groups throughout the country that are engaged in the search for new cancer preventives and therapeutics.

Last year, we initiated a novel program called RAID (Rapid Access to Intervention Development) that evaluates promising drug candidates in the laboratories of academic investigators and, via peer review, manages the movement of these candidate drugs from the lab to the point of clinical trial. To date, 35 novel agents have entered the RAID pipeline and in one year four have reached or are ready for clinical trials. We will expand this successful program in the coming year.

NCI's Challenge: Building the Capacity of the Future

Our capacity to build on our recent accomplishments is critical to further progress against cancer. First, we must sustain and strengthen the research programs that have enabled us to pursue a path of scientific excellence and discovery in cancer research, providing opportunities for researchers to explore new, innovative, and unconventional ideas, including complementary and alternative medicine (CAM), to make new discoveries in cancer research.

Second, we must seize extraordinary scientific opportunities made possible by advances in science and technology. Through expanded support for investigator- initiated research, by strengthening the integration of cancer research centers, and by supporting the expansion and integration of networks and consortia to spur creativity and to explore new and innovative ways to detect, diagnose, treat, and prevent cancer, we expect to strengthen the cancer research infrastructure and enable basic discovery to rapidly improve clinical practice.

Third, we are committed to strengthening the National Clinical Trials Program. In the past two years, the results of clinical trials have set new standards for increasing the effectiveness and reducing the toxicity of regimens for childhood cancers, leukemia, myeloma, breast cancer, ductal carcinoma in situ (DCIS), cervical cancer, head and neck cancer, lymphoma, colorectal cancer, prostate cancer and others. To sustain these efforts NCI is extensively restructuring our national clinical trials system. We want to improve the quality of scientific questions asked, increase speed and efficiency and decrease the administrative burdens of participating in clinical trials. Furthermore, we want physicians and patients to have access to the full menu of available clinical trials. Currently, about 20,000 new patients are enrolled annually in NCI-sponsored treatment trials. We want to make certain that our clinical trials system is able to keep pace with the dramatic increase in the number of new therapeutic and preventive agents that warrant testing. Many more patient-volunteers are needed to help establish the benefits of new agents, new combination treatments, and complementary and alternative cancer therapies. Our planned enhancement of the infrastructure to support these studies will be critical.

Fourth, the power of computer-based communications and the World Wide Web are making possible unprecedented research opportunities. Paper-based research systems are giving way rapidly to integrated systems that share information and knowledge effortlessly and enable new discoveries to be made at the researcher's desk, not just in the lab. A strong cancer informatics infrastructure is vital to NCI's efforts to foster collaboration among the conventional and CAM communities by helping to speed the discovery process, translate the best discoveries into clinical trials, and transform cancer care through more effective and efficient information exchanges.

Fifth, as I described previously, the expansion of NCI's cancer surveillance efforts is vital to our efforts to prevent and control cancer. Through the planned efforts I have included in my written testimony, NCI continues to play an active role in developing a comprehensive national surveillance program.

Finally, new ways of educating, training, and developing scientists are necessary to ensure that technology advances are integrated rapidly into the cancer research enterprise and that scientists are prepared to work together in team settings to unravel the complex factors contributing to human cancer.

NCI Progress in Complementary and Alternative Medicine (CAM)

Since Dr. Klausner addressed the Committee in 1998 and outlined NCI's goals to strengthen NCI's role in CAM research, much progress has been made. I am pleased to report that we have not only met those goals but surpassed them. NCI is supporting a number of high quality CAM-related research projects, including projects examining the effects of dietary interventions in cancer treatment, projects examining the therapeutic value of vitamins and minerals in cancer prevention and treatment, studies in stress and pain management to enhance the quality of life for cancer patients, and studies examining the effect of natural inhibitors of carcinogenesis. We are working closely with the NIH National Center on Complementary and Alternative Medicine (NCCAM), under the leadership of my colleague, Dr. Straus, to encourage the conventional cancer research community to initiate new CAM research studies at NCI-sponsored cancer centers. In addition, as Dr. Straus mentions in his testimony, NCCAM and NCI are initiating a new research grant mechanism - Quick Trials for Novel Cancer Therapies - to ensure timely development of new treatments.

The NCI is extremely pleased with the support and guidance Dr. Straus and his staff have provided the Institute in our efforts to strengthen the integration of cancer-related CAM research into the cancer research agenda. Through the leadership of Dr. Jeffrey White, NCI is actively involved in forging collaborative relationships between the conventional cancer research and CAM communities, and progress has been made in strengthening the Institute's relationship with CAM researchers and practitioners.

NCI has made progress in incorporating CAM information into NCI's cancer communications network. Of considerable importance to all of us is the public availability of accurate, up-to-date information about CAM therapies. NCI has taken steps to assure that this information receives the same consideration as conventional approaches in our evaluation and dissemination efforts. Few health-related interventions have the potential of interactive health communications to improve health outcomes, decrease costs, and enhance consumer satisfaction. Indeed, effective communication is central to cancer care, from primary prevention through survivorship.

Detailed CAM summaries have been prepared for cancer therapies identified by our Cancer Information Service and the NCCAM Clearinghouse as being of public interest. The continued development of these and other CAM-related summaries will follow the same model as those for conventional therapies and include specific trial results and references to the published literature. They will be reviewed by the appropriate Physicians Data Query (PDQ) Editorial Board depending on whether the intervention is for the treatment or prevention of cancer or used as a supportive care intervention. In addition, these summaries will be sent to experts in the CAM

community for review and comment before they are made available on the NCI web site.

Information Dissemination Efforts

NCI has moved rapidly to expand linkages to CAM-related cancer information throughout our existing cancer information network. In addition, NCI has developed CAM Cancer PDQ Summaries and Cancer Fact Sheets on a number of CAM therapies. CAM-sensitive and knowledgeable reviewers participate in the review of these summaries, and once approved by NCI's Physician's Data Query (PDQ) Editorial Board, are put on the NCI website. New summaries are planned to be completed and fully reviewed quarterly. An updated list of CAM Fact Sheets and PDQ CAM summaries currently on the NCI Website is included in my written testimony. These summaries can be found at website address:
<http://cancer.net.nci.nih.gov/treatment/cam.shtml>

They include Cancer Fact sheets on Cancell, Gerson Therapy, Immuno-augmentative Therapy, Laetrile, the NCI-Sponsored Clinical Trials of Antineoplastons, and NCI Studies of Hydrazine Sulfate. Also currently available are PDQ summaries on Hydrazine Sulfate, Laetrile, and Cartilage (Bovine and Shark). Green Tea is one of the topics for an upcoming PDQ summary, and other summaries have been drafted and are ready for review. They include: 714-X, Mistletoe, and Coenzyme Q10.

Through collaborative efforts with NCCAM, NCI has expanded its commitment to develop new centers for CAM research, and to support research to evaluate the efficacy of intensive pancreatic proteolytic enzyme therapy with ancillary nutritional support in the treatment of inoperable adenocarcinoma of the pancreas. The NCI has collaborated with the NCCAM to begin a randomized, prospective evaluation of Dr. Nicholas Gonzalez's therapy (a nutritional program with oral pancreatic enzymes and a "detoxification" regimen) at Columbia Presbyterian Medical Center, one of the NCI-designated Cancer Centers.

Because of public interest in the potential anti-cancer activity of shark cartilage and its continued use despite the lack of persuasive clinical evidence of efficacy, the NCI is collaborating with NCCAM to sponsor clinical trials in this area. The first trial is with the Canadian company (Aeterna). This trial is centered at the MD Anderson Cancer Center's Community Clinical Oncology Program with accrual sites in the U.S. and Canada. The study is a phase III randomized study in patients with non-small cell lung cancer. Both arms of the trial will receive standard therapy (chemotherapy + radiation therapy), one arm will receive the liquid shark cartilage product and the other study will receive a placebo. The first patients are currently being entered onto this study. A second shark cartilage trial is planned to be centered at Mayo Clinic in conjunction with the North Central Cancer Clinical Trials Group. NCI staff in the Division of Cancer Prevention have been instrumental in establishing phase I and II clinical trial protocols using formulations of the active components from green tea. These clinical trials began accruing patients in December 1999.

As a result of efforts to encourage NCI's intramural community to explore CAM research, we are seeing intramural researchers at NCI involved in examining the use of alternative medical therapies in adult cancer patients enrolled in Phase I clinical trials, and the use of complementary or alternative medicine practices by women at increased risk for breast cancer. NCI intramural researchers are also conducting a Phase I randomized study of Genistein, a soy product, for prevention of cancer in patients with no history of cancer or with asymptomatic early prostate cancer or other malignancy.

The Cancer Advisory Panel for Complementary and Alternative Medicine (CAPCAM), an expert panel that provides advice to both NCCAM and the NCI, is actively evaluating applications elicited from the CAM community by NCI's Best Case Series Program. As a result of CAPCAM recommendations, NCI is exploring the possibility of prospective outcomes monitoring on new lung cancer patients treated in a homeopathic clinic in India. Dr. White is working with the P Banerji Homeopathic Research Foundation clinic in Calcutta, to explore onsite monitoring of new lung cancer patients seen in the Banerji's clinics and to obtain the documentation and follow-up of a group of 30 - 50 new lung cancer patients for a period of 12 - 18 months.

NCI has also evaluated results of "Sun soup" clinical experience in lung cancer. This small uncontrolled trial that uses an herbal supplement in the treatment of lung cancer was presented to the CAPCAM in July, 1999. Dr. Alexander Sun, the originator of the "Sun soup" product, is applying for a research grant to support further clinical study.

The NCI continues to review CAM modalities for research readiness. This is an ongoing process of surveillance of the field to identify areas of research opportunity. This process will allow the identification of modalities appropriate for grant or contract support.

CAM Cancer Information Program

In February, 1999, NCI established the Cancer CAM Research Interest Group. This group is the only continuous and open forum for members of the NIH community to learn about and discuss the current status and potentials of CAM research as it relates to the treatment of cancer patients. This group allows for more frequent opportunities for productive interchange between the alternative and conventional medical and research communities. Topics of discussion may include: lectures from outside speakers about various aspects of and types of CAM or CAM-like research or clinical practice, discussions of comprehensive literature summaries, updates of ongoing CAM cancer research, and identification of opportunities for intramural and extramural research in CAM or CAM-related areas. Further, NCI continues to sponsor lectures and seminars on a variety of CAM-related topics.

We are also pleased to report that a website for the NCI Office of Cancer Complementary and Alternative Medicine has just been launched (<http://occam.nci.nih.gov/>). The site will be used to communicate with the general public and extramural research and practice communities as well

as intramural NCI and NIH program and administrative staff. It will contain updates and status of current and planned NCI CAM projects and will serve to project a visible research agenda and to make more transparent the NCI's processes for handling CAM issues (e.g. the Best Case Series Program).

The NCI is currently embarking on a project to develop a cancer-related CAM Citation Database to augment the cancer component of the existing NCCAM CAM Citation Index. This database will become a resource for NIH and extramural investigators interested in CAM research and will include articles and abstracts from many databases including Medline. The database will serve as a resource for NIH and extramural investigators interested in CAM research.

Conclusion

Again, thank you for inviting me to address you today. I look forward to discussing NCI's contributions to the scientific body of knowledge needed to support efforts to integrate complementary and alternative medicine into cancer care in the new millenium. Through the careful application of research and discovery, the 21st century can and will be the era in which cancer finally is conquered.

Dr. KANG. I was going to say he could have my time if it means I didn't have to testify. I am kidding.

Mr. Chairman, distinguished committee members, thank you for inviting us to discuss Medicare coverage for complementary and alternative therapies and experimental treatments, as well as our efforts to address racial disparities in health care.

We are well aware of the increasing integration of alternative therapies into conventional therapy. I have referred my own patients for treatment such as acupuncture in my own private practice.

However, for Medicare coverage and payment to be made, there must be reliable scientific evidence that a treatment is reasonable and necessary. To date, there has been a paucity of such evidence for complementary and alternative modalities, and we are actually eager and anxious to work with our colleagues at NIH, FDA and the National Center for Complementary and Alternative Medicine to address the necessary evidence needed for Medicare coverage decisions.

Once that evidence is generated that Dr. Wittes and Dr. Straus referred to and it is adequate, we will move quickly to provide coverage whenever and wherever that evidence is sufficient, within the limits of our statutorily defined benefit categories.

For experimental therapies, Medicare has historically not covered them because they do not meet the statutory requirement for reasonable and necessary. However, as the President announced this morning, we will explicitly authorize payment for routine patient care costs associated with clinical trials. Furthermore, the President asked us by Executive order this morning to report to him within 90 days regarding the feasibility and advisability of providing additional financial support for the non-covered or non-routine costs associated with clinical trials.

We want to do all we can to help generate the kinds of data we need to make prompt coverage decisions on experimental and alternative treatments. Our new open and accountable coverage determination process will help that.

For example, we—following our testimony last fall, my agency's testimony last fall to this committee, we actually thoroughly reviewed all of the studies cited in the National Institutes of Health Consensus Conference on Acupuncture in 1997. That conference concluded that the scientific evidence suggests that acupuncture is promising for the treatment of conditions such as chemotherapy-related nausea and vomiting and post-operative dental pain.

We will actually use that information as a starting point, and we have just initiated a national coverage determination process to look at those two cases for coverage in Medicare, and we are requesting any additional scientific information that has been generated since 1997.

We also have several initiatives under way to address racial disparities in care. We are particularly focusing on making health care and health care information understandable and obtainable for all populations, and we are stressing the importance of cultural competency, which emphasizes the need to recognize and respect the use of beneficiaries' traditional treatments and beliefs from

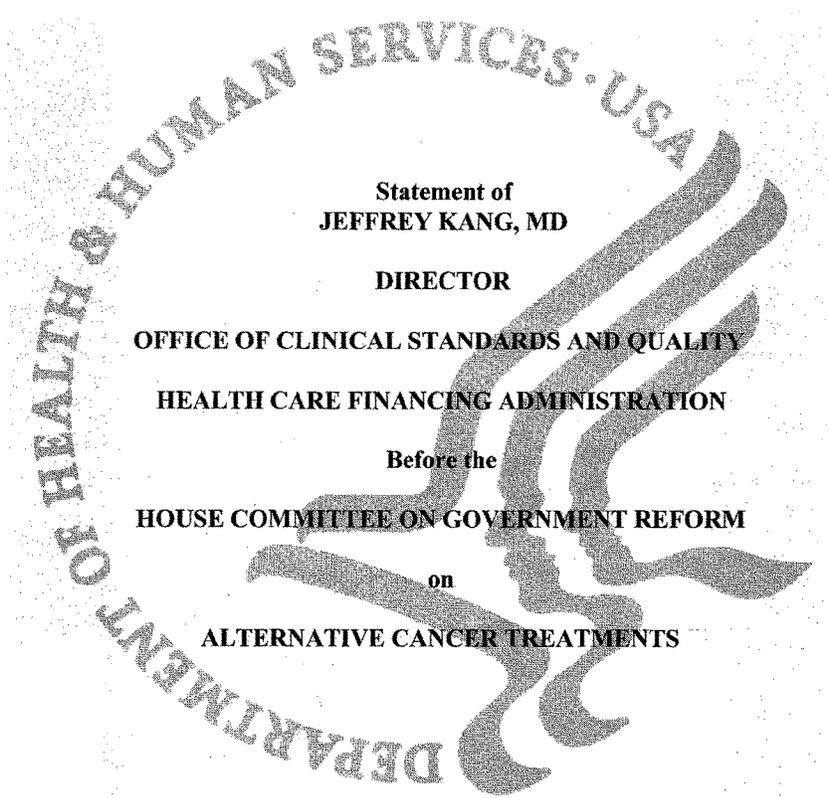
whatever cultures they may come from and then to integrate them into the conventional medical care that we pay for.

We greatly appreciate the desire of this committee for wider coverage of alternative and experimental therapies and steps to address racial disparities in care. We will continue to work closely with our colleagues on this panel today to develop the scientific knowledge and evidence we need for coverage. We will also move quickly to implement the revised coverage policy regarding routine costs announced by the President today, and we are committed to working to address reducing racial disparities.

I thank you, Mr. Chairman and committee members, for the opportunity to testify today and am looking forward to answering any questions you may have.

Mr. BURTON. Thank you, Dr. Kang.

[The prepared statement of Dr. Kang follows:]



Statement of
JEFFREY KANG, MD

DIRECTOR

OFFICE OF CLINICAL STANDARDS AND QUALITY
HEALTH CARE FINANCING ADMINISTRATION

Before the
HOUSE COMMITTEE ON GOVERNMENT REFORM

on
ALTERNATIVE CANCER TREATMENTS

June 7, 2000



**Testimony of
Jeffrey Kang, MD, Director
Office of Clinical Standards & Quality
Health Care Financing Administration
before the
House Government Reform Committee
on
Integrative Cancer Care
June 7, 2000**

Chairman Burton, Congressman Waxman, distinguished Committee members, thank you for inviting us to discuss Medicare coverage for alternative and experimental therapies, as well as efforts to address racial disparities in health care.

The Social Security Act authorizes Medicare coverage of defined categories of medical services provided by specific types of practitioners when such treatments are “reasonable and necessary for the diagnosis or treatment of illness or injury or to improve the functioning of a malformed body member.” It authorizes the Health & Human Services Secretary to specify what is covered and under what circumstances, and we try to strike the appropriate balance between providing timely access to medical advances and ensuring that treatments are “reasonable and necessary.” To do so, we rely on scientific evidence, including medical literature and data, discussions with medical experts, and technology assessments.

We are well aware of the increasing integration of alternative therapies into conventional treatment for patients with cancer and other conditions. I have referred my own patients for treatments such as acupuncture. Hospices, hospitals, and managed care plans in Medicare can provide alternative treatments under discretion they have through per diem, prospective, and capitated payment systems, respectively. And the law specifically provides for Medicare coverage of chiropractic spinal manipulation by chiropractors, as well as massage therapy by physical therapists when the treatment can be demonstrated to help improve a patient's health status.

For other alternative therapies, we will move quickly to provide coverage throughout Medicare when there is sufficient scientific evidence to meet the statutory requirement that Medicare fee-for-service treatments be reasonable and necessary.

Coverage for alternative modalities to date has been limited because of the paucity of reliable scientific evidence to support their use. Without such scientific evidence, we are limited in our ability to determine that these treatments meet the statutory requirement of being “reasonable and necessary.” However, thanks to the work of my colleague Dr. Straus and others at the National Center for Complementary and Alternative Medicine, as well as work by colleagues at the Agency for Healthcare Research and Quality (AHRQ) and elsewhere, we may be better able to make these determinations soon.

For experimental therapies, Medicare historically has not covered them because they do not meet the requirement of being reasonable and necessary. However, as the President announced this morning, we have reviewed our legal authority and determined that we can cover the routine services provided to Medicare beneficiaries who are participating in clinical trials. We will move quickly to implement this new policy by formally and explicitly instructing our contractors to provide such coverage. We also will launch education efforts to make sure beneficiaries and providers know that they are entitled to such coverage.

Our new, open and accountable coverage determination process will help facilitate prompt coverage determinations for all experimental and alternative treatments as scientific evidence of their efficacy becomes available. This new process, implemented last year after extensive review of how we could improve our coverage determination process, allows any member of the public to request a coverage determination or submit new evidence that might justify a redetermination. There are time lines for action on such requests, data are reviewed by expert panels in open meetings. The status of determination proceedings is posted on the Internet. And we will work with our National Institutes of Health colleagues to help researchers design trials to evidence needed for coverage determinations, which should help to further speed up the approval process.

We also have several initiatives underway to address racial disparities in care. And we look forward to working with our NIH colleagues to develop a comprehensive strategy to address this important issue.

NEW COVERAGE DETERMINATION PROCESS

The new coverage process helps ensure that the public is fully informed and can track the status of any determination under consideration. We now publish on our www.hcfa.gov web site:

- a list of coverage issues under review;
- the stage of review each issue is in;
- the major scientific questions that need to be resolved prior to a coverage decision;
- an estimate of when the next action will occur;
- a complete, indexed record of issues reviewed for each decision, including evidence examined, major steps taken in the review, and the rationale for decisions.

Any member of the public may request a review of a national coverage policy determination at any time. Individuals requesting such a review need only submit the request in writing, along with new medical and scientific evidence that merits consideration, or an analysis of Medicare's decision demonstrating that a material misinterpretation was made in the evaluation of evidence. We also regularly review new medical and scientific information on our own initiative to assess whether modifications to national coverage policy may be appropriate.

We generally respond within 90 days to a coverage review request by:

- referring the request to the new Medicare Coverage Advisory Committee;
- referring the request to an independent technology assessment body, such as those that contract with the Agency for Health Care Research and Quality;
- notifying the requester that coverage is warranted and will be granted;
- notifying the requester that coverage is not warranted and will not be granted;
- notifying the requester that coverage is warranted, but only under certain limitations;
- notifying the requester that coverage will be left to local contractor discretion;
- notifying the requester that the request duplicates and will therefore be combined with another pending request; or
- notifying the requester that the request duplicates an earlier request for which a decision has already been rendered and available evidence does not warrant reconsideration.

The coverage determination process features a Medicare Coverage Advisory Committee which reviews requests in open public meetings. Its 120 members include nationally recognized experts in a broad range of medical, scientific and professional disciplines, as well as consumer and industry representatives.

The Committee is divided into six panels, organized to roughly parallel Medicare benefit categories:

- Medical and Surgical Procedures;
- Laboratory and Diagnostics Services;
- Drugs, Biologics, and Therapeutics;
- Medical Devices and Prosthetics;
- Durable Medical Equipment; and
- Diagnostic Imaging.

Each panel includes a consumer representative and an industry representative. These panels review and evaluate medical literature, technology assessments, and other data on the effectiveness and appropriateness of medical items and services. Based on the evidence reviewed, the Committee advises and makes recommendations to HCFA.

We are now beginning to use this new process to review whether acupuncture meets the "reasonable and necessary" criteria for coverage. Since our agency testified before you last fall, we have thoroughly reviewed all the studies cited in the National Institutes of Health Consensus Conference report on acupuncture. The report concluded that scientific evidence suggests that acupuncture is "promising" for several conditions, including treatment of chemotherapy related nausea. Our extensive analysis of literature cited in the NIH consensus report will serve as the starting point in the coverage determination process, and we are making an open request for any and all additional scientific data.

Coverage Criteria

To further improve and clarify our coverage process, last month we issued a *Federal Register* notice proposing to develop national criteria for whether a service or treatment meets the “reasonable and necessary” requirement. The notice describes two criteria that could be applied:

- **Medical Benefit.** An item or service is shown through objective clinical evidence to have medical benefit -- i.e. produce a health outcome better than the natural course of illness or disease with customary medical management of symptoms; and
- **Added Value.** An item or service provides added value compared to existing treatments - i.e. it substantially improves health outcome, provides access to a beneficial treatment of a different type (medication instead of surgery), or substitutes for an existing treatment at lower cost.

The notice invites public comment, which may be received through June 15. Public comments will be considered in the drafting of a proposed rule. The public will then have an additional opportunity to comment on the criteria before they become final.

CLINICAL TRIAL COVERAGE

This morning the President announced that we will change Medicare policy to explicitly authorize coverage for routine patient care costs provided to Medicare beneficiaries participating in clinical trials. Before today, Medicare reimbursement policies often discouraged seniors from participating in clinical trials. Because clinical trial investigators could not guarantee that Medicare would pay for the routine care associated with participation in their clinical trial, seniors considering whether to enter these trials had to assume that they may be responsible for costs simply because they were participating in a clinical trial. In addition, investigators and research centers were often reluctant to recruit them because of the uncertainty of Medicare coverage.

Promoting biomedical research and ensuring that Medicare beneficiaries receive the highest quality care possible are longstanding priorities for this Administration. And we have been greatly concerned that only about one percent of seniors now participate in clinical trials, even though the elderly are most likely to have conditions being studied.

For cancer, seniors constitute 63 percent of cases but only 25 percent of those in clinical trials. For breast cancer the disparity is worse – half of all patients are seniors, but seniors represent less than 2 percent of those in clinical trials.

These low participation rates hinder development of new therapies, as it often takes between 3 and 5 years to enroll enough participants in a trial. In fact, one reason for the stunning advances in pediatric cancer care has been that more than half of pediatric cancer patients were enrolled in clinical trials over the last twenty years, and today, 75 percent of cancers in children are curable.

To address these problems, the President has instructed us to:

- Immediately revise Medicare program guidance to explicitly authorize coverage for routine patient care costs and costs due to medical complications arising after trials.
- Inform beneficiaries and providers about this new coverage option.
- Help researchers design trials to produce data needed for Medicare coverage decisions.
- Review the feasibility and advisability of additional action to promote research, including:
 - providing financial support for monitoring, evaluation, and other non-routine, non-covered costs for those trials of particular relevance to Medicare beneficiaries;
 - establishing a system to track spending in trials that Medicare supports; and
 - exploring further efforts to increase participation of seniors in clinical trials and ensure that researchers can determine the best therapies for older as well as younger patients.

ADDRESSING RACIAL DISPARITIES

We are working diligently to address disturbing disparities in access to care, morbidity, and mortality among racial and ethnic minorities. As President Clinton said when announcing his goal to eliminate disparities by 2010: “We do not know all the reasons for these disturbing gaps. Perhaps inadequate education, disproportionate poverty, discrimination in the delivery of health services, and cultural differences are all contributing factors.

But we do know this: no matter what the reason, racial and ethnic disparities in health are unacceptable in a country that values equality and equal opportunity for all. And that is why we must act now with a comprehensive initiative that focuses on health care and prevention for racial and ethnic minorities.”

At HCFA, we co-sponsored a conference last fall that brought together leading researchers to help us develop a research agenda on what causes disparities and what helps in eliminating them. Papers we commissioned at the conference should be published later this year. We also have new contracts with Medicare’s physician-led Peer Review Organizations that include projects with local groups to reduce disparities. And we have many initiatives that concentrate on making health care and health care information understandable and attainable for all populations.

For example, our HORIZONS program targets African-American, Hispanic, Asian-American and Pacific Islander, and American Indian and Alaska Native beneficiaries as we work to overcome language and cultural barriers that inhibit these groups from understanding and receiving health care and information. We also are working with the Office of Minority Health to improve our health communication efforts and to develop strategies to reach vulnerable and underserved populations. And we are working to increase the materials translated into other languages on our www.medicare.gov beneficiary web site; currently, information on Medicare contacts, quality comparisons, and other useful resources is available in Spanish and Chinese on the web site.

Furthermore, the latest versions of our final Medicare+Choice regulations and the final Quality Improvement System for Managed Care Standards and Guidelines considerably expand cultural competency requirements. A growing body of knowledge demonstrates that when care is provided in both a clinically competent and culturally appropriate fashion, it is more readily understood and accepted by the patient. A key part of cultural competency is recognizing and respecting use of traditional treatments and beliefs, and working to integrate them into conventional medical care. As a result, patient compliance is enhanced, outcomes are improved, and health care costs and expenses are reduced by diminished illness and mortality.

Our efforts not only enable these populations to better understand Medicare and Medicaid materials, but they help us to receive survey information and other feedback from these populations, further enhancing our ability to provide the information and care they need.

Beyond producing materials that can be understood by a broader range of people, we are striving to put these materials in the hands of beneficiaries, especially those in underserved populations. Our Regional Education About Choices in Health (REACH) campaign is the localized outreach component of the National Medicare Education Program. It has activities tailored to reach minority groups using demographic maps and partnering with local organizations that represent these groups. It concentrates on educating beneficiaries on basic Medicare and their options under the Medicare+Choice program, as well as raising beneficiary awareness of our information channels, including Medicare.gov and 1-800-MEDICARE.

In addition to these communication efforts, for the last two fiscal years we have been working with the Indian Health Service to establish cost reporting for its 49 hospitals. While Medicare is moving to prospective payment systems, cost reports may remain the final claim for payment in Medicaid. Prior to our involvement, these facilities were not filing any cost reports for either Medicare or Medicaid. We have been working to enhance their reporting capabilities so they can receive Medicaid payment, and so far, 16 of the 49 hospitals are filing annual cost reports. We plan to continue working until all 49 hospitals are completing cost reports.

Communications and payment are important, but we also are working to improve minority involvement in the health care system. Beyond our own equal opportunity programs, we serve as training site for a number of the fellows in the American Association of Health Plans' Minority Management Development Program. The Program is designed to expand the number of minority managers and executives in managed care organizations. In FY 2000, three Program fellows participated in a six-week rotation at the HCFA central office and two fellows performed a similar rotation in our California regional office.

All of our initiatives are taking place within the broader context of the President's goal of eliminating longstanding racial health disparities. The Department of Health and Human Services has worked to close these gaps in health through a plan that sets a national goal of eliminating health disparities in six primary areas by the year 2010. These areas include: infant mortality; cancer screening and management; cardiovascular disease; diabetes; HIV/AIDS rates; and child and adult immunization levels.

The Department's initiatives are spearheaded by a sweeping outreach campaign led by Surgeon General David Satcher. This includes developing new approaches and encouraging local, innovative strategies to address racial and ethnic health disparities. We also are developing a new Foundation/Public Sector collaboration to work on this initiative, and we are looking at more effective ways to target existing federal programs to address health disparities. Perhaps most importantly, the Department has issued a challenge to involve communities, foundations, advocacy organizations, and businesses in developing strategies to diminish these gaps in health. With a collaborative, national focus on this important issue, we are moving towards raising the health levels of all Americans – we are moving in the right direction.

CONCLUSION

We greatly appreciate the desire of this Committee for wider coverage of alternative and experimental therapies, and steps to address racial disparities in care. We will continue to work closely with the NIH to develop the scientific knowledge we need for coverage of alternative therapies. We will move quickly to implement the new clinical trials coverage policy announced today by the President. And we are committed to working to address racial disparities in care. I thank you for holding this hearing, and I am happy to answer your questions.

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Mr. BURTON. Dr. Pazdur.

Dr. PAZDUR. Mr. Chairman, members, I am Richard Pazdur, MD, Director of the Division of Oncology Drug Products at the Center for Drug Evaluation and Research at the Food and Drug Administration. Prior to coming to the FDA 9 months ago, I was at the University of Texas M.D. Anderson Cancer Center in Houston for 11 years, where I was involved in patient care, research, medical education and administration. To the extent that information is publicly available, I would like to address the specific issues in your letter.

We understand that cancer patients and their families are often unfamiliar with the FDA's statutory responsibilities. To more thoughtfully work with the concerns of cancer patients and families, the FDA hired staff in 1994 who are available to answer questions and discuss concerns.

I would now like to address the issues in your letter.

Our primary obligations are those vested in us by Congress in the Federal Food, Drug and Cosmetic Act to help ensure that marketed medical drugs are properly labeled, safe and effective and that the procedures and studies conducted on unapproved drugs are designed to protect the vulnerable, particularly patients with life-threatening diseases such as cancer. The FDA is interested in good clinical studies and data, independent of the type of therapy used. It does not matter whether a drug is labeled alternative, complementary or conventional.

You asked us to address patient access to unapproved drugs. The access process starts with a sponsor, usually a drug company, seeking to develop a new drug. Testing experimental drugs in patients presents medical and ethical dilemmas. Medical and ethical standards prohibit substitution of an unproven drug where curative treatments are available.

For example, in the initial treatment of Hodgkin's disease, testicular cancer, child leukemia and medulloblastoma, there are curative therapies. Therefore, the use of an unproven drug before the standard therapy has been used is medically imprudent and ethically unacceptable.

The ideal mechanism for a patient to receive a promising but unproven drug is in a controlled clinical trial. Such trials provide appropriate patient protections and potential benefits. It is not always possible, however, for each patient who might benefit from the drug to enroll in clinical trials. Our regulations allow patients to have access to unapproved drugs even though they cannot enter clinical trials.

In the drug development process, the sponsor must decide whether it is willing to make the unapproved drug available for an individual patient. If the sponsor is not willing, even if the FDA has no objections, the patient will not be able to obtain the unapproved drug.

One may ask, why is the FDA involved in this process? Because the FDA has access to confidential information about the safety of the unapproved agent, our participation in the decisionmaking process is critical. We work closely with the sponsor and the patient's physician. For patients for whom no curative therapy exists,

our practice has been to liberally allow patients access to unapproved drugs.

Mr. Chairman, you asked, can an unapproved therapy believed to be less toxic be tried prior to a curative therapy that has known serious adverse events? The answer is no. The most important aspect of any potential cancer therapy is the likelihood for prolonging life or, hopefully, cure. Indirectly, drugs can be harmful if they lead people to delay or reject proven therapies, possibly worsening their condition.

The first chance for a cure is the best chance for a cure. This is because progressive tumor growth and deterioration in a patient's health makes subsequent therapy much more difficult. Researchers are always focusing on the goal of new and better treatments with minimal side effects.

For example, in childhood leukemia, progress has been made in improving the cure rate and decreasing the toxicity. With careful observation and no compromise in cure rate, well-designed clinical trials allow the development of less toxic therapies. Now the cure rates for some kinds of childhood leukemias are greater than 90 percent.

Mr. Chairman, we are often asked the question, how should we balance public health protection with personal autonomy? We think the Congress has established the balancing correctly in the Food, Drug and Cosmetic Act. As a practicing oncologist for over 20 years, I understand that some patients will never stop seeking treatment that they think might help them. Our regulations protect the public from unsafe and ineffective drugs but also are flexible and allow desperately ill patients access to promising unapproved therapies.

Thank you very much for the opportunity to testify. I would appreciate if my full written statement would be entered into the record. I will be happy to answer any questions the committee may have.

Mr. BURTON. Thank you, Doctor.

[The prepared statement of Dr. Pazdur follows:]



DEPARTMENT OF HEALTH & HUMAN SERVICES

Food and Drug Administration
Rockville MD 20857

STATEMENT BY

RICHARD PAZDUR, M.D.

DIRECTOR, DIVISION OF ONCOLOGY DRUG PRODUCTS

CENTER FOR DRUG EVALUATION AND RESEARCH

FOOD AND DRUG ADMINISTRATION

DEPARTMENT OF HEALTH AND HUMAN SERVICES

BEFORE THE

COMMITTEE ON

GOVERNMENT REFORM

U.S. HOUSE OF REPRESENTATIVES

JUNE 7, 2000

RELEASE ONLY UPON DELIVERY

PAZDUR

Mr. Chairman, Members of the Committee, I am Richard Pazdur, M.D., Director, Division of Oncology Drug Products (the Division), Center for Drug Evaluation and Research (CDER), Food and Drug Administration (FDA or the Agency). The Division's mission is to ensure that new cancer drugs are as safe and effective as possible and to facilitate access to promising therapies for seriously ill and dying patients when no other treatment is available. Prior to coming to FDA approximately nine months ago, I was associated with the M.D. Anderson Cancer Center in Houston, Texas, for eleven years where I was involved in patient care, cancer research, medical education, and administration.

Because of my prior experience with patient, academic, and scientific communities, I am acutely aware of the impact FDA's processes and decisions have on the public we serve. Under the Federal Food, Drug, and Cosmetic (FD&C) Act and related statutes, the Government has a vitally important role in helping to ensure that the medical products upon which patients and their health care practitioners rely are both safe and effective. These safeguards are particularly important for our most vulnerable citizens, those who are seriously ill.

Having treated and worked with cancer patients and their families for the past 20 years, I have seen the face of desperation frequently. When the effective treatment options have been exhausted, some cancer patients contact FDA asking for help in getting access to an unapproved product that is being investigated.

We understand that cancer patients and their family members are often unfamiliar with FDA's legal and regulatory responsibilities, and often are unaware that FDA cannot lawfully compel a company to supply an individual patient with an investigational drug outside of clinical trials. To more thoughtfully work with the concerns of cancer patients and their families, FDA hired staff in 1994 who are available to answer their questions and listen to their concerns. I will describe the functions of this office in greater detail later in my testimony, however, I want to emphasize that FDA staff spends time with these callers explaining, to the extent that our confidentiality restrictions allow, how and why we make our decisions.

I am pleased to share with you what our Agency is doing to accelerate the development of new treatments for cancer, to provide access to unapproved treatments, and to meet

the needs of cancer patients and their families. First, however, I would like to address the specific issues raised in your letter of invitation to FDA, to the extent that information is available and public.

Mr. Chairman, you have requested that as part of our testimony we discuss clinical trials in complementary or alternative therapies for cancer that FDA has under investigational new drug (IND) application status, information on the types and numbers of calls the Agency receives regarding these therapies, information we provide to the public about these treatments and about complementary and alternative medicine (CAM), an explanation of the process that a family goes through in being able to access a clinical trial for an alternative cancer therapy and the reasoning why a less toxic, safer therapy cannot be tried prior to a therapy that has known serious adverse events, and last but not least, the role of freedom of choice in medicine.

I. CLINICAL TRIALS IN COMPLEMENTARY OR ALTERNATIVE MEDICINE

When it comes to clinical research, there are good studies, and then there are the rest. FDA is interested in good studies and good data independent of the type of therapy being tested. We do not categorize therapies but

rather seek good clinical data from whatever intervention is being tested. Our primary obligations are those vested in us by Congress in the FD&C Act, namely to help ensure that marketed medical products are properly labeled, safe, and effective, and that the procedures in studies conducted on unapproved products are designed to protect the vulnerable -- particularly patients with life-threatening diseases and serious illnesses. To FDA, it does not matter whether the product or treatment is labeled alternative or complementary, or mainstream or conventional. We are indifferent as to the source and nature of any potential therapy as long as consistent good manufacturing standards and good laboratory and clinical practice are used.

Before gaining FDA marketing approval, new drugs, biologics, and medical devices must be proven safe and effective by controlled clinical trials. Under the FD&C Act, FDA must rely on evidence from adequate and well-controlled studies. The persons who participate in those clinical trials need to be adequately protected and fully informed of the risks and possible benefits of their participation. Patients want to make informed choices about medical treatments, whether conventional or

alternative or complementary. This is possible only when there is adequate data to provide the information upon which informed consent can be made.

CAM is a broad term referring to treatments that are either unapproved or not widely accepted in this country. Treatments range from botanicals and animal extracts to biofeedback to visualization techniques, chiropractic, homeopathy, massage therapy, acupuncture, and prayer. As we have emphasized, FDA relies on evidence, and is required to do so under the FD&C Act, from adequate and well-controlled studies as its basis for approval, not on theories of healing, animal studies or strongly held beliefs. Complementary and alternative treatments are as readily studied in well-controlled trials as are conventional treatments and some are being studied under National Institutes of Health (NIH) grants and other funding sources. FDA is eager to see formal controlled studies of CAM and has advised potential sponsors of such studies on study design and conduct.

Examples of products used in complementary and alternative medical practice that are being or have been evaluated for the treatment of cancer either in the United States (U.S.)

or abroad, under an IND, include the following: Green Tea extract(s) for cancer; Shark cartilage extract for advanced lung and other cancers; ozone therapy for transfusion-related diseases; Antineoplastons for cancer; Dietary Arginine Supplements for cancer; Vitamin D for cancer; and, Zinc Supplementation in Head and Neck cancer patients.

In addition, we are developing a guidance on the study and development of botanical products that facilitates their entry into clinical trials and will describe how to develop appropriate specifications for these complex products.

FDA works with NIH's National Center for CAM as well as the Division of Cancer Treatment, Diagnosis, National Cancer Institute (NCI) in the pursuit of evaluating unproven treatments for cancer. FDA is involved with these agencies in clarifying existing regulations and policies and participating in ongoing meetings regarding issues of mutual interest.

II. ACCESS TO A CLINICAL TRIAL FOR ANY CANCER THERAPY

The access process starts with a drug sponsor, a pharmaceutical company or a research scientist at a

university or at NIH, seeking to develop a new drug it hopes will find a useful and/or profitable place in the market. Before clinical testing begins, researchers analyze the drug's main physical and chemical properties in the laboratory and study its pharmacologic and toxic effects in laboratory animals (pre-clinical studies). If the laboratory and animal study results show promise, the sponsor can apply to FDA to begin testing in people.

Once FDA has reviewed the sponsor's plan and allowed it to proceed, and a local Institutional Review Board (IRB) (a panel of scientists and non-scientists that oversees clinical research) approves the protocol for clinical trials, experienced clinical investigators give the drug to a small number of cancer patients who have no other available therapy. These Phase I studies assess the most common acute adverse effects and examine the amount of drug that patients can take safely without unacceptable side effects. Initial clinical studies also begin to clarify what happens to a drug in the human body, how it is changed (metabolized), how much of it (or a metabolite) gets into the blood and various organs, how long it stays in the body, and how the body gets rid of the drug and its effects.

If Phase I studies do not reveal major problems, such as unacceptable toxicity, the next step is to conduct a clinical study in which the drug is given to patients who have medical conditions that may benefit from the drug; for potential cancer drugs, often several different types of cancers are explored (Phase II studies). Researchers then assess whether the drug has a favorable effect on the condition.

Testing experimental drugs in people inevitably presents ethical questions. For example, is it ethical to give patients a placebo when effective treatment is available? Not all authorities agree on the answer. The generally accepted practice in the U.S., and one increasingly being adopted abroad, is that well and fully informed patients can consent to take part in a controlled-randomized-blinded clinical trial, even when effective therapy exists, as long as they are not denied therapy that could alter survival or prevent irreversible injury. They can voluntarily agree to accept temporary discomfort and other potential risks in order to help evaluate a new treatment. In any trial in which a possible effect on survival is being assessed, it is important to monitor results as they

emerge. That way, if a major effect is seen, positive or negative, the trial can be stopped.

In some cases, a new treatment can be compared with established treatment, as long as the effectiveness of the latter can readily be distinguished from placebo and the study is large enough to detect any important difference. It is also possible to evaluate new drugs in this situation in "add-on" studies. In this kind of trial, all participants receive standard therapy approved for treating the disease, but those in the treatment group also get the investigational drug. The control group gets either no added treatment or placebo. Any difference in results between the treatment and control groups can be attributed to the investigational drug.

We recommend that anyone interested in participating in a clinical trial discuss the idea with his or her physician. Doctors are generally aware of investigational drugs that might be of benefit to their patients and of clinical trials involving these drugs. Detailed information can be obtained from a variety of sources, including drug sponsors, FDA (if the information is public), and NIH. Clinical trials are carried out at major medical research

centers such as teaching hospitals, at NIH, and even in doctors' offices. Although they often involve hospitalized patients, many clinical trials can be conducted on an outpatient basis, with participants more or less going about their normal activities. The center or institution where a study is to be carried out often runs newspaper ads recruiting potential participants for clinical studies that tell readers where to call or write for further information.

These and other aspects and implications of taking part in a clinical trial must be fully explained in advance by the people conducting the trial, and patients must agree to the conditions before they can participate. The hope of personally benefiting from a new drug, or the desire to take part in research that might one day benefit millions, is what makes people volunteer for clinical trials. It should not prevent them, however, from finding out all they can about being a part of the process.

III. EXPANDING ACCESS TO INVESTIGATIONAL NEW PRODUCTS

The ideal mechanism for a patient to receive a promising but unproven drug is as a participant in a controlled clinical trial. Such trials provide appropriate patient

protections and potential benefits (for example, IRB review, informed consent, free product or treatment, and FDA review of pre-clinical data and the protocols for the clinical trials) and maximize the gathering of useful information about the product, potentially benefiting the entire patient population. It is not always possible, however, for all patients who might benefit from the drug to enroll in controlled clinical trials.

In this situation, FDA believes that it is possible, and appropriate, to help make certain promising, but not yet proven, products available to patients with serious and life-threatening illnesses. This should be done in a way that does not pose an unreasonable risk to the patient and does not prevent the collection of the information needed to support the effectiveness and safety of the drug.

While the phrase "compassionate use" is commonly used to describe some of the ways of making unapproved products available, there is no FDA regulation or policy defining a "compassionate use." Compassion, however, should be, and is, an element of all our activities. Section 402 of the Food and Drug Modernization Act of 1997 (FDAMA) has codified certain FDA regulations and practices regarding

expanded patient access to experimental drugs and devices. FDAMA addresses three expanded access procedures with respect to: 1) emergency situations; 2) individual patient access to investigational products intended for serious diseases; and 3) treatment IND applications and treatment investigational device exemptions (IDE). The Agency continues to review current regulations and practices in light of FDAMA.

There are a number of mechanisms FDA has used to provide access to promising investigational therapies, including: treatment INDs; treatment protocols; single patient INDs; emergency INDs; open label protocols; continued availability of investigational devices; protocol or special exceptions; open label extensions; parallel track; emergency use of unapproved medical devices; and treatment IDE.

In the drug development process, FDA's primary point of contact is with the sponsor of the product. At times, FDA communicates with a patient's physician, who is seeking permission to use an investigational therapy on an individual patient, for example, when an individual patient is seeking access to an investigational therapy

for personal use, and who may or may not be eligible for enrollment in a clinical trial.

The commercial or other sponsor (e.g. NIH) of the investigational drug must decide whether it is willing to make the product available for individual use by the patient. Assuming it is, and such access cannot be provided through an existing protocol, FDA may be asked to consider a physician-sponsored individual patient IND. If the sponsor of the already ongoing study (the "owner" of the drug or biologic) is not willing to make the product available, the single patient study cannot proceed, even if the Agency has no objections to the treatment. In considering such cases, the Agency is bound by strict rules of confidentiality governing the types of information it can disclose to a physician about the sponsor's product and development data.

One may ask why FDA is involved in this process at all. That is, why should not the physician and patient decide on the appropriateness of treatment. We believe that the independent scientific consideration provided by the Agency is critical and is an essential component of patient protection, when one is considering drugs about which

relatively little is often known. In the typical single patient IND situation, especially those involving emergency IND requests, the patient's physician generally has only very limited information about the investigational therapy being requested.

The Agency's primary responsibility in deciding whether to allow a single patient IND to proceed is to determine whether use of the therapy in the particular patient involved would be reasonable or safe. In oncology, with respect to patients for whom no curative treatments exist, our practice has been to permit almost anything that is reasonably safe without regard to efficacy or potential efficacy. There may be several INDs for the same product with each sponsor working confidentially and in ignorance of what others are doing and of their results. FDA is often the only party that has all of the information.

A. Can an unapproved therapy believed to be less toxic be tried prior to a curative therapy that has known serious adverse events?

Indirectly harmful products are those that do not themselves cause injury, but may lead people to delay or reject proven remedies, possibly worsening their condition. For example, if cancer patients reject

curative drug therapies in favor of unproven therapies and the unproven therapies turn out not to work, their disease may advance beyond the point where proven curative therapies can help.

There have been two well publicized cases where FDA refused to permit patients to receive an unproven cancer therapy prior to receiving the standard of care that was likely to cure the disease because, there was NO evidence of clinical data to suggest a benefit from the investigational product requested. More importantly, the standard of care for these two diseases was and is considered "CURATIVE THERAPY," a rare opportunity in cancer treatment. Prior to use of the curative therapy in these situations, death was the most certain outcome for patients with these diseases. It is now highly likely that patients can expect long term survival. In over 700 cases where curative treatments were not available and patients requested use of this same unproven therapy, FDA permitted such patients to go ahead with the treatment.

Researchers are constantly striving to improve on past accomplishments with the goal of finding new and better treatments with minimum side effects. For example, in

childhood leukemia, progress was made in improving the cure rate and decreasing the toxicity by substituting one drug at a time in multi-drug combinations. Initial treatments for protecting or treating children with leukemia in the brain were considered too toxic, but worth the risk due to the high cure rate. With careful observation and no compromise in the cure rate, the toxic therapies were replaced with less toxic therapies as newer drugs became available. Now, the cure rate for some types of childhood leukemia are greater than 90 percent with excellent follow up and development.

As long as a curative treatment for a disease is available, FDA cannot permit the use of an unproven product, and risk patients forgoing proven treatments for that which is unknown.

B. The Office of Special Health Issues (OSHI).

FDA is mindful of the frustrations that patients with life-threatening illnesses and their families experience when trying to obtain information about potentially helpful therapies, especially when there is no standard therapy. In addition to offices within FDA's Center for Biologics Evaluation and Research (CBER) and CDER that

routinely provide assistance and information to consumers, the Agency created OSHI to provide information and to work with cancer patients and their advocates on cancer-related issues. Most activity in OSHI is on behalf of patients with life threatening diseases, most often cancer and AIDS.

Usually, callers want information about treatments currently being researched. For example, a kidney cancer patient called recently asking for access to an unapproved biologic therapy. He was not eligible for the clinical trial and asked if FDA could please get the drug for him or make the company give it to him. After explaining that FDA cannot compel a company to supply a product, an FDA staff member, trained to work with cancer patients, spent many hours on the phone with this patient over the course of a week, explaining sources of information regarding kidney cancer clinical trials and helping him to understand options he might pursue in lieu of the trial he was not eligible to enter under the company's protocol.

Although we cannot disclose proprietary information about products under development, we are able to talk with patients about any treatment that appears in public access

data bases, such as the NCI's Physician Data Query database at <http://cancertrials.nci.nih.gov> or through the NCI's telephone service at 1-800-4-CANCER. This database contains close to 1800 cancer trials; pharmaceutical company trials represent only 10 percent of that database. Additional information is available through the National Library of Medicine's clinicaltrials.gov website.

Section 113 of FDAMA requires drug companies to list trials of therapies for serious or life-threatening diseases in a public access database once the trial sponsor begins to investigate the effectiveness of that therapy. Our staff is working actively with the National Library of Medicine and the pharmaceutical industry to include more clinical trials into the clinicaltrials.gov database.

Our goals in serving patients with life-threatening diseases and their family members are straightforward:

- 1) Promptness (returning patients' and family members' calls within 24 hours);
- 2) Accessibility (listening to the caller's concerns and giving him or her as much time as he or she needs);

- 3) Education (about the drug approval process and his or her options); and
- 4) Assistance (providing additional information to the patient or family member that may be helpful, e.g. other sources of information).

The nature of the calls vary greatly. Sometimes they are simple calls in search of information on clinical trials. Often, the calls are more complex, such as distraught patients or family members seeking access to a drug that has not been approved.

These calls, by their nature, are very difficult ones. OSHI has a trained staff dedicated to providing as much assistance as possible to patients and family members in extremely difficult situations. It is our responsibility to remain reasonable and sympathetic, even in the face of the frustration and anger that may be present. The staff explains the steps to follow in requesting access to unapproved products. Patients and family members are encouraged to call back as often as needed to get their questions answered or express their point of view. OSHI receives approximately 1000 inquiries (phone and e-mail) from patients and family members annually requesting access to unapproved products.

OSHI also works within the Agency to assist with patient and consumer requests to become more involved with the drug approval process. There is a web page that is updated regularly with information on AIDS and cancer issues. Specifically, there is information on clinical trials, product approvals, meetings, and other matters of interest to this constituency.

Also, we are discussing with sponsors ways to educate patients about the clinical trial process. We know that recruitment of patients into cancer clinical trials is often the rate-limiting factor in cancer drug development. Less than three percent of adult cancer patients participate in clinical trials, in large part because cancer patients do not know about clinical trials for which they may be eligible, or fear being part of a study.

The Cancer Liaison Program within OSHI also serves as an access point for the organized cancer patient advocacy community. Many cancer patient advocacy organizations, in addition to providing valuable information to cancer patients, are focused on monitoring the development of State and Federal policies governing a variety of cancer issues, such as health insurance or research or, in the

case of the Agency, the drug development rules and regulations.

FDA's Cancer Liaison staff actively participates in discussions of FDA policies that affect the regulation and review of cancer therapies. Consequently, informing the advocacy community about FDA policy matters and making certain that meetings are convened between representatives of cancer patient advocacy organizations and FDA specialists is one of our major responsibilities. We maintain a 300-member mailing list that is used to notify the cancer community about FDA advisory committee meetings, open public hearings or seminars on cancer research or policy. As promptly as possible, we notify the cancer community about FDA's approval of a new cancer drug, biologic or device.

In furtherance of the Agency's goal of educating cancer survivors and advocates about FDA and the drug review and approval process, FDA's Division of Oncology Drug Products, in partnership with OSHI's Cancer Liaison Program, designed a pilot Visiting Oncology Patient Advocates Program.

Visiting advocates attend a one-week scientific seminar with FDA staff, followed by two to four training sessions in the Division of Oncology Drug Products. Participants receive one-on-one orientation from FDA scientists and attend division drug review meetings. At the completion of the program, each visiting advocate will write a "reaction paper" about the program, and will, we hope, through speeches, workshops and articles, educate their cancer constituency about the experience.

IV. REINVENTING THE REGULATION OF CANCER DRUGS AND FDAMA

For the past four years the Agency has been working under the "Reinventing the Regulation of Cancer Drugs," initiative, which included: 1) Expediting approval of cancer therapies; 2) Encouraging new uses of marketed products in cancer treatment; 3) Expanding access to investigational cancer therapies that have been approved in other countries; and 4) Including cancer patients on our Oncologic Drug Advisory Committee that reviews cancer therapies.

In addition, FDAMA codified many of FDA's initiatives and existing programs intended to expedite drug development and expand access to unapproved therapies. FDAMA also

created powerful new incentives for the development of treatments for children.

A. Expediting development, review, and approval of new products.

FDA has implemented mechanisms designed to increase access to new drugs, biologics, and medical devices by expediting their development, review and approval. All of these programs have been instrumental in shortening the time to marketing approval for cancer drugs and biologics. FDA programs include:

- **Expedited development** under Title 21, Code of Federal Regulations (CFR) Part 312, Subpart E expedites the development, evaluation, and marketing of new therapies intended to treat persons with life-threatening and severely debilitating illnesses. Since the effective date of the Subpart E regulations, there have been 48 new drug applications (NDA) approved that had been identified for expedited drug development under Subpart E while in the IND stage. Of these NDAs, nine were for cancer, and 39 were for indications other than cancer, including several for conditions that occur in patients with cancer.
- **Priority Review** to speed the review of NDAs, biologics license applications (BLAs), and effectiveness supplements that could have important therapeutic impacts. A priority designation is intended to direct overall attention and resources to the evaluation of applications for products that have the potential for providing significant therapeutic advances. FDA's goal is to review a priority NDA within six months rather than the standard review time of ten months. Since 1996, five biologics and 31 drugs (20 NDAs and 11

supplements) for cancer therapies have received priority review and approval.

- **Fast Track** section 112 of FDAMA, amends the FD&C Act to consolidate the various provisions intended to facilitate the investigational development and approval of drugs and biologics that provide significant advances in the treatment of serious diseases. This codified FDA's accelerated approval regulations, 21 CFR Part 314, Subpart H and 21 CFR Part 601, Subpart E, unified provisions for consideration of serious and life-threatening diseases, established the provision for "rolling" review of marketing applications and thus consolidated FDA's approach to expedited drug development and approval. To provide clear information to industry regarding participation in the fast track process, we issued a guidance document on this provision in September 1998.

It is important to note that FDAMA did not alter FDA's effectiveness standard, except by giving explicit authority to the Agency to rely on a single, adequate and well-controlled study with confirmatory evidence, in particular cases, as support for approval. Even for drugs intended for serious and fatal illnesses, there must be substantial evidence that the drug will have the effect it purports to have. The law recognizes, however, that the magnitude of the effect that needs to be demonstrated might vary depending on the urgency and clinical need. It therefore permits FDA to approve drugs for serious or life-threatening illness that provide meaningful benefit compared to existing treatments where there is a demonstrated effect on a surrogate endpoint that is

reasonably likely to predict a real clinical benefit but where a real clinical benefit has not yet been clearly shown. A surrogate endpoint is a laboratory effect or other clinical measurement that does not itself directly measure clinical benefit but is thought to predict clinical benefit. The effect on clinical benefit is then ascertained in postmarketing clinical trials (Phase IV studies).

FDA's goal is to improve significantly patient access to promising cancer treatments without compromising patient safety or the requirement that drugs be proven safe and effective before they are sold. Importantly, FDA regulations emphasize safeguards for the protection of human subjects, including the requirement for informed consent, IRB review, conduct and review of animal studies prior to human testing, IND safety reports and updates, and adverse drug reaction reports.

B. Encouraging new uses of marketed products in cancer Treatment.

In the spirit of section 403 of FDAMA, FDA will continue its efforts to encourage sponsors to submit supplemental applications for new uses for their products. In December

1998, we published Guidance for Industry, "FDA Approval of New Cancer Treatment Uses for Marketed Drug and Biological Products." The guidance is for sponsors planning to file applications for new uses of marketed drug and biological products for the treatment of cancer. This guidance discusses the quality and quantity of data that may be adequate to add a new use to the prescribing information for a product used in the treatment of cancer. It also describes specific steps FDA is taking to encourage the updating of labeling for products used in cancer treatment.

Product labeling is intended to provide full prescribing information for a product and should include all clinical indications for which adequate data are available to establish the product's safety and effectiveness. Many newer uses of anticancer products are common in clinical practice, but are not listed in product labeling, despite the fact that they appear to be supported by published data from clinical studies.

1. Community outreach.

As part of its continuing effort to be aware of, and stimulate applications for new uses of marketed drugs, FDA

efforts have included community outreach. FDA has surveyed private, academic, and professional groups involved in cancer research and treatment for their views regarding appropriate uses of products in cancer treatment not described in current product labeling. Where appropriate, FDA has met with commercial sponsors of marketed products and has encouraged the submission of supplemental marketing applications.

As specified in FDAMA, FDA will continue its outreach efforts to survey major groups in the cancer research and treatment community, including professional societies, cancer patient and research advocacy organizations, other government agencies, and other interested groups and individuals, for their views regarding new cancer treatment indications that should be examined for possible inclusion in labeling for currently marketed products. These groups and individuals will be asked to identify published and unpublished studies that may support a supplemental application.

Specifically, they will be asked to collaborate with FDA to encourage sponsors: 1) to prepare supplemental applications in cases where definitive studies have been

completed or 2) to conduct further research that may be needed to provide support for a supplemental application that is suggested by preliminary research findings. The Agency will contact the commercial sponsor(s) of a promising product and encourage the sponsor(s) to evaluate the available data and, if the data appear adequate, to submit a supplemental marketing application.

2. Support sponsors in application development.

In some cases, commercial sponsors of a product may be unable or unwilling to accommodate an FDA request to evaluate the data regarding a currently unlabeled indication for a product used in cancer treatment or to consider filing a supplemental marketing application. In such cases, FDA may pursue other avenues, depending on specific circumstances and in accordance with applicable laws and regulations.

For example, FDA may provide public notification of the Agency's interest in receiving a supplemental application for review. FDA may request a summation and analysis of the data from staff of other governmental agencies (e.g., staff of the NCI), for review by FDA. If necessary, FDA

may directly approach study investigators and request study data for summary and analysis by Agency staff.

3. Continue to prioritize certain supplemental Application reviews.

Supplemental applications will continue to be assigned a review priority based on the importance of the new use of the product, if, based on preliminary review of the application, it appears that the new product use may represent a significant improvement (compared to other marketed products) in the treatment, diagnosis, or prevention of a disease. The fact that a product is already marketed for another indication does not affect FDA's determination of whether a new supplemental application will receive priority review.

4. Designate key persons.

Consistent with section 403(c) of FDAMA, CDER and CBER have designated key persons who will: 1) encourage the prompt review of supplemental applications for approved products; and 2) work with sponsors to facilitate the development and submission of data to support supplemental applications.

C. Expanding access to investigational cancer therapies that have been approved in other countries.

The third goal of the reinventing government initiative was to utilize current mechanisms for expanded access of investigational agents to ensure that cancer patients in the U.S. have access to potentially beneficial treatments that have been approved by recognized foreign regulatory authorities, but not yet marketed in the U.S.

In 1996, FDA sent a letter to the regulatory authorities of 24 countries requesting a list of all cancer or cancer-related therapies approved in their country over the last ten years. Detailed responses were received from 15 countries. In 1996, forty-four drug products not marketed in the U.S. but marketed in one or more of these countries were identified. In 1998, the Agency completed its evaluation of the drugs identified as having been approved in foreign countries. Some of them were later approved in the U.S.; some are under review. The Agency concluded, however, that there do not appear to be significant differences in the spectrum of drug products available for the treatment of cancer in the U.S. and in foreign countries. There are no products that appear to potentially provide a significant benefit in cancer

treatment that cannot be accessed by U.S. patients, either in the marketplace or through an established IND mechanism.

D. Including cancer patients on FDA's Oncologic Drug Advisory Committee.

The fourth goal of the reinventing initiative was to include cancer patients in the review process by ensuring that all FDA cancer-therapy advisory committee meetings include an ad hoc member with personal experience with the illness for which a product is being considered. Since 1996, all meetings of the Oncologic Drugs Advisory Committee have included a patient representative in discussions of products under review. These representatives have been full voting members of the panel. The Division continues to work with OSHI's Cancer Liaison Staff to assure full inclusion of patient representatives in all advisory committee proceedings.

V. PEDIATRIC ONCOLOGY DRUGS

The development of pediatric oncology agents merits special consideration. Compared to adult malignancies, pediatric cancers afflict smaller numbers of patients, clearly a problem in developing treatments. On the other

hand, and unlike most adult cancer patients, the majority of pediatric patients already receive their cancer therapy as participants in clinical research protocols. That is, participation in oncology trials has become the "standard of care" in pediatric oncology.

Children with cancer are usually treated at specialized centers by pediatric oncologists who are members of national pediatric cooperative study groups. One of the highest priorities of these groups is to develop improved novel therapies, and early access to new agents is an important component of achieving this goal. There should be great benefits from FDA, industry, and academic cooperation.

Ensuring that there is adequate pediatric use information for drugs and biologics has long been a high priority for the Agency. The pediatric exclusivity provision of section 111 of FDAMA has provided a powerful development incentive, an important complement to the Agency's final rule issued in November 1998, requiring pediatric testing for drugs. We are pleased that there has been an enthusiastic response from industry to the incentives offered by this provision. In June 1998, FDA issued

written guidance "Qualifying for Pediatric Exclusivity Under Section 505A of the FD&C Act to communicate to industry the Agency's plans for implementation of the pediatric program, and updated this document in October 1999 to provide additional information to industry. FDA is also in the process of issuing a guidance pertaining to pediatric oncology drugs specifically.

To encourage the development of treatments for pediatric cancers, FDA expects to make written requests to sponsors of new drugs that may qualify a product for pediatric exclusivity under FDAMA. In general, these requests will ask for early (Phase I) studies to assess pediatric tolerability and, if the drug is tolerated, will request Phase II studies to follow potentially responsive tumors in specific populations. If approval is based on surrogate endpoints or smaller safety numbers, further studies would usually be needed after approval.

To expedite this initiative, FDA has posted on its website a "Sample of a Written Request for a Pediatric Oncology Drug Product Plan." FDA has suggested that sponsors discuss a pediatric development plan with a pediatric cooperative study group, utilizing the group's expertise

and resources to optimize study design and patient accrual and to determine which cancers should be studied.

Sponsors are encouraged to generate proposals for written requests from the Agency (the trigger for the FDAMA exclusivity provision) working with pediatric cooperative groups to refine the proposals prior to submission to the Division of Oncology Drug Products.

CONCLUSION

Mr. Chairman, we are often asked the question: where should we, as a matter of public policy, draw the balance between public health protection and personal autonomy?

We think Congress has drawn that balance correctly in the FD&C Act. This law was designed to protect the public health, and it has done a good job of assuring safe and efficient development of drugs and protection against marketing of unsafe or ineffective drugs. Recent changes in law, together with FDA program changes, have also made the application review process very rapid; new, properly developed drugs are marketed in the U.S. as rapidly, or more rapidly, than in any other country in the world.

Even as they provide high standards and protection of patients, the laws and regulations are flexible and allow

desperately ill patients access to promising unproven treatments, while preserving the system of well-controlled clinical trials that provides the information necessary to determine the safety and effectiveness of proposed new products. Protection of public health and compassion and respect for individuals, can, and do, co-exist.

Thank you for the opportunity to testify. I will be happy to answer any questions the Committee might have.

ATTACHMENT TO FDA TESTIMONY

Information Concerning Antineoplastons



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
Rockville, MD 20857

MEMORANDUM

Date: April 21, 1998

To: Associate Commissioner for Public Affairs
Director, Center for Drug Evaluation and Research
Director, Center for Biologics Evaluation and Research

From: Lead Deputy Commissioner of Food and Drugs

Subject: Disclosure of Information - Unapproved Products

Under regulations of the Food and Drug Administration at 21 C.F.R. 312.130 and 314.430¹, if the existence of an investigational new drug application (IND) or new drug application (NDA) has not been publicly disclosed or acknowledged, FDA will not publicly disclose the existence of the application or any data or information in the application. If the existence of an IND or NDA has been publicly disclosed, FDA regulations at section 314.430(d) provide that "the Commissioner may, in his or her discretion, disclose a summary of selected portions of the safety and effectiveness data that are appropriate for public consideration of a specific pending issue." The most frequent invocation of this provision has been in the context of public advisory considerations. The Commissioner has also, from time to time, invoked this provision when he determined public disclosure was warranted under other circumstances, as with the 1993 disclosure of the report of an FDA task force on Fialuridine (FIAU).

In relation to the recent series of congressional hearings on unapproved products in which the existence of an IND or NDA has been publicly disclosed and the safety and effectiveness of the investigational product that is the subject of the IND or NDA has been made the subject of public debate, I have determined that it is appropriate for me to disclose publicly under 21 C.F.R. 314.430(d) a summary of selected portions of the safety and effectiveness data available for the product in order to achieve a more accurate public understanding of the product. This determination applies to INDs, NDAs, and safety and

¹ The analogous provisions for biological products appear at 21 C.F.R. 601.50 and 601.51. The determinations of this memorandum are intended to apply to biological products under sections 601.50 and 601.51, as well as to drug products that are not also biological products.

effectiveness data in existence at the time of this determination and analogous data that may subsequently be submitted to these INDs or NDAs, but does not apply to new INDs or NDAs.

Public Disclosure

For purposes of invoking section 314.430(d), with respect to the subject matter of these hearings, I will consider the existence of an IND or NDA to have been publicly disclosed when the sponsor of the IND or NDA makes such a disclosure or publicly acknowledges the existence of an IND or NDA in any manner.

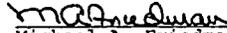
Summary of Safety and Effectiveness Data

The summary information that is disclosed will be appropriate for public consideration of the issues raised about the specific product. Summary information does not include the full reports of investigations required to be submitted for approval, and will not reveal the full administrative record of an IND or pending NDA. In determining the specificity of the summaries to be disclosed under this determination, I will use established precedent (for example, the summaries of safety and effectiveness data prepared for post-approval disclosure under 21 C.F.R. 314.430(e) or the FIAU report). Such summaries may, for example, include:

- (1) adverse reaction reports, including total numbers of patients suffering specific adverse events, but excluding individual patient or reporter identifiers;
- (2) the specific indication(s) being studied under the disclosed or acknowledged IND and summary results of trials under the IND, including information about total numbers of patients exhibiting specific clinical responses, but excluding individual patient or reporter identifiers;
- (3) relevant reports, or portions thereof, prepared by or for an FDA task force or advisory committee concerning the safety and effectiveness of an investigational product;
- (4) results and analyses of animal and human toxicology and pharmacology studies;
- (5) relevant portions of medical officers' reviews;
- (6) relevant portions of informed consent forms or investigator brochures;
- (7) relevant inspectional findings related to the identity, stability, purity, potency and bioavailability of the product; or
- (8) relevant portions of FDA findings related to clinical

investigator misconduct.

The summaries I have determined to release as of this date are attached.


Michael A. Friedman, M.D.
Lead Deputy Commissioner

Attachment

- | | | |
|----|------------------------|---|
| 1) | Product: | Antineoplastons |
| | Investigator: | S. R. Buczynski, M.D., Ph. D. |
| | Application Numbers: | IND 43,742 (intravenous formulation)
IND 22,029 (oral formulation) |
| 2) | Source of Information: | |
| | IV Antineoplastons | January 23, 1998 annual report |
| | Oral Antineoplastons | July 31, 1997 update of 1997 annual report |

Oral antineoplaston

Efficacy

As reported in the July 31, 1997 update to the annual report, 26 patients were entered on 5 protocols and 27 patients were special exceptions. There were no reported tumor responses (shrinkage by at least 50%) in these 53 patients.

Intravenous antineoplaston

Efficacy

The annual report of January 23, 1998 reports on 828 patients treated with intravenous antineoplastons, 404 patients treated on protocols and 424 treated as special exceptions. In protocol patients there have been 34 reported responses for a response rate of 8.4%, including 14 patients in whom tumor was reported to be undetectable by X-ray for at least one month ("complete response") and 20 patients in whom tumor was reported to have shrunk by least 50% lasting for at least one month ("partial response"). In special exception patients there have been 2 responses in 424 patients for a response rate of 0.5%. Overall, there have thus been 36 responses reported by the investigator in 828 patients for a reported response rate of 4.3%. The validity of these responses has not been evaluated by FDA audit. Of the 36 reported responders, 50% withdrew from study due to patient request, worsening condition, or growth of tumor, 44% were still receiving antineoplastons at the time of the annual report, and one patient (4%) discontinued antineoplastons while the tumor was reported to be responding; of the 36 responders, 11 deaths have been reported to date. Death has been reported for 64% of all protocol patients and 61% of special exception patients.

In the following table response rates as reported are presented by tumor type for the common tumors, i.e. those with at least 20 patients:

	Claimed Tumor Responses / No. Patients treated (%)	
	All Patients	Protocol Patients
Brain tumors	29/378 (7.7%)	28/207 (13.5%)
All other tumors	7/450 (1.5%)	6/197 (3.0%)
Breast cancer	0/74 (0%)	0/17 (0%)
Colon Cancer	1/56 (2.0%)	0/8 (0%)
Lung Cancer	0/88 (0%)	0/29 (0%)
Lymphoma	3/59 (5.1%)	3/34 (8.8%)
Prostate	0/29 (0%)	0/13 (0%)
Melanoma	0/24 (0%)	0/8 (0%)
Ovarian Cancer	0/22 (0%)	0/5 (0%)
Soft Tissue Sarcoma	0/22 (0%)	0/8 (0%)
Unknown Primary	0/22 (0%)	0/6 (0%)

Safety

Of the 404 patients enrolled on phase 2 protocols, approximately 65% have reportedly had an elevated level of serum sodium (hyponatremia). 7% of protocol patients reported extreme elevation of sodium to levels of 160 mEq/L or higher, and 1.7% were reported as having elevations of 180 mEq/L or higher. Given the proximity of the date of death for some patients to documented episodes of hyponatremia, and considering the severity of the reported abnormality, it is likely that hyponatremia contributed to the death of at least 7 patients (1.7%). Other adverse events described in the annual report include nausea, vomiting, allergic skin reactions, dizziness, fatigue, drowsiness, joint pains, muscle pains, and other blood electrolyte abnormalities such as low potassium.

Among protocol patients 4% died while still receiving antineoplastons. The most commonly reported reasons for withdrawal from the study were 'patient request' in 45% and 'growth of tumor' or 'worsening clinical condition' in 36%.

Because of the very low response rates in breast cancer and in non-small cell lung cancer and in view of the significant toxicity experienced by some patients, the Agency mandated that starting on August 29, 1997 no additional patients with these tumors should be given Antineoplastons as Special Exceptions. Patients could still receive Antineoplastons on protocol until the protocol accrual goal had been reached.



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The Antineoplaston Anomaly: How A Drug Was Used For Decades In Thousands Of Patients, With No Safety, Efficacy Data

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Clinical trials of "antineoplastons" therapy are unlike any other in modern medicine.

To begin with, the inventor of antineoplastons, their manufacturer, proprietor of the clinic that offers the alternative therapy, and the principal investigator on clinical trials are all the same man: Stanislaw Burzynski, a Polish-trained physician who initially produced antineoplastons by extracting them from human urine.

Working outside peer review, Burzynski is conducting 71 concurrent, preliminary phase II trials that cover most cancer indications—an unheard of number for a single investigator, and for a drug which is yet to be proven effective for any indication.

These trials are fundamentally flawed in design and execution, said three experts after reviewing the Burzynski Research Institute's 1997 annual report to the Food and Drug Administration. [The reviews begin on page 1.]

An exploration of the structure of Burzynski's clinical trials is by necessity a journey through an intricate, hidden labyrinth of loopholes that proved large enough to allow the controversial doctor to pump a sodium-rich substance into the veins of 963 patients treated in 1997.

Burzynski's motivation for conducting clinical trials is not limited to scientific curiosity. He is under a court order to administer antineoplastons exclusively through clinical trials or through "special exceptions" from FDA.

Though Burzynski says he has a network of physician "co-investigators" who follow his patients, several of these investigators said they did not put patients on the trial, do not administer antineoplastons, have no authority to stop the treatment, and have no knowledge of Burzynski's protocols. These physicians said they had not presented the protocols to their local Institutional Review Boards, which determine whether clinical trials are ethical.

"A Lowered Threshold"

Seven years after antineoplastons became the test case of the capability of the National Institutes of Health to evaluate alternative remedies, answers about the drug's activity are not on the horizon.

In October 1991, a team of National Cancer Institute scientists visited Burzynski's clinic in Houston to review the cases he regarded as the most successful. The team determined that seven of these cases constituted a basis for skipping formal phase I safety testing to move directly to phase II efficacy trials.

This was not done in a political vacuum. In fiscal 1992, Congress mandated NIH to establish an Office of Alternative Medicine that would oversee testing of "the most promising unconventional medical practices." The provision was inserted in the appropriations bill by Sen. Tom Harkin (D-IA), a supporter of alternative medicine.

"Our threshold for doing this has been lowered by a serious instruction from Congress," Bruce Chabner, then director of the NCI Division of Cancer Treatment, said at that time. "I think there is a significant potential downside for Dr. Burzynski here. This trial could put his operation out of business if his agent doesn't work." (The Cancer Letter, June 5, 1992)

However, the NCI attempt to test antineoplastons produced more heat than data. First, pediatric oncology cooperative groups said there was no justification for skipping phase I tests and declined to design a trial of the substance.

Advocates of alternative medicine, with backing from Congress, attempted to force the Office of Alternative Medicine to take over the trial from NCI.

For believers in alternative medicine, antineoplastons were an important test case: an alternative medical treatment that claims to produce cures. These members of the OAM advisory board spent much of their time battling the office director, Joseph Jacobs, who saw it as his mission to acquaint alternative practitioners with the principles of sound research.

"OAM was willing to buy the research assistance for [Burzynski] to design a good protocol and to set up a data monitoring committee," Jacobs said to The Cancer Letter. "There have been plenty of opportunities. And those clowns, his supporters, were doing everything they could to wreck those opportunities."

Ultimately, in late 1993, Burzynski and his supporters gave up on their effort to force the trial into a setting less rigorous than NCI. A trial of antineoplastons, coordinated by NCI, began at Memorial Sloan-Kettering Cancer Center, the Mayo Clinic, and the NIH Clinical Center.

That trial, which tested Burzynski's drug in advanced recurrent malignant glioma, accrued nine patients and was aborted as a result of a dispute. The dispute generated a stack of mutually recriminating memos, in which Burzynski accused the investigators of attempting to scuttle the trial, while NCI officials responded with requests that Burzynski provide the data that would back his accusations.

In August 1995, the studies were ended, generating some data on toxicity, but no conclusion on efficacy.

Another Stab At Clinical Trials

In the fall of 1995, a grand jury charged Burzynski with 75 counts of criminal contempt, mail fraud, and violations of the Food, Drug and Cosmetics Act.

In February 1996, Judge Simeon Lake, of the U.S. District Court for the Southern District of Texas, made Burzynski's "continued pretrial release" conditional on administering his drugs exclusively through "FDA-approved clinical trials." Lake's ruling was based on a 1984 permanent injunction issued by Judge Gabrielle McDonald.

After Lake's ruling, FDA was confronted with an unusual dilemma:

On the one hand, FDA was the client represented by the Justice Department in its prosecution of Burzynski. On the other hand, the agency and Burzynski became involved in negotiations aimed at setting up clinical trials of his remedy.

These negotiations, too, were not happening in a vacuum. Congress and the media were watching. Rep. Joe Barton (R-TX) held a series of hearings that featured patients who wanted to continue receiving the treatment. Burzynski's patients, wielding "Say No To Chemo" signs and chanting, "FDA go away! Let me live another day!" were making news all over America.

Federal prosecutors who were preparing the case against Burzynski told the agency that a deal that would create an appearance of Burzynski's compliance with the law would gut their case.

"We stated that position as forcefully as we could," said Michael Clark, former chief of the criminal division of US Attorney's Office for the Southern District of Texas.

Ultimately, FDA decided to disregard the prosecutors' pleas and make a deal with Burzynski.

Burzynski was allowed to set up nearly identical phase II protocols for every disease he treated. These prospective studies, which Burzynski said he based on the protocol used in the NCI trial, were

designed to enroll new patients.

Patients who were getting antineoplastons at that time were placed into a protocol called CAN-1, a retrospective study in which data on non-Hodgkins lymphoma are reported alongside data on brain tumors, prostate cancer, and "adjuvant therapy."

CAN-1 is so distinctly unconventional that frustrated prosecutors promptly began to refer to it as "the garbage can," Clark said.

"When they put the patients into a large clinical trial unlike any other that we have been aware of, it made it very difficult to argue that the clinical trials process was very important in the case," said Clark, an attorney with the Houston firm of Gardere, Wynne, Sewell & Riggs.

In 1997, the government failed in two attempts to convict Burzynski. One trial ended in a hung jury. Another produced a not guilty verdict.

Still No Answer

As a result of his battles with FDA, Burzynski has become something of a folk hero. More importantly, he gained the ability to continue to treat patients legally.

As protocols became central to his efforts to stay in business, Burzynski used the NCI study as a prototype for all his studies.

"We did it this way because we felt that this will give us the best chance to have the right protocol," Burzynski said to The Cancer Letter. "[Since] these protocols have been already reviewed by FDA, we felt that FDA should not request many changes."

The purpose of preliminary studies is to ask a single research question. Usually, such studies are done in one or as many as five indications that the sponsor regards as the most promising.

"I think the question that needs to be asked is what are the gaps in our surveillance system that would allow someone to do 71 preliminary studies on a single regimen," said Norman Wolmark, chairman of the National Surgical Adjuvant Breast and Bowel Project. "To justify this kind of an effort, the investigator has to have 71 legitimate research questions. I certainly could not come up with that number of questions on a single regimen."

"The problem with 71 pilot trials is that it is so diffuse that it becomes no trial at all," said Robert Young, president of Fox Chase Cancer Center in Philadelphia. "This defeats the purpose of having a clinical trial design."

Generally, peer review or the cost of conducting a proper trial prevent investigators from undertaking 71 concurrent preliminary studies. FDA reviews trials for safety, and has no authority to regulate protocol design, the agency said.

"FDA works to ensure that trials are designed to produce clinically relevant results without placing research subjects at unreasonable risk," the agency said in a statement to The Cancer Letter.

"Although the agency may place an unacceptably designed clinical trial on hold, the ultimate responsibility for designing and conducting trials properly rests with the clinical investigator."

In an interview, Burzynski said he plans to file a New Drug Application for antineoplastons.

"We are retaining two consulting firms which are guiding us through FDA approval process, and they really feel that we have a reasonable chance to get [the] NDA approved, regardless of what the doctors whom you found are saying," Burzynski said to The Cancer Letter.

"I Have No Idea Whether He's Got Enough"

Thomas Garvey, one of the consultants retained by Burzynski to compile the NDA, is not quite as upbeat as his client.

"I have no idea whether he's got enough [data]," Garvey said to The Cancer Letter. "I have to figure out what the hell is there. Then maybe we can defend it. You don't know until you take a real hard look."

Garvey, a gastroenterologist, is focusing on Burzynski's astrocytoma patients, a cohort in which Burzynski claims to have the strongest response. Burzynski's numbers indicate that 12 of the 28 evaluable astrocytoma patients who had no previous radiation or chemotherapy had complete and partial responses, and another 11 patients had stable disease. The stable disease category is not recognized by FDA as a measure of response.

"The first step is to pull it all together, lay it out, and try to obtain an appropriate historical control against which to compare his results," Garvey said.

Garvey said he is neither "a true believer" nor an "acolyte" of Burzynski.

"Burzynski is a very bright and charming person," Garvey said. "He also appears to be a good doctor. He knows his patients. He takes care of them. He has an unusual, unconventional anticancer therapy, and he has, by-and-large, functioned on the periphery of usual medical endeavors."

Another of Burzynski's consultants, Dieter Schellinger, chief of neuroradiology at Georgetown University Hospital, reviews the scans of Burzynski's patients who are classified as responders.

"The majority of the cases I have reviewed were in concert with his assessments," Schellinger said. "In some cases, I rated them higher than he did."

Altogether, Schellinger has reviewed about 40 cases. "I know very little about the drug," he said. "I look only at images."

In an interview with The Cancer Letter, and in a follow-up letter, Burzynski said that Robert Temple, director of the FDA Center for Drug Evaluation and Research, encouraged him to file a New Drug

Application for antineoplastons.

"Perhaps the reason there is a difference of opinions among experts who reviewed the annual report [for The Cancer Letter] and Dr. Temple is that at present we have more extensive data to support approval for Antineoplastons A10 and AS2-1," Burzynski wrote.

Temple said he has not seen the data that would have allowed him to assess the safety and efficacy of antineoplastons. "I don't invite anybody to come to the FDA," Temple said. "We have a standing invitation to anybody who has great data to submit it. I have never seen any favorable data from Burzynski in a form in which we could review it, so I could not possibly have an opinion about the actual data he has."

Burzynski apparently began to count Temple among his supporters after the FDA official commented on brain tumor scans that were presented at a recent meeting on alternative medicine. "My recollection is somewhat dim now, but the specific cases, as described, looked pretty impressive" Temple said. However, scans tell only a part of the story, especially in brain tumors, Temple said.

In a statement, FDA officials indicated that the trials being conducted by Burzynski could not support a New Drug Application.

"The current Dr. Burzynski trials are studies that could provide evidence of activity in a variety of tumor types, but they could not be viewed as definitive themselves," the statement said. "Preliminary trials can therefore be an important step in paving the way to definitive trials. Patients and physicians have no way of knowing whether there is benefit from a product unless that product has been studied in well-controlled clinical trials."

"Perhaps the most unfortunate result of Dr. Burzynski's practice over the past two decades is that he has administered antineoplastons to several thousand patients without, for the most part, gathering enough information to determine whether the product is safe or actually works," the statement said.

"That situation does not help patients, and it does not advance medical science."

Costs And Benefits Of Supervision By FDA

Several observers said the preliminary trials offer one advantage to an investigator: the ability to provide the therapy to a large number of patients.

"It appears that these so-called protocols and the special exception mechanism represent a vehicle for delivery of therapy rather than for answering any meaningful scientific questions," said David Parkinson, head of US oncology research programs at Novartis Pharmaceuticals Inc.

"The reviews suggest that, at best, this extraordinarily large
... 1,000 patients when you

combine patients treated under the so-called protocols with special exception patients—is a collection of anecdotes," said Parkinson, former associate director of the NCI Cancer Therapy Evaluation Program.

Janice Dutcher, chairman of the FDA Oncologic Drugs Advisory Committee and professor of medicine at the Montefiore Medical Center, said the Burzynski trials don't appear to be aimed at answering questions about the drug's efficacy.

"From the comments, it seems that it's all commerce: Whoever wants it gets it," Dutcher said. "It's impossible to tell from anecdotal data, without controls, what is happening. The patients and scientific community need to be convinced. The drug needs to be tested."

To date, Burzynski has submitted two annual reports that contain data that can yield a wealth of information about his research methodology and the clinical characteristics of his therapy.

"When fair-minded clinical investigators independently conclude that data are worthless, two options seem available: withdraw antineoplastic therapy from public use, or develop new protocols in conjunction with experts in clinical trials," said Barrie Cassileth, a psychosocial oncologist and author of *The Alternative Medicine Handbook*.

"The comments reported by Drs. Howard Ozer [of the Allegheny University of the Health Sciences Cancer Center], Henry Friedman [of Duke University], and Peter Eisenberg [of Marin Oncology Associates] cannot be misconstrued as government efforts to impede research," Cassileth said. "The reviews carefully delineate deficiencies in Dr. Burzynski's protocols. The reviews are sufficiently detailed and instructive to enable collaborative development of properly designed protocols."

FDA officials said they have been monitoring the results of Burzynski's trials in order to assess the viability of special exceptions.

"When these trials have shown no responses, we have terminated the expanded access programs," the agency said in a statement. "For example, FDA stopped providing single patient INDs for breast cancer and for non-small cell lung cancer, because Dr. Burzynski's data show that for these conditions, antineoplastons offer no objective benefits and present the risk of significant toxicity.

"Should the trials show similar lack of response for other conditions, FDA would not hesitate to terminate those expanded access programs," the agency said.

"Exceptional Amount Of Sodium"

According to the 1997 annual report to FDA, Burzynski treated 538 patients on protocol and 425 as "special exceptions" last year.

As a clinical investigator, Burzynski enjoys considerable leeway.

FDA does not verify whether patients who are enrolled on protocol actually fit the entry criteria.

The agency is consulted when patients request to be treated as "special exceptions." These applications are reviewed by FDA physicians, and exceptions are granted only to patients who are unlikely to be cured by standard treatment.

Burzynski's marketing materials describe antineoplastons as "non-toxic substances."

This claim appears to be at odds with information contained in the protocols, FDA analysis of Burzynski's data, and the data reported by investigators from Memorial Sloan-Kettering, Mayo and NIH, the institutions that conducted the NCI-sponsored trial of the substance.

Under a high-dose antineoplon regimen, a patient is exposed daily to 2.6 times the total amount of sodium normally found in the body.

In a high-dose regimen, an 88-kilogram patient would get about 147.8 grams of sodium per day, according to a calculation by Helen McFarland, director of oncology pharmacy at Johns Hopkins Oncology Center.

"Certainly, we may have increase of sodium because it's in the formulation, and because patients were dehydrated," Burzynski said. "But also [the therapy] is interrupting signal transduction through RAS oncogene pathway. And the RAS oncogene regulates potassium channels in the cells, which is causing potassium to go inside the cells, and sodium escapes from the cells." [In a telephone interview, Burzynski offered an account of his drug's mechanism of action and its side effects. An excerpted transcript of this discussion appears on page 13.]

Renal specialists and oncologists paint a less optimistic picture.

"This is an exceptional amount of sodium, and no matter what the body's defenses, and no matter what the renal function, first the patient is going to get excessively thirsty, and there is going to be some swelling related to the sodium level," said nephrologist Richard Quigg, associate professor of medicine at the University of Chicago.

Side effects from sodium alone are likely to include hypernatremia, edema, and, potentially, seizures, Quigg said. "A patient who weights 88 kilograms would have to get to about 12 liters of water a day in order not to die," he said. Patients who become incapacitated would be in grave danger, he said.

According to McFarland's calculation, a low dose of antineoplastons pumps 41.4 grams of sodium into the same patient's veins. By comparison, the daily sodium load of phenylacetate or phenylbuterate, two drugs closely related to antineoplastons, is around 8.8 grams.

Even with a sodium content of about one-seventeenth of high-dose antineoplastons, phenylacetate and phenylbuterate are considered high-sodium drugs. Patients currently receiving these drugs in phase I studies are carefully monitored, advised to go on a low-sodium diet, and given diuretics, said Michael Carducci, assistant professor of oncology and urology at Johns Hopkins School of Medicine.

"Infusion of hypertonic saline leads to a shift of fluid from inside the cells to outside the cells," said nephrologist Quigg. "With such massive sodium loads, edema, both cerebral and total body, would occur."

The metabolic consequences of this therapy could be disastrous, said Bruce Chabner, chief of medical hematology and oncology at Massachusetts General Hospital. "As a rational physician I would never do something like this," Chabner said. "This makes no sense."

In a document released at recent hearing held by Rep. Dan Burton (R-IN), chairman of the Government Reform and Oversight Committee, FDA officials said that according to Burzynski's data, 4% of his patients died while on protocol. According to FDA, hypernatremia—an elevation of serum sodium levels—may have been a factor in the deaths of 1.7% of patients enrolled in the studies in 1997 (The Cancer Letter, April 24).

Burzynski said his patients are encouraged to drink large amounts of fluid, but sometimes neglect to do so.

"When they stay in Houston, we watch them very carefully, and we monitor fluid in and out very carefully, and we try to convince them that this is important to do," Burzynski said. "But sometimes they don't drink as much fluid as they should, and then they may get dehydrated, and they have an elevation of sodium."

Burzynski said the sodium levels are usually brought down successfully.

"In practically all of these cases except for two cases we were able to reverse hypernatremia and bring this to a normal level, and the patient did not die as a result of hypernatremia," he said. "We had one case when a patient developed hypernatremia and intracerebral hemorrhage, and he died without having a chance to bring hypernatremia to normal. We had another case when a patient who had extensive liver involvement which can cause hypernatremia also developed hypernatremia, and she did not wish to have any treatment for hypernatremia, and she also died."

"So we have two cases in which we couldn't bring hypernatremia under control," Burzynski said.

Clinical Experience

Independent investigators who worked with antineoplastons confirmed that the treatment was associated with substantial toxicity.

"We found severe toxicity in three of the nine patients, which necessitated stopping treatment," said Mark Malkin, associate attending neurologist at Memorial-Sloan Kettering Cancer Center, an investigator in the NCI-sponsored trial.

"In two of the three patients, we observed somnolence and seizures that resolved by stopping antineoplastons," Malkin said. "The third patient with protocol-ending toxicity developed a general edema of her body, and required stopping the infusion and diuretics to bring her back to normal. This woman had no history of kidney problems, liver problems, heart problems, or high blood pressure."

In two patients, edema appeared to have been attributable to the therapy. "Scans showed that the mass characteristics didn't change, but the edema in the brain went up," he said.

A paper on the trial has been submitted to a peer-reviewed journal, said Jan Buckner, associate professor of oncology at Mayo Clinic, principal investigator on the trial. The third author on the paper is Eddie Reed, chief of the ovarian cancer section of the NCI Medicine Branch.

"I think they were interested to stop this project soon. To prove that this doesn't work," Burzynski said to *The Cancer Letter*. "But we have patients who are now alive who have taken the medicine for a number of years, and these patients have been evaluated by some top neurologists in this country, or neurosurgeons, and they didn't see any toxicities, so to speak, to the treatment."

Hypernatremia was not observed in the NCI-sponsored trial, the investigators said. This is not a surprise for two reasons. First, the sample was small, and second, hypernatremia is rarely encountered in mainstream medicine.

"You can anticipate it, you can monitor it, you can detect it when it starts, and you can treat it, if necessary," Malkin said. "To develop hypernatremia, which can be lethal in patients with hemisphere glioblastoma, as part of their disease or as part of their medical treatment, is just distinctly unusual," Malkin said. "I can't remember the last time I've seen it, and I've been here for 13 years, and have probably treated 1,000 or more glioblastoma patients in that time."

"It's hard to imagine that the risk of death from hypernatremia is still being taken in 1998, when we've known for 20 to 30 years that hypernatremia in the treatment of patients with brain tumors is a contraindication," said Archie Bleyer, head of pediatrics at M.D. Anderson Cancer Center and chairman of the Children's Cancer Group.

Accidental Co-Investigators?

Proper management of Burzynski's patients presents unusual problems.

Since the therapy is administered by the patients themselves, their hometown physicians are often reduced to the role of authorizing

blood draws and other routine care. These physicians are listed as "co-investigators" in Burzynski's annual report.

Though many of these physicians filled out standard "1572" forms issued by FDA, their role in taking care of the patients did not conform with the traditional role of co-investigators.

"I am neither honored nor flattered to be listed as a co-investigator by Dr. Burzynski," said Malkin, who is listed as a co-investigator. "I think it's presumptuous to list someone as collaborator in an endeavor when that person has refused to become involved."

"I refuse to become an accomplice after the fact," said Charles Riggs, an associate professor and medical director of the University of Iowa Clinical Cancer Center, after learning from a reporter that he was listed as a co-investigator. "I can't judge the patient for taking antineoplastons any more than I can judge the patient for using illicit drugs. But I will not be a party to either."

Malkin and Riggs said they did not fill out 1572 forms for Burzynski's trial. Virginia Stark-Vancs, a brain tumor specialist in Fort Worth, signed such a form in order to continue routine monitoring of her patient.

"Here is how it's presented: the patient says, 'I need you to authorize local blood draws, so results could be sent to Houston, but I don't want you to interfere,'" Stark-Vancs said. "You don't want to alienate the patient, because you know that inevitably the patient will need to have a local doctor."

The form notwithstanding, Stark-Vancs said she does not consider herself a co-investigator.

"I don't recruit patients to his study; in fact, the opposite is true," she said. "If I were indeed an investigator on his trial, I would have been administering the drug and doing follow-up. I would have had access to the data. I would have been invited to investigators' meetings. I would have had regular communications with the principal investigator. I would have had the authority to halve the dose or take the patient off therapy unilaterally if I saw major toxicity."

"Finally, I would have had the option of saying, 'I don't want to be a party to what you are doing.'"

The Cancer Letter asked Burzynski to check the forms for nine of the investigators named on the list. Burzynski sent a reporter the forms signed by four of the nine.

Two investigators—Riggs and Malkin—did not return the forms, "but we have correspondences from them indicating that [they are following] patients," Burzynski wrote. "The person compiling the data was under the impression that in fact they were co-investigators since they agreed to follow-ups and evaluations of these patients," he wrote.

One of the patients was being followed by a physician other than

the one named on the list. The remaining two investigators—the father of a deceased patient and an alternative medicine advocacy organization—were placed on the list by error of the clerk who was compiling the data,” Burzynski wrote.

The issue of communications between the principal investigator and co-investigators is not one of mere bureaucratic procedure, said ODAC Chairman Dutcher. If this link does not work properly, important safeguards can be lost, she said.

“When we learn about toxicities, we modify the protocols,” Dutcher said. “If we have something that is unusual, like a sodium or electrolyte problem, we have to either add other medications to control it, or change the dosing or schedule, or do whatever needs to be done.”

Patient Groups Call For Investigation

While Burzynski’s patients have served as their doctor’s most effective advocates, patient groups that insist on high quality clinical trials and routinely take part in designing and monitoring protocols have not examined his practice.

In recent years, many patient groups have developed a genuine expertise in the design of clinical trials. Cooperative groups, pharmaceutical companies, and FDA have opened the doors for these patient advocates to take part in peer review of trial design and drug approval. Since Burzynski was not inviting scrutiny by these informed patients, none was being offered. He was simply off the screen.

This is no longer the case.

“It’s a travesty of everything we fought for as activists,” said Fran Visco, president of the National Breast Cancer Coalition and a member of the President’s Cancer Panel. “We’ve spent years educating breast cancer activists about the importance of quality trials, the importance of research, and advocating for support of research. If this is the type of research that is permitted to go forward, it’s a threat to our lives and a threat to continued support for science.”

Visco said the reviews by Ozer, Friedman, and Eisenberg point to a breakdown in the system of regulation of clinical research.

“It looks like we have a breakdown on every level of the system that supposedly is designed to advance good science while it protects patients,” Visco said. “We supposedly have all these laws and all these regulations in place, so things like this don’t happen. How is he getting away with it? There are so many laws here

highest levels."

Ellen Stovall, executive director of the National Coalition for Cancer Survivorship and president of The March: Coming Together To Conquer Cancer, said Burzynski's supporters in Congress and in the media owe an apology to cancer patients and their families.

These reviews make it painfully clear that Dr. Burzynski has bastardized the system that patients and their advocates rely on to validate safety and efficacy of cancer therapies," Stovall said.

"The exposure of this information propels us to become actively involved in monitoring Dr. Burzynski's practice. From this moment on, we are not going to let him rest. He is insulting the intelligence of the American people by calling his therapy nontoxic and alternative.

"All the news organizations, all his Congressional supporters—all those who by virtue of giving him a microphone gave him the opportunity to present himself as a folk hero—now have the moral responsibility to tell the public what the evidence really shows," Stovall said.

"I would like to see Dr. Burzynski's Congressional patrons apologize to the American people. Now that the truth is out, nothing less than an apology will suffice."

Help With Trial Design Is Available

Would it have been difficult or prohibitively expensive for Burzynski to design phase II clinical trials that would have provided convincing answers?

"We design trials like this all the time," said ODAC Chairman Dutcher.

The process of designing a proper trial for antineoplastons would have required little more than a one-day meeting involving four experts, said Richard Schilsky, a member of ODAC, chairman of Cancer and Leukemia Group B, and director of the University of Chicago Cancer Research Center.

"If it were just an issue of design, Dr. Burzynski could have brought together four outside consultants—people who have experience and credibility in the clinical cancer research community—and presented his data, and sought their advice on how to design a clinical trial," Schilsky said.

"He could have paid them \$1,000 each, and another \$1,000 to cover travel expenses, and he would have gotten some very valuable scientific advice," he said.

Had Burzynski invited alternative medicine scholar Cassileth, with whom he is acquainted, he would have saved the honorarium. "If I had known that he needed help in protocol design, I would have offered my assistance gratis," Cassileth said.

Of course, protocol design is just a fraction of the cost of a proper trial. For trials to be meaningful, data have to be properly collected and audited. Such work is performed routinely by institutions, NCI-funded clinical trials cooperative groups, and private clinical trials organizations.

"Had Dr. Burzynski presented his data to CALGB, and had it evaluated by a peer group of investigators, and was able to persuade us that these are exciting data that should be tested fully, CALGB would have been more than willing to do a well-designed clinical trial evaluating these compounds, and that would have been a relatively low-cost effort for Dr. Burzynski to be able to utilize the existing national clinical trials program to evaluate these new agents," Schilsky said.

Government-funded clinical trials groups would not have been the only place available for Burzynski, Dutcher said.

"If he doesn't want the government involved, then he can go to one of the commercial clinical trials groups, and have an external advisory board watching it," Dutcher said.

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Experts Say Interpretable Results Unlikely In Burzynski's Antineoplastons Studies

(The Cancer Letter, Vol. 24, No. 36, Sept. 25, 1998. Copyright 1998, The Cancer Letter Inc. All rights reserved.)

Clinical trials conducted by Houston physician Stanislaw Burzynski are poorly designed and unlikely to produce interpretable results, three experts in clinical research concluded after reviewing Burzynski's annual report to FDA.

The annual report, which contains the names, diagnoses, and treatment-related toxicities of 963 patients who received intravenous antineoplastons over 12 months ended Nov. 25, 1997, was released to The Cancer Letter by Burzynski.

The reviews were conducted by:

- Howard Ozer, director of Allegheny University Cancer Center in Philadelphia, a clinical investigator with Eastern Cooperative Oncology Group, former chairman of the biological response modifiers committee and executive committee of Cancer and Leukemia Group B.
- Henry Friedman, professor of pediatrics at Duke University and chairman of the brain tumor committee of the Pediatric Oncology Group.
- Peter Eisenberg, a community oncologist whose practice in Marin County, CA, offers complementary interventions as well as standard treatment. Eisenberg is the principal investigator of Sutter Health West Cancer Research Group, a clinical trials consortium, and a former member of the executive committee of the National Surgical Adjuvant Breast and Bowel Project.

The reviews represent the first systematic examination of Burzynski's data by independent experts experienced in the design and conduct of clinical trials.

Ozer, Friedman, and Eisenberg agreed on the following points:

- The protocols are poorly designed and data are not interpretable.
- The toxicities of the antineoplastons treatment are significant and life-threatening.
- The data do not justify making antineoplastons available under special exceptions.
- Burzynski is conducting more clinical trials than his data justify.
- Burzynski's claim that antineoplastons produce "stable disease," which he considers a positive result, runs counter to established rules for interpretation of clinical trials data.
- Withdrawal by patients described by Burzynski as having responded is unusual in the practice of medicine.
- If Burzynski wants to convince patients and physicians that his drug works, he will have to accept the established mechanisms of clinical trials.

The reviewers were chosen by The Cancer Letter, and were not paid. They worked separately, and did not discuss the materials with each other.

Ozer, Friedman, and Eisenberg received the annual report, a copy of the FDA summary of the report, a detailed letter from Burzynski disputing the accuracy of the FDA tabulation of the data, the address of the Burzynski Research Institute web site which posts the protocols, and a list of questions prepared by The Cancer Letter. The reviewers had the option of not answering the questions and addressing any issue they chose.

Burzynski released the annual report last May, when he disputed the accuracy of an analysis of his data by FDA. Testifying before a hostile hearing conducted by Rep. Dan Burton (R-IN), a long-standing Burzynski ally, FDA-Acting Commissioner Michael Friedman announced that antineoplastons therapy produced no responses among protocol patients with melanoma, soft tissue sarcoma, as well as cancers of the breast, colon, lung, prostate and ovaries (The Cancer Letter, April 24).

The reviewers did not audit the data in the annual report. The reviewers first assessed protocol design and the quality of data. After enumerating fundamental errors in protocol design and data collection, the reviewers concluded that the studies were so flawed that auditing them was meaningless.

The text of the reviews follows:

Howard Ozer:

Dr. Burzynski is studying a heterogeneous, ill-defined patient population.

He treats patients who come through the door, and only patients who come through the door. He takes patients with bony disease, liver disease, bone marrow involvement, CNS disease. He organizes data by disease site, whatever the patients' stage, and whatever treatment they received prior to walking through the door of his clinic.

What we have here are bad trials that could never get past peer review of any clinical trials cooperative group. It's not in the public interest to conduct trials that are not going to yield clear results. If you are going to test an alternative approach, you need to test it as rigorously as you do mainstream approaches.

Dr. Burzynski's protocols are written with all the trappings of protocols. They look like protocols. They smell like protocols. But they lack the rigor of protocol design that defines the patient population, defines the endpoints, sets exclusion and inclusion criteria, and allows for statistical analysis.

The protocols are evaluating a single statistical endpoint: response. He doesn't evaluate disease-free survival, time to progression, quality of life, or overall survival. With these endpoints not prospectively defined, he has no basis for making legitimate claims regarding these parameters. This is a fundamental problem: You have to set your endpoints prospectively. It's too late to go back and do it after all the patients are treated.

Dr. Burzynski presents no baseline data. He presents no control data. He presents no description of methodology employed to measure active agents in the blood. How are these values affected by other variables, such as how recently these patients have been on other chemotherapy? How many other chemotherapy agents have they had? Is their liver and renal function normal? In the absence of controls, Dr. Burzynski is constructing his controls from memory and experience, which eliminates any possibility of determining a true response rate.

If a fellow brought me these data, I would tell him to choose a tumor-at most three sites-conduct a properly designed phase II trial, and come back to me after collecting adequate data. If this trial were proposed at the Eastern Cooperative Oncology Group, the review committee would lecture the investigator on the perils of employing a "shotgun approach" to clinical trials. Also, the investigator would be told that the proposed trial would subject too many patients to risk without true evidence of benefit.

Moving from protocols to results, I am surprised by Dr. Burzynski's statement that stable disease is a positive outcome. That runs contrary to established criteria for trial design. In the context of phase II trials, which are short-term studies, stable disease is not reported as a positive outcome.

It's possible to set a bar of proving that stable disease is beneficial. However, that bar has to be quite high for a new agent. To demonstrate benefit, the investigator would have to show stable disease not for a month or three months (which is all Dr. Burzynski

is claiming at this point), but for six, 12, or 24 months in patients who have truly progressive disease.

For example, if you had a patient with a newly diagnosed acute myelogenous leukemia, and you started treating her with an agent, and her white count remained stable for a year, that would be indeed remarkable. However, if you had a patient with breast cancer in which the natural history of the disease can evolve over a decade, even after metastatic spread occurs, and you do analysis four weeks or even three months apart, and say that's stable disease, your result is not meaningful.

In the annual report to FDA, I see problems of adherence to protocols. While protocols call for evaluation of response every 90 days, in some instances I see Dr. Burzynski making these evaluations monthly.

Looking at Dr. Burzynski's brain tumor data, I don't see a breakdown by histology. It's extremely difficult to evaluate response in brain tumors, and these materials tell me little about how Dr. Burzynski does it. I can't review his scans, his x-rays, or his physical exams to know whether any of his results mean anything.

I do see patients with responses who subsequently withdraw from the study. That means to me that the patients' perception of their benefit is less than what Dr. Burzynski is interpreting.

In the data presented to FDA, I see a 4 percent death rate that may be attributable to the therapy. That's a very significant grade 5 toxicity rate.

Hypernatremia reported by Dr. Burzynski is serious: as high as 180 mEq/L. A normal serum sodium level ranges between 135 and 145 mEq/L. Generally, the level of 155 to 160 mEq/L would be a big deal on the ward. By that token, 180 mEq/L is truly remarkable. I have never seen it. This would not characterize antineoplastons as very dangerous drugs, but they are certainly drugs that need careful monitoring since patients can be expected to experience life-threatening toxicity. If you are running serum-sodium at that level, it probably means that patients have to be hospitalized.

Dr. Burzynski's pharmacology data presented to FDA leave a lot to be desired. The pharmacokinetic data are reported, but are impossible to interpret. Here, too, I see no homogeneity. Dr. Burzynski presents individual patient kinetics, but I can't make head-or-tails of them, because his methodology is not explained.

In the absence of usable pharmacokinetic data, I can't say whether hypernatremia is caused by huge amounts of saline, or whether the study agents are having a physiological effect of creating hypernatremia.

All of these problems of trial design are real, but even if one assumed a good trial design, there isn't enough follow-up yet in any single group of patients to be able to determine validity of his results.

About 80% of Dr. Burzynski's patient population is too early to evaluate, and yet he evaluates them, and he does include the data from that evaluation. These data could be useful for making preliminary evaluations, but not efficacy claims.

It's not FDA's job to design the trials for Dr. Burzynski. Their job is to monitor safety, and make sure that the trials are ethical.

Based on the data I have seen, I believe that compassionate use of this drug is inappropriate at this time. Compassionate use should be reserved for cases when you know that a treatment is likely to benefit the patient, but the patient doesn't meet the protocol criteria.

I would not allow Dr. Burzynski to continue enrollment of new patients in his study. He has enough patients at this point to demonstrate anything that could conceivably be there. He needs to follow up patients for another 12 to 24 months.

Giving the investigator the benefit of the doubt, I would follow the patients currently under treatment, and over time there will be indicators of activity among some of the larger populations. If the response rate doesn't rise, and stays at about 20 percent or less after sufficient follow-up, then the trials would not be worth pursuing in their present form.

Henry Friedman:

Dr. Burzynski is collecting data in anecdotal fashion.

In the absence of rigorously reported and described results, and in the absence of independent verification of Dr. Burzynski's adherence to his own protocols, these data can never be useful to show true merit or lack of merit of his drug.

I see no data that would support the activity of this agent in brain tumors in any way, shape or form. The biggest problem is that the documents do not reveal that he has the expertise required for meaningful evaluation of radiographic evidence of responses in brain tumor patients. In the absence of peer review, we don't know whether he controls for the many factors that can produce an appearance of a response.

Clinical trials in brain tumor patients require rigorous and controlled review of the scans, because many different things can make an investigator suspect that there is a response when there is nothing. There could be a post-surgical artifact (post-surgery inflammation) that resolves by itself. There could be increases in Dexamethasone, which make the scans look better. There can be changes that are related to other factors, such as concurrent medications that can obscure the results.

If you don't have standardized, rigorous criteria for reviewing MRIs, which is the way you evaluate the responses of brain tumor patients, your data are meaningless. The protocols do not specify who is providing neuroradiologic interpretation of scans. Is it Dr. Burzynski himself? If so, what qualification does he have for interpretation of these results? The absence of requisite expertise to

evaluate responses for conditions that produce artifacts in brain tumor scans would render the entire protocol worthless.

Dr. Burzynski reports a significant withdrawal rate of patients who theoretically respond. That has to be explained, because patients who truly respond don't withdraw, unless they have unacceptable toxicity as part of interventions.

Dr. Burzynski's patients experience hypernatremia levels of about 170 to 180 mEq/L. [The normal level is 135 mEq/L to 145 mEq/L]. This is incredibly dangerous.

Hypernatremia in patients with cancers outside the brain is a problem, but when you have somebody with a mass in the brain, and you've got that kind of a cellular change, you are really asking for a much more pronounced problem because of the fluid shifts that go along with that.

When you correct hypernatremia, you can produce a significant intracranial swelling of the tumor, and ultimately kill somebody. When we get a patient who is hypernatremic, he or she is handled incredibly gingerly. Hypernatremia places brain tumor patients in double jeopardy. First, there is the danger from hypernatremia itself. Second, after you correct hypernatremia, a patient can develop cerebral edema.

Cerebral edema normally is a problem. But when you have a brain tumor and you get cerebral edema, it's frequently a lethal event. Anything that has to do with an electrolyte change in a patient with a cancer outside the brain is going to be exacerbated in a patient with a cancer of the brain.

The annual report to FDA and the protocols posted on his web site indicate that Dr. Burzynski is trying his drug in most brain tumors.

After reviewing these documents, I am unable to say what Dr. Burzynski's brain tumor data or his work are about. What I see is a waste of an opportunity to help people and advance the field. That's why you do clinical investigations: both to help people and to try to make the field move forward, and what he has done is present such a confusing morass of data that it's uninterpretable.

If Dr. Burzynski wants to test his drug in brain tumors, he is going to have to design a rigorous protocol with one or two histologies, and evaluate those. I personally would not want to be a part of such a trial, because I believe there are a lot more promising interventions than antineoplastons out there to evaluate first. For all brain tumor histologies, there are better questions to ask.

Nonetheless, if Dr. Burzynski chooses to proceed, I would advise him to abandon his claim that stable disease is a meaningful parameter in phase II trials.

It is not.

Peter Eisenberg:

After reviewing materials presented to me, I cannot make any

conclusion regarding the efficacy of antineoplastons.

The trials seem to be numerous and unfocused. As a clinical investigator and a practicing physician, I recommend that Dr. Burzynski write a protocol on one or two diseases and treat patients in a rigorous fashion.

The results of his studies should be presented in a peer-reviewed, published paper so that all oncologists would be able to assess the results. This is how all of us who care for patients learn what works and what doesn't:

It is important for me to know that a study is credible:

1. Patients must meet inclusion criteria. Diagnoses must be histologically confirmed malignancy, and tumors must be appropriately staged.
2. Patients must have undergone uniform previous therapy or no therapy at all.
3. Patients must be randomized to receive study drug or placebo so that each treatment group is identical in every respect, except for the treatment to be studied. If the study groups are not identical, this should be acknowledged and explained.
4. Treatments must be given consistent with protocol design.
5. Evaluations of patients must be done in a standardized way so that it is clear what is being measured. Standard definitions for responses should be used. Dr. Burzynski's claim notwithstanding, "stable disease" is not a valid endpoint.
6. Discussions and conclusions should be based on the objective findings and supported by data.

One of the tragedies in cancer care is that not enough people participate in clinical trials. Only 2 to 3 percent of people are treated in a manner that would yield answers about safety and efficacy of treatments.

Dr. Burzynski has studied hundreds of patients without publishing his results, and we still know very little about the efficacy of his treatment.

The results in the annual report are presented in the form of raw data: many, many pages of charts detailing patient names, I.D. number, patient characteristics, name of disease, response to treatment and current status.

I cannot find any helpful summary material or a description of the study, results and discussion. Also missing is information on whether Dr. Burzynski's patients had been receiving therapies other

- I am unable to understand why FDA grants "special exceptions" for Dr. Burzynski to treat patients off-protocol. Considering that there is no evidence of efficacy of this drug, it seems unusual to me that Dr. Burzynski has treated 538 patients on protocol and 425 as "special exceptions." The whole notion of using investigational drugs "on protocol" implies a certain degree of rigorous and orderly investigation. I am much more in favor of completing well-conceived, properly designed trials than I am in continuing to provide medications with an unclear efficacy off-study.
- I can't understand why so many of Dr. Burzynski's patients entered in the studies are classified as "not evaluable."
- Dr. Burzynski seems to think that achieving "stable disease" is a good thing. I can say only that stable disease does not a response make. Oncologists use standard measurements for response. A complete response means the complete disappearance of the lesions, and no appearance of new lesions. A partial response refers to shrinkage by more than 50% of the sums of the products of the longest dimension of a tumor and the longest dimension that is at right angles to it. Responses must be documented to persist for more than four weeks.
- Dr. Burzynski's brain tumor data are impossible to interpret since all brain tumors are lumped together into a single category. That's a puzzling choice, considering that brain tumors are usually treated according to their histology.
- I am surprised to see in the FDA summary that half of the 36 patients characterized by Dr. Burzynski as responders withdrew from the study due to patient request, worsening conditions, or growth of tumor. If antineoplastons work, why are these people choosing to stop therapy?
- It is not clear to me why Dr. Burzynski's patients develop hypernatremia. According to the FDA summary, 65% of patients experienced hypernatremia, with 7% having a sodium of 160 mEq/L and higher. This is high incidence, because it's not something we routinely see with standard chemotherapy.

In his letter to the editor in The Cancer Letter of May 22, Dr. Burzynski claims that hypernatremia is common in the general populace. This has not been my experience, nor is this supported in the literature.

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"We Don't See Any Significant Toxicity," Burzynski Says

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In a telephone interview with The Cancer Letter Editor Paul Goldberg, Burzynski offered an explanation of his drug's mechanism of action and its side effects. Following is an excerpted transcript of this discussion:

The Cancer Letter: You say in your promotional materials that antineoplastons are not toxic. How do you arrive at that claim?

Burzynski: It depends on what you are talking about toxicity. In some of the patients who are taking treatment for a number of years, we arrived to the total dose of antineoplaston of about 600 kilograms. And with minimal side effects.

CL: At high dose?

B: It is in the range of 5 to 15 grams per kilogram body weight. The kind of dosage that we are using for A-10 is 25 grams per kilogram body weight daily. We seldom use such high dose, because usually it's not necessary, but that's what we are able to use without really showing any significant side effects in these patients. And, as I've mentioned, for patients who have taken the treatment for a number of years—some of them have taken the treatment for 10 years—we don't see any significant toxicity. Some minor problems, but can you imagine taking any chemotherapeutic drug for 10 years without showing any significant toxicity?

CL: When Mayo, Memorial, and NCI tried it, they found some major toxicities. Of the nine patients, three had to be taken off the study.

B: We can look at this from various points of view. Some of them were taken off because they developed some skin rash. But it happened that the skin rash was due to Dilantin [a seizure medication] that the patient was taking at the same time. I think they were interested to stop this project soon. To prove that this doesn't work. But we have patients who are now alive who have taken the medicine for a number of years, and these patients have been evaluated by some top neurologists in this country, or neurosurgeons, and they didn't see any toxicities, so to speak, to the treatment.

If you take in consideration 20 grams per kilogram body weight, and if you take body weight of 70 to 80 kilograms, that means that daily you can theoretically administer 20 times 80, around 1,600 grams of the material, which means better than 3 pounds. Okay? So how can you call such material toxic if you can give it in such quantities?

CL: According to a calculation I cite, an 88-kilogram patient on high-dose antineoplastons would get about 150 grams of sodium a day. That's a load of sodium.

B: Of course, there is a substantial amount of sodium here, using a large dose of this drug. We did pharmacokinetic studies, and we were treating a large number of patients with high-dosages of antineoplastons, and we were taking blood samples at short time intervals, like after seven minutes, after one hour, two hours, three hours, and so on. And we have seen some fluctuation of electrolytes, but they were within normal limits. We could see sodium levels climbing toward the upper normal limits, but then going back to normal after the infusion was finished. Certainly, we have seen some cases of hypernatremia.

CL: Why do you think it's happening?

B: It may happen for a variety of reasons. Of course, we have a certain content of sodium, and the sodium also causes hypernatremia, sodium which is in the formulation. However, when we did pharmacokinetics, we didn't find any hypernatremia. On the other hand, the medicine has some osmotic effect. The osmolarity is higher than normal. And because of that we see increased diuresis. And increased diuresis may cause dehydration. Typically, in patients we see increased elimination of urine, and we allow them to drink more fluid. We try to accomplish proper fluid balance in these patients, but sometimes they neglect it.

CL: Oh, they do? They neglect it.

B: Sometimes they don't drink such an amount of fluids. When they stay in Houston, we watch them very carefully, and we monitor fluid in and out very carefully, and we try to convince them that this is important to do. But sometimes they don't drink as much fluid as they should, and then they may get dehydrated, and they have an elevation of sodium. In most cases, this is only a minor elevation of sodium, which we may see in the blood test without any symptoms. But in some cases, we may see substantial sodium concentration. We record every instance of elevation of sodium. Even if it's one unit above normal, and we record it. And we report it to FDA. So this way FDA came up with something like 55% of patients have an elevation of sodium, but in most of these cases this was a minor elevation, only evidenced by the blood test.

CL: What kind of elevation?

B: If we see 148 mEq/L, we discontinue the treatment and we report to FDA that the sodium has been elevated. In most of the protocols for chemotherapy they don't pay any attention if sodium is one point above or two points above. They are more concerned when the sodium is too low. Certainly, we have some cases when sodium was very high. In practically all of these cases except for two cases we were able to reverse hypernatremia and bring this to a normal level, and the patient did not die as a result of hypernatremia. We had one case when a patient developed hypernatremia and intracerebral hemorrhage, and he died without having a chance to bring hypernatremia to normal. We had another case when a patient who had extensive liver involvement, which can cause hypernatremia, also developed hypernatremia, and she did not wish to have any treatment for hypernatremia, and she also died. So we have two cases in which we couldn't bring hypernatremia under control.

CL: That's last year, right?

B: Yes. And in the rest of the cases, hypernatremia has been normalized.

CL: Is this only in Houston, or at home?

B: I am talking about all patients, altogether. All patients treated. In most cases these patients were outside Houston when this happened.

CL: So you managed them on the phone?

B: We have a lot of doctors who are involved in the treatment. When a patient is taking high doses of antineoplastons, we have a lot of doctors register as co-investigators. They are managing the patients locally, but we are trying to maintain contact with the patients practically every day. We are more concerned about water toxicity with these patients, because the limiting factor seems to be the volume of fluid which we have to infuse. In most of these patients we are not really reaching the maximum dose of 20 grams per kilograms for adult patients, but they are usually administered the medicine between 5 to 15 grams per kilogram body weight for antineoplaston A-10.

CL: That's a substantial amount of sodium.

B: Yes, sure. In our protocols, we stop the treatment even if we have elevation of sodium by one point. And practically in all of these patients the next day sodium is back to normal, and we don't have to introduce any treatment, and simply ask the patients to drink more fluids. That's what we normally do in our protocols.

CL: What about cerebral edema?

B: Cerebral edema is usually decreased during the treatment, because we have osmotic effects of the formulation. We have osmotic effects similar to Mannitol. Patients when they are under treatment usually have less chance of cerebral edema. It's like if they receive Mannitol infusions. When we stop the treatment, then they may develop signs of cerebral edema. So they may have a rebound effect. So sometimes with such patients we have to resort to Mannitol, we have to resort to higher doses of dexamethasone to decrease edema. But about 98% of our patients have a tendency to eliminate more than usual amount of fluid, and about 1.5% of patients have a tendency to retain the fluids. This situation seems to be beneficial, because many of cancer patients have problems with fluid retention. If you are talking about patients who also have liver involvement, they usually are coming with ascites. They may have pleural effusions. They may have total edema.

CL: So this is beneficial? I guess intracranial pressure would be increased; wouldn't it?

B: No. It decreases, as a matter of fact. Of course, if you have a high level of sodium, then intracranial pressure may increase because of that. But it takes really a high sodium level to do it. Theoretically, when you introduce osmotic diuresis, then the intracranial pressure is decreasing. That's why we don't really need to use diuretics frequently, because we have diuretic effect of the medicine in the first place. Okay? And also waste products which may be coming up from dying cancer cells, like uric acid, are also eliminated. Before we used high dosages of antineoplastons, and before we used formulations which have such high osmos expression, frequently we have seen high elevations of uric acid in blood, which required, of course, giving them allopurinol, giving them hydration, a proper diet, and discontinuation of the treatment

until uric acid stabilized. Now we seldom see this, because uric acid has been eliminated because of this diuresis.

CL: Uric acid in this case occurs because?

B: Uric acid usually occurs when you have extensive tumor breakdown, or necrosis. So in some cases we experience what is called tumor lysis syndrome, when a high level of uric acid and an elevation of some other laboratory values, and decrease of potassium because of tumor necrosis. And this was when we used lower doses, and not as concentrated formulation. But now we seldom see this, because with the increased diuresis, it has been eliminated.

CL: What effect does the sodium have on the tumor? Does it have any tumor-fighting effect?

B: I doubt it very much. If anything, it may have the opposite effect. Certainly, we try to not have high sodium concentration, and in most of our patients we are able to avoid it through very careful monitoring.

CL: So the sodium is there to get rid of the uric acid from necrosis?

B: There is a more up-to-date explanation why we may have increased sodium in such patients. Certainly, we may have increase of sodium because it's in the formulation, and because patients were dehydrated. But also antineoplaston AS2-1 is interrupting signal transduction through RAS oncogene pathway. And the RAS oncogene regulates potassium channels in the cells, which is causing potassium to go inside the cells, and sodium escapes from the cells.

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Child's Treatment Provides Study Of Contrasts: Burzynski Versus Mainstream Medicine

(The Cancer Letter, Vol. 24, No. 36, Sept. 25, 1998. Copyright 1998, The Cancer Letter Inc. All rights reserved.)

On July 3, 1996, the Burzynski clinic admitted a 4-year-old boy who had undergone a surgical resection of a medulloblastoma, according to the clinic's annual report released to The Cancer Letter.

Burzynski's management of the case as well as his stated rationale for medical decisions do not appear to be mainstream, oncologists said. The fact that Burzynski was able to make several treatment choices without running afoul of FDA regulations raises questions about the agency's adherence to the standards of oncology practice, experts said.

In mainstream medicine, early stage medulloblastoma is regarded as a treatable disease.

"Basically, if you treat a kid who has had a resection, and has no metastatic disease, we expect that survival should be at the 70 to 80% level with reduced dose irradiation and chemotherapy," said

Larry Kun, president of the American Society of Therapeutic Radiology and Oncology, chairman of radiation oncology, and program leader in neurobiology and brain tumors at St. Jude's Children's Research Hospital.

When the boy was admitted to the protocol, he met the eligibility criteria, Burzynski said.

Indeed, the 1996 version of the protocol states that, "patients who did not receive standard therapy are eligible." FDA requested that the provision be removed the following year, Burzynski said.

The letter of the protocol notwithstanding, the decision to admit a child with a treatable cancer into a phase II preliminary study is problematic, said Norman Wolmark, chairman of the National Surgical Adjuvant Breast & Bowel Project.

"One has to come to grips with what would justify withholding effective standard therapy for a treatment regimen that is undergoing investigation," Wolmark said. "Even if one were to consider clinical trials in such a setting, those trials would have to be rigorously controlled, and the experimental regimen would have to be compared to the standard of care."

Burzynski said antineoplastons offer a reasonable treatment option for medulloblastoma patients. "For such patients, radiation therapy certainly would cause lifelong adverse effects, and certainly mental retardation," Burzynski said. "And, certainly, there was no assurance that this was a curative treatment."

"This statement is entirely false," said Kun. "The current standard for a resected patient is a reduced dose of radiation, in conjunction with chemotherapy, as practiced at every major center in North America now."

"This treatment seems to be associated with rather limited kinds of deficits," Kun said. "The majority of kids will show changes in the order of 10 or less than 20 IQ points. These kids will likely require some assistance with learning, but the early information tells us that they are capable of learning independently at a respectable level and continue to do well."

Burzynski said the boy had some residual tumor. "He had the involvement of the right lateral portion of the fourth ventricle," Burzynski said, reading from a treatment summary. "At that time his tumor measured 2.4 by 1.7 centimeters."

The tumor was evaluated by an in-house radiologist, and Burzynski reviewed the scans himself, he said. "At that time, I was reviewing all of the scans," he said.

Duke oncologist Henry Friedman, who had evaluated the boy prior to initiation of the Burzynski treatment, disagrees with Burzynski's assessment of the patient.

"There was no measurable residual disease at the end of surgery," Friedman said. "There was stuff in the lateral ventricles that was

initially interpreted by many institutions, including us, as metastatic tumor, and later was shown to be heterotypia. We had better radiologists look at it over time and realized that this thing was not a tumor."

After eight months on antineoplastons, the child's disease progressed, Burzynski's annual report shows.

"He had progression, because he had some interruption in the treatment program," Burzynski said. "So we said that, perhaps because of the interruption, the tumor was growing. We asked FDA to allow his treatment under a special exception."

Burzynski's letter to FDA dated March 21, 1997, states that the child's tumor had shrunk by 40 percent. However, the scans showed a new nodule of about 1.3 cm. by 0.7 cm.

"There is a good chance that by increasing the dosage of Antineoplaston A10 to the maximum, his new small nodule will also respond to treatment," Burzynski wrote. The letter requested that the child be upgraded to the maximum dosage under the special exception program.

Friedman disagrees with Burzynski's claim that the boy's tumor had shrunk. "This is unequivocally not a kid who would have had measurable disease that one could have said responded to therapy," he said. "It was not a tumor. It was heterotypia.

"All the antineoplastons did was delay the onset of conventional therapy until the kid ultimately progressed," Friedman said.

FDA approved Burzynski's request.

The boy was taken off the treatment eight months later, in October 1997. Burzynski's annual report to FDA notes his reason for withdrawal as "progressive disease."

The child's family remains loyal to Burzynski. "I believe antineoplastons are a potential cure," the boy's mother said to The Cancer Letter. "I regret that there wasn't a more concentrated formula available, so he could have a higher dose of the drug without a greater amount of fluid. Without the toxicity of conventional treatment, his body was allowed to recover from the side effects of surgery."

The boy's mother said he has had four resections, the most recent of which was followed by radiation. The boy has responded to treatment, and his intellect has not been impaired, said Thomas White, a pediatrician in St. Petersburg, FL.

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'Antineoplastons'

An Unproved Cancer Therapy

Saul Green, PhD

UNORTHODOX and unproved treatments for cancer are big business in the United States.^{1,2} Usually, individuals providing these treatments offer the public little or no information on their qualifications to treat cancer. Their science is generally presented in unverifiable testimonials, anecdotal material, and non-peer-reviewed magazines sold in supermarkets or publicized on television talk shows and in throwaway health-fair circulars. When reviewed, they reveal a patchwork of half-truths and scientific misinformation.

In contrast, there is no lack of published material for the patient who may be considering antineoplaston therapy. There are hundreds of papers about this therapy and its discoverer, Stanislaw R. Burzynski, MD.³⁻⁶ They include his curriculum vitae, his list of publications, explanations of his theory of cancer and the way his treatment works, clinical information, press releases, brochures, abstracts of his speeches, reports of his research results, review articles, government reports, court opinions, legal depositions, records of public hearings, and transcripts from television talk shows.

This article reviews material on the subject of antineoplaston therapy for cancer, so that the reader can come to an informed conclusion as to the validity of the claims made for its scientific basis.

INFORMATION FROM BURZYNSKI'S PUBLICATIONS Background and Credentials⁹

Burzynski's graduation from the Medical Academy in Lublin, Poland, in 1967 coincides with his claim to have discov-

ered the peptides that control cancer growth in the human body, which he later named *antineoplastons*. He received a doctorate in medical science in 1968, interned at Lublin in surgery, internal medicine, pediatrics, and obstetrics and gynecology, and he then undertook a residency in internal medicine. Burzynski came to the United States in 1970 and worked as a research associate in the Department of Anesthesiology, Baylor College of Medicine, Houston, Tex, where he isolated peptides from the brain tissue of conditioned rats.^{10,11} He was licensed to practice medicine in 1973, published his theory of antineoplastons in 1976,⁴ and began treating patients at his newly opened Burzynski Research Institute (BRI) in 1977.¹

Hypothesis of Antineoplastons

In 1976, Burzynski⁴ proposed that since cancer was a disease of differentiation and since new cells are constantly being produced, groups of abnormal cells could constantly arise as a result of the influence of carcinogenic factors. Without a reliable mechanism for "normalizing" such erroneously developed cells, he hypothesized, the organism would not live very long. Since spontaneous regression of cancer does occur, he proposed that a normalizing mechanism must therefore exist in the body. Based on this reasoning, Burzynski suggested that the ideal approach to cancer therapy would be to direct cancer cells into normal channels of differentiation. He named those naturally occurring substances that could "normalize" cancer cells *antineoplastons*. Because the scientific literature identified peptides as molecules that carried information, he concluded that antineoplastons must be

peptides. Since peptides were found in the urine, he judged urine to be the most economical source for the isolation of antineoplastons.

Antineoplaston Literature

The current antineoplaston literature contains more than 140 citations.⁴ Between 1964 and 1972, there are 23 citations. Burzynski's earliest studies conducted in Poland describe methods for the isolation and quantitative measurement of peptides from mushrooms and from the blood of humans with renal disease, heart disease, and obesity. The studies conducted in the United States deal with peptides from rat brains.^{10,11} The first report of an effect of peptides from human urine on cancer cells in vitro appeared in 1973.³ A 3-year National Cancer Institute (NCI, Bethesda, MD) grant (RO-1-15056) was awarded in 1974.⁴ From 1973 through 1976, Burzynski worked on methods for extracting peptides from urine, methods for their quantitative determination, and the effects of urinary peptides on isolated frog hearts and intestinal smooth muscle.^{12,13} In 1976, he published one article on the effect of urinary peptides on tumor cells in vitro.⁴

Burzynski's theory of the cause and cure of cancer was published in 1976.⁴ In 1977, he used a urine extract he called *antineoplaston A* to treat 21 cancer patients.⁴ In 1985, Burzynski described the production of eight antineoplastons in a US patent.⁴ He named them A-1, A-2, A-3, A-4, A-5, A-10, AS 2.5, and AS 2.1. He claimed A-10 was the active component present in the urinary antineoplastons and identified it as 8-N-phenylacetylaminopiperidine-2,6 dione. Two products, AS 2.5 and AS 2.1, were made from A-10. All three, A-10, AS 2.5, and AS

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2,1, could be synthesized in the laboratory. At present, over 95% of his patients are treated with synthetic preparations of antineoplastons that do not contain any material isolated from human urine (written communication, S. R. Burzynski, MD, May 1988).

Since 1977, the antineoplaston literature has covered the following: proposed mechanisms of antineoplaston interaction with DNA, effects on protein synthesis and cell division, toxic effects studies in mice, and phase-I trials in cancer patients.

Literature¹⁴ provided by the BRI states that research groups headed by Xu in China,¹⁴ Muldoon and Hendry in the United States,^{14,15} and Tsuda in Japan^{14,16} have confirmed preclinical and clinical research results with antineoplastons. Burzynski Research Institute publications also claim that researchers at Sigma Tau, a pharmaceutical manufacturer located in Rome, Italy, feel there is evidence to justify the use of antineoplastons to treat cancer in humans.^{11,12}

A CRITIQUE OF BURZYNSKI'S CLAIMS

Burzynski states that he discovered a naturally occurring biochemical anticancer surveillance system in humans in 1967.¹ Between that time and his departure for the United States, he claims²⁸ to have received a PhD degree in biochemistry. Professor Stanislaw Bilinski, the current chairman of the Department of General Chemistry at Lublin, who remembers Burzynski as a student (written communication, March 1987), stated the following:

From December 15, 1966, to September 30, 1967, Burzynski worked as a scientific technical assistant in the Department of General Chemistry. He received his diploma as an MD on February 18, 1967, and a doctorate in medical sciences in 1968. To the best of my knowledge he did not do any independent research while he was at the Academy.

Burzynski's bibliography does not identify a PhD dissertation.¹

None of the first 23 papers in Burzynski's bibliography, from 1964 through 1972,⁹ deals with cancer or the effects of urinary peptides on cancer. None mentions information-carrying peptides with an ability to induce differentiation in cancer cells, and there is no published evidence that Burzynski experimentally tested his hypothesis that information-bearing peptides from urine could normalize cancer cells.

The methods used to produce and identify urinary antineoplastons described in his 1985 US patent⁹ are as follows. Two thousand to 3000 liters of urine were processed in batches to pro-

duce the amount of each of the five urinary antineoplastons required for use. This huge volume of urine was collected and transported frequently from various sites around the city of Houston, where the weather is frequently hot. In reply to a letter requesting information about the precautions taken to prevent infection and contamination with bacteria and the acceleration of their growth in the urine during collection, storage, and transportation, as well as the methods used to remove bacteria, viruses, pyrogenic material, and other substances that might be present because of the medical conditions of the donors, Burzynski replied as follows (written communication, May 1988):

I would like to explain to you that, at present (May 3, 1988), over 95% of our patients are treated with synthetic preparations of antineoplastons that do not contain any material from human urine. As far as the formulations obtained from urine are concerned, we are running multiple tests to check if we have any endotoxins in preparations during different steps of the procedure. The procedure is designed this way so that it should eliminate any proteins, including endotoxins, in the first step. Our production facilities were inspected repeatedly by the FDA (US Food and Drug Administration), and after the most recent inspection, we have in writing from the FDA that we are in full compliance with current good manufacturing procedures. Fever and chills observed in some of the patients some time after administration of the medicine are usually related to extensive tumor necrosis.

The process used for sterilization of the urine and its fractions is described in Burzynski's 1985 patent as filtration and ultrafiltration. Although the patent states that precautions were necessary to rid the raw material of contaminating microorganisms, Burzynski offers no specific information about the methods used, how often they were applied, or how successful they were. According to the FDA's guidelines for good manufacturing procedures²⁴ and the Health Industry Manufacturing Association's guidelines for sterilization of pharmaceutical products,²⁵ the use of filtration processes intended to result in sterilization of a product are effective only when the mass of bacterial contamination is low, when the conditions for regrowth of the microorganisms are tightly controlled, and only with very low or nonexistent amounts of pyrogenic endotoxins in the reagents or on the surfaces of the apparatus and glassware at the beginning of the process. Bacterial endotoxin²⁶ contaminates all unsterilized liquids and surfaces. It is a low-molecular-weight fatty substance, not a protein, and is not removed from solutions by ultrafiltration. Finally, the

FDA will not confirm that it stated in writing that it considered the manufacturing plant at BRI to be operating in accordance with the FDA's good manufacturing guidelines (oral communication, S. Miller, FDA offices, Houston, Tex, October 1991).

Five fractions were produced from human urine by Burzynski, A-1, A-2, A-3, A-4, and A-5. For these, five chromatograms are shown,⁹ and each is said to specifically represent one fraction. The five chromatograms are nearly identical both qualitatively and quantitatively, and without the figure number assigned to each, it would be almost impossible to distinguish one from the other. Data in this patent clearly show that all five fractions have essentially the same anticancer activity and the same degree of toxicity. Although the text implies that they all contain the antineoplaston A-10, Burzynski does not offer an explanation for the basis on which he chooses any one specific fraction for treatment of a patient, or why he has never reported using fractions A-1 or A-4 to treat patients. Burzynski claimed that A-10 from urine fraction A-2 is the active factor common to all the fractions.⁸ But since A-10 was not isolated from any of the other urinary fractions, there is no basis for this claim.

The method for the synthesis of A-10 is presented in Burzynski's 1985 patent. In this method, phenylacetylglutamine (PAG) is synthesized from glutamine and phenylacetyl chloride. Acidification of the solution containing the PAG converts it to the piperidine A-10 by cyclization of its glutamine moiety through removal of one molecule of water. Since Burzynski's process for producing A-10 from urine involves acidification of urine containing PAG, the PAG must be the precursor of the A-10, which he isolates from urine fraction A-2.

The antineoplastin A-10 (3-N-phenylacetylaminopiperidine-2,6 dione) is insoluble in aqueous solutions.¹ Nevertheless, Burzynski states that it is produced in the body and circulates normally in aqueous biological fluids like blood and urine. He offers no explanation of how or where this insoluble substance is made or how it gets from the blood, through the kidneys, and into the urine.

Being insoluble, A-10 is obviously not suitable for intravenous administration. Burzynski says that treatment of A-10 with sodium hydroxide and heat results in the production of the water-soluble sodium salt.⁸ In a later paper,²⁷ Ashraf et al (Burzynski was a coauthor) state that A-10 is unstable in alkali and breaks down (hydrolyzes) to yield PAG. As we have seen, this is the urinary

substance from which the A-10 was derived in the first place. Therefore, the "soluble" A-10 that Burzynski says he is using in intravenous injections and infusions is not the soluble sodium salt of A-10 but is the sodium salt of PAG. The Chinese researchers that Burzynski says confirmed his work with antineoplastons stated this fact in one of their papers.¹⁴

Phenylacetylglutamine is a waste product that is only found in the urine of humans.^{15,16} It results from conjugation of glutamine in the liver, with the organic acid, phenylacetic acid (PA). The toxicity of PA in humans has been recognized since 1919¹⁷ and more recently has been associated with the brain damage due to the faulty amino acid metabolism of phenylketonuria.^{18,19}

Some of Burzynski's patients may be given the insoluble (authentic) A-10 by mouth.⁹ Burzynski²⁰ has reported that insoluble A-10 that is ingested is rapidly converted to PAG by alkaline digestive juices in the small intestine. Therefore, it is PAG, and not A-10, that is absorbed into the circulation from the small intestine after insoluble A-10 is ingested. This is of special interest because experimental data in Burzynski's earlier work showed that PAG was ineffective against cancer cells.²¹ Burzynski supported his conclusion by citing the work of Israeli researchers²² who obtained the same results in 1977.

Two antineoplastons, AS 2.5 and AS 2.1, have been derived from A-10.⁴ The antineoplaston AS 2.5 is PAG and AS 2.1 is a 4:1 mixture of PA and PAG. In 1969, Burzynski recognized that metabolically produced PA was toxic in humans and needed to be detoxified for safe excretion in the urine.²³ Since PA is a strong acid, it is not surprising that AS 2.1, which is 80% PA, should cause the death of cells in culture. In evaluating Burzynski's reported results with AS 2.1, it must also be recognized that as a strong acid, PA must be neutralized with sodium hydroxide before it is added to the culture medium. Thus, the cytotoxicity of AS 2.1 might be due as much to the high salt concentration as to the PA.²⁴

In a letter written to me in May 1988, Burzynski stated that 95% of BRT's patients were being treated with synthetic A-10 or AS 2.1. The antineoplaston AS 2.5 was not mentioned. Since neither AS 2.1 nor A-10 is a peptide and neither has been shown to carry information that will induce differentiation in tumor cells *in vivo*, these products do not qualify as antineoplastons by Burzynski's own definition. The component that makes up 80% of AS 2.1, PA, can be purchased as an ultrapure, water-soluble powder from any

chemical supply house for about \$0.09 a gram.²⁵

The antineoplaston A-10 is 3-N-phenylacetylaminopiperidine-2,6 dione.⁴ The pharmacology literature lists at least two pharmacologically potent compounds that are also piperidine 2,6 diones. They are glutithamide and thalidomide.²⁶ Both drugs have been withdrawn from the pharmaceutical marketplace because both are habituating and both can cause peripheral neuropathy. The teratogenic effects of thalidomide have been documented and widely known since the 1960s.^{27,28} These substances and A-10 are currently classified by the US Drug Enforcement Agency as controlled substances in the 1985 US Code of Federal Regulations, title 211, part 1308.13.²⁷ In spite of the striking structural similarities between A-10 and these two dangerous drugs, there is no evidence in the antineoplaston literature that testing of the potential of A-10 to induce teratogenicity or peripheral neuropathy has been carried out.

Burzynski makes a strong effort through his public information office to convince his supporters and patients that his clinical successes with the antineoplastons are being confirmed by independent researchers around the world. The average reader of his press releases has no way of knowing the truth about what is being claimed, but a critical reviewer can verify the references cited, evaluate the reported experimental results, and make inquiries of those scientists whose work is cited. For this review, whenever confirmations of Burzynski's clinical results were announced in his press releases, each research worker named was contacted, when possible.

The BRT¹⁴ claimed that Xu and associates of the Department of Pharmacy, Shandong Medical University, Jinan, China, reported a new antitumor assay for A-10 and the effects of A-10 on cyclic AMP levels in tissues and tumors of tumor-bearing mice. Their results indicated induction of cell differentiation.

In response to my inquiry, Xu sent (in 1989) four abstracts and one published article²⁹ reporting that A-10 had no anticancer effect when assayed by standard animal assay methods, that using a revised assay (undescribed), some evidence of inhibition in tumor cell growth could be seen, and that some effects were observed on the cAMP in the tumors of mice that were fed A-10. An antitumor effect against S-180 tumor cells in culture was reported when soluble A-10 was added at 3.0 mg/mL. No effects were seen *in vivo*. Xu concluded the following: "Since soluble A-10 is really PAG, it cannot be intercalating

DNA in the cells."³⁰

The claim that antineoplastons work by interacting with DNA has also been examined by workers in the United States. Lehner et al,¹⁴ Hendry et al,¹⁷ and Muldoon et al¹⁶ used spectroscopic analysis and stereochemical modeling studies to see whether the molecular structure of insoluble A-10 might allow it to insert between base pairs of partly unwoven strands of DNA to compete with carcinogens that intercalate DNA. Based on theoretical considerations, Hendry et al¹⁷ concluded that insoluble A-10 could form a weak, noncovalent, reversible link between a base pair and a phosphate in DNA. Insoluble A-10 might therefore block the intercalation of some carcinogenic compounds into DNA and prevent the events that initiate cancer cell growth. But this conclusion does not support the concept that insoluble A-10 would be useful in treating an existing cancer.

Hendry et al¹⁷ used insoluble A-10 in all their modeling studies. They did not report using soluble PAG. But as we have seen, the substance reaching the tissues is not the insoluble A-10, but PAG. Therefore Burzynski's declaration that A-10 acts as an antineoplastic agent by blocking the intercalation of DNA by carcinogenic compounds is experimentally without foundation.

To clarify the relationship between the research done at the Medical College of Georgia, Augusta, and the claims of support that Burzynski attributed to that research, Hendry and Muldoon have advised Burzynski that their work does not provide support for the use of A-10 in human subjects, and that, to their knowledge, no one at the Medical College of Georgia has ever evaluated or advocated the use of A-10 in patients (written communications, T. G. Muldoon, PhD, and L. B. Hendry, PhD, November 1988). Burzynski was instructed not to use the name of the Medical College of Georgia in any of his publications or public presentations without prior approval (written communications, C. H. Wray, MD, and L. Greenbaum, PhD, November 1988).

The BRT^{14,22} also claimed the following: We are happy to report that by the end of this year, at least three countries outside of the US will be conducting clinical trials with the Burzynski treatment. In March 1990, Dr H. Tsuda, of Kurume, Japan, will be presenting 1989 clinical trial results with antineoplastons to the 9th International Symposium on Future Trends in Geneva, Switzerland. In Poland, six different clinical trials are beginning this year under the supervision of the Institute for Drug Research and Control, Warsaw. They will be using naturally occurring chemicals called antineoplastons to

treat patients with brain cancer, non-Hodgkins lymphomas, prostate cancer, and breast cancer. Researchers from Sigma Tau, Italy's largest pharmaceutical firm, are in Ireland finalizing preparations for clinical trials. The researchers at Sigma Tau feel there is adequate scientific evidence to justify the use of antineoplastons to treat cancer. Millions of dollars have been earmarked for antineoplaston research and development as the company prepares to conduct preclinical and clinical studies in specific European countries to evaluate four of Dr Burzynski's formulations.

The following individuals responded to my inquiries regarding the BRI's claim: H. Tsuda, MD; T. Sugimura, MD; C. Trevisani, MD; and A. Danysz, MD. Tsuda, from the Kurume University School of Medicine, Japan, wrote the following on October 9, 1990: "Regarding your questions to our clinical investigation, we are afraid you have to wait until we publish the data." On January 7, 1991, Tsuda wrote the following: "We have not published any results of our clinical investigation on antineoplastons. You have to wait for our publication. We do not think that you are going to pick up any biological effect of antineoplaston A-10 in our study."

Sugimura, president of the National Cancer Center, Tokyo, Japan, wrote, on July 24, 1990: "I am afraid that antineoplaston A10 has no popularity in our country."

Trevisani, medical director of Sigma Tau Pharmaceuticals Inc, Rome, Italy, wrote, on May 22, 1991:

Dr Burzynski was informed on January 31, 1991, that Sigma Tau did not intend to proceed with the development of the antineoplastons. . . . We have studied antineoplaston A-10 and AS 2.1; both compounds were supplied by Dr Burzynski. . . . We have tested AS 2.1 and A-10 in several in vitro experiments on human and murine tumor cell lines. In addition, we have studied the percentage of survival and the mean survival time of tumor-bearing conventional mice and the effect in nude mice transplanted with human colon carcinoma. On the basis of these results, the project has been discontinued and more extensive testing or clinical trials have not been planned. These results have not been published. Dr Burzynski was notified of these results and our decision to discontinue the project on January 31, 1991.

Danysz, director of the Institute of Drug Research and Control, Warsaw, Poland, wrote, on July 8, 1991: "Antineoplastons may be investigated in some clinics in Poland, but the Institute of Drug Research and Control is not supervising any of these studies."

RESULTS OF INDEPENDENT TESTING OF ANTINEOPLASTONS

In 1983 and 1985, at the request of the Bureau of Prescription Drugs of Health

and Welfare, Canada, the NCI conducted tests of A-2 and A-5. The tests were done at the Southern Research Institute, Birmingham, Ala, using the P 388 leukemia in mice as the tumor target. The results showed that those doses that were high enough to produce toxic effects in the mice were not effective in inhibiting the growth of the tumor or in killing it (written communications, N. H. Greenberg, PhD, November 1983, and J. M. Venditti, PhD, March 1985).

In 1990, the NCI carried out a series of tests using antineoplaston A-10 against a standard panel of tumors that included different cell lines from tumors of the following classes: leukemia, non-small-cell lung cancer, small-cell lung cancer, colon cancer, cancer of the central nervous system, melanoma, ovarian cancer, and renal cancer. The chief of the Drug Synthesis and Chemistry Branch of the NCI reported the following: "The drug exhibited neither growth inhibition nor cytotoxicity at the dose levels tested" (written communication, V. L. Narayanan, PhD, July 1990).

These test results, along with those reported from the in vitro and in vivo trials carried out at Sigma Tau Pharmaceuticals Inc are compelling evidence of the lack of efficacy of antineoplastons against experimental cancer.

CONCLUSION

This article reviews the claims made by Burzynski in support of his theory that an antineoplastic biochemical surveillance system exists in humans. Burzynski's own literature is the basis for the conclusions reached herein.

The rationale upon which the existence of antineoplastons was postulated is as follows: (1) cancer cells are constantly produced in the body, but not everyone develops cancer; (2) cancer that exists in people can regress spontaneously, indicating the presence of a "normalizing" mechanism; (3) cancer is a disease of cell differentiation and certain information-carrying chemicals can induce differentiation; (4) peptides are chemicals that can carry information that can trigger biochemical reactions in cells; and (5) peptides with antineoplastic activity, antineoplastons, are found in human urine and therefore urine is the best place to look for naturally occurring antineoplastic substances.

None of Burzynski's publications between 1964 and 1990 contain objective experimental evidence supporting the postulate that a naturally occurring antineoplastic biochemical surveillance system exists in humans. The so-called five urinary antineoplastons (A-1 to A-5) have not been shown to be chemically, biologically, or pharmacologically dis-

tinct from each other, and none has been proven to have antineoplastic activity against experimental cancer. Only one urine fraction (A-2) has been used to produce antineoplaston A-10. The admitted insolubility of A-10 makes it physiologically incompatible with aqueous body fluids, so it cannot be part of the normal anticancer system that Burzynski postulates circulates throughout the body.

The process that Burzynski says "solubilizes A-10" does not convert it to the sodium salt but hydrolyzes it to PAG, now named AS 2.5, which is not an information-carrying peptide. Interestingly, Burzynski does not cite AS 2.5 as an antineoplaston in his most recent *Patients Information Brochure*. The antineoplastin AS 2.1 also contains no information-carrying peptides but is a mixture of synthetic PAG and PA.

None of the independent tests carried out with antineoplastons in experimental tumor systems have shown anticancer activity.

These considerations lead to the conclusion that the treatment for cancer with substances called antineoplastons actually involves the use of two simple commercially available organic chemical compounds, PA and PAG, which are marketed under the names A-10, AS 2.1, and AS 2.5. None is a peptide, none has been shown to "normalize" tumor cells, none has been shown to actually intercalate DNA, and none has been proven to be active against cancer in experimental tumor test systems.

Since the manuscript was accepted for publication, the NCI announced that on October 4, 1991, an NCI site-visit team, headed by M. J. Hawking, MD, visited the BRI, where they reviewed a best-case series of seven patients prepared for them by Burzynski. The team did not independently contact the patients or the physicians who previously treated them. Based on their review, the NCI has decided to conduct four independent phase-2 clinical trials on patients with glioblastoma multiforme, anaplastic astrocytoma, pediatric brain tumors, and low-grade astrocytoma using antineoplastons A-10 and AS 2.1 (written communications, BRI Inc, December 1991, and M. J. Hawking, MD, chief, Investigational Drug Branch, Cancer Therapy Evaluation Program, Division of Cancer Treatment, NCI, February 1992).

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AN FDA GUIDE TO CHOOSING

MEDICAL TREATMENTS

by Isadora B. Stehlin

Medical treatments come in many shapes and sizes. There are "home remedies" shared among families and friends. There are prescription medicines, available only from a pharmacist, and only when ordered by a physician. There are over-the-counter drugs that you can buy—almost anywhere—without a doctor's order. Of growing interest and attention in recent years are so-called alternative treatments, not yet approved for sale because they are still undergoing scientific research to see if they really are safe and effective. And, of course, there are those "miracle" products sold through "back-of-the-magazine" ads and TV infomercials.

How can you tell which of these may really help treat your medical condition, and which will only make you worse off—financially, physically, or both?

Many advocates of unproven treatments and cures contend that people have the right to try whatever may offer them hope, even if others believe the remedy is worthless. This argument is especially compelling for people with AIDS or other life-threatening diseases with no known cure.

Clinical Trials

Before gaining Food and Drug Administration marketing approval, new drugs, biologics, and medical devices must be proven safe and effective by controlled clinical trials.

In a clinical trial, results observed in patients getting the treatment are compared with the results in similar patients receiving a different treatment or pla-

cebo (inactive) treatment. Preferably, neither patients nor researchers know who is receiving the therapy under study.

To FDA, it doesn't matter whether the product or treatment is labeled alternative or falls under the auspices of mainstream American medical practice. (Mainstream American medicine essentially includes the practices and products the majority of medical doctors in this country follow and use.) It must meet the agency's safety and effectiveness criteria before being allowed on the market.

In addition, just because something is undergoing a clinical trial doesn't mean it works or FDA considers it to be a proven therapy, says Donald Pohl, of FDA's Office of AIDS and Special Health Issues. "You can't jump to that conclusion," he says. A trial can fail to prove that the product is effective, he explains. And that's not just true for alternative products. Even when the major drug companies sponsor clinical trials for mainstream products, only a small fraction are proven safe and effective.

Many people with serious illnesses are unable to find a cure, or even temporary relief, from the available mainstream treatments that have been rigorously studied and proven safe and effective. For many conditions, such as arthritis or even cancer, what's effective for one patient may not help another.

Real Alternatives

"It is best not to abandon conventional therapy when there is a known response

[in the effectiveness of that therapy]," says Joseph Jacobs, M.D., former director of the National Institutes of Health's Office of Alternative Medicine, which was established in October 1992. As an example he cites childhood leukemia, which has an 80 percent cure rate with conventional therapy.

But what if conventional therapy holds little promise?

Many physicians believe it is not unreasonable for someone in the last stages of an incurable cancer to try something unproven. But, for example, if a woman with an early stage of breast cancer wanted to try shark cartilage (an unproven treatment that may inhibit the growth of cancer tumors, currently undergoing clinical trials), those same doctors would probably say, "Don't do it," because there are so many effective conventional treatments.

Jacobs warns that, "If an alternative practitioner does not want to work with a regular doctor, then he's suspect."

Alternative medicine is often described as any medical practice or intervention that:

- lacks sufficient documentation of its safety and effectiveness against specific diseases and conditions
- is not generally taught in U.S. medical schools
- is not generally reimbursable by health insurance providers.

According to a study in the Jan. 28, 1993, *New England Journal of Medicine*, 1 in 3 patients used alternative therapy in 1990. More than 80 percent of those who use alternative therapies

used conventional medicine at the same time, but did not tell their doctors about the alternative treatments. The study's authors concluded this lack of communication between doctors and patients "is not in the best interest of the patients, since the use of unconventional therapy, especially if it is totally unsupervised, may be harmful." The study concluded that medical doctors should ask their patients about any use of unconventional treatment as part of a medical history.

Many doctors are interested in learning more about alternative therapies, according to Brian Berman, M.D., a family practitioner with the University of Maryland School of Medicine in Baltimore. Berman says his own interest began when "I found that I wasn't getting all the results that I would have liked with conventional medicine, especially in patients with chronic diseases.

"What I've found at the University of Maryland is a healthy skepticism among my colleagues, but a real willingness to collaborate. We have a lot of people from different departments who are saying, let's see how we can develop scientifically rigorous studies that are also sensitive to the particular therapies that we're working with."

Anyone who wants to be treated with an alternative therapy should try to do so through participation in a clinical trial. Clinical trials are regulated by FDA and provide safeguards to protect patients, such as monitoring of adverse reactions. In fact, FDA is interested in assisting investigators who want to study alternative therapies under carefully controlled clinical trials.

Some of the alternative therapies currently under study with grants from NIH include:

- acupuncture to treat depression, attention-deficit hyperactivity disorder, osteoarthritis, and postoperative dental pain
- hypnosis for chronic low back pain and accelerated fracture healing
- Ayurvedic herbals for Parkinson's disease. (Ayurvedic medicine is a holistic system based on the belief that herbals, massage, and other stress relievers help the body make its own natural drugs.)
- biofeedback for diabetes, low back pain, and face and mouth pain caused by jaw disorders. (Biofeedback is the con-

Anyone who wants to be treated with an alternative therapy should try to do so through participation in a clinical trial.

scious control of biological functions, such as those of the heart and blood vessels, normally controlled involuntarily.)

- electric currents to treat tumors
- imagery for asthma and breast cancer.

(With imagery, patients are guided to see themselves in a different physical, emotional or spiritual state. For example, patients might be guided to imagine themselves in a state of vibrant health and the disease organisms as weak and destructible.)

While these alternative therapies are the subject of scientifically valid research, it's important to remember that at this time their safety and effectiveness are still unproven.

Avoiding Fraud

FDA defines health fraud as the promotion, advertisement, distribution, or sale of articles, intended for human or animal use, that are represented as being effective to diagnose, prevent, cure, treat, or mitigate disease (or other conditions), or provide a beneficial effect on health, but which have not been scientifically proven safe and effective for such purposes. Such practices may be deliberately deceptive, or done without adequate knowledge or understanding of the article.

Health fraud costs Americans an estimated \$30 billion a year. However, the costs are not just economic, according to



Acupuncture is one "alternative" therapy currently under study with grants from the National Institutes of Health.

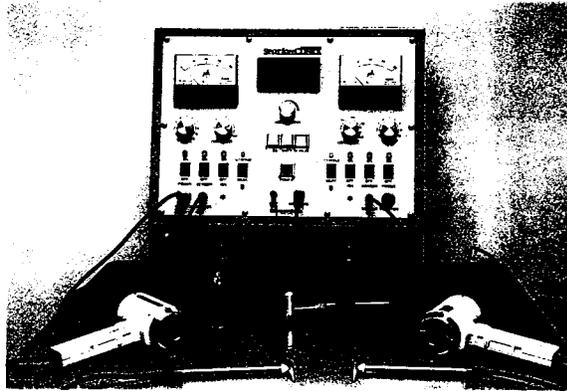
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Tip-Offs to Rip-Offs

New health frauds pop up all the time, but the promoters usually fall back on the same old clichés and tricks to gain your trust and get your money. According to FDA, some red flags to watch out for include:

- claims the product works by a secret formula. (Legitimate scientists share their knowledge so their peers can review their data.)
- publicity only in the back pages of magazines, over the phone, by direct mail, in newspaper ads in the format of news stories, or 30-minute commercials in talk show format. (Results of studies on bona fide treatments are generally reported first in medical journals.)

- claims the product is an amazing or miraculous breakthrough. (Real medical breakthroughs are few and far between, and when they happen, they're not touted as "amazing" or "miraculous" by any responsible scientist or journalist.)
- promises of easy weight loss. (For most people, the only way to lose weight is to eat less and exercise more.)
- promises of a quick, painless, guaranteed cure
- testimonials from satisfied customers. (These people may never have had the disease the product is supposed to cure, may be paid representatives, or may simply not exist. Often they're identified only by initials or first names.) ■



Promoters promised that this "High Genki" machine could treat diabetes, high blood pressure, muscular pain, and arthritis. FDA said it was an unapproved medical device, and on Nov. 9, 1993, the government seized this machine and several similar devices in Hawaii. "It beeped, buzzed, gave a mild electric shock, and that was about all," said Cindy Wolodkin, a public affairs specialist in FDA's San Francisco office.

John Renner, M.D., a Kansas City-based champion of quality health care for the elderly. "The hidden costs—death, disability—are unbelievable," he says.

To combat health fraud, FDA established its National Health Fraud Unit in 1988. The unit works with the National Association of Attorneys General and the Association of Food and Drug Officials to coordinate federal, state and local regulatory actions against specific health frauds.

Regulatory actions may be necessary in many cases because products that have not been shown to be safe and effective pose potential hazards for consumers both directly and indirectly. The agency's priorities for regulatory action depend on the situation; direct risks to health come first.

Unproven products cause direct health hazards when their use results in injuries or adverse reactions. For example, a medical device called the InnerQuest Brain Wave Synchronizer was promoted to alter brain waves and relieve stress. It consisted of an audio cassette and eyeglasses that emitted sounds and flashing lights. It caused epileptic seizures in some users. As a result of a court order requested by FDA, 78 cartons of the devices, valued at \$200,000, were seized by U.S. marshals and destroyed in June 1993.

Indirectly harmful products are those that do not themselves cause injury, but may lead people to delay or reject proven remedies, possibly worsening their condition. For example, if cancer patients reject proven drug therapies in favor of unproven ones and the unproven ones turn out not to work, their disease may advance beyond the point where proven therapies can help.

"What you see out there is the promotion of products claiming to cure or prevent AIDS, multiple sclerosis, cancer, and a list of other diseases that goes on and on," says Joel Aronson, director of FDA's Health Fraud Staff, in the agency's Center for Drug Evaluation and Research. For example, he says, several skin cream products promise to prevent transmission of HIV (the virus that causes AIDS) and herpes viruses. They are promoted especially to health care workers. Many of the creams con-



tain antibacterial ingredients but, "there is no substantiation at all on whether or not [the skin creams] work" against HIV, says Aronson. FDA has warned the manufacturers of these creams to stop the misleading promotions.

People at Risk

Teenagers and the elderly are two prime targets for health fraud promoters.

Teenagers concerned about their appearance and susceptible to peer pressure may fall for such products as fraudulent diet pills, breast developers, and muscle-building pills.

Older Americans may be especially vulnerable to health fraud because approximately 80 percent of them have at least one chronic health problem, according to Renner. Many of these problems, such as arthritis, have no cure and, for some people, no effective treatment. He says their pain and disability lead to

despair, making them excellent targets for deception.

Arthritis

Although there is no cure for arthritis, the symptoms may come and go with no explanation. According to the Arthritis Foundation, "You may think a new remedy worked because you took it when your symptoms were going away."

Some commonly touted unproven treatments for arthritis are harmful, according to the foundation, including snake venom and DMSO (dimethyl sulfoxide), an industrial solvent similar to turpentine. FDA has approved a sterile form of DMSO called Rimso-50, which is administered directly into the bladder for treatment of a rare bladder condition called interstitial cystitis. However, the DMSO sold to arthritis sufferers may contain bacterial toxins. DMSO is readily absorbed through the skin into

Approaching Alternative Therapies

The NIH Office of Alternative Medicine recommends the following before getting involved in any alternative therapy:

- Obtain objective information about the therapy. Besides talking with the person promoting the approach, speak with people who have gone through the treatment—preferably both those who were treated recently and those treated in the past. Ask about the advantages and disadvantages, risks, side effects, costs, results, and over what time span results can be expected.
 - Inquire about the training and expertise of the person administering the treatment (for example, certification).
 - Consider the costs. Alternative treatments may not be reimbursable by health insurance.
 - Discuss all treatments with your primary care provider, who needs this information in order to have a complete picture of your treatment plan.
- For everyone—consumers, physicians and other health-care providers, and government regulators—FDA has the same advice when it comes to weeding out the hopeless from the hopeful: Be open-minded, but don't fall into the abyss of accepting anything at all. For there are—as there have been for centuries—countless products that are nothing more than fraud. ■

Medical Guides

Whether looking for an alternative therapy or checking the legitimacy of something you've heard about, some of the best sources are advocacy groups, including local patient support groups. Those groups include:

American Cancer Society
1599 Clifton Road, N.E.
Atlanta, GA 30329
(404) 320-3333, (1-800) ACS-2345

Arthritis Foundation
P.O. Box 19000
Atlanta, GA 30326
(1-800) 283-7800

National Multiple Sclerosis Society
733 Third Ave.
New York, NY 10017-3288
(212) 986-3240, (1-800) 344-4867

HIV/AIDS Treatment Information Service
P.O. Box 6303
Rockville, MD 20849-6303
(1-800) 448-0440, TDD/Deaf Access: (1-800) 243-7012

Federal government resources on health fraud and alternative medicine are:

FDA (HFE-88)
Rockville, MD 20857
(1-800) 532-4440

Office of Alternative Medicine/NIH Information Center
6120 Executive Blvd., EPS
Suite 450
Rockville, MD 20852
(301) 402-2466

U.S. Postal Inspection Service
(monitors products purchased by mail)
Contact your local post office.

Federal Trade Commission
(regarding false advertising)
Room 421
6th St. and Pennsylvania Ave., N.W.
Washington, DC 20580
(202) 326-2222

Other agencies that may have information and offer assistance include local Better Business Bureaus, state and municipal consumer affairs offices, and state attorneys general offices. ■

the bloodstream, and these toxins enter the bloodstream along with it. It can be especially dangerous if used as an enema, as some of its promoters recommend.

Treatments the foundation considers harmless but ineffective include copper bracelets, mineral springs, and spas.

Cancer and AIDS

Cancer treatment is complicated because in some types of cancer there are no symptoms, and in other types symptoms may disappear by themselves, at least temporarily. Use of an unconventional treatment coinciding with remission (lessening of symptoms) could be simply coincidental. There's no way of knowing, without a controlled clinical trial, what effect the treatment had on the outcome. The danger comes when this false security causes patients to forgo approved treatment that has shown real benefit.

Some unapproved cancer treatments not only have no proven benefits, they have actually been proven dangerous. These include Laetrile, which may cause cyanide poisoning and has been found ineffective in clinical trials, and coffee enemas, which, when used excessively, have killed patients. (See "Hope or Hoax? Unproven Cancer Treatments" in the March 1992 *FDA Consumer*.)

Ozone generators, which produce a toxic form of oxygen gas, have been touted as being able to cure AIDS. To date this is still unproven, and FDA considers ozone to be an unapproved drug and these generators to be unapproved medical devices. At least three deaths have been connected to the use of these generators. Four British citizens were indicted in 1991 for selling fraudulent ozone generators in the United States. Two of the defendants fled to Great Britain, but the other two pleaded guilty and served time in U.S. federal prisons.

The bottom line in deciding whether a certain treatment you've read or heard about might be right for you: Talk to your doctor. And keep in mind the old adage: If it sounds too good to be true, it probably is. ■

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ST PERSON REPORT



Carl Lynn, 25, turned to a controversial alternative called antineoplastons when doctors told her there was no proven treatment for her lymphoma.

TO
SAVE
MY
LIFE

Diagnosed with incurable cancer, I had to fight the FDA for the alternative treatment I desperately wanted. I won—and that's when my problems began.

By Cari Lynn

AT THE END of February 1996, I sat in a large hearing room on Capitol Hill, staring at the elevated seats soon to be filled by the dark-suited members of the Subcommittee on Oversight and Investigations. The topic of the hearing was whether my doctor, Stanislaw Burzynski, could keep treating patients with the drug that seemed to be ridding me of cancer.

Two years before, at the age of 21, I'd been diagnosed with a slow-growing non-Hodgkin's lymphoma. The diagnosis had come almost by accident. A routine scan following a bout of food poisoning had shown tumors throughout my gastrointestinal tract. After doctors at several oncology clinics said they had nothing to offer me, I began taking Burzynski's medication, called antineoplastons (derived from the Greek for "against cancer"). After a few months I received good news: Scans revealed the tumors were shrinking. But the likelihood of my being able to continue the treatment was shrinking as well. The Food and Drug Administration had just won an indictment of Burzynski on 75 counts of mail fraud and inter-

state commerce of an unapproved drug.

I, along with dozens of other patients, decided to protest. Since another patient and I lived in Washington, D.C., we took to Capitol Hill, toting our bags of medicine around to elected officials as we asked for help. Most of the senators and congresspeople listened politely, stiffly said they would look into the matter, and nodded good day. A handful, however, welcomed us into their private offices, served sodas, and spoke with us at length. After such a meeting with Rep. Joe Barton (R-Texas), he called this hearing. Barton is one leader of a new movement to give Americans more freedom of choice on their medical care. He favored a bill to speed approval of drugs for serious illness and had just cosponsored the Access to Medical Treatment Act, a bill that would give patients the right to try any alternative therapy, even an unproven one. Barton wanted our saga to illustrate his point. For us, the hearing was a chance to expose what we saw as a witch-hunt of our doctor.

Patients, former patients, and their family members arrived in Washington by the dozens, some flying cross-country to attend. I arrived with Michele, with whom I had been lobbying for the past month and who had become a good friend. Seven years earlier Michele had been diagnosed with a rare liposarcoma that, despite numerous tries at chemotherapy and alternative treatments, kept resurfacing. In front of me sat Maria,

Photograph by KEVIN MORAN

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whom I had befriended in Burzynski's waiting room last year. She and her two teenage children had traveled to D.C. from Pennsylvania. Maria had an astrocytoma, a brain tumor that had gradually shrunk to a sliver after she went on antineoplastons. On my other side was a father from New Jersey whose 12-year-old daughter had been diagnosed with a brain tumor. "Only a couple weeks after she started on antineoplastons she was out of the wheelchair!" he proudly reported to me.

The entire back row of the hearing room swarmed with cameras and reporters. Barton took his seat at the center of the panel and, in his soft drawl, described the hearing's purpose and

I FIRST visited Burzynski's privately owned clinic in Houston after top specialists at Stanford and Harvard gave me the same advice: Do nothing—a strategy called watch-and-wait. Chemotherapy doesn't work against slow-growing tumors like mine, they said, and radiation would damage nearby organs. When the cancer's growth speeded up—in a year, five years, 20 years, no one could say for sure—then a bone marrow transplant might be the route to take. But perhaps, they suggested, if I sat tight for a while, one of the exciting experimental drugs being tested by the FDA would be approved. Unfortunately, I couldn't get into any of the clinical

As the panicked voice on the line relayed news of Burzynski's indictment, I sized up

announced that FDA officials had turned down his invitation to testify.

Burzynski's most vocal supporters then paraded in, taking their seats at the front, where they would, one by one, tell their stories. Over the past year I'd gotten to know them: the wealthy businessman and his wife who had transformed their dining room into pro-Burzynski headquarters after antineoplastons cured her of the same type of cancer I was battling; the mother who would bounce her toddler son on her knee as she spoke of how antineoplastons had dissolved his brain tumor; and the decorated policeman whose baby, one of twin girls, also experienced remission from a brain tumor after treatment with antineoplastons, only to die of brain damage caused by her previous long run of chemotherapy and radiation. They all spoke in quivering, choked-up voices, some with tears streaming down their cheeks. Finally the policeman's remaining twin daughter, her long white-blond hair tied with a bow, asked into the microphone, "Why can't we throw away the bad medicine and keep the good medicine?"

Anyone who'd ever had cancer or known anyone with cancer began to cry. Anyone who was a parent and could imagine having a child with cancer began to cry. The congresspeople shifted uncomfortably in their seats.

Except for a couple of reporters scribbling on steno pads, I was possibly the only person in the room with dry eyes. Maybe I was unaffected because I had heard the stories a dozen times. But more likely I didn't cry because I was angry. I was angry that Burzynski's patients had to keep resorting to tears to get heard. I was angry for all the time and energy I had devoted to fighting off the FDA rather than to getting better. But I was also angry for a reason I was just starting to uncover: that our problems with the FDA could be traced to Burzynski himself.

What I didn't realize was the scope of our actions. We were affecting the course of alternative medicine as a whole, being used as a voice for the Access to Medical Treatment Act. Yes, I'd like to think every American should have the right to the treatment of his or her choice. Yet I can't help but see my story as a cautionary tale. Had I only known then what I do now.



my supply. "It's finally working," I pleaded. "Two months is not enough."

trials; those spots were reserved for people who had been failed by at least one method of mainstream treatment.

But, at age 21, waiting was not easy. It was unsettling to know I had cancer and was doing nothing about it. Out of frustration, my parents and I began researching alternative treatments, from massive doses of vitamin C to macrobiotic diets to the unproven regimens of doctors from Canada to Mexico.

Given Burzynski's notoriety, it didn't take long for us to come across the subject of antineoplastons. We sent away for Burzynski's materials and also contacted the Lymphoma Research Foundation of America, which, after noting that many people at its support group meetings were Burzynski patients, had compiled a list of those willing to share their experiences. We tracked down a dozen who had used or were using his treatment for the same diagnosis as mine. Amazingly, all said taking antineoplastons had led to a significant decrease in tumor size. If not a complete and lasting remission. Over and over they repeated one word: *nontoxic*. Even if antineoplastons didn't work for me, I concluded, they wouldn't cause harm.

I consulted my oncologist, who, after reading the information I provided and speaking with colleagues, took a deep breath and said, "I understand how frustrated you must be and why you would like to try this. I wish there was something here I could offer you, but there isn't. I can't tell you to go to Houston, but there is nothing I can find that would make me say, 'Don't go.'"

The scientific evidence for and against antineoplastons was thin. Burzynski had written papers that detailed impressive-looking results in individual patients, but they hadn't been published in major peer-reviewed journals. Other oncologists who had examined records of brain tumor patients treated with

TO SAVE MY LIFE

Antineoplastons had seen enough to recommend research, but they had looked at only seven cases. (Single-case reports can't fully account for the fact that some tumors may wax and wane even without treatment.) And then there were the troubles of which I was well aware: Burzynski's history with the FDA.

Fifteen years ago the FDA sought and won an injunction to stop Burzynski from shipping an unapproved drug across state lines. Two years later the FDA raided his clinic, taking patients' CAT scans, MRIs, and other records. Burzynski had subsequently appeared before three grand juries but hadn't been indicted. However, problems with the FDA seemed almost standard for the alternative doctors I researched. Many had resorted to practicing in another country.

Burzynski described antineoplastons as a mixture of peptides and amino acids found naturally in blood and urine that could cure brain tumors, lymphomas, and several other types of cancer without serious side effects. The premise was that antineoplastons reprogram cancer cells by switching off the genes that instruct them to multiply out of control and by switching on the genes that tell the cells to self-destruct.

A Polish-trained physician, Burzynski began treating patients with his mixtures in 1977. Initially he developed antineoplastons using his own urine; eventually he had gallons of urine shipped from public urinals. By the time I visited him he'd treated a reported 2,000 patients and was making synthetic antineoplastons in his own lab in Texas.

In most cases antineoplastons weren't covered by insurance plans, so patients themselves paid the medical bills, which started around \$200 a day. I was one of the lucky ones. My insurance agreed to pay half.

I spent most of my first day at Burzynski's clinic sitting in the large waiting room with three dozen other cancer patients and their families. This waiting room was different from the many others I had visited. Most obvious, it was filled with reporters and TV news crews, their lights bombarding us all. Words were unnecessary, as the youngest children told the story of antineoplastons' appeal best. The children were victims of mainstream medicine. They wore the tattoos of those failures clearly: half-shaven heads zig-zagged with scars; swollen, steroid faces; and weak, wheelchair-imprisoned bodies. Then the cameras shifted to the children who'd been taking antineoplastons for months or even years. With full heads of hair, they ran and laughed and played with the toys in the waiting room, all the while hooked up to IV bags of antineoplastons.

Another difference was that people talked. No one had spoken in the waiting rooms at Stanford or Harvard or any of the other oncology offices I'd visited. Yet here there was an immediate sense of comradeship, and the common bond, it

seemed, was that we all had heard unfavorable prognoses, even death sentences, from mainstream doctors. We needed the support of others who had sought out Burzynski as a last shot.

"I was diagnosed eight weeks ago with a brain tumor," Maria volunteered the first time I met her. "I was skiing, and I had a seizure right there on the slope."

"I'm here with my sister, all the way from upstate New York," an older woman said. "She has kidney cancer and is back with the nurses now. Dr. Burzynski said he didn't know if the medicine would help."

I spoke with a man, bald with pasty yellow skin, who'd been diagnosed with a lymphoma. "We followed the advice of the first doctor we saw, and he got a bone marrow transplant," his wife explained. "But before he was even released from the hospital the lymphoma came back. The hospital just dismissed us. They said, 'Well, we tried. Just go home and get your things in order.'" The wife was 28, the husband 30.

I cringed when a woman asked me outright, "What brings you here? What were you diagnosed with?" But looking around the room at the people chatting, exchanging phone numbers, making dinner plans, and hugging each other, I realized it was a question everyone asked and got asked. For families who were sacrificing savings, jobs, and even homes to pay for this treatment, the security of friendship was all they had left.

On trial in Houston last year, Stanislaw Burzynski greets supporters who believe his methods can cure many cancers. The FDA says he's ducking scientific scrutiny.

In the waiting room that first day, I scrawled my signature on numerous documents releasing Burzynski from responsibility for anything that might happen as a result of antineoplaston treatment.

When I was finally introduced to Burzynski, he gave me a squinty-eyed smile, the corners of his mouth stretching toward long sideburns. A short man with

(continued on page 139)



To Save My Life (continued from page 115)

a heavy Polish accent and a tendency to mumble, he exuded friendliness as he studied my chart. "Usually this treatment has very good success with slow-growing non-Hodgkin's lymphomas. Every four hours you would get a dosage of two types of antineoplastons. You would get a CAT scan after you had been on the treatment six weeks. The treatment would continue for four months after you have a clear scan because we need to ensure that all of the lymphoma is gone and will stay away."

I had heard similar promises of a simple cure at other alternative clinics and had fled. Yet the words of the patients I'd spoken with before coming to Houston echoed in my head, compelling me to begin.

The following morning in another clinic, I had a semipermanent IV surgically inserted in one of my largest veins, directly above the heart. The slender white tube was held externally by two stitches and completely concealable under clothes. Back at Burzynski's clinic I was ushered into a large room filled with leather recliners, a sort of classroom where patients were taught correct administration of antineoplastons. On one wall hung newspaper clippings about Burzynski, one describing how he was called during Jacqueline Kennedy Onassis's final days of battling lymphoma. He was not allowed to bring antineoplastons to her bedside in New York, however, since the first civil trial had ruled he could practice the therapy in Texas only.

Despite the ruling, it was no secret that the majority of Burzynski's patients were not from Texas. The clinic operated on a "don't ask, don't tell" basis. I gave a Texas address of distant cousins to whom my monthly supplies of antineoplastons would be mailed. My cousins would then ship them to me. Many patients had similar arrangements. Others restocked by flying to Texas frequently with several empty suitcases.

I received my pump, attached by thin translucent tubes to my first bags of medicine. The pump looked like an enlarged calculator with a number pad and a digital display. It fit snugly into a blue tote the size of a camera case. The nurse connected the medication to the catheter with a simple, painless twist, programmed the pump, and began infusion of the clear, sticky antineoplastons. Because of their urine-like composition, the medication smelled of an overused public toilet. As Burzynski had promised, I felt nothing as the drugs entered my system.

Over a few days at the clinic I learned how to connect and disconnect the IV bags, change the tubing, and set the pump. I also experienced my first side effects: I couldn't eat because my stomach was churning, and I was too tired for anything much besides reading in bed. Finally a nurse gave me a shot of an anti-inflammatory steroid, told me my reactions were good—signs of "tumor breakdown"—and, with Burzynski's consent, sent me home, where I returned to college for my senior year.

Twelve weeks later my CAT scans revealed the first signs that the tumors had shrunk. I called everyone I knew, relaying the news as tears of relief dripped onto my IV bag. Each scan that followed showed more reduction, and by eight months my scans, read by my radiologist and oncologist in D.C., showed a 35 percent decrease.

Word from Burzynski's office, though, was that my response was slow, and so I was instructed to increase my dosage steady-

ly. I began feeling the toll: My joints hurt to the point that it was painful to bend, type, or write; I could hardly eat; and I often slept the entire day. Worse, though, was the thirst. No matter how much water I drank, I was always on the verge of dehydration. I complained to my oncologist about all the side effects, and she recorded them. I complained as well to Burzynski's nurses who called each week to check up on me. They said they, too, were recording them. I didn't mind that no one suggested remedies. The pain seemed small payment for steps closer and closer to a cure.

Then one day I got a call from someone on the phone chain set up by Burzynski patients, relaying the news of the doctor's indictment. As I listened to the shaky, panicked voice, I sized up my dwindling supply of antineoplastons. It would last a few weeks. I hurriedly phoned the clinic, asking to have six months of medication reserved for me. The place was in disarray. Some staffers were reluctant to speak freely, fearful the phones were bugged. Newcomers were filling in for the usual receptionist who, after traumatic cross-examination during her grand jury testimony on Burzynski's behalf, suffered a heart attack while driving home. Because of the commotion and demand, the clinic was allotting each patient a two-month supply of antineoplastons, which had to be picked up in person at the clinic in Houston.

"Only a two-month supply?" I pleaded. "It's finally working, and that's not enough."

EVEN WHEN a drug is backed by a large pharmaceutical company, the FDA approval process is arduous and expensive. Rather than "innocent until proven guilty," the premise is essentially "ineffective until proven effective." And *effective* means results within precise standards from several phases of trials determining a drug's safety, whether it works in the test tube, then on animals, then on humans, and then the best possible protocol. Most trials eventually involve not just a drug company but doctors in multiple hospitals working together to test the drug on hundreds if not thousands of patients.

To the FDA, Burzynski was someone who had flouted this system, who by not collaborating with oncologists, a major medical center, or a drug company was refusing to play by the rules. After the injunction in 1983, Burzynski had applied to the FDA to begin clinical trials, but the agency said his application was incomplete. In 1989 Burzynski got the go-ahead for a clinical trial with breast cancer patients, but the FDA says he never submitted any data. Trials were approved again in 1993, this time testing brain tumor patients, but the agency says Burzynski refused to enroll enough patients and the trials were canceled. All the while, at his clinic, Burzynski continued to treat hundreds of patients at a time with antineoplastons.

Shipping an unapproved drug across state lines to patients who aren't enrolled in a clinical trial is a federal offense. (States regulate medicine within their own borders.) After a decade of trying, the FDA had finally convinced a grand jury that Burzynski was doing just that.

The day after I received the call I skipped work and graduate school, and flew to Houston with my mom. We hauled cardboard boxes filled with IV bags of antineoplastons out of the clinic, into our rental car, and to UPS. Then we met up with the

TO SAVE MY LIFE

dozens of other patients who had dropped everything to come to Burzynski's aid. We organized a picket for the following morning at the federal building in downtown Houston.

The wealthy businessman and his wife, the mother and her saved little boy, and the decorated policeman, as well as other patients, relatives, and friends, paraded around and around, shaking homemade signs and chanting, "FDA, go away! Let us live another day!" Parents pushed their children in wheelchairs. The chil-

dren chanted through puffed-up cheeks and waved signs as best they could with swollen hands.

Our efforts appeared to succeed, as the clinic stayed open. I returned to D.C., where Michele and I, along with lobbyists working on Burzynski's behalf, took to Capitol Hill every week.

Now that I was being quoted in the press, I started receiving calls from members of Congress, reporters (from as far away as London), and even interested scientists. Some were anonymous tips on

who our friends were on the Hill. But others wanted to keep me abreast of allegations against Burzynski that were surfacing. One caller had heard that Burzynski had been given an opportunity to affiliate with the prestigious M.D. Anderson Cancer Center in Houston but had balked. Another claimed that Burzynski's annual take-home pay topped a million dollars.

As the charges multiplied, I asked Burzynski's staff and the people leading our activist efforts for background information so I could accurately refute them. Had Burzynski refused help from a leading cancer center? Was he pocketing millions supplied by patients who had given up everything? But I was stunned. "You are beginning to remind us of E," I was told. E had been blacklisted by the group for asking questions that leaned toward "the other side."

Burzynski's patience was waning, too. When a *New York Times* reporter asked him why a top medical journal had never published findings on his drugs, he responded, "To hell with them." He went on to compare himself to Albert Einstein and Louis Pasteur and said, "[Treatments like mine] have never happened before in medical history, so if the *New England Journal of Medicine* refuses to publish my paper, why should I waste my time with these fools?"



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THERE, in black and white, my doctor was admitting he'd lost interest in making his treatment more scientific. All this time I'd campaigned on Burzynski's behalf, I had cast him as a victim of the FDA and its conventions. But now I wondered whether it was actually the other way around. Might Burzynski be getting in the way of science more than it was getting in his way?

Taking a chance on this insight, I telephoned acquaintances at the FDA. They said that in trying to set up clinical trials in 1993 Burzynski withheld information, was evasive and hard to work with, and had only six patients in the trial until a judge ordered him to enroll more. Their message: Your doctor is the one making it difficult. Then I phoned Burzynski's clinic and spoke with the clinical trials director, Dean Mouscher. He had no medical training. After his father had become a

TO SAVE MY LIFE

patient of Burzynski's for a brain tumor, Dean had felt the calling. "Do you know how much paperwork the FDA wanted?" he asked me. He explained how the agency kept asking for minuscule, nit-picky information, how the clinic would have had to hire extra help to meet the FDA's demands, how it had a limited staff. He said the FDA also had to okay every new patient and was turning away people who needed treatment but didn't fit the guidelines. Mouscher's answer in effect confirmed the FDA's view: The clinic wasn't willing to follow the rules.

Still, our political efforts had shaken the FDA, and soon after Barton's hearing the agency agreed to approve a new set of clinical trials on antineoplastons, enrolling each and every one of us—an unprecedented break with the usual practice of studying only patients who fit specific protocols.

But Burzynski was still facing trial on mail fraud charges. Ironically, as he was scheduled to appear in court for illegal shipment of antineoplastons, he was at the same time legally sending them to all 400 of his patients around the country as part of the FDA-sponsored trial.

As the court date neared, our campaign gained more momentum. Patients bought angel pins for "Dr. B." and his staff to wear. TV news shows covered our effort. "If you convict the doctor," asked Ted Koppel on "Nightline," "are you sentencing his patients to death?"

Meanwhile, my side effects worsened. Burzynski's staff of doctors continued to tell me my increasing pain wasn't a sign of toxicity but was more "tumor breakdown," evidence that the high doses were working. To assuage my pain, they filled me with prescription painkillers, steroids, and anti-inflammatory agents—toxic medications to counteract effects of the "nontoxic" treatment.

Nothing helped. I rarely slept since the medication forced me to get up nine or ten times a night to go to the bathroom. Because antineoplastons contain a lot of sodium, the more I upped my dosage, the more thirst became the center of my life. I would drink a gallon of water during the day and go through another gallon at night. And I was still thirsty.

My regular oncologist was also growing frustrated since she had no basis on which to judge my progress in conjunc-

tion with my increasing side effects. She didn't know what to expect, what was typical, or how long to continue therapy before deeming it unsuccessful. Burzynski seldom had answers to these questions. Although the clinic's nurses called me regularly (daily when the FDA tightened its reins), I was losing confidence that my reactions were being analyzed and compared with those of other patients.

Exasperated and unable to control my nausea, I found myself back in the office of the gastroenterologist who had originally diagnosed the lymphoma, begging for help. He immediately ordered biopsies, tests he said should have been required months before.

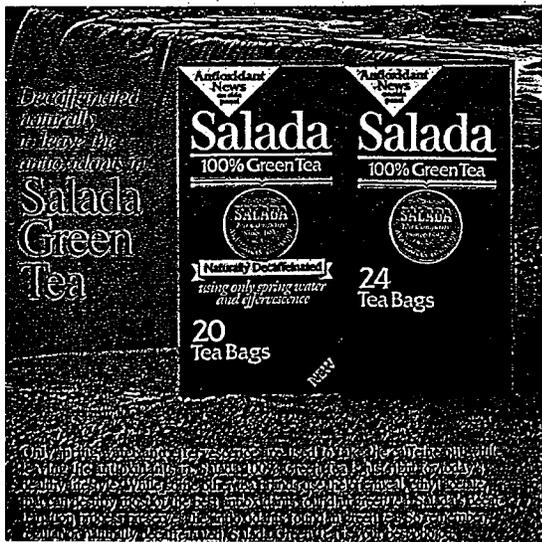
He was right. For what showed up in the biopsies was that the cancer cells had turned aggressive, spreading fast. From all my research, I knew what that meant: The lymphoma was now much more dangerous, but was also likely to respond to chemotherapy. In a couple of weeks I had stopped antineoplastons, moved to be closer to my parents, and, at Northwestern Memorial Hospital, begun six rounds of standard chemotherapy.

Standard. Just the word relaxed me. I snuggled into the comfortable arms of an established scientific therapy, where I was fully informed of my exact protocol, not to mention any and all anticipated effects gleaned from years of research and painstaking documentation.

PEOPLE LAUGH WHEN I tell them that despite losing my hair, chemotherapy was simple. Now I realize I was comparing the treatment to all I had been through while taking antineoplastons.

Though the chemotherapy was not completely effective, its failure finally made me eligible for a spot in a clinical trial on the promising treatment called monoclonal antibodies. The therapy was touted as a magic bullet, infusing human antibodies and doses of radiation directly to cancer cells, eliminating the toxicity and side effects that normally accompany cancer treatments. Conducted at Northwestern, this was just the sort of trial that the Stanford and Harvard specialists had advised me to watch-and-wait for.

Suddenly I was experiencing the drug development process as it was meant to be. At Northwestern I was grilled relentlessly



on my symptoms, poked and prodded, and bombarded with tests. Yet after my experience with Burzynski I felt grateful to be monitored so closely. When the next patient complained of a side effect, I knew the doctor could research the exact day, the exact hour, I'd experienced the same problem. With Burzynski, the patient after me who complained of a side effect like mine was probably told: "It's tumor breakdown."

In two weeks the treatment was complete. A few months later I heard the words I'd waited three years for: "There is no sign of lymphoma anywhere."

Burzynski's criminal trial began in February 1997. The media swamped the courthouse. Patients launched rounds of letter writing, took out huge newspaper advertisements, and raised hundreds of thousands of dollars for the legal defense. In May, when my local newspaper ran a photo of a smiling Burzynski trailed by the little boy who was saved, I knew without reading the story that Burzynski had been acquitted.

Two years have passed since I stopped using antineoplastons. I still catch my former doctor on television news and tabloid shows. He is always posed the same way, standing authoritatively next to MRI brain scans, pointing out the changes. First scan, deadly tumor. Second scan, after treatment, no tumor.

Every now and then a desperate patient sees my name in an old newspaper article and calls, seeking information about Burzynski, just as I had done with patients before me. I am never quite sure what to say. Such hope and yearning wait on the line, it is not right to squelch it. I think of Maria, who is still infusing antineoplastons for the remaining sliver of her brain tumor but who is alive and relatively active years past her prognosis for survival. This person on the phone does not have a brain tumor, though; she has ovarian cancer, something that Burzynski, I assume, would say he's not sure antineoplastons can be effective on. But he'd be willing to try.

Willing to try. How can someone facing death disregard those words from a doctor? A part of me wants to tell the caller just to enjoy what's left of her life, not to bother with long shots that might make those last months miserable and cost her family's savings or her house. But I can't say that. Even if the chance of

antineoplastons working is one in 100, what if I'm discouraging that one?

My response would be so much simpler had Burzynski lived up to his responsibility as a scientist and healer by working with others to collect statistics on his medicine. But he didn't.

After I discontinued his treatment, I requested that a copy of my records be sent to me. Flipping through page after page of recent daily entries, I read, "Condition unchanged," "Patient doing well," "Patient feels good." I checked the name at the top; it was mine, although I couldn't remember a single time in the past six months I had felt "good."

The FDA released preliminary data from the clinical trial earlier this year showing that more than half of the treated patients had high levels of sodium in their blood. The condition may have contributed to seven deaths. Burzynski disputed the finding.

The wealthy businessman and his wife were among the patients at another congressional hearing this spring. This time they rallied passionately for the Access to Medical Treatment Act, which is currently being decided in Congress.

I can see both sides of the argument, for I have lived them. I believe in letting cancer patients try unproven treatments; had I been free to try monoclonal antibodies when I was first diagnosed, the lymphoma might have been wiped out in a few months rather than a few years. Yet when I look closer, the proposed law scares me. It means any doctor could claim to have a cure and prey on people desperately seeking help. It removes incentives for alternative doctors to conduct trials and contribute to science.

I don't know who's right. But I do know that for 15 years the FDA and Burzynski have chased each other, spending precious time and money on legal battles rather than on contributing to science. Had everyone involved focused on what was truly important, antineoplastic therapy could have been proven or disproven as a viable treatment by now.

Instead, the cancer patient loses. And it shouldn't take a brain surgeon, or an oncologist or the commissioner of the FDA, to figure this out.

Ceri Lynn is a freelance writer currently finishing a book about her journey as a cancer patient.

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Mr. BURTON. Dr. Pazdur, let me start with you. As an expert in colon and rectal cancer, can you please state your expertise in medulloblastoma?

Dr. PAZDUR. Medulloblastoma, I do not treat pediatric oncology patients. The decision at the FDA regarding special exceptions to NDAs for pediatric oncology drugs is handled by a board-certified pediatric oncologist. This is reviewed by myself and is also reviewed by a team leader who is a board-certified medical oncologist and also at the office level.

In cases—

Mr. BURTON. I guess the answer is you do not have any expertise in medulloblastoma?

Dr. PAZDUR. I am not a pediatric medical oncologist.

Mr. BURTON. Well, I didn't need to have the whole history there. I just wanted to ask you that question, do you have any expertise in that area, and you say no.

Dr. PAZDUR. No, I do not have personal expertise in that area.

Mr. BURTON. You are familiar with the legislation that I have sponsored, I presume, aren't you, the Thomas Navarro bill?

Dr. PAZDUR. I have read it, yes.

Mr. BURTON. You are familiar with the situation with the Thomas Navarro boy?

Dr. PAZDUR. I am intimately aware of the case. We have spent many hours considering our decision in this case.

Mr. BURTON. Can you tell me what the side effects are for chemotherapy and radiation on a person who has that ailment?

Dr. PAZDUR. OK. The side effects for chemotherapy and radiation and the discussion of toxicities need to be individualized for a given patient.

Mr. BURTON. Well, let's be a little bit more general than that. Do you have a list of the side effects that we have—that we have found out about with chemotherapy and radiation? The reason I bring that up, Doctor, is because in the case of that boy and several others that we have had contact with, the side effects—mental retardation, a whole host of which I will read to you in just a moment—cause a lot of the parents to be very concerned about Dr. Burzynski's treatment down there and how it might be as effective or more effective without the potential side effects. The adverse events we understand include sterility, stunted growth, hormone disorders, blindness, hearing loss, mental retardation and secondary cancers.

Now, in the case of the boy we are talking about and others that have had this kind of treatment that Dr. Burzynski has advocated and performed down there—in a clinical trial, I might add—they had some pretty good results. We have talked to some of the parents who have had some remarkable results with this kind of treatment.

Yet because the Navarro boy's parents did not want him to go through the potential side effects that might arise from chemotherapy and radiation, they decided they wanted to have the alternative therapy that is in a clinical trial that Dr. Burzynski proposed. The problem they ran into is they said he could not take the alternative therapy, which is in a clinical trial, until he had taken chemotherapy and radiation; and they went so far as to say that

if he did not take the chemo and radiation first, which had these potential side effects, that the State agencies might come in and take the boy from the parents and force the foster parents or whoever took charge of the child to give the boy chemotherapy and radiation in spite of the possibilities of the side effects.

So I guess my question is this: Why should that family or any family, when there is a clinical trial going on, have to go through what they perceived to be a real danger to their child, chemotherapy and radiation, when there is another approach in clinical trials that might provide better treatment and longer survivability for the child?

Dr. PAZDUR. The answer to the question is a very complicated answer. When we are dealing basically with a decision of therapy, there is a question of efficacy and toxicity, how well does the therapy work, how well has it been established to work.

The conventional therapies for medulloblastoma is one of the few success stories of pediatric oncology in that it allows a curative potential in over 75 percent of patient—

Mr. BURTON. May I interrupt you real briefly? Because I saw some of the children cured by this treatment. I saw them. They were mentally retarded, they couldn't talk, they couldn't speak. The cancer supposedly was cured, but the child was a vegetable. I am not sure that that is what those parents envisioned when they went through the conventional treatment.

So why shouldn't—and I see my time has run out and I will yield to my colleagues, but why shouldn't a parent have the right to choose between a clinical trial that is ongoing and a treatment that might endanger their child's life or health dramatically?

Dr. PAZDUR. First of all, the patient did not qualify for the clinical trial in that the clinical trial is written that patients need to have had progressive disease on standard therapy. This is getting back to the major issue that formulated our decision, and that is the curative potential standard therapy that has been well-tested over decades, that has led to the cure in patients.

Now, granted, you have seen examples of children that have probably suffered severe side effects. There has been tremendous progress in reducing doses of radiation therapy using different chemotherapy regimens in an attempt to reduce the toxicities experienced by patients in the treatment of this disease. No. 1, Thomas Navarro did not qualify for the protocol because it was specifically stated that patients must have had an attemptive curative therapy.

Mr. BURTON. Meaning chemotherapy and radiation first?

Dr. PAZDUR. And radiation, because of the cure.

Mr. BURTON. Let me interrupt here. I think I understand this. So the child and the parent is taken out of the decisionmaking process at that point. Either they go along with chemotherapy and radiation and the potential side effects, or their child cannot get the other treatment?

Dr. PAZDUR. Here again—

Mr. BURTON. That is true, though, isn't it?

Dr. PAZDUR. Our decision is based on a balance between efficacy and toxicity.

Mr. BURTON. I understand what you are saying. But what we are saying is the parent is no longer able to participate in the decision-

making process unless they first use chemotherapy and radiation, though knowing full well the side effects that might occur.

Dr. PAZDUR. Given the known efficacy data regarding antineoplastins in this disease, we cannot substitute it for a known curative regimen that carries with it a 70 percent survival.

Mr. BURTON. Why don't you just give me a straight answer? The straight answer is, yes, they cannot participate in the clinical trial unless the child has first had chemotherapy or radiation.

Dr. PAZDUR. That is the eligibility criteria of the trial.

Mr. BURTON. What if you have a child, you, and the child has this devastating cancer, and this child has to go through this treatment, and you have done all the reading and research, you have gone to the Internet and talked to a lot of other parents that had problems with this, and you came to the conclusion that the risk of chemotherapy and radiation was greater than going the alternative route and trying to help your child with clinical trial, what would you do? Would you say, OK, we are going to go ahead and take the risk?

Dr. PAZDUR. No. Let me emphasize that I have been in practice for 20 years in medical oncology, and the issue here is the Internet and the information that patients get from the Internet. We applaud and we want patients to be active participants in their care, but this does not substitute for the experience of physicians that have treated patients with medulloblastoma. I am not saying this in an autocratic, authoritative, authoritarian fashion. Nevertheless, when we made our decision, we contacted leading experts that treated medulloblastoma, and they believed the risk-toxicity benefit versus the known survival advantage was far outweighed.

Mr. BURTON. I am going to yield to my colleague, but I want to make one real brief comment.

I went to Africa, and I got a terrible stomach problem, and I came back, and I had this bug for 2 years. I couldn't eat properly, I had to take everything, Zantac, everything for my stomach for a long time.

I read about a doctor from Australia, and he had said for the first time that he believed that the problem that people have with stomach ailments was not caused by nerves, ulcers and all of that sort of thing, but it was caused by a bacteria. And I went down to see him, because I couldn't live with what I was going through.

He treated me, and in 1 week I was cured. He is now recognized all over the world as one of the leading doctors in his field, and what he said was the H pylori bacteria does exist and probably 90 percent of the people in the world could be cured if they just took a combination of medicines. FDA wouldn't approve it, FDA didn't look at it, none of that was approved, and yet I was cured before that happened.

Now, the thing that bothers me is I participated in the decision-making process myself, and I went down there, and I was cured. A parent who has a child who is dying of cancer, who knows that the chances of survival is not all that great, who knows the side effects of chemotherapy and radiation and knows there is another approach like Dr. Burzynski's that is in clinical trials, it is my contention that they ought to have a voice in the decisionmaking process. And what we see is that—and you say you are not an autocrat,

but what we see is we see the agency of government, the Food and Drug Administration, saying to that parent, no. Your child is going to go through chemotherapy and radiation, or else. And if the child has the side effects that I have seen where a child is a mental basket case, a vegetable because of the side effects of the chemotherapy and radiation, then that is just tough.

I am one of those who believes that the parent, if it is a clinical trial that has been approved by the Food and Drug Administration, at least ought to have a voice in the decisionmaking process, and you folks continue to say no, and that bothers me a great deal. But we will talk about this further.

Mr. Horn, you are recognized for 5 minutes.

Mr. HORN. I would be glad to yield you 2 minutes more.

Mr. BURTON. That is all right.

Mr. HORN. No. 1, I would like to ask Dr. Wittes, you are at NIH, is it true that there has been a loss of personnel in the portion of NIH where drug development was being reviewed? Is that correct? I am told almost 30 have been dismissed there or reassigned to other parts of NIH.

Dr. WITTES. I don't know what your point of reference is, your time point of reference. But we—

Mr. HORN. The last 4 months.

Dr. WITTES. No. It is not true.

Mr. HORN. It is not true.

Dr. WITTES. Right.

Mr. HORN. So nobody is being—you know what I am talking about, on drug development and marine plant life and plant life.

Dr. WITTES. Correct, there has than been no loss of personnel in the last 4 months.

Mr. HORN. Then maybe some of the newspapers are a little in error. But that bothered me, to say the least.

What type of a program do you have going on plant life and marine life?

Dr. WITTES. Well, we will have and have had for a long time a pretty extensive program that actually goes out to far corners of the world and searches ecosystems like tropical rainforests and marine ecological niches, soils and so on, to try to procure examples of plant, animal or microorganism life for our natural products repository, which is a repository that is actually a natural treasure. It contains about 140,000 extracts of one sort or another, and this has actually been the basis for the natural products work that has gone on at the Cancer Institute.

A little while ago, a year or two ago, we established a program that makes the repository available to people outside the Institute interested in screening for compounds in cancer and also outside the area of cancer. So it would please us greatly, for example, if people interested in drug discovery for other serious medical illnesses would regard this also as a repository for them.

That is one aspect of what we do.

Mr. HORN. What is the next one?

Dr. WITTES. Well, also, there has been in place for a number of years now a screening system that depends on inhibition of growth of a panel of various cell lines. This has been actually very useful in discovering extracts and pure compounds that might have

anticancer activity, although the proof of that is always in the pudding, but it is an initial screen.

We have come to question in the last few years whether that cell line screen is the right way to be asking questions about what might be useful in cancer. Based on new knowledge in cancer biology we have big plans, actually, to try to reorient our approach in the direction of molecular targets but still use the same kinds of chemical diversity that we have been talking about in the past also. Enhanced, however, by some of these new synthetic methods in the laboratory that I mentioned briefly in my comments before.

We also have a development program. Development is the process by which you take a chemical that looks like it might be interesting and you turn it into a substance that you can administer to an animal or downstream to a human being. That involves lots of tests that give you reason to think that, if you were to give it to a person, it would be safe and it wouldn't cause horrific side effects, at least not initially, depending on how you ended up giving it, but certainly it would be safe to introduce into clinical trials. It would also have the potential to kill cancer or stop it from growing in a whole animal or a person as opposed to just a petri dish. That is a long, complicated process that involves many steps like toxicology, pharmacology and formulation and things like that.

Mr. HORN. Has there been substantial interest from the pharmaceutical firms?

Dr. WITTES. We collaborate with, I would guess, probably somewhere between 100 and 200 pharmaceutical companies and also academic laboratories all over the world who submit compounds, unknown compounds and known compounds, to our screening systems. We also commonly collaborate with companies in the clinical development of agents that either we license to them or they want to co-develop with us. This process has been a collaborative one for decades now, and it is really only going to increase in intensity as industry becomes more and more interested in cancer, which they are in both the pharmaceutical and biotechnology sectors.

Mr. HORN. We hear every time we talk to the pharmacological industry that it costs them about \$300 million in research on that. You are doing a lot of the research at the NIH. Is there any recompense from the industry when they are successful or maybe when they are not successful? And I would just be curious the way—are you able to award a particular scientist on your payroll at NIH and doing a lot of this or, through grants from NIH, is there ever a chance for that individual who has taken and pursued a particular line of endeavor where there is any monetary award?

Dr. WITTES. That is a complicated question.

Mr. HORN. I am thinking from the pharmaceutical group, in terms of your contract.

Dr. WITTES. Right. So the reward system that is in place for scientists who discover things that end up being useful, if that happens within the intramural program of the NCI, that is on the campus in Bethesda or in Frederick, there it is now possible for inventors to receive royalties up to a certain level once there is a revenue stream from the sale of something. Of course, for extramural grantees, grantees of the NIH that discover something under grants or contracts, the legislation allows licensing, patenting and

licensing; and they, of course, can therefore also benefit from a revenue stream once there is one.

There is not, in general, direct financial feedback, however, from drug companies to the NIH, except when there is a collaborative research and development agreement in place, which is, I am sure you know, a formalized process actually created by the Congress to enable collaborations between outside organizations and the government.

Mr. HORN. And you feel that is helping maintain first-rate scholars in science to the NIH?

Dr. WITTES. I think it is a factor. I think most of the people who work at the NIH work at the NIH because they love it. Nobody gets rich by working at NIH.

Mr. HORN. It is hard to beat. You don't have students and a university bothering you either.

Dr. WITTES. Some of us like students.

Mr. BURTON. Mr. Horn, we will come back to you in just a minute.

Mr. Cummings.

Mr. CUMMINGS. Thank you very much, Mr. Chairman. And, Mr. Chairman, I want to thank you for taking a moment of silence on behalf of my father who passed away on Sunday. I sincerely appreciate that, and I appreciate the thoughts and the prayers of the committee.

I just have a few very brief questions.

Dr. Wittes, let me just ask you, does NCI evaluate all research proposals by the same criteria?

Dr. WITTES. Well, can you say a little bit more about what you mean by that?

Mr. CUMMINGS. Does the NCI hold unconventional and conventional research proposals to the same standards?

Dr. WITTES. That is certainly the intention, yes. You see, the reason I am not simply saying yes is a lot of the evaluation of the proposals is done by a peer review system, which involves committees of experts drawn from the outside, and depending on who you get together around the table to discuss things, you may get a greater or lesser degree of enthusiasm for one type of thing or another. The intention is certainly to mainstream the evaluation of complementary and alternative approaches, yes.

Mr. CUMMINGS. Many people now turn to the Internet for information about cancer and how to prevent, detect and treat it. What steps has the NCI taken to make accurate information available on the Internet?

Dr. WITTES. We have devoted an immense amount of time and energy over the last few years to that issue.

I mentioned in my opening statement the revamping of our protocol and information data base relating to cancer and cancer research. This data base is called CancerNet, and it involves thousands and thousands of pages of Internet pages of text about state-of-the-art treatments for cancer and about available clinical studies. It has a new powerful search engine that allows people to put in information that is more closely tailored to their own circumstance, including where they live, by the way, and come up with not only protocols that are available for them for their stage

and kind of disease but also in the geographic area in which they live.

We also have a new Web site called CancerTrials which is full of contextual information about the research setting. So it tells people, for example, about why they should care about clinical trials, what clinical trials are, what the informed consent process is all about, the kind of questions they should ask of people. We have really I think done a much better job over the last few years in exactly that direction.

Mr. CUMMINGS. I understand in the State of Maryland it is estimated that 22,600 new cancer cases will be diagnosed this year. Maryland is not a big State. A lot of those cases will take place in my district which is Baltimore city, predominantly African American. The thing that concerns me is we have seen articles here recently that show that there are significant racial disparities in the way people are treated for their cancers. Could you describe any efforts by the NCI to determine the reasons for these disparities?

Dr. WITTES. Yes. That is another area, actually, of intense interest to us, and we have actually a very ambitious plan relating to cancer and the disparity of the burden of cancer in various segments of our population.

We are doing a lot with that now, including the creation of a series of ambitious community-based networks to try to create infrastructures in areas suffering a disproportionate burden of cancer. These infrastructures will actually serve as research platforms to ask exactly the kind of questions that your question focuses on, which is why is there an excess burden of certain kinds of cancers. We don't have a very good idea right now, for example, of why African American men suffer disproportionately from prostate cancer. It is known they do. We don't know why. These kinds of issues are the issues we need to get to the bottom of.

There are a number of other things we are doing also, including trying to establish relationships between sites of research in minority-serving institutions and the cancer center networks that the Cancer Institute already supports. We are doing this with the Office of Research on Minority Health and expect that that kind of fusion between institutions that are oriented toward the care of minority groups on the one hand and then institutions that are science-rich places that may not have been thinking about the particular problems in minorities, will be a very creative way of getting people to put this on their radar screens and make it a real issue for them.

Mr. CUMMINGS. Dr. Pazdur, what is the cure rate of children with pediatric brain cancer using the standard care treatment?

Dr. PAZDUR. The standard treatment, I assume we are talking about medulloblastomas here—

Mr. CUMMINGS. I didn't know whether I could pronounce that word right.

Dr. PAZDUR. It is in excess of 70 percent. In some series, it is even 80 percent or higher. It is a very curative disease.

Mr. CUMMINGS. Well, what is the cure rate for children when we use Dr. Burzynski's treatment?

Dr. PAZDUR. This is one of the problems in determining the adequacy of his treatment. We really do not have adequate survival

data, because we are dealing with a very limited number of patients that have been entered on clinical trials. Basically we are taking a look at—if we take a look at the number of patients entered on clinical trials, it is in the range of about 17 patients. The survival data we do not have complete data on because many of these patients are obviously being treated at this time. We do not analyze a clinical trial until the trial is completed.

The activity that we have seen using this therapy have included some responses. However, by responses I mean tumor reductions. But in order to acquaint that therapy to the body of knowledge that has been evolved really over the decades using radiation and chemotherapy is impossible to answer at this time.

Mr. CUMMINGS. Thank you very much, Mr. Chairman.

Mr. BURTON. Following up on what Mr. Cummings just asked, how many people would you say was in that clinical trial down there? Seventeen, I think you said. I am pretty sure that is what you said.

Dr. PAZDUR. The most recent update on the protocol, on the protocol in 1999, which is the most recent, we have eight patients on the protocol, and nine patients that were exceptions that we entered on the protocol.

Mr. BURTON. One of the things you said when I was talking to you a while ago, and I think you just said now, you have such limited knowledge from the clinical trial. That is true, isn't it? We have very limited knowledge.

Dr. PAZDUR. We have 17 patients treated.

Mr. BURTON. I understand. But you limit the number of people on that clinical trial, and then after you limit the number of people in the clinical trial, you say you don't have enough evidence. You know, I don't understand that. Would you explain that to me? You say we don't have enough evidence because we don't have enough people on the clinical trial, and at the same time you are saying we won't let anybody beyond a certain number on the clinical trial. What you are saying is you are going to make sure you know the result ahead of time. The result is, we don't have enough evidence from the clinical trial. You won't let them in, so you are never going to get the kind of end result that might come out. Isn't that correct?

Dr. PAZDUR. No, it is not.

Mr. BURTON. How many people will you allow in the clinical trial?

Dr. PAZDUR. We will allow the patients that meet the eligibilities criteria.

Mr. BURTON. And that is? Chemotherapy and radiation first?

Dr. PAZDUR. Yes.

Mr. BURTON. The ones that don't die or become vegetables, then you will allow them in the clinical trial?

Dr. PAZDUR. I think that is a gross mischaracterization of a standard therapy and the results that one gets from therapies that are administered to patients with this disease.

I would like to bring up—

Mr. BURTON. Then you should have come to our press conference and should have talked to the parents who had their kids there in wheelchairs who were just degenerating into nothing because of the

conventional treatment instead of the other treatment that they could have taken.

Dr. PAZDUR. We have talked to pediatric oncologists who are experts in this disease, and they believe that the risk-toxicity benefit is warranted in the relationship to the cure rate. We have allowed over 300 patient exceptions, patients to be exempted and to be treated on antineoplaston. So I don't think we are limiting the access to this drug in appropriate situations.

Mr. BURTON. It was after, though, they had the chemotherapy and radiation, correct?

Dr. PAZDUR. This is in a variety of diseases.

Mr. BURTON. Oh. But as far as the medulloblastoma, how many have you had?

Dr. PAZDUR. As I stated before, the number of patients that are on medulloblastoma trial, there were eight on the trial and nine exemptions that did not fit the criteria for the trial.

Mr. BURTON. Why didn't they fit the criteria?

Dr. PAZDUR. They could have had minor laboratory abnormalities, etc.

Mr. BURTON. Minor laboratory abnormalities. Tell me what those are?

Dr. PAZDUR. I don't have that data in front of me.

Mr. BURTON. I mean, could it have been a mental problem or a physical problem that resulted from the chemotherapy or radiation?

Dr. PAZDUR. I do not believe so.

Mr. BURTON. Well, do you know?

Dr. PAZDUR. I would have to look into that and get back to you.

Mr. BURTON. Would you look into it and get back to me? I would like to know if the chemotherapy or radiation had side effects for those nine patients that resulted in their non-acceptance into the program down there. So would you let me know that?

Dr. PAZDUR. I would be happy to let you know that.

Mr. BURTON. Thank you.

Dr. Straus, I understand that one of your employees is a Reiki master. Could you explain what that therapy is?

Dr. STRAUS. He is the expert. You are referring to Dr. Morgan Jackson who we recently had the good fortune of having join us. He was until now the Director of Minority Health Studies at the Agency for Health Care Research and Quality. He is a licensed internist trained at Harvard and Harvard Medical School, and he is also interested in a range of complementary therapy.

Reiki therapy, as I understand it, involves manipulation of particular points on the feet for therapeutic purposes. He is interested in that therapy.

Mr. BURTON. And has he had some positive results from the therapy he is using?

Dr. STRAUS. I believe he has, but he has been with us now for about 2 weeks, and his responsibility is to develop our entire portfolio of research addressing the issues of health disparities using CAM approaches to traditional and indigenous health care systems.

Mr. BURTON. What is the role of spirituality in healing as a physician? Do you ever pray with your patients, and, if not, would you be uncomfortable doing that? I am just curious.

Dr. STRAUS. I am a religious person myself, Mr. Chairman, and I have prayed when my children have been ill, as many parents do, and I support and respect my patients' wishes for that kind of therapy and offer them clerical support if they wish to pray.

I have not prayed in any religious context with my patients. My own religious beliefs may be different. But, as I say, these spiritual efforts are very supportive in comforting patients and families.

Mr. BURTON. Regarding acupuncture and other therapies, do you think that they have been shown to be effective and should be reimbursed by Medicare?

Dr. STRAUS. I believe that acupuncture, despite its thousands of years of use and its venerable traditions, is in the area of, still, controversy for some cases. It is touted for many, many illnesses. Most of those cases have not been studied at all. There have been some good studies, although not absolutely definitive, suggesting that acupuncture is beneficial for certain types of pain disorders and not others.

There was a consensus panel of outside experts convened at the NIH in 1997 who, upon reviewing the literature to that time, concluded that the burden of evidence suggested acupuncture is beneficial for pain associated with dental extraction, as well as an adjunctive therapy for relief of nausea and vomiting following chemotherapy.

As to whether the level of evidence is adequate for reimbursement, reimbursement issues are not ones I am particularly knowledgeable about, but I would say the evidence for acupuncture for all CAM modalities should be exactly the same as for all conventional therapies. When there has been adequate controlled trials of a prospective nature that says it works and is safe, that should be sufficient.

Mr. BURTON. Thank you, Doctor.

Mr. Horn.

Mr. HORN. Thank you very much, Mr. Chairman. Let me pursue some of that drug laboratory situation.

Do you see—after several years, maybe decades, of this, do you see any major stream that might be the most productive as a result of that laboratory and the grants that are granted in a similar nature? Where are we, in other words, in it right now, in terms of plant life, marine life, etc?

Dr. WITTES. Well, I think as far as sources of chemicals is concerned, it has to be said that the microbial world has probably been more intensively investigated than either plants or the marine world. Now I say that with some hesitance because the discovery of a whole new genre of life, the so-called bacteria that live in very hostile places like near deep sea vents and so on, plus the increasing knowledge there are actually very large numbers of organisms that are not culturable by conventional technology, means that there is a whole lot of microbiology we are just beginning to learn about. It may very well be that there will be very interesting chemicals coming out of that source.

The business about plant life in endangered ecosystems has gotten a lot of public attention, and we are doing what we can to collect specimens that are not already represented in our repositories.

Marine life is also another area of real attention. You will be hearing from Dr. Petit tomorrow, who has actually made a lot of contributions in this whole area.

Mr. HORN. Well, I thank you.

Dr. Kang, I would like to ask you, because of your affiliation with Medicare, do you advise the health care financing system as to what pharmaceuticals ought to be recognized by Medicare in relation to cancer? Is that one ever your roles?

Dr. KANG. You have to understand that Medicare actually currently does not have a drug benefit.

Mr. HORN. We are going to give it in the next 3 months, so you will be doing that.

Dr. KANG. Yes. I am responsible for Medicare's coverage decisions and to the extent that there is a limited drug benefit with regard to some cancer drugs, and I do make those decisions. I certainly endorse the statements that Dr. Wittes and Dr. Straus have made, that the evidentiary standards for whether certain drugs should or should not be included for Medicare coverage should be the same and the scientific method should be the same.

Mr. HORN. One much the drugs that women have to get, which is tamoxifen—how do you pronounce it?

Dr. KANG. Tamoxifen.

Mr. HORN. Is that approved for Medicare?

Dr. KANG. Unfortunately, that is an oral drug, and it is not a Medicare benefit. That is something that legislation needs to pass. But I will tell you if you gave—

Mr. HORN. A number of health plans do have that, and so I am thinking when we will get to this in the next few months that I would hope that that would be recognized, because there are so many people out there, particularly widows, with maybe only \$500 a month in a Social Security pension, their husband is dead, and then this gets to be very expensive.

Have you looked—even though you don't have the authority now, have you looked at the range of pharmaceuticals that might well be utilized by health care, both physicians, hospitals and clinics and all the rest, that are eligible?

Dr. KANG. In general, the administration has overall looked at the drug benefit in its total package, but we have not gone drug by drug. Obviously though, if we were to get a drug benefit, we are in full support of this; and tamoxifen certainly for the treatment of breast cancer I think would be on the list.

Mr. HORN. I appreciate that.

I guess I would ask Dr. Wittes, when we are talking about Medicare people, we are talking about some of us that are over 60 years of age.

Dr. WITTES. Don't look at me.

Mr. HORN. No, I am saying, to what degree have we included them? And I might add the same for FDA, to what degree are people over 60 in some of these particular trials that we hear about from FDA and we see in NIH and universities and elsewhere? Is there a sensitivity to sort of making sure the elderly—

Dr. KANG. I think this is actually why the President's announcement this morning—currently, roughly one-third of beneficiaries over the age of 65 are participating in cancer and clinical trials,

when we know that roughly they comprise roughly two-thirds of actually the people with cancer in this Nation. So there is somewhat of a lag for the elderly.

One of the barriers to that is the payment for routine costs associated with those clinical trials, and the President announced this morning that Medicare would do that, make it explicitly clear that because people enter a clinical trial, they don't lose their Medicare benefit.

Obviously, there are other reasons why the elderly may not participate in trials, but certainly we are interested in removing the financial barriers.

Mr. HORN. Is it tilted primarily for women because of the sort of scourge of breast cancer we have in this society?

Dr. KANG. Not that I am aware of.

Dr. WITTES. No, we also have the scourge of prostate cancer.

Mr. HORN. Yes, I am one of those. I am zero on my PSA for the last 5 years. I thank the people that did it.

By the way, one of my urology surgeons had just the situation that the chairman mentioned on stomach upsets, ulcer, etc., and the man from Australia certainly saved him after 20 years.

Mr. BURTON. Dr. Barry Marshall is his name.

Let me now yield to Mr. Cummings.

Mr. CUMMINGS. Thank you.

Mr. BURTON. Incidentally, Dr. Barry Marshall, I understand, has received one of the highest awards of any physician here in the United States for his medical research, and I understand he may be nominated for a Nobel Prize for science in the future.

If I might just—one second, Mr. Cummings—tell you, I told my stomach doctor in Indianapolis about my experience with Dr. Marshall, and he was visibly angry, and he turned around and walked off. And that kind of surprised me, because I guess the treatment, the conventional treatment that he had been using for years with which he made his living was being jeopardized by Dr. Marshall, and it made him very upset.

Mr. Cummings.

Mr. CUMMINGS. Thank you very much, Mr. Chairman. I didn't have a preliminary statement, but I do appreciate you holding this hearing. I really do, because I think it is such an important subject.

I want to take a moment to thank our panelists for all that they do every day to help people live the very best lives that they can and help people live, period. I think sometimes we can get so caught up in what we do that we forget how many lives we touch. So I want to express my appreciation to all of you and to all of the people who are associated with you who may be watching this right now.

One of the things, Dr. Kang, that I am just serious about, if we had a drug benefit like Mr. Horn just talked about, and I have just as much optimism as he does with regards to this Congress doing that, how do you determine what kinds of criteria is used to determine what drugs would go under that benefit with regard to cancer? I am not asking you for specific drugs, just what do you look at? Do you look at price, do you look at effectiveness, things of that nature?

Dr. KANG. Under the President's drug proposal, those drugs approved by FDA and their indications, because they have already been labeled safe and effective, would be covered. So that would be one criteria.

I think, in general, we would be very interested in looking at the outcomes, the health outcomes and what contributes to the patients' not only cure rates and quantity of life but quality of life.

Under the President's proposal currently, I should say those decisions would be made by the pharmacy benefit managers. The point, though, is that beneficiaries should get access to the FDA-approved drugs that have been deemed safe and effective.

Mr. CUMMINGS. You know that there are people who are right now glued to their televisions watching this, or maybe watching it later, and they heard the President this morning, and there are people sitting there watching us right now who are suffering from cancer and suffering from other problems. I know you have talked about it a little bit earlier, but, you know, I am sure they are sitting there saying, exactly what does this mean for me? If I have got a problem, what does this mean for me and how do I now go about making sure that—first of all, did I fall within the category that the President was talking about? Second, how do I make this work for me?

I think the chairman would agree that if there is something available to the public, we want to make sure they understand it and not have any misconceptions and that kind of thing. Can you just kind of tell us real quick, as if there were somebody looking at this right now wondering?

Dr. KANG. I think the most important message is that, because of participation, if someone participates in a clinical trial, he or she would not lose their Medicare benefits. I think that is the most important message. We will pay for the routine costs associated with the trials.

I think that the other important message is we will—the President did say that the agency and the administration will work on efforts to actually educate the community. But I think there is some misunderstanding about what is covered and what is not covered, and the last thing we want to do is to make sure beneficiaries who go into trials know what the Medicare program will be paying for and what the trial sponsors will be paying for and really understand their liabilities.

Mr. CUMMINGS. Thank you very much.

Thank you, Mr. Chairman.

Mr. BURTON. We are about to go to our next panel. I just had one more question for Dr. Straus.

Dr. Straus, you talked about the foot therapy that Dr.—is it Reiki? I think you are talking about a different subject. Because Dr. White—where is Dr. Jeffrey White? He indicated that the Reiki treatment is energy therapy and not foot therapy. So I thought you may have been thinking about something else. I just thought I would mention that.

Dr. STRAUS. Let me stay, Mr. Chairman. I thank you for the opportunity to reflect my ignorance.

Mr. BURTON. No, we are not—

Dr. STRAUS. The fact is, I have been hired to be director of the Center because of my expertise as a clinical scientist, but my background is in infectious disease and immunology. If you would be like to discuss that, I would like to entertain you with that sometime. But I am not knowledgeable of the many hundreds of CAM therapies. That is why I recruit the best and the brightest to help us develop the programs to do so.

Mr. BURTON. Very good.

One last question. I would like to say to all of you, though—I would like to submit to you a whole host of questions we haven't had time to get to you today, and I would like you to submit them for the record. In particular, I would like to have the backgrounds on those nine people we were talking about earlier.

Finally, Dr. Straus, is there a role for complementary and alternative therapies in the hospice environment?

Dr. STRAUS. One of the largest uses of complementary therapy is to alleviate suffering from chronic illness, be it pain, be it nausea, and that is, in fact, some of the most successful uses.

My own background involves a lot of studies of chronic pain associated with shingles infection. Those are the kinds of areas in which one can explore acupuncture, patients who are chronically ill or often depressed understandably from that illness; and the use of botanical products that may raise their mood could be beneficial.

I would say that palliative care is a huge place for CAM studies. The NIH has just announced that it has hired a director of palliative care to join us this summer in the clinical center. She comes from the Foxchase Cancer Center where she has had extended experience in this area.

Mr. BURTON. Very good.

Well, as I thank you for your help, let me just say one of the things that bothers me continually and bothers a lot of other people in the country is that people like Mr. Navarro have had to take their loved ones or themselves or their children out of the country to get treatment that they think is going to be beneficial for their families, and many of the treatments that are being used in other countries and Europe have been beneficial that are not yet recognized or accepted in the United States because of FDA and HTS regulations. That is unfortunate, because it costs so much money to take somebody to Europe or someplace else or Germany for a treatment that might save their lives when, if it is effective, it should be utilized here as well.

One of the things that I have never understood is why countries that have an effective treatment for a disease, such as cancer, why there is not some kind of cross-pollination between that country and the United States and vice versa so that those treatments and those scientists' minds and proposals can't be utilized across intercontinental borders.

So I just leave that thought with you. I want to thank you all very much for being here today.

We will now bring our next panel forward. I hope, if you have a moment, you can stay and hear some the stories these people are going to tell. We are going to have patients here.

Mr. Navarro, Mr. and Mrs. Horwin, Dr. Geffen, Mr. Cary and Mr. Devries, would you please come forward? Would you please rise? This is a standard procedure.

[Witnesses sworn.]

Mr. BURTON. Let the record reflect the witnesses have responded in the affirmative, and we will now recognize each one of you for an opening statement.

STATEMENT OF JAMES NAVARRO, TUCSON, AZ; MICHAEL HORWIN, SAN DIEGO, CA; RAPHAELE HORWIN, SAN DIEGO, CA; DR. JEREMY GEFFEN, GEFFEN CANCER CENTER AND RESEARCH INSTITUTE; ROGER CARY, CANCER TREATMENT CENTERS OF AMERICA; AND GEORGE DEVRIES, AMERICAN SPECIALTY HEALTH PLANS

Mr. BURTON. Mr. Navarro, it is nice having you back with us. Why don't you tell us how your son is doing and what has transpired since we last met.

Mr. NAVARRO. Well, thank you.

Mr. BURTON. I hate to say this, but because of the lateness of the day, if you could confine your remarks to 5 minutes, if it is possible, we would really appreciate it.

Mr. NAVARRO. Thank you, Mr. Chairman. As we speak, Thomas is in therapy outside the United States; and in spite of the events of the last almost 9 months, he is doing quite well in defeating his illness.

Mr. BURTON. Very good. Do you have a statement?

Mr. NAVARRO. No, I wanted to share something with you before my testimony. You happen to be in luck today because I happen to have a copy of protocol BT-29 for your review, which was a new protocol submitted to the FDA on Thomas' behalf that mirrors the FDA-approved trial, with the exception that Thomas would be allowed treatment without prior radiation and chemo damaging his body.

Mr. BURTON. Is that right? Well, would somebody go down there and pick that up from him? We will take a look at that. Thank you very much. We will look at that.

Do you have a statement you would like to make other than your son is doing well?

Mr. NAVARRO. Well, that is everything to me.

Mr. BURTON. OK.

Mr. NAVARRO. But in following with your opening speech, I am here to tell you that I am a living testament to your opening speech and to the current cancer statistics. We are both fighting it now.

Mr. BURTON. Yes, I understand. For those in the audience, Mr. Navarro has just discovered recently that he has fourth stage prostate cancer and so you are in the fourth stage, so you are in a battle as well as your son.

Mr. NAVARRO. Yes, and having three sons, we are two out of four males, which is the one in two statistic.

Mr. BURTON. Let me just say we will all say a prayer for you and hope that the treatment you get will be beneficial.

Mr. NAVARRO. Thank you, sir. I am glad to be here and hope that we can break some barriers today.

Mr. BURTON. We are going to continue to work on that.

Mr. Horwin.

Mr. HORWIN. Good afternoon. My name is Michael Horwin. My wife Raphaelle and I, would like to thank Congressman Burton for the opportunity to speak about the experience our 2-year-old son Alexander had with chemotherapy that resulted in his death.

Can I have the first slide, please?

Today is Alexander's birthday. He was supposed to be 4 years old today. Alexander was a strong, happy, very intelligent little boy who loved life, but when he was 2 years old everything changed. On August 10, 1998, Alexander was diagnosed with medulloblastoma, a highly malignant brain tumor that represents a quarter of all brain tumors in children. After two brain surgeries, Alexander was tumor free, but we were warned that without further treatment his tumor would return.

We met with the oncologist at Children's Hospital Los Angeles, and he told us that radiation was out of the question because it would destroy Alexander's developing brain, but he told us his "state-of-the-art" chemotherapy would provide a good chance of survival.

This protocol was called CCG-9921, and was comprised of four chemo drugs—cyclophosphamide, cisplatin, etoposide, and vincristine. He warned us that, although the side effects were not as bad as radiation, they could be severe.

Can I have the second slide, please?

Heart damage, lung damage, liver damage, kidney damage, loss of hearing, secondary cancer, intellectual decline, ineffectiveness and death. After hearing this, we continued researching other cancer treatments and focused on the Burzynski Clinic in Houston, TX. We spoke to parents of children who were doing well on Burzynski's nontoxic therapy and decided that this was the very best treatment for Alexander.

On September 21, 1998, Burzynski met with us, looked at our son's latest MRI and said that because there was no tumor he could not treat Alexander. He explained that the FDA controlled his protocols and required that Alexander have tumor in his brain. We explained that our son had suffered through 16 hours of brain surgery to be tumor free.

Burzynski said he was sorry, there was nothing he could do.

In Los Angeles, we scrambled for other options, but we were unable to find any other viable, nontoxic therapy. Reluctantly, we returned to Children's Hospital for chemotherapy on October 7th. Later, we would find out that the oncologist had contemplated taking Alexander from us with a court order if we resisted.

Slide three, please.

After the first round of chemo, Alexander began to change—constant vomiting, hair gone, dark skin turned pale as a ghost. He got sick with fevers and spent weeks in the hospital. There were blood transfusions and hearing and kidney and liver tests; antibiotics squirted up his nose; injections in his legs; all standard fare with chemotherapy.

Three months after starting chemotherapy and one-fourth the way into a 12-month protocol, Alexander was diagnosed with 30 tumors throughout his brain and spine. We were told that he had about 3 days to live. We were given decadron and morphine and

sent home. But now, with 3 days to live, Alexander met the FDA criteria for Dr. Burzynski's therapy. He had measurable tumors, 30 of them, and he had already had the benefit, so-called benefit, of chemotherapy.

We chartered an air ambulance. The first time Alexander had been to Burzynski's on September 21st, he had joked with the nurses, watched TV and played. Now he was brought in on a stretcher with an escort of emergency personnel.

After fighting like hell to live, Alexander died on January 31, 1999, in my wife's arms. Our son was only 2½ years old.

After Alexander was buried, we wanted to know what happened. Why did he die while receiving "state-of-the-art" chemotherapy?

We started researching the medical literature. What we found stunned us. In 1994, St. Jude's Hospital had given the exact same four chemotherapy drugs to children the same age as Alexander, with exactly the same tumor as Alexander. The protocol had to be terminated because 11 of the 13 children had their brain cancers return and spread in an average of 5 months, just like Alexander's did.

This was hard for us to understand. This so-called state-of-the-art chemotherapy had already been used before and had failed. Why were they giving this to our son now?

We continued our research and found that the chemo drugs that they had given Alexander had been used for over 20 years, and the oncologists were admitting in their journals, in their medical journals, that they were incredibly toxic and ineffective alone or in combination.

Here is a sample of what we had written about chemotherapy—a sample of what they had written about chemotherapy.

If I could have the next slide, please.

This is just a sample. We have over 40 citations in our written testimony.

1985, written by an oncologist, in respect to medulloblastoma and chemotherapy: Responses are generally transient and virtually no cures are reported.

1988: Aggressive treatment of medulloblastoma has not improved survival.

1993: The absolute benefit of chemotherapy for the treatment of medulloblastoma in childhood is, as yet, not proven.

1994: The median time to progression, return of the tumor, was 6 months.

1996: The outcome for the majority of children with malignant brain tumors remains poor, despite surgery, radiation and conventional chemotherapy.

1998: For many years, chemotherapy has been utilized for the treatment of malignant brain tumors with minimal success.

This is what oncologists are writing in their journals.

We wondered what else oncologists were writing in their medical journals and not telling parents or the public. We discovered that chemotherapy wasn't only toxic but it was also highly carcinogenic, according to the NIH and the FDA. This explained why some children treated with chemo actually died from a different cancer.

Can I have the next slide, please?

We wanted to know how the FDA and others could spout encouraging statistics like what we heard earlier when the children were relapsing and dying. We found journal articles that discussed how response rates to chemotherapy could be found where it did not exist.

Others illustrated that a response rate has nothing to do with survival, and others explained that dead children are not counted in the statistics, the theory being that if a child dies while on the chemo protocol, he or she did not have the benefit of the entire therapy and therefore should not be counted.

The medical literature is clear. There is no standard of care for this disease in young children. The FDA policy of not allowing terminally ill children access to other therapies is outrageous. It must be stopped immediately.

My wife now has some final testimony.

Mr. BURTON. I would like to have your entire testimony and all the slides that you have. I want to send all that information over to the FDA for a response from them about that.

The doctor that made the comments about the conventional treatment, we asked him to stay. He left. So we are going to make sure that he has a chance to review this and respond to us.

Mr. HORWIN. Thank you, Mr. Chairman.

Mr. BURTON. Mrs. Horwin.

Mrs. HORWIN. Because the FDA did not allow us to use a therapy that could save Alexander's life, we never gave our son a fighting chance to survive his disease. When conventional therapy has nothing to offer, the FDA should not sentence children to death by taking away an option that could save their life. A parent should have the right to work with their doctor and choose the best nontoxic therapy available when their child has a terminal disease.

Why does the FDA not allow this?

Five days of chemotherapy cost our insurance company between \$23,000 and \$31,000. Alexander's body was a profit center to the drug companies and oncologists. But chemo is an ineffective treatment in pediatric brain tumors.

Faced with a choice, no parent would use it, and that is why the drug companies, through the FDA, make sure there is no choice. We urge the committee to take a hard look at the conflict of interest that exists between the FDA decisionmakers and the drug companies that profit from these decisions. Children should not be used as guinea pigs for profit.

Two hours before Alexander died, he looked at me, and he gave me a little smile. He said, "I love you, mommy."

Our son was our life. We thank you for listening.

Mr. BURTON. Thank you, Mrs. Horwin.

I know that this is a very difficult time for you, but I can tell you that we are checking into the issue you are talking about. We have sent subpoenas to the FDA and HHS and CDC for all the people who are in the decisionmaking process. Our staff has spent many, many, many hours going through to find out if there are conflicts of interest. We believe we have found a number of those in the advisory panels, and we will be holding a hearing on those in the future and releasing that information to the public once we

get through it all, because there is so much of it. But we are looking into it and you can be assured that we will get to the bottom of it.

[The prepared statement of Raphaele and Michael Horwin follows:]

Written Testimony of Raphaelle and Michael Horwin

Hearings on Integrative Oncology - Cancer Care for the New Millennium
Committee on Government Reform
June 7, 2000

A Child has the right to...

Affection, love, and understanding.

Adequate nutrition and medical care.

Full opportunity for play and recreation.

A name and nationality.

Be among the first to receive relief in times of disaster.

Be a useful member of society and to develop individual abilities.

Be brought up in a spirit of peace and universal brotherhood.

Enjoy these rights, regardless of race, color, sex, religion, national or social origin.

- United Nations' Declaration of the Rights of the Child Resolution 1386 XIV, 20 November 1959.

Over forty years ago, those powerful words were written and endorsed by many nations throughout the world including the United States. It is a beautiful declaration but sadly it is only an illusion. The medical establishment took every single one of those rights away from our only child Alexander. Without the right to live, there are no opportunities for affection, play, or love.

Alexander was two years old when he was diagnosed with medulloblastoma, the most common pediatric brain tumor. This cancer is rising in frequency. Alexander was a strong, happy, very intelligent little boy who loved life. He enjoyed trucks and could name various types of bulldozers, backhoe's, garbage trucks, cranes, and tankers on sight. He had a special fascination with airplanes and helicopters and enjoyed his visits to the airplane museum where he could sit in the cockpit of a real helicopter and make believe he was flying. He enjoyed being pushed in a stroller while his mommy roller-bladed behind. He loved taking his daddy down to the boat docks to show him the little animals he had found attached to boat-lines that had lain in the water too long. Of course, he loved the TeleTubbies and Barney and dreamed of the day when he would go to school wearing his little back pack, meet the real-life "Barney's backyard gang," build things, make friends and play. Alexander was a wonderful, handsome, sweet, happy child who was adored by a large extended family. When he was diagnosed with brain cancer we turned to the FDA and the medical profession for help. What happened next none of us could imagine.

After Alexander was diagnosed, we were rushed into UCLA Medical Center for surgery. The neurosurgeon was unable to remove the entire tumor and Alexander needed a second surgery. This second operation was done at Children's Hospital Los Angeles by a wonderful, caring, and experienced neurosurgeon named Dr. Gordon McComb. This second surgery left

Alexander tumor-free. But we were warned that without further treatment this cancer always returns.

We conducted around-the-clock research to find the cancer treatment that offered Alexander the best chance to survive. After scrutinizing therapies and speaking to parents and patients from throughout the world, we selected the Burzynski Clinic in Houston Texas. Burzynski, a MD Ph.D. has a twenty-year track record of curing or controlling the re-growth of malignant brain tumors in children and adults with an innovative cancer therapy. In addition, his therapy is non-toxic and offers a good quality of life.

With this decision made we took Alexander to Houston. There, on September 21st, 1998 Burzynski met with us and gave us the incredible news that he could not treat Alexander. He explained that the FDA controlled his protocols and it required that Alexander have the tumor return in his brain after using chemo and or radiation. We explained that our son had suffered through a total of sixteen hours of brain surgery to be tumor free. Burzynski said his hands were tied. Later, through conversations with other parents, we would learn that the FDA had actively restricted other children from gaining access to this potentially life saving therapy.

This position by our government signed the death warrant for Alexander and many other children. Now, instead of needing a diagnosis of brain cancer to enter the Burzynski Clinic, the FDA was requiring that the child first receive "standard therapies" (chemotherapy and radiation) and have "measurable disease." Alexander did not meet either of these two criteria and that's why, at the age of two, he was rejected.

Back in Los Angeles, we scrambled for other options but we were unable to find any other viable non-toxic therapy that had any record of success with pediatric brain tumors. We spoke with the oncologists at Children's Hospital. Dr. Hyder, the individual who would become Alexander's oncologist, explained that radiation was a poor choice of post-surgical therapy. He explained to us that at two-years old, Alexander was much too-young. Radiation would destroy his developing brain, leave him with severe neurological disabilities and reduce his IQ to around 60, which would mean retardation. But Hyder held out a life raft - chemo. Chemotherapy, he told us, was both effective and relatively safe. Much safer than either surgery or radiation. He told us that in respect to the toxicity, young children do extremely well on chemo. He said that he could give Alexander the latest "state-of-the-art" chemotherapy. He recommended a new protocol called CCG 9921(A) comprised of four drugs: vincristine, cisplatin, cyclophosphamide (also called cytoxan) and etoposide (also called VP16). He told us that chemo would prolong Alexander's life if it didn't save it. He told us that this was Alexander's best hope.

Yet, even with these encouraging promises we still hesitated. The idea of filling our son's body with poisons in order to make him healthy didn't make sense. We continued to pursue Burzynski's therapy. We found that there were several doctors who planned to use this non-toxic approach outside the USA, beyond the reach of the FDA, but they were not up and running yet. The clock was ticking for Alexander. Hyder began pressuring us to start the chemo. We began receiving faxes and phone calls from him that communicated his

impatience with us. The following quotes are taken verbatim from Alexander's medical chart. Each entry is written by Hyder.

September 25, 1998

Mr. and Mrs. Horwin and I discussed treatment options in the office for about two hours...We discussed the risks of chemotherapy at length including low hemoglobin, low white blood cells, low platelets, infection, need for blood transfusion, need for platelet transfusion, pain, nausea, vomiting, hair loss, skin injury, heart damage, lung damage, liver damage, kidney damage, loss of hearing, small stature, hormonal problems such as low growth hormone or low thyroid hormone, infertility, second cancer, intellectual decline, worsening of neurological symptoms, ineffectiveness, and death. Mr. and Mrs. Horwin were quite distressed by all the potential side effects, but I explained that despite all these risks, I believe the potential benefits of chemotherapy in prolonging the length of cancer free survival or possibly cure are greater than the potential risks.

October 2, 1998

...without chemotherapy I am quite certain that the disease will relapse and this could possibly result in Alexander's death. PLANS: We will proceed with chemotherapy like CCG-9921A, as the best available therapy.

October 3, 1998

I received your voice mail message that you have decided not to bring Alexander for scheduled chemotherapy today...Alexander needs chemotherapy now...We need to get chemotherapy started if Alexander is to survive this disease.

October 6, 1998

"About 4:30 p.m. on October 5, 1998, Mr. Horwin telephoned and asked me about a variety of biological therapies such as "nerve cell growth factor," "retinoic acid," and "tumor necrosis factor"...Mr. Horwin asked to use these biological therapies for his son before chemotherapy. I again told him clearly in my professional opinion, chemotherapy is the next treatment to use because of its known clinical efficacy. He was distressed by the limitations of chemotherapy, since treatment is successful in only about 30-40% of children with Alexander's type of cancer...I explained that the best opportunity we have to successfully treat Alexander's cancer is to use chemotherapy now...I reiterated that my best professional advice which is to use chemotherapy now against Alexander's cancer. I spoke to Mrs. Horwin and explained what I had explained to her husband. I told her that my best medical advice is to use chemotherapy for treatment of Alexander's cancer. I told her that without chemotherapy, Alexander may die from cancer..."

After more assurances from Hyder that his drugs would, at a minimum, "buy as time" we brought Alexander in for his first round of chemotherapy on October 7th, 1998. Alexander sat

on his mommy's lap watching his favorite Barney video. The nurse came in the room covered with a protective "spacesuit" that covered her body with blue plastic from head to toe. She hooked up the bottles labeled "biohazard" to the IV pole and connected it to Alexander's port-a-cath that accessed a vein near his heart, the only vein strong enough to take the chemo and not burn clean through. Then she started the drip. We cried quietly as this bottle of poison emptied into our son's body. The nurse warned us not to change Alexander's diapers without wearing gloves. She told us that his urine could burn our hands.

To reassure ourselves, Raphaele and I repeated the words that the oncologists had told us. "We're buying time." And to Alexander we said, "This is medicine that is going to help you."

What we didn't know and what we couldn't possibly know was that those words were delusions.

After the first round of chemo, Alexander began to change. Even after two brain operations, Alexander was still a vibrant, ruddy, strong, energetic child. But as the chemotherapy repeatedly filled his small body Alexander began to die inside. First the relentless stomach pains and the horrendous projectile vomiting began. Then his beautiful curly hair fell out. Next his dark skin tone turned pale as a ghost. He got sick with fevers and spent weeks in the hospital. Then there were the blood transfusions to replace the blood cells the chemo had killed, the hearing tests to see if the chemo drug cisplatin had not devastated too much of his hearing, the nuclear medicine tests to check if his kidneys were not giving up under the strain of processing so much poison, the liver function tests to ensure that his liver was not being destroyed, etc.

During chemotherapy we had to squeeze an antibiotic into his nose called nystatin several times a day. He hated it and buried his face in a pillow when he saw it coming with all the strength his little body could muster. One of us had to pin Alexander down and keep his head immobile while the other pushed the syringe into each nostril and injected the solution. We were also called upon to give him GCSF injections at home. These injections into his legs were designed to raise his blood cell counts. It was horrific. We felt as if we were actively engaged in the slow but sure torture and destruction of our own child.

Then we found the following statement written by Hyder in our son's medical chart. It was dated September 26, 1998:

"Dr. Heideman also called me because he was very concerned about Mr. and Mrs. Horwin...He was very concerned that the family would refuse treatment and that a court order would have to be obtained to treat Alexander."

And on October 6, 1998 Hyder continued:

"I think that if Mr. and Mrs. Horwin do not bring Alexander in for chemotherapy tomorrow, additional steps will be necessary."

We went to see an attorney to find out if the oncologists could take Alexander from us if we decided to stop chemo. Incredibly, the answer was yes. The lawyer explained that the court could take custody until a judge decided what to do. We weighed everything. If we said "no more chemo" to the oncologists we knew that we might get a visit from a police officer and a social worker. Alexander would be taken from us screaming. His last days alive could be spent out of our reach in some kind of foster care environment away from his home, his family, his toys, everything he knew and loved while an over-burdened legal system decided what to do with him. If we agreed to continue chemotherapy the horrific side effects would persist but the oncologists assured us that the treatment would prolong Alexander's life if not save it. If we left the country, we would have our son but no blood tests, MRI's, or follow-up by the surgeons who operated on him. Those were our three choices, one worse than the next.

What do we do? We did not have a choice of therapies. The FDA had taken away our first choice of treatment at the Burzynski's Clinic. The oncologists warned us that if we didn't use chemotherapy that the tumor would probably return in three months. These doctors assured us that the chemo they were administering to our son was the current "state-of-the-art." They told us repeatedly that this was Alexander's best choice for a long and healthy life.

We continued the chemotherapy. As a result of the drugs, Alexander's balance was lost, his ability to see deteriorated, and he lost hearing in one ear. The whole thing was horrendous.

We never stopped looking for alternatives. After three sessions of chemo, we had found a clinic in Switzerland that had a good track record with pediatric cancers using a non-poisonous approach. Raphaelle told Alexander: "No more chemo, Ninouche. It is finished! No more chemo or hospitals!" Alexander was thrilled. "Yeah mommy, no more chemo," he smiled. This was on December 7th, 1998.

But it was already too late. After a "clean" MRI on January 4th, Alexander had a spinal tap. A day later Alexander complained of pain in his head and back and he began to vomit. We asked for another MRI but Hyder, the oncologist, refused because he had done one just a few days previously. Hyder told us that Alexander's pain was just a side effect of the spinal tap. But as each day passed the pain became worse. "Mommy I have pain here and here," Alexander repeated putting his hand on his lower back and on his head. His suffering was increasing. We brought Alexander into the hospital on January 11th and Hyder ordered a CAT scan without contrast. We were told that the scan looked "fine," although later, we would find out that a CAT scan especially one taken without contrast is not designed to reveal the presence of a returning brain tumor. As Alexander's pain continued to increase, Hyder told us to give Alexander Tylenol and "Mountain Dew" - the soft drink because it had caffeine for his headache. Evidently, the young oncologist was still under the impression that Alexander's pain resulted from the spinal tap, but we knew something was wrong. Finally, on January 18th, we brought Alexander into the hospital and demanded a MRI. Hyder refused to order the test. He explained that it was too late in the day to schedule one. We had a confrontation. We would not leave until a MRI was ordered. Finally, Hyder relented. Alexander was wheeled into the MRI suite. We told him that he would sleep for a while and then when he woke up mommy and daddy would be there and we would go home. An hour later we had

the news. It was surrealistic like the first time we were told our precious son has a brain tumor.

Hyder shook his head and told us that Alexander had over 30 tumors throughout his brain and spine.

“What does that mean?” we asked completely stunned.

Hyder just continued to shake his head.

We were ushered out of the MRI suite. Alexander was waking up slowly recovering from the powerful drug nembutal. He smiled because mommy and daddy were standing over him.

“Mommy, I have to throw-up,” he said apologetically and threw up on the floor.

“It is OK Alexander, it is OK Ninouche, mommy loves you so much.”

We were keeping back the tears to maintain our sanity in front of our 2 ½ year-old son. One of Alexander’s neurosurgeons from Dr. McComb’s team stopped in to look at the MRI and then came out to talk with us.

“What is it?” we asked him.

“Leptomeningeal sarcoma. I am so sorry. There is nothing we can do.”

“How is this possible?”

“It happens,” he said.

“How often,” we asked.

“It happens sometimes. I’m so sorry.”

How long does Alexander have,” we asked.

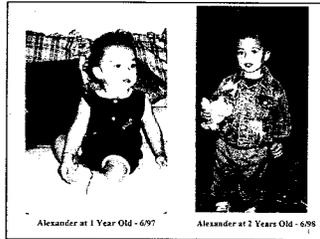
The surgeon paused. “A few days, perhaps,” he said.

We stood silently, holding Alexander’s hands.

“I’m going to ask Hyder what we can do,” I said to my wife.

I returned to the MRI suite.

“The only thing we can do is send you home with hospice care. I’ll give you a prescription for morphine and decadron,” Hyder said as he awkwardly patted me on the shoulder. “I think it is better to keep your son here tonight and you can go home tomorrow,” he added.



Alexander at 1 Year Old - 697

Alexander at 2 Years Old - 698

Possible Side Effects of Chemo

As written by Alexander's oncologist in his medical chart

Chemotherapy Drugs	Possible Side Effects
Protocol CCG9921 comprised of:	<ul style="list-style-type: none"> heart damage lung damage liver damage kidney damage loss of hearing second cancer intellectual decline ineffectiveness death
<ul style="list-style-type: none"> cyclophosphamide (cytoxan) cisplatin etoposide (VP16) vincristine 	



After 1st round of chemo (10/98)

After 2nd round of chemo (11/98)

After 3rd round of chemo (12/98)

What Oncologists Write About Chemotherapy

- 1985 - "Responses are generally transient and virtually no cures are reported."
- 1983 - "Aggressive treatment of medulloblastoma... has not improved survival."
- 1993 - "The absolute benefit of chemotherapy for the treatment of medulloblastoma in childhood is, as yet, not proven."
- 1994 - "The median time to progression (return of the tumor) was six months."
- 1996 - "The outcome for the majority of children with malignant brain tumors remains poor, despite surgery, irradiation and conventional chemotherapy."
- 1998 - "For many years, chemotherapy has been utilized for the treatment of malignant brain tumors with minimal success."

How Data is Manipulated

- Response rate found where it does not exist
- Response rate has nothing to do with survival
- An "active drug" does not lengthen survival
- Dead children are not counted in the statistics

Mr. BURTON. Dr. Geffen.

Dr. GEFEN. Good afternoon. My name is Dr. Jeremy Geffen. I am honored to be here today to speak with you about a subject that I care very deeply about, and to which I have devoted my entire professional career.

I am a practicing medical oncologist and have spent the last 10 years exploring meaningful and responsible ways of integrating the very best available conventional cancer treatments with a wide variety of alternative and complementary therapies. In 1994, I opened the Geffen Cancer Center and Research Institute in Vero Beach, FL, with the vision of providing leadership in this field by creating a model of what truly integrative cancer care would look like, how it would feel, how it would run, what it would offer, and how it would differ from mainstream centers in the way it cared for people with cancer and their loved ones.

My compelling motivation to create such a cancer center appeared in my life 14 years ago, while I was a senior in medical school. In that year, my father was diagnosed with metastatic gastric cancer, and he died less than 4 months later. In a heartbeat, as almost always happens with this disease, my own life—as well as that of my father and everyone in our family—was turned upside down and changed forever.

A somewhat unusual aspect of our situation was that, prior to medical school, I had had years of experience exploring and studying a variety of alternative and complementary approaches to healing. Like so many other cancer patients and family members, I longed for a place to bring my father where he could receive the very best of both worlds; that is, state-of-the-art conventional medicine, along with alternative and complementary therapies, administered in a genuinely open-minded and open-hearted manner.

I firmly believed that this kind of integrative care could help save his life, or at the very least, help improve the quality of his life in the time that remained.

Although I searched everywhere, I could find no such place because it didn't exist. I vowed that 1 day I would build the cancer center that I had been looking for.

A summary of our approach at the Center, including examples from real patients who have gone through our program, is described in my book, "The Journey Through Cancer: An Oncologist's Seven-Level Program for Healing and Transforming the Whole Person," recently published by Crown.

In the remainder of my time today I would like to emphasize two lessons which I have learned in building an integrative oncology program and guiding patients and loved ones on their journey through cancer.

The first lesson is very simple, yet profound, and it is this: Cancer almost always challenges the mind, heart and spirit of patients and their family members as deeply—if not more deeply—than it challenges the physical body.

Unfortunately, even tragically, and as we have heard over and over and over again today, this simple lesson is overlooked by mainstream medicine, and most especially by Medicare and HMOs, as well as the major government and university research institutions and regulatory agencies.

In the urgent, compelling search for newer and better ways to diagnosis and treat cancer—with scientifically based methods, and now with alternative and complementary therapies as well—the person who has the disease, and those who love them, are often left behind.

From my years of experience as an oncologist, and as a friend or loved one of cancer patients, I can tell you with absolute certainty that focusing only on the physical dimensions of this—or any other—disease will never, ever be enough.

Thus, as we begin to embrace a more integrative approach to cancer care, I believe it is time that medicine learns to honor and care for every dimension of who we all are as human beings—physically, mentally, emotionally and spiritually—and that we do so with equal skill and integrity. Nothing less will ever provide the healing and fulfillment that all people seek in life—especially, especially when facing an ordeal as challenging as the journey through cancer.

How we can achieve this is the other lesson I would like to very briefly address this afternoon. First and foremost, we need to clearly acknowledge that this is an area that is worthy of our time and attention, in equal measure to the resources that we give to the biological aspects of disease. We need vastly more significant funding and reimbursement for all kinds of modalities of healing that honor and address the needs of the whole person.

In my opinion, Mr. Chairman and committee members, there is something very deeply flawed about a health care system in which I, as an oncologist, can readily spend tens of thousands of dollars of Medicare funds, with the full blessings of Medicare, to extend the life of an elderly man with advanced lung cancer for perhaps 3 or 4 months, utilizing second, third, fourth, or even fifth-line expensive chemotherapy regimens, growth factors, blood transfusions, CT scans, MRI scans and other costly diagnostic procedures, but I cannot find \$100, or even \$50, for an acupuncture treatment, a therapeutic massage, or a private counseling session for a frightened, terrified, single mother of three children who is battling metastatic breast cancer—and who happens to be sitting in the very next room.

I have faced this circumstance, sad to say, countless times in my career, and I think it is wrong. It is also heartbreaking, frustrating, and, I believe, very short-sighted on our part as a Nation.

Make no mistake, the advances and developments in biomolecular medicine that we enjoy in this country are nothing short of stunning and profound; and we must continue to pursue them with great vigor, focus and attention. In the same way, we must continue and even further expand our explorations of the value and benefits of alternative and complementary therapies.

However, at the same time, we must finally begin to address a deep and fundamental issue. In America, doctors are paid to treat diseases, not to genuinely care in a comprehensive way for the people who have the disease.

Honestly facing this hard truth is, I believe, one of the most fundamental challenges that lies before us today, especially as we begin to explore how we might create a cancer care for the new millennium.

In this process, we must not forget that the system of cancer care that we choose to create will be called upon to meet the needs of real people everywhere, not only people just like you and me but perhaps literally you and me, and people who we know and love who might need that care today, tomorrow and beyond.

In closing, I would like to thank you, Chairman Burton, for your courage in sponsoring these hearings, for your leadership in helping to create an integrative form of cancer care, for opening the minds and the hearts of this government and this country, and for the opportunity and privilege to appear before you today. Thank you.

Mr. BURTON. Thank you, Dr. Geffen.

Just one real brief comment, and that is that there was a movie called *The Doctor*—I think it was called *The Doctor*, wasn't it—about a doctor who was very direct and callous with his patients until he became a cancer victim and went through the whole process, and his whole attitude changed. It is a shame that he had to go through that, and I think your message I hope is heard by physicians all across the country.

[The prepared statement of Dr. Geffen follows:]

United States Congress
Committee on Government Reform
Hearing on: Integrative Oncology: Cancer Care for the New Millennium
June 7, 2000

Testimony of:

Jeremy R. Geffen, MD, FACP
Geffen Cancer Center and Research Institute
Vero Beach, FL

Good afternoon.

I am honored to be here today to speak with you about a subject that I care deeply about, and to which I have devoted my entire professional career.

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A somewhat unusual aspect of our situation was that, prior to medical school, I had had years of experience exploring and studying a variety of alternative and complementary approaches to healing. Like so many other cancer patients and family members, I longed for a place to bring my father where he could receive the very best of both worlds -- that is, state of the art conventional medicine, along with alternative and complementary therapies. I firmly believed that this kind of integrative care could help save his life, or at the very least, help improve the quality of his life in the time that remained.

Although I searched everywhere, I could not find such a place... because it didn't exist, and I vowed that one day I would build the cancer center that I had been looking for. A summary of our approach at the Center, including examples from real patients who have gone through our program, is described in my book, "The Journey Through Cancer: An Oncologist's Seven-Level Program for Healing and Transforming the Whole Person," recently published by Crown.

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Cancer almost always challenges the mind, heart, and spirit of patients and their family members as deeply—if not more deeply—than it challenges the physical body.

Unfortunately—even tragically—this simple lesson is often overlooked by mainstream medicine—and most especially by Medicare, and HMO's, as well as the major government and university research institutions. In the urgent, compelling search for newer and better ways to diagnose and treat cancer—with scientifically based methods, and now with alternative and complementary therapies as well—the person who has the disease, and those who love them, are often left behind.

From my years of experience as an oncologist, and as a friend or loved one of cancer patients, I can tell you with absolute certainty that focusing only on the physical dimensions of this—or any other—disease will never be enough.

Thus, as we begin to embrace a more integrative approach to cancer care, it is time that medicine learns to honor and care for every dimension of who we all are as human beings—physically, mentally, emotionally, and spiritually—with equal skill and integrity. Nothing less will ever provide the healing and fulfillment that all people seek in life—especially when facing an ordeal as challenging as the journey through cancer.

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In my opinion, there is something deeply flawed about a healthcare system in which I, as an oncologist, can readily spend tens of thousands of dollars of Medicare funds to extend the life of an elderly man with advanced lung cancer for perhaps three or four months, utilizing expensive chemotherapy treatments, growth factors, blood transfusions, CT Scans, MRI Scans, and other costly diagnostic procedures....but I cannot find \$100 dollars, or even \$50 dollars, for an acupuncture treatment, a therapeutic massage, or a private counseling session for a frightened, terrified single mother of three children who is battling metastatic breast cancer—and who happens to be sitting in the very next room. I have faced this circumstance countless times in my career, and I think it is wrong. It is also heartbreaking, frustrating, and, I believe very shortsighted on our part as a nation.

Make no mistake: the advances and developments in bio-molecular medicine that we enjoy in this country are nothing short of stunning, and profound—and we must continue to pursue them with great vigor, focus, and intention. In the same way, we must continue and even further expand our explorations of the value and benefits of alternative and

complementary therapies. However, at the same time, we must finally begin to address a deep and fundamental issue: in America doctors are paid to treat diseases—not to genuinely care, in a comprehensive way, for the people who have the disease. Honestly facing this, is, I believe, one of the most fundamental challenges that lies before us today, especially as we begin to explore how we might truly create a “Cancer Care for the New Millennium.” In this process we must not forget that the system of cancer care that we choose to create will be called upon to meet the needs of real people, everywhere—not only people just like you and me, but perhaps literally you and me, and people who we know and love—who might need that care today, tomorrow, and beyond.

In closing, I would like to thank Chairman Burton for his courage in sponsoring these hearings, for his leadership in helping to create an integrative form of cancer care, and for the opportunity and privilege to appear before you today.

Thank you.

Mr. BURTON. Mr. Cary.

Mr. CARY. Yes. Chairman Burton and Representative Horn, thank you for the opportunity to be able to address you today. As the chief operating officer of Cancer Treatment Centers of America, I am ecstatic about being able to talk with you today.

Cancer Treatment Centers of America has been providing comprehensive, integrative care for patients for over 20 years, and the reason we do this is because patients demand it. This innovative approach derives from our corporate mission and vision, and what we look for is figuring out ways to deliver care in such a manner that we can make a difference in the lives of patients, similar to what Dr. Geffen talked about.

Our patient-centered and interdisciplinary approach stands in stark contrast to the traditional allopathic gatekeeper model. Although in our treatment setting the allopathic attending physician retains overall patient responsibility, the integration of complementary oncology services assures better patient outcomes.

What we find by complementary medicine and the integration of complementary medicine is we have fewer side effects. The toxicities of chemotherapy, radiation and surgery are much diminished by finding ways to buildup the immune system.

We also find—it is anecdotal, I would admit, but we also find that we have improved tumor response, and we have fired up immune system, and we believe that that also contributes strongly to patient outcomes and the responses our patients get. This is in sharp contrast to what happens today in our conventional systems. As the doctor is the gatekeeper, he is making the decisions. In our centers, the approach is that the patient is in the middle of the decision, and they choose which services they want and don't want. However, the doctor does—the allopathic doctor does continue to remain in control of their care.

Our unique and comprehensive integrated oncology approach does begin with the best of conventional treatments. We do everything from bone marrow transplant to high-dose rate brachytherapy for prostate cancers, to photodynamic therapy for lung cancers. We are into biological and gene therapies as well as surgery, but we believe that the complementary therapies that we integrate into patient treatment plans by a multidisciplinary team adds so much to the value and the outcome and the quality of life of our patients.

The National Center for Complementary and Alternative Medicine describes complementary medicine as those medical practices not currently integral—an integral part of the conventional medicine. While this is true, that so-called conventional medicine overlooks many of the great traditions in nature and holistic medicine. The integration of these practices is the foundation of our treatment.

So, again, what we want to be able to do is to take the best of conventional medicine and integrate that with more natural medicines.

You know, many patients around the country who are treated only with conventional therapies suffer greatly. They tend to sometimes even discontinue their treatment because of the side effects

of treatment. Sometimes it is so toxic and so bad they can't continue.

With the use of many of the naturopathic or complementary medicine therapies, we find that patients can tolerate therapy much better. Recent studies, and you have heard as well today, indicate that 40 to 72 percent of all cancer patients utilize complementary medicine or alternative medicine. The sad news is that less than 50 percent of these patients disclose this to their oncologist, and there can be contraindications, as you heard today, and it turns into disjointed or unproductive care.

Cancer patients have traveled hundreds of miles and, in many cases, thousands of miles to come to our hospitals. We have had patients from all 50 States and 45 foreign countries. So if the question is do patients want alternatives to just conventional, we would have to say emphatically yes.

What we do is we integrate five therapies, complementary therapies, into our conventional program. Without going into great detail with them, they include: Therapeutic nutrition. These are therapies that work to enhance the body's immune system and get the body's immune system to be on the attack instead of being one of the problems to their potential outcome.

Spirituality is another important part of our treatment process. Meeting the spiritual needs of patients with cancer is critical. I can give many examples of that.

Psychoneuroimmunology, or what is also called mind-body medicine, allows us to be able to destress the patient and allow the patient to focus their energies toward healing and getting better.

And then we have exercise and massage therapies. We work to restore the highest level of immune function by making the body more physically fit.

Cancer Treatment Centers of America is the only hospital system in the United States that has naturopathic physicians—practitioners working alongside medical oncologists, and the intent of the naturopathic practitioner is to find natural nontoxic therapies to be able to work along with the allopathic oncologist.

The benefits that we have seen from this is increase in efficiencies of the traditional medicines, the body to heal itself and reduce side effects.

A brief point on reimbursement. In November 1998, the Journal of the American Medical Association stated that the majority of patients receiving complementary care paid for it out of their own pocket. What we have created in our society is a two-tiered system. Those who can pay for the treatments or can buy a premium health insurance seek out alternative care, seek out locations where they can get that; those who don't sometimes are relegated to having to go a conventional route and try to pay for it out-of-pocket. Because of the lack of reimbursement for complementary therapies from Medicare and other insurers, the majority of hospitals have been reluctant to finance these therapies.

In brevity, I come from Chicago. One of our hospitals is in Chicago. Recently, the Metropolitan Chicago Health Council stated that 50 percent of the 130 hospitals they represent are losing money.

With the Balanced Budget Act, which is going to be instituted in August of this year, they are projecting 70 percent. With hospitals struggling to survive, it becomes more difficult for them to be able to fund complementary care for their patient and to address that issue.

As far as the choice issue, at Cancer Treatment Centers of America we never make a choice whether a patient should get complementary care, whether an insurance company is going to pay for it or not. We do not believe that the care provider should be put in that position. We believe that it is important to stand up now. It is important that we start here with Medicare and then work with other insurances to get these complementary therapies approved.

We take too long taking some of these therapies from the lab bench to the patient's bedside, and if I could implore anything upon you today it would be to move with a lot more speed.

The time for action is now. We need to stand tall, make it happen. We need to do something which we coined as the "mother standard". We need to do whatever it takes to make a difference in the life of patients. My own mother had a bout with breast cancer, as well as the chairman of our company. If we can treat each patient with the same care that we would want one of our loved ones, we will do whatever it takes to make a difference in the lives of patients, and I believe we, starting today, can do that.

I thank you for the time.

Mr. BURTON. Thank you, Mr. Cary. I have had a chance to meet some of the people with your company, and I was very impressed with them and the work they do.

[The prepared statement of Mr. Cary follows:]

**TESTIMONY OF ROGER CARY BEFORE THE HOUSE COMMITTEE ON
GOVERNMENT REFORM HEARING ON "INTEGRATIVE ONCOLOGY:
CANCER CARE FOR THE NEW MILLENIUM"**

June 7, 2000

Chairman Burton and other distinguished members of the House Committee on Government Reform, as the Chief Operating Officer of Cancer Treatment Centers of America, I am honored to be invited to testify on "Integrative Oncology: Cancer Care for the New Millennium".

Cancer Treatment Centers of America provides comprehensive, integrative, oncology care for all of its patients because that is what they demand. This innovative approach derives from our corporate vision and mission to combine the best of complementary therapies with those of conventional therapies to truly make a difference in the lives of those we serve.

Our patient-center and interdisciplinary approach stands in stark contrast to the traditional allopathic gatekeeper model. Although, in our treatment setting the Allopathic attending physician retains overall patient responsibility, the integration of complementary oncology services assures better patient outcomes. These outcomes include fewer side effects from chemotherapy, radiation therapy, and surgery, improved tumor response, enhanced immune system functioning, and a much improved quality of life. By being patient-centered our patients remain in control of the choices for their treatment. This is in sharp contrast to the many patients that feel a loss of control who are treated conventionally.

Our uniquely comprehensive and integrated oncology approach begins with the best of conventional treatments and services. These include the latest advancements in radiation therapy (including 3D conformal and Intensity Modulated Radiation Therapy), High-Dose Rate Brachytherapy, Bone Marrow Transplantation, Photodynamic Therapy, Chemotherapy, Biological and Gene Therapies and Surgery. Complementary therapies are integrated into patient treatment plans by a multi disciplinary staff of professionals. The National Center for Complementary and Alternative Medicine describes complementary medicine as "those medical practices not currently an integral part of conventional medicine." While it is true that so-called conventional medicine overlooks many of the great traditions in natural or wholistic medicine, the integration of these practices forms the foundation of our treatment.

Cancer Treatment Centers of America's complementary medicine includes the use of therapeutic nutrition, Psychoneuroimmunology (mind-body medicine), spiritual care and support, exercise therapies, and Naturopathic Medicine (lifestyle modification, vitamin/mineral supplementation, herbal and homeopathic medicine.)

Many patients treated with only conventional therapies suffer greatly from their treatment. In fact, patients have often discontinued treatment where only conventional therapies are provided because of the side effects, which may include nausea, diarrhea, vomiting, fatigue, and a diminished immune capacity. Recent studies indicate that 40 to 72 percent of all cancer patients utilize some form of complementary or alternative medicine. Less than 50% of these patients, disclose this to their conventional medical oncologists. This has resulted in sometimes inappropriate therapeutic combinations, disjointed and unproductive care.

Cancer patients have traveled hundreds, and in many cases thousands, of miles in search of our uniquely comprehensive and integrated cancer program. To date, we have served patients from all 50 States, and 45 foreign countries. These patients come to us not only because of the excellent conventional therapies we provide, but also because these therapies are integrated with:

Therapeutic Nutrition

The National Cancer Institute has stated that over forty percent of cancer patients die from malnutrition. With our aggressive and pioneering nutrition and vitamin supplementation programs we help patients build up their body's own defense reservoirs. The patient's enhanced nutritional status becomes a weapon in their fight against cancer, not an impediment.

Spiritual Care

Cancer Patients and their families are faced with spiritual issues during their fight. Therefore, effective pastoral care is an integral part of our patient care programs. Our programs are based on creating an atmosphere that contributes to healing and wholeness in the context of whatever spirituality the patient expresses.

Psychoneuroimmunology (Mind-Body Medicine)

The Mind-Body Connections program helps cancer patients and their families explore and experience the unique healing capacity of their body, mind, and spirit at all levels. Using research-based methods developed during the last two decades, we enhance their immune system function by directing the patient's energies toward healing and getting well again.

Exercise and Massage Therapy Programs

Research studies have shown a relationship between exercise and improving the function of the immune system by triggering a response of the body's natural defense system. Each patient receives massage therapy and an individual exercise plan that is personalized to maintain or restore the highest level of immune function possible.

Naturopathic Medicine

Cancer Treatment Centers of America is the only hospital system in the country in which on-staff practitioners of Naturopathic medicine work side-by-side with oncologists as an integral part of the cancer treatment team. The practice of Naturopathic medicine blends centuries of knowledge about natural, nontoxic therapies with current advances in the understanding of health aimed at stimulating the body to heal itself. Using a wide range of natural therapies, Naturopathic practitioners will work to augment the immune system and increase the effectiveness of conventional cancer treatments while reducing side effects.

REIMBURSEMENT OF COMPLEMENTARY THERAPIES

In November 1998 the Journal of the American Medical Association stated that the majority of patients receiving complementary therapies paid all of the cost of same out of pocket. This has set up a two-tiered oncology treatment system, wherein those who can afford to pay out of pocket or purchase a premium health policy, may choose to receive

an integrated approach to their treatment, and those who can not receive only conventional options. Whatever complementary services they seek will be "cash and carry." If they can afford them, and inevitably disjointed, not comprehensive and integrated.

Because of the present lack of reimbursement for complementary therapies from Medicare and other insurers, the majority of hospitals have been reluctant to finance these additional therapies. This is in part because of the present precarious financial status of hospitals. In the Chicago area (where one of our hospitals resides), the Metropolitan Chicago Healthcare Council reported that 50% of all its member hospitals were operating in the red this year. With the enactment of the Balanced Budget Act scheduled to take effect in July, 2000, the Council is projecting that 70% of its members will operate in the red next year. With this struggle for survival, it should not surprise us to find hospitals reluctant to embrace complementary medicine, especially when there is little to know reimbursement available for these services.

AT CANCER TREATMENT CENTERS OF AMERICA THE PATIENT CHOOSES WHAT COMPLEMENTARY SERVICES THEY DESIRE

The choice as to what complementary services are integrated into conventional cancer care should never be one of whether the insurance provider will pay for required services. Because of our patient-centered mission/vision, our patients make the choice as to what complementary services they desire to integrate into their treatment. We have a "mother standard" at Cancer Treatment Centers of America. Every patient that enters our doors is treated as if they were our mother. With this standard, we have an imperative to provide the best, the most comprehensive, the most empowering, seamless and integrated care available.

At present, our physicians prescribe appropriate complementary medical services even if the patient's insurance provider will not cover the services. This has become increasingly challenging, and a near impossibility, because of continued reimbursement reductions for conventional therapies.

A TIME FOR ACTION

In short, the American public demands a more comprehensive, empowering and wholistic array of natural, traditional and complementary services in conjunction with their conventional oncology care. They know they will do better with an integrated approach to their needs, and so do we. It is time now to "stand tall," beginning with the Medicare Program, and add reimbursement for complementary therapies. Specifically, Naturopathic physicians should be defined as physician providers under federal regulations, including Medicare and Medical Savings Accounts. Other insurance providers will follow your lead and this will encourage more hospitals and medical practitioners to utilize an integrated approach in the fight against cancer. Working together, we can provide the "mother standard" of integrated care to all of our citizens across our United States of America, regardless of race, creed or socio-economic status.

Mr. BURTON. Mr. Devries.

Mr. DEVRIES. Good afternoon, Mr. Chairman and Congressman Horn. I am pleased to be before you to discuss insurance coverage issues on complementary and alternative medicine.

I am the chairman, president and CEO of American Specialty Health. My company is a specialty health services organization for complementary and alternative health care. We provide specialty health plans, networks, managed care programs and discount provider networks for chiropractic, acupuncture, massage therapy, dietetics and naturopathy. American Specialty Health assists health plans and insurance carriers in providing CAM programs for their covered members. When health plans and insurance carriers offer CAM programs, they currently often outsource the provision and administration to companies like ours.

American Specialty Health currently covers 25 million Americans through 68 health plans under CAM discount network programs, benefit programs and network programs.

There has been, over the last 10 years, we all know, a surge in interest in complementary and alternative health care. Dr. David Eisenberg's two studies at Harvard University have shown the dramatic increase of interest by consumers in the use of various complementary and alternative health care therapies over the last 10 years.

Basically, in another study conducted by the International Society of Employee Benefit Specialists, they surveyed employee benefit specialists, those people with employer groups and union trust funds who help their organizations make decisions on which employee benefits to cover. Basically, two-thirds of those employee benefit specialists expect to see an increased coverage of CAM in the future, and that's basically certainly driven by the consumer interest in complementary and alternative health care in the direction we see consumer interest driving employers to go ahead and offer coverage in these areas.

I personally speak with three to five health plans that offer or are considering offering complementary and alternative health care services for their enrollees and generally find significant interest. The question that really comes up is what approach will the health plan take?

Most health plans have a lack of understanding and experience in working with complementary and alternative health care and many are choosing to start with a simpler approach through a network discount program.

Under a network discount program, the health plan does not actually provide a covered benefit program but offers their members access to a credentialed network of complementary and alternative health care providers such as chiropractors, acupuncturists, massage therapists, naturopaths and dietitians. The members still pay, they still self-pay for services. However, they are able to obtain these services at a discount from a credentialed prescreened provider.

The CAM provider who participates in these programs, we believe, benefits since major health plans are promoting and encouraging the use of complementary and alternative health care to

their enrollees and giving significant public visibility of these programs.

Invariably we see, as employers have exposure to the discount network programs and they see the interest in complementary and alternative health care on the part of their employees, that those employers invariably come back and are asking health plans, well, the discount network was a nice start but how do we go to the next level and actually obtain coverage for our employees for complementary and alternative health care?

We really see that it is coming along three different levels where the benefits are being—and it is really just in the beginning stages, but where they are beginning to be incorporated.

The first is really through employer-sponsored health plan programs where the health plans create supplemental benefit programs for services like chiropractic or acupuncture, massage therapy or naturopathy, and where employers are able to purchase a supplemental benefit program for complementary and alternative health care, much like they would purchase a dental or a vision program.

The second area we see of great interest is MedicarePlus Choice plans. As Dr. Kang had mentioned in his written comments earlier, written testimony earlier, that as HCFA provides prospective payment to certain MedicarePlus Choice plans, they certainly have the ability to enhance benefits that they provide for their members, and we have certainly seen MedicarePlus choice plans who, for example, provide coverage for acupuncture, even though they are under no mandate to provide such.

The third area in terms of benefit coverage is coming through State mandates, where certain States legislatively are requiring health plans and insurance carriers in their States to provide coverage for complementary and alternative health care. The State of Washington probably has the broadest mandate for alternative health care, but there are many other States, also.

From our perspective, we believe that CAM has become an important part of the average American's personal health care system, that when you talk to most Americans now they will not only talk about their primary care physician, perhaps a specialist like an OB/GYN, but they will also talk about their chiropractor; they will talk about the acupuncturist who is treating their mother; they will talk about their vitamins or herbal supplements; they will talk about other types of complementary and alternative health care.

We still have a long way to go before our complementary and alternative health care is fully integrated into our health care system, but I believe that there are a variety of steps the Federal Government can take to support the development of complementary and alternative health care in our country and specifically within third-party reimbursement systems.

Quickly, those are, No. 1, the Federal Government can encourage States to enact licensure statutes and procedures for providers. For example, naturopathic physicians are only licensed in 11 States. Acupuncturist licensure or certification varies significantly among the approximately 30 to 40 States where they are licensed or certified, and these disparities create unequal access to complementary and alternative health care for Americans in these various

States. This certainly could be corrected by providing CAM benefits for Medicare beneficiaries which would stimulate licensure in those States or the consistency of licensure.

No. 2, the Federal Government can support and encourage the accreditation of schools and universities that train providers in complementary and alternative health care. The U.S. Department of Education and the Department of Health and Human Services ought to explore ways to achieve this objective the way it has for chiropractic.

No. 3, the Federal Government should promote and fully fund research on the clinical efficacy of complementary and alternative health care, and this would mean the continued funding expansion of the National Center for Complementary and Alternative Medicine at the NIH.

No. 4, the Federal Government should promote tax equality employee benefit plans allowing coverage of CAM benefits like dietary supplements. Legislation such as H.R. 3306, which has been introduced by you, Mr. Chairman, would create tax incentives and a quality necessary to create benefits in health plans for nutritional supplements. I personally know of Fortune 500 companies who have expressed interest in obtaining such coverage but will not because of the tax issue.

No. 5, the Federal Government should promote and encourage complementary and alternative health care education at U.S. medical schools.

Really, those are the five areas which I believe would significantly and positively impact the introduction of complementary and alternative health care into third-party reimbursement systems.

Thank you for your time. I will be pleased to answer any questions.

Mr. BURTON. Thank you for being with us. We appreciate your statement and your recommendations.

[The prepared statement of Mr. Devries follows:]

**TESTIMONY OF GEORGE T. DEVRIES,
PRESIDENT & CHIEF EXECUTIVE OFFICER,
AMERICAN SPECIALTY HEALTH INC.,
SAN DIEGO, CALIFORNIA
BEFORE THE U.S. HOUSE OF
REPRESENTATIVES COMMITTEE ON
GOVERNMENT REFORM
JUNE 7, 2000**

**“INTEGRATIVE ONCOLOGY—CANCER CARE
FOR THE NEW MILLENIUM”**

**HEALTH INSURANCE COVERAGE ISSUES
COMPLEMENTARY & ALTERNATIVE
HEALTHCARE**

Good afternoon Mr. Chairman, and members of the committee. I am pleased to be before your committee today to discuss insurance coverage issues on complementary and alternative medicine.

I am the Chairman, President, and Chief Executive Officer of American Specialty Health Inc., (ASH) a company I co-founded in 1987. My company is a health services organization for complementary and alternative health care (CAM). We provide specialty health plans, networks, managed care programs, and discount networks for chiropractic, acupuncture, massage therapy, dietetics, and naturopathy. American Specialty Health assists health plans and insurance carriers in providing CAM programs for their covered members. When health plans and insurance carriers offer CAM programs, they often outsource the provision and administration to companies like ours.

ASH currently covers approximately 25 million Americans through 68 health plans under CAM benefit programs, network programs, and discount network programs.

There has been a surge in interest in CAM care over the last decade. The Eisenberg study conducted at Harvard University and published in the New England Journal of Medicine reported more than two thirds of all Americans use some form of CAM health care during their lives. In another study, conducted by the International Society of Employee Benefit Specialists, sixty-seven percent of employee benefit specialists expect to see increased coverage of CAM in the future.

I personally speak with three to five health plans per week that offer or are considering offering CAM services for their enrollees. In general I find significant interest. The question that comes up is what approach will the health plan take.

Most health plans have a lack of experience and understanding of CAM. Many are choosing to start with a simple approach, through network discount programs. Under a network discount program, the health plan does not actually provide a covered benefit program but offers their member access to a credentialed network of CAM providers such as chiropractors, acupuncturists, massage therapists, naturopaths, and dieticians. The member still pays self-pays for services. However, they are able to obtain these services at a discount from a credentialed, pre-screened provider. The CAM provider benefits since major health plans are promoting and encouraging the use of CAM to their members.

Discount network programs provide high visibility for CAM. Inevitably, employer groups begin to request access to covered benefit plans for CAM from their regular health plans. Employers are interested more than ever in attracting and retaining top talent in their organizations. Expanding their employee benefit

plans by adding coverage for CAM benefits gives employers an edge over their competitors.

Benefit programs are gaining employer interest. Typically health plans are offering supplemental benefit programs for services such as chiropractic, acupuncture and massage therapy. Supplemental Benefit Plans are offered much like a dental or vision plan. Employers purchase for their employees CAM benefits to add to their basic medical plan.

A key area of development in CAM is the concept of integrated health care clinics which combine both traditional medicine and CAM in their practice. In integrated clinics, there are medical physicians practicing side-by-side with chiropractors, acupuncturists, naturopaths, and massage therapists. They develop coordinated care plans based upon what is the best outcome for the patient. There are a number of these clinics in operation or planned. It is still a question whether health plans will cover services at these clinics or not in the future.

We should recognize that CAM is an important part of many Americans' personal health care system. This system includes their family physician, their specialist physician like an OB/GYN, and also includes their chiropractor, acupuncturist, massage therapist, and their dietary supplements like vitamins and herbal supplements. When the devastation of cancer strikes, many find significant support and relief from acupuncture, massage therapy and chiropractic. For example, it is well known and documented that pain relief can be obtained by acupuncture without the sedative and doping effects of narcotic painkillers. Your senate colleague, Senator Tom Harkin of Iowa knows first hand and speaks eloquently how CAM helped his brother live out his final days with cancer with a high quality of life free from pain, all from acupuncture treatments.

We still have a long way to go before CAM is fully integrated into our health care system. There are a variety of steps the Federal Government can take to support the development of CAM in our country and specifically within third-party reimbursement systems. These are:

- 1) The federal government can encourage states to enact licensure statutes and procedures for providers. For example, Naturopathic physicians are only licensed in eleven states. Acupuncturist licensure or certification vary significantly among the approximately 30 states where it is licensed or certified. These disparities create unequal access to CAM care for Americans in the various states. This could be corrected by providing CAM benefits for Medicare beneficiaries that would stimulate licensure in the several states.
- 2) The federal government can support and encourage accreditation of schools and universities that train providers in CAM. The US Department of Education and the Department of Health and Human Services ought to explore all the ways to achieve such an objective.

- 3) The federal government should promote and fully fund research on the clinical efficacy of CAM. This would mean the continued funding and expansion of the National Center for Complementary and Alternative Medicine at the NIH.
- 4) The federal government should promote tax equality in employee benefit plans allowing coverage of CAM benefits like dietary supplements. Legislation such as HR 3306, introduced by you Mr. Chairman, would create the tax incentives and equality necessary to encourage covered benefits in the health plans. I cannot stress enough how important this is. I personally know of Fortune 500 companies who have expressed interest in obtaining such coverage but will not because of the tax issue.
- 5) The federal government should promote and encourage CAM education at U.S. medical schools.
- 6) The NIH Consensus Statement on Acupuncture, published in 1997, encouraged coverage for acupuncture under Medicare and Medicaid.

I will be pleased to answer any questions you have.

Mr. BURTON. Mr. Navarro, I understand you had a brief statement you wanted to make. Do you feel a little bit more secure now and relaxed?

Mr. NAVARRO. Thank you, Mr. Chairman. I apologize for not following your instructions a little more clearly.

Mr. BURTON. No, that's all right.

Mr. NAVARRO. As you know, my name is Jim Navarro; and I am the father of Thomas Navarro, who is a 4-year-old victim of cancer. My son Thomas has medulloblastoma, which is a brain tumor located on the cerebellum. He was diagnosed with his illness September 17, 1999.

I cannot begin to tell you the impact the news had on his mother and me, and his brothers and sister. To say that it was overwhelming is an understatement compared to what we dealt with afterwards. It was the lesser of two evils, for the evil that was perpetrated against our family was the reality that we, as parents, had been stripped of our rights to make life-and-death decisions for our son. You see, we had discovered, much to our horror, that as parents of a terminally ill child we were no longer deemed intelligent enough or responsible enough to make decisions regarding our son's care. We had been stripped of our freedom, the freedom of choice.

So I am here today in an effort to answer the question that has haunted his mother and me since that dark day in September. The question is: Who decides? Who decides which doctors will treat my son? Who decides which medicines will be introduced into his body to fight this disease? Who decides whether he lives with dignity and quality of life or dies as some doctor's clinical experiment?

If any of you here today can answer this question, please tell me, who decides?

Since those early days in September when Thomas was first diagnosed, we have been challenged as to our capability. We have been challenged as to the type of parents we are. Our integrity has been brought into question. Our name has been attacked. We have been threatened with the loss of our child, not by the disease that he fights but by the Child Protective Services acting as the strong-arm enforcers of the medical community.

To me, it is a grievous injustice in this country we call America that we as parents do not have the right to do that which we feel is best for our son. Our decisions regarding Thomas' health have not been made out of emotion but by the sheer will and determination to see our son survive when all others have said he will not live.

I do not want my son kept alive using radiation and chemotherapy so that some doctor can say he reached a 5-year survival rate, so that some doctor can say he is a smashing success, when in reality history of this disease tells us that he will be left severely damaged as a result of the devastating side effects of the chemo and radiation.

In the process of doing what we felt would be best for our son, we have paid a very heavy price. It has cost us our home, our business and our friends. But it is a price that we would gladly pay again for the results that we have achieved to date. Those results are that our son is winning his fight against his illness, not be-

cause of radiation and chemotherapy but because we found an alternative therapy that has not only shown to be winning against his cancer but it has allowed him to maintain his dignity and quality of life.

Mr. Chairman, I ask that this hearing not be a time of petty jealousies being brought to light in the medical community but that it be a time the world be made aware that if we dare call ourselves Americans that we be allowed to live as a free people, free to make our own choices, free to pick our own doctors, free to pick our own treatments, free indeed to decide our own destinies.

It is time to say good-bye to the old way of thinking. It is time to say good-bye and time to embrace the future, a future of new ideas, a future of alternatives.

Radiation and chemo have left in their path a grim testimony, a lineage that my wife and I have seen over the past months of death and despair; a path of children left blind, sterile, retarded, mentally and physically damaged by the excellent results of conventional medicine.

Mr. Chairman, every child that was diagnosed with my son from the day he first became ill we have buried, and what discourages me about today is that the very doctor who has sat in judgment over my son and denied him access to medical attention that we choose best and denied him freedom didn't even extend to me the courtesy to stay here and hear me speak, and I have traveled thousands of miles from a foreign country to spend 5 minutes with you.

I understand he has an important job as a Director at the FDA, but I, too, like many other parents, have a very important job, and that is that I am the father of a terminally ill child and it is my solemn duty to keep him alive and healthy and happy.

Thank you, sir, for your time.

Mr. BURTON. Well, I can assure you he will get a copy of your statement.

Mr. NAVARRO. Thank you.

[The prepared statement of Mr. Navarro follows:]

Thomas Navarro's Story**Testimony of James Navarro
Before the Government Reform Committee Hearing
Cancer Care for the New Millennium – Integrative Oncology
June 7, 2000**

Four-year-old Thomas Navarro of Tucson, Arizona, and his family are in the midst of battling for his life. Thomas's story illustrates how Americans do not have the freedom to choose the medical treatment they want for themselves or their children. This story also shows how a government agency, the FDA, has the power to make life and death decisions for individual Americans. When the Navarros took up this fight, they could never have known that today, seven and a half months later, they would have had to take Thomas out of the country for a different treatment while still awaiting the therapy they want Thomas to have.

Thomas has a medulloblastoma brain tumor. Although the entire tumor was removed surgically in September of 1999, this type of tumor *always* recurs. When Thomas's parents, Jim and Donna Navarro, discovered this fact, they did a lot of research and decided on a nontoxic treatment. This treatment would preserve Thomas's quality of life and offer him a real chance at a cure. But Thomas's doctors want him to have a combination of chemotherapy and irradiation. The Navarros know this combination will cause serious, life-threatening, and permanent side effects. Because they do not agree with the Navarros' treatment choice, Thomas's doctors contacted child protective services in Tucson, Arizona, where the Navarros live. As a result, Thomas, his parents, and his little brother, Patrick, and his family have been living away from home in hotel rooms in Texas, since before Thanksgiving. If they return to Tucson, Thomas and Patrick may be taken away from them.

The nontoxic treatment the Navarros chose is therapy with *antineoplastons*, offered by Stanislaw R. Burzynski, MD, PhD, of Houston, Texas. Dr. Burzynski discovered these drugs and has been refining them for over 25 years. He manufactures antineoplastons in a state-of-the-art, FDA-approved facility.

The most exciting and promising new direction of cancer research is into the body's own natural defense systems against cancer. Dr. Burzynski is far ahead of all cancer researchers because he has been using the body's defense systems to fight cancer in humans using antineoplastons. Not only has Dr. Burzynski done years of preclinical (in test tubes and animals) testing on antineoplastons, he has been using them to treat patients with terminal cancer for over 20 years. Currently, Dr. Burzynski is conducting 74 FDA-authorized clinical trials, 72 in cancer, 1 in HIV, and 1 in other immune disorders.

Most cancer experts agree that each of us develops cancer hundreds if not millions of times during a lifetime. Given the trillions of developing cells, the millions of errors that can occur in the differentiating (maturing) process of each cell, and our constant exposure to carcinogenic substances (e.g., smoke, car exhaust, and radiation), the laws of probability dictate that mis-developing cells must occur frequently in the life of every person. It therefore stands to reason

that a healthy body has a corrective system to “reprogram” newly developed cancer cells into normal differentiation pathways before cancer can take hold.

Cancer cells differ from healthy cells in that they are immortal. Healthy cells live for a short time and then die, whereas cancer cells continue to divide. The program for cell death in cancer cells never is activated. Dr. Burzynski’s antineoplastons suppress the activity of oncogenes that cause cancer; at the same time, antineoplastons stimulate the activity of tumor-suppressor genes, which stop cancer.

Antineoplastons are peptides, small proteins, and amino acid derivatives that are found naturally in the human blood. Cancer patients tend to have low levels of antineoplastons—as little as 2% of that of healthy persons. Antineoplastons work to reprogram cancer cells to die; however, these drugs do not affect healthy cells, as do traditional chemotherapy and irradiation. Thus, antineoplastons are nontoxic. Antineoplastons have been shown to work particularly well on brain tumors. Because they are nontoxic, children as young as 3 months of age can be given antineoplastons without incurring any lifelong physical or mental deficits at all. This is not true with even the most advanced treatments being offered today.

However, the FDA says that because Thomas has not had chemotherapy and radiation therapy, he cannot be enrolled in Dr. Burzynski’s Protocol BT-12 for medulloblastoma. Furthermore, the FDA refuses to give Thomas the status of being a “Special Exception,” which is routinely given in clinical trials run by large pharmaceutical firms. The FDA also has refused to allow Dr. Burzynski to open another protocol for Thomas and other children like him, protocol BT-29. Protocol BT-29 would allow children without measurable tumor and who have not had chemotherapy and radiation therapy to be treated with antineoplastons.

Over the past seven and a half months, the Navarros have begged the FDA for Thomas’s life. They just want Thomas to be treated with antineoplastons. Dr. Burzynski has complied with all of the FDA’s requests, to no avail. (Sadly, the requests seem to be stalling tactics.) For months now, since October of 1999, the FDA has refused their request. Thomas’s time is running out.

After asking Dr. Burzynski to submit a new protocol under which Thomas can be treated (another stalling tactic), the FDA wrote that “Protocol BT-29 remains on clinical hold due to the absence of adequate evidence to support the use of antineoplastons as adjuvant therapy for patients with primitive neuroectodermal tumors (PNET) [also called medulloblastoma] in view of the excellent results attainable with standard therapy.”

The results the FDA calls “excellent” are accompanied by severe, permanent neurological deficits from chemotherapy and radiotherapy. The younger the child the worse the deficits, and Thomas is very young. The FDA is very aware of these facts. An article entitled, “Survival and Neurodevelopmental Outcome of Young Children with Medulloblastoma at St. Jude Children’s Research Hospital (Walter, Mulhern, Gajjar *et al.* *Journal of Clinical Oncology* 1999 Dec; 17(12):3720-3728) states that “Young children treated for medulloblastoma are at especially high risk for morbidity and mortality from their disease and therapy.” The authors also state: “All patients [average age 2.6 years] lost cognitive function during and after therapy at a rate of minus 3.9 intelligence quotient points per year. Sensory functions declined significantly after therapy.

All long-term survivors required hormone replacement therapy and had growth abnormalities.” These authors’ have concluded that “All patients treated in this fashion [with chemotherapy until either the disease progressed or the child was old enough for radiation therapy, termed *salvage radiation*] have significant neuropsychologic deficits.” (In general, children under 4 years of age are not given irradiation because it is too dangerous.)

In great contrast, Dr. Burzynski has treated and currently is treating quite a few children with brain tumors under FDA-approved clinical trials. These children are doing very well. Children who have not had chemotherapy or radiotherapy fare much better than those who have had these treatments. One perfect example is Dustin Kunnari. Dustin is now 8 years old, tumor-free, and perfectly normal physically and neurologically. He is cured of medulloblastoma. Chemotherapy and radiation therapy cannot offer a cure. Moreover, Dustin has none of the permanent debilitating side effects that he would have been burdened with had he had chemotherapy at two and a half years of age, when he was diagnosed. In fact, Dustin most likely would not be alive today if he had not been treated with antineoplastons. Instead, he is a healthy, happy, beautiful little boy. Dustin’s parents also were threatened with having him taken away from them if they would not allow him to be treated with chemotherapy. Luckily for Dustin, his parents, Jack and Marianne Kunnari, would not relent. (Note. Dustin was treated by Dr. Burzynski legally in the state of Texas before the clinical trials were opened, and thus, he did not have to have chemotherapy plus irradiation before being treated with antineoplastons.)

Dr. Burzynski may very well have a cure for childhood brain tumors, one without all the permanent, devastating side effects of standard treatments. These so-called state-of-the-art treatments are nothing more than the same old thing, chemotherapy with toxic drugs and irradiation, just in different combinations and different dosages. Antineoplastons should have been approved long ago, by the FDA’s own standards. Many drugs that are far less effective have been approved for cancer.

Over 10 years ago, in 1989, Dr. Frank E. Young, former FDA commissioner, wrote that the FDA does not insist on evidence of improved survival, on particular designs of trials, or studies in large numbers of patients before approval. He also wrote the following: “The FDA considers all standard endpoints when evaluating a drug for approval: tumor response rate, time to progression, survival, and various indices of quality of life.” (Antineoplastons have far surpassed all these criteria.) Dr. Young also said the following:

“Even when survival is considered a critical endpoint, what the FDA really seeks is evidence that survival is not reduced compared with standard therapy. Cancer drugs have been approved on extremely small databases--well under 100, with less than 10 responses. Cancer drugs have been approved on the basis of studies whose design was anything but classic [a criticism leveled at Dr. Burzynski]. Again, even when survival is considered a critical endpoint, the FDA has approved drugs based on a small number of long-term survivors when survival was unexpected.” (Antineoplastons have far surpassed all these criteria.)

Here are only a few examples: Gliadel wafers for brain tumors were approved in September of 1996 based on a two-month increased survival in glioblastoma multiforme only and no survival benefit in other types of brain tumors; significant hearing abnormalities occurred in 15% of patients. Gemcitabine (Gemzar) was approved for pancreatic cancer in May of 1996 based only on clinical response in 27% of patients, with no tumor response. Basically, patients felt better.

Carboplatin was approved for recurrent ovarian cancer even though marginal evidence exists of enhanced survival in two small studies; the basis of approval rested on a small number of complete histopathologic responses (six responses) of good duration and a decrease in time to disease progression. Irinotecan (Camptosar) was approved for colorectal cancer in June 1996 even though 27% of patients were hospitalized owing to adverse events from the drug, that is, severe diarrhea and severe myelosuppression; there is no data concerning clinical benefits, such as increased survival and decrease in disease-related symptoms. Sustiva for AIDS was approved in September of 1998 after only a six-month study on 450 patients who also were taking other AIDS drugs; severe depression is a side effect; long-term side effects have not been studied.

It is important to note that once a drug has been approved for a particular cancer it can be used for other types of cancer. This type of use is called "off-label" and is perfectly legal. This is what has been done, in fact, with chemotherapy drugs used in children. Many of these drugs have not been approved by the FDA for use in the pediatric population but doctors use them anyway.

If antineoplastons had been approved years ago, Thomas Navarro and his parents would be in their own home during this terrible time in their lives. This family would not be waiting for the FDA to say "Yes," long, long after the "Season of Good Will." Unfortunately, Thomas may have spent his last Thanksgiving, Christmas, and all the holidays since the New Year in hotel rooms.

Despite the support of Senator John McCain and Congressman Dan Burton, Chairman of the House Oversight Committee on Government Reform, the FDA has not relented. The FDA is just too powerful. Congressman Dan Burton wrote a letter to the head of the FDA, Jane Henney, asking she provide the reasons for her stance; and Burton's legislative aide, Beth Clay, met with Henney. All these effort were to no avail. Here is the text of that letter:

Dear Dr. Henney:

Pursuant to its authority under Rules X and XI of the House of Representatives and the oversight responsibilities of the Committee on Government Reform, this Committee has jurisdiction over the Food and Drug Administration (FDA). The Committee has been contacted by the Navarro family regarding access to the Burzynski Antineoplaston treatment. Thomas Navarro is a four-year old child with medulloblastoma. He survived surgery and at present has no tumors. His parents, after extensive review of treatment options, have determined that this treatment is what is best for their child. They have also determined, based on published scientific journal articles, that giving their four-year old son chemotherapy or radiation would cause him irreparable harm and most probably cause him to be deaf, brain damaged, and to have leukemia.

It is my understanding that Mr. Navarro has had extensive conversations with FDA staff who have refused his son access to antineoplastons since Thomas has not first gone through courses of radiation and/or chemotherapy. It is well established that the antineoplaston treatment is more effective in patients whose bodies have not been ravaged by chemotherapy and radiation. I also understand that a relatively new FDA employee who is well known to be adamantly opposed to the antineoplaston treatment has put the Burzynski protocol BT29 on clinical hold stating as the reason that "conventional treatments of radiation and chemotherapy are known to be successful". Is it common practice for the FDA to cease protocols based not on the success or failure of that protocol, but on the opinion of a single, obviously biased individual, who feels another treatment is better? If that is the case, then how is science advanced?

It is my understanding that very young children do not fair well in chemotherapy and radiation. Please provide published research articles on studies in children 0-5 years who have been successfully treated with chemotherapy and/or radiation for medulloblastoma and other brain cancers and have not suffered blindness, deafness, brain damage, other irreparable damage, and/or other cancers. Please also provide a list of radiation and chemotherapy protocols or agents that have been approved and licensed by the FDA for pediatric populations of 0-5 years.

Please provide my staff an update on the Burzynski clinical trials and the Navarro compassionate IND. I ask your assistance in providing Thomas Navarro access to this treatment. I am disturbed that there continues to be problems within the FDA regarding

antineoplastons. I am prepared to call hearings in January if I cannot be assured that personal and institutional bias against antineoplastons, Dr. Burzynski, and other unconventional cancer protocols have not been resolved within the FDA and that Americans are assured fair and compassionate treatment by the FDA and access to these clinical trials.

Please have your staff contact Profession Staff member, S. Elizabeth Clay, at 202-225-5074 to schedule a meeting early next week to discuss these issues and to facilitate the compassionate IND for Thomas Navarro immediately.

Recently, Republican presidential candidate Alan Keyes joined the fight to save Thomas. During the January 10th and 15th Republican debates, Ambassador Keyes spoke of the plight of the Navarros. He stated that "It should be the right of every responsible American citizen to seek the medical care of their choice without government bureaucracies standing in their way." He spoke about Thomas again on "Good Morning America" and the Fox News Channel's "Hannity and Colmes," on which he was joined by Jim Navarro. During the debates, Ambassador Keyes asked his colleagues to sign the following letter to Donna Shalala, Head of the Department of Health and Human Services, which oversees the FDA.

Dear Secretary Shalala:

We bring to your attention the case of Thomas Navarro. He is four years old and dying of brain cancer. His father, James Navarro, has requested that he receive treatment at the Burzynski Cancer Clinic in Houston, Texas, where they have an excellent record of treating the very aggressive form of cancer that afflicts young Thomas. Mr. Navarro has pleaded with the FDA to allow him what he believes to be his best chance to save his young son's life. The FDA has refused to act and placed the matter on clinical hold.

It should be the right of every responsible American citizen to seek the medical care of their choice without government bureaucracies standing in their way.

Time is running out for Thomas Navarro and for countless Americans like him. It is imperative that you expedite a decision on allowing the medical treatment chosen by his parents for this young boy. If you refuse to act, Thomas' parents and the American people deserve to be presented with a justification for your standing in the way. Clearly, since a young life is at stake, time is of the essence.

We would appreciate a prompt reply.

The national news media seem to think that freedom of choice concerning health care, especially cancer, is not of interest to Americans. Although local press coverage has been good, the national media initially ignored this major story. The Navarros were scheduled to be on "20/20" and the segment was canceled. They were scheduled to be on "NBC's Today Show" and it never materialized. This initial lack of media attention raised questions because on February 16, Thomas's story became even more of a national issue.

To help Thomas gain access to the treatment he needs, Congressman Dan Burton introduced the "Thomas Navarro FDA Patient Rights Act" as emergency legislation on February 16. Although reporters from NBC, ABC, CBS, C-SPAN, and the Fox News Channel covered the Press Conference, absolutely nothing has appeared on the national news.

Participating in the press conference were Congressman Dan Burton, Ambassador Alan Keyes, some of the co-sponsors of the bill, the Navarro family, and other families who have also been denied access to Dr. Burzynski's antineoplaston therapy. Dustin Kunnari, the little boy mentioned previously who was cured of a medulloblastoma brain tumor by Dr. Burzynski, and his parents also were present. Although this bill raises profound questions about the state of access to health care in American and despite the fact that at the press conference emotions ran high, the national media chose not to tell this story.

After the press conference, Ambassador Keyes, the Navarros, the other families, and many supporters marched to Donna Shalala's office to give her the letter signed by all the Republican presidential candidates. Donna Shalala was busy at lunch, even though she was well aware they were coming.

And so, the American public is not being made aware of this important legislation, the Thomas Navarro FDA Patient Rights Act. This legislation will do two things:

1. **It will return medical choice to the patient.** Dan Burton writes that "The role of the Government should be to inform a patient and their family what their treatment options are, not to make that choice for them or to prevent access to treatments. With this legislation, patients are given back the power to choose their treatments, with full disclosure from the FDA as to what the options are."
2. **It will ensure that scientific research can advance based on safety and efficacy.** Dan Burton writes that "The FDA currently has a clinical hold on the BT-29 protocol to which Thomas needs access. They did so, not because the protocol was unsafe or because it might not work, but because in their opinion, another treatment was a better choice. However the other treatment has undesirable risks involved."

(See the end of this text for the entire bill.)

The Thomas Navarro FDA Patient Rights Act needs to be passed immediately. Thomas's life depends on it. Moreover, about 50,000 adults and children like Thomas will be diagnosed with terminal brain tumors this year. Most will die of their disease or from the chemotherapy and radiation treatments they are routinely given. What is not well-known is that most of these so-called traditional therapies have never been studied in controlled clinical trials or approved by the FDA to treat children. Most parents will not be fully informed about all the possible short-term and long-term side effects of these treatments. These parents will never be given the choice of quality of life over terrible suffering. What is worse, many parents will find out about Dr. Burzynski and will be lied to. They will be told Dr. Burzynski's treatment does not work and his character will be assassinated. Some fortunate parents will find Dr. Burzynski, believe what they see, and refuse to allow their children to be treated with harmful but accepted "conventional" methods. However, if the child has medulloblastoma, the parents will be told by the authorities (their doctors, child protective services, the FDA) that they have no say regarding treatment of their child. The end result will be a suffering child who has major physical and mental deficits. Who will care for that child? The answer is the parents, not the authorities.

In addition to lack of personal freedom when it comes to health care choices, Thomas's case brings to the forefront four other points. **First**, the four-year-old Clinton-Gore Initiative is not being implemented by the FDA nor followed by the White House. This initiative states that drugs for life-threatening conditions must be put on a fast track by the FDA. (Also, the FDA is blatantly giving out false information about Dr. Burzynski to this day, despite being reprimanded time and time again for doing so.) **This initiative was supposedly begun even before Thomas was born!** Why have Clinton, Gore, and the FDA forgotten their promises? They all have been contacted about Thomas, and they all have done nothing. On March 29, 1996, Dr. Kessler of the FDA made the following statements in a press conference in front of the White House, with Vice President Al Gore by his side:

"If there is a drug anywhere in any country that there is reason to believe works against cancer, we believe at the FDA [that] patients in this country should have access to those drugs. Now, we still need the data to determine whether these drugs work, but that doesn't mean we can't provide access on one hand, and still get the information on the other."

"But we are committed to providing expanded access, availability to American patients for any drug that there's reason to believe may work."

"First, for patients with refractory, hard-to-treat cancer, instead of requiring evidence of clinical benefit, such as survival, FDA will rely on objective evidence of partial response, such as tumor shrinkage, as an initial basis for approval. This will allow us to rely on smaller, shorter studies for the initial approval of cancer drugs. This accelerated procedure...should and will simplify and speed up the evaluation and approval of drugs for advanced stages of solid tumors. Use of similar approaches to drug evaluation and review in our experience with AIDS has been a powerful stimulus...especially for people who need them the most."

If this initiative applies to anyone, it applies to Thomas. Why are the President and the Vice President of the United States ignoring Thomas's plight? Why are they not living up to their word?

Second, the Access to Medical Treatment Act must be passed. This Act currently is languishing in Congress because of the influence of special interests. The Act would enable a doctor to treat a patient with any treatment as long as the patient is informed of the side effects of the treatment and that the treatment has not been approved for use in the general population by the FDA. Passing this act will ensure that what has happened to Thomas will never happen to any other little child, ever again. Passing of Thomas's bill will give the Access to Medical Treatment Act the momentum it needs to be passed.

Third, chemotherapy and irradiation are extremely harmful and have been proved to be failures in young children, and in adults, as attested to in the scientific literature. Almost all malignant brain tumors in children are **not** curable by radiation and chemotherapy. In the very rare case that a cure is effected, the child will suffer significant, permanent debilitating side effects—for as long as the child lives. Moreover, the child has a 25% chance of getting another form of cancer from these same treatments. Yet, these treatment are routinely used and even forced on children against their parents' wishes, with absolutely no thought to the child's quality of life.

Fourth and last, antineoplastons need to be fast-tracked and approved for the treatment of deadly brain tumors in children. It is only common sense that a nontoxic treatment be tried first, and not be used as a last resort after the effects of chemotherapy and irradiation.

**Thomas Navarro FDA Patient Rights Act (Introduced in the House) .
HR 3677 IH.
106th CONGRESS.
2d Session.**

H. R. 3677.

To amend the Federal Food, Drug, and Cosmetic Act to restrict the authority of the Food and Drug Administration to issue clinical holds regarding investigational drugs or to deny patients expanded access to such drugs.

**IN THE HOUSE OF REPRESENTATIVES.
February 16, 2000.**

Mr. BURTON of Indiana (for himself, Mr. BARR of Georgia, Mr. BARTON of Texas, Mr. DOOLITTLE, Mr. GILMAN, Mr. HORN, Mr. JONES of North Carolina, Mr. LAHOOD, Mr. MCHUGH, Mr. MCINTOSH, Mrs. MEEK of Florida, Mr. PAUL, Mr. RYUN of Kansas, Mr. SCARBOROUGH, and Mr. STUMP) introduced the following bill; which was referred to the Committee on Commerce.

A BILL

To amend the Federal Food, Drug, and Cosmetic Act to restrict the authority of the Food and Drug Administration to issue clinical holds regarding investigational drugs or to deny patients expanded access to such drugs.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the '**Thomas Navarro FDA Patient Rights Act**'.

SEC. 2. INVESTIGATIONAL NEW DRUGS; RESTRICTIONS ON AGENCY AUTHORITY REGARDING CLINICAL HOLDS ON TRIALS AND EXPANDED ACCESS FOR PATIENTS.

(a) CLINICAL HOLDS- Section 505(i)(3) of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 355(i)(3)) is amended by adding at the end the following subparagraph:

'(D) The Secretary may not under clause (i) or (ii) of subparagraph (B) place a clinical hold on an investigation of a drug on the basis that the Secretary has determined that--

'(i) there is another drug (including another investigational drug) that is or may be a safe and effective therapy for the disease or condition involved; or

'(ii) there is a comparable or satisfactory alternative therapy available for a patient who is receiving or will receive the drug as a clinical subject in the investigation, except that such restriction on the authority of the Secretary applies only if the patient declares in writing that the patient is aware of the comparable or satisfactory alternative therapy, is aware of the risk involved in receiving the drug in the investigation, and chooses to receive the drug notwithstanding such risk and notwithstanding the comparable or satisfactory alternative therapy.'

(b) EXPANDED ACCESS-

{1} INDIVIDUAL PATIENT ACCESS- Section 561(b)(1) of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 360bb(b)(1)) is amended by inserting before the semicolon the following: ', except that such conditions for the receipt by the person of the investigational drug do not apply if the person declares in writing that the person is aware that there is a comparable or satisfactory alternative therapy, is aware of the risk involved in receiving the investigational drug, and chooses to receive the drug notwithstanding such risk and notwithstanding the comparable or satisfactory alternative therapy.'

(2) TREATMENT APPLICATION- Section 561(c)(2) of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 360bb(c)(2)) is amended by inserting before the semicolon the following: ', except that such condition for the receipt by a patient of an investigational drug does not apply if the patient declares in writing that the patient is aware that there is a comparable or satisfactory alternative therapy, is aware of the risk involved in receiving the investigational drug, and chooses to receive the drug notwithstanding such risk and notwithstanding the comparable or satisfactory alternative therapy'.

Sponsor: Rep. Burton, Dan (introduced 2/16/2000)

SHORT TITLE(S) AS INTRODUCED: Thomas Navarro FDA Patient Rights Act

OFFICIAL TITLE AS INTRODUCED: To amend the Federal Food, Drug, and Cosmetic Act to restrict the authority of the Food and Drug Administration to issue clinical holds regarding investigational drugs or to deny patients expanded access to such drugs.

Referred to the House Committee on Commerce on 2/16/2000.

Referred to the Subcommittee on Health and Environment on 2/23/2000.

14 Co-Sponsors, 2/16/2000: Representatives Bob Barr, John T. Doolittle, Stephen Horn, Ray LaHood, David M. McIntosh, Ron Paul, Joe Scarborough, Joe Barton Benjamin A. Gilman, Walter B. Jones, Jr., John N. McHugh, Carrie P. Meek, Jim Ryun, Bob Stump.

Mr. NAVARRO. Mr. Chairman, can I just show you something really quick?

Mr. BURTON. What is that?

Mr. NAVARRO. As a man of common sense, I am sure you will agree. You have seen my son Thomas. This is his new best friend, Linn, after 2 months of chemotherapy. It triggered in him a reaction of tumors throughout his head and broke his jaw.

May I show the audience?

Mr. BURTON. Sure.

Mr. NAVARRO. This is Thomas using alternative therapy and this is Linn, conventional therapy, 2 months' worth.

Which would you chose? Who decides?

Mr. BURTON. Thank you, Mr. Navarro. If you have an extra copy of those pictures, we would like to have those submitted for the record as well.

Mr. NAVARRO. Yes, sir.

Mr. BURTON. Let us get on with the questions here.

Mr. Navarro, let's start with you. How much research did you do before you determined that your son's treatment should be in the area that you talked about?

Mr. NAVARRO. Mr. Chairman, I have to date read approximately 100 books on neurology, pediatric cancers, brain tumors, medulloblastoma. I have gone through literally every medical abstract that I could get my hands on, and that is from all the major cancer clinics throughout North America and Europe, and I am ready to challenge the test to become a doctor, I think, at this point.

Mr. BURTON. OK. Since the Food and Drug Administration has denied Thomas access to antineoplastons, what did you do? You took him out of the country, is that what you had to do?

Mr. NAVARRO. Yes, sir, we did.

Mr. BURTON. Because of the threat that the different agencies might take custody of your son?

Mr. NAVARRO. It was actually twofold. It was not only to keep him safe from the harm of conventional medicine but also because we realized, because of the nature of his cancer, that he needed treatment soon before we lost him to recurrence.

And, sir, if I might add to that, one of the things that perhaps wasn't clarified earlier is the fact that, although they may say they do have a 70 percent success rate, I think the part that got left out was the fact that they may stop or even destroy the medulloblastoma but what you are not told is it is the new cancer that the chemo creates that kills the child. Many times they may start with medulloblastoma but they die of a secondary type of cancer, and I am sure Mr. Horwin can substantiate that through his research.

Mr. BURTON. What do you say to the statements made by physicians and those at the FDA that the success rates are so profound for chemotherapy and radiation with medulloblastoma that it is standard treatment that should be followed? The same thing I guess you just said.

Mr. NAVARRO. I would—

Mr. BURTON. You challenge it?

Mr. NAVARRO. I would not only challenge that, I would remind you, Mr. Chairman, that genocide was Hitler's standard of treat-

ment for their social ills in World War II Germany, and it didn't make that right.

We are experiencing a new genocide today.

Mr. BURTON. Mr. and Mrs. Horwin, if you had read the papers you put together for this hearing prior to choosing treatment for Alexander, I presume you would have done it differently?

Mrs. HORWIN. Absolutely.

Mr. HORWIN. Yes. What we did at that point is listen to our oncologist. He said that there was a very good likelihood that he would be able to help our son, but at the same time he reminded us of the severe neurotoxic effects of his therapy, and when he outlined those to us we said, gee, the treatment sounds worse than the disease in some respects, and we began to look for other things.

We found Burzynski's therapy. We did the responsible thing that parents would do in a case like this, which means do your research, do your homework, speak to other parents, go down to the clinic, which I did. I met with the patients. I spoke with them. I met the children. I realized that this was exactly what Alexander needed.

We went down there with our son ready to start treatment; and, as I mentioned, we were turned away. At that point, we didn't know what to do. We had no other options left. We went back, enrolled him in the chemotherapy protocol.

Again, we were reminded many, many times that this was state-of-the-art. It was going to be successful. If it didn't save his life, it was going to extend his life. So that's why 3 months into this protocol, when he had—again, this is a point that Mr. Navarro just made. My son was diagnosed with medulloblastoma. According to the neurosurgeons, he died of leptomenigeal carcinoma. It is another cancer. He had this other cancer come back. It was 30 tumors throughout his brain and spine, and they sent us home. They said, he is going to die.

Mr. BURTON. I presume that the information that you are giving us, all that research that you have done, there is no question you would have handled it differently.

Mr. HORWIN. Yes.

Mr. BURTON. We will make sure all of your information is forwarded to the FDA and ask for a response to that.

Mr. HORWIN. May I add one other thing, Chairman?

Mr. BURTON. Sure.

Mr. HORWIN. Thank you. When they talk about standard of care, I get extremely frustrated with that because, frankly, it is a very irresponsible comment to make that there is a standard of care for this disease. All you have to do is to be able to read English to know there is no standard of care.

The other thing you might want to remind some of these folks at the FDA is there are some very prominent cancer hospitals out there. I will name two of them. One is St. Jude's. The other is Memorial Sloan Kettering. You would imagine if there is a standard of care that it would be practiced at both of those hospitals.

We were at St. Jude's at one point to see if there was something there for Alexander. This is the standard of care right now at St. Jude's—this is a very experienced pediatric oncologist who has been practicing for 20 years, realizes that these children are dying, and he is doing what he can to try to save their lives. This is his

therapy right now: He drills holes in children's brains. He puts in an ommaya reservoir. This allows him to inject chemotherapy directly into the brain. He also does, every other day, spinal taps for the very same purpose. This is a very desperate measure, injecting chemotherapy directly into the brain and spine.

When we asked him about the track record for this, he was a very honest physician, he said there is none. I asked him about the long-term side effects, the short-term side effects, the efficacy. He had no information for us. My wife turned to him and said, are you going to use our son as a guinea pig? And he looked at her and he said, yes, Mrs. Horwin.

So this is the kind of desperate measures this one very experienced pediatric oncologist is using. If there was an effective standard of care, do you think he would use something as desperate as this? I don't think so.

Memorial Sloan Kettering, same thing. There is a doctor there using what is called ABMT, autologous bone marrow transplant. The idea behind that is you give a child such high dose chemotherapy that his bone marrow can no longer produce blood cells, and he will die. So what they do in preparation for this is actually take bone marrow, they store it in a freezer and they take it out forcibly, store it in a freezer, give the child very high dose chemotherapy, bring him to the brink of death and then, quote, and this is in their language, they try to rescue him, they try to rescue him by giving back his bone marrow.

The only problem with this one is, if you read his articles, anybody can do it who can read English, the death rate from the treatment itself is 8 to 10 percent. That means almost 10 percent of the children die from the therapy. They give this kid—these kids such high dose chemo and they die within a couple of days. That's a pretty desperate measure.

Again, if there was an effective standard of care for this disease you wouldn't have experienced pediatric oncologists in leading cancer hospitals using such ridiculous methods.

Mr. BURTON. Well, thank you, Mr. and Mrs. Horwin.

Dr. Geffen, do you think we can move to an integrated approach to treating cancer and not be required to use chemotherapy and radiation? Do you think that can happen, and do you think it should happen?

You are an oncologist, and you have used chemotherapy and radiation, I presume—

Dr. GEFFEN. That's correct.

Mr. BURTON [continuing]. In conjunction with others. Do you think there is alternative therapies that could be used that would not necessitate the use of those?

Dr. GEFFEN. From my experience over about 10 years practicing oncology, what has become very clear to me is that chemotherapy and radiation are not the problem. If you were to ask Lance Armstrong, for example, his opinion of chemotherapy, he would have a completely different view. It saved his life. He had metastatic testicular cancer. Chemotherapy and radiation cures many, many, many people, but it is very clear, from what we have heard today and from what we know, that there are perhaps equally as many people, if not more, who it doesn't cure.

I think what is needed is the honesty, the humility, to admit that we are very handicapped in our ability to treat many cancers. But let's not discount the areas where we have phenomenal success.

I don't think the problem is chemotherapy. I think the problem is when it is used indiscriminately, when it is used in a rigid, formalized protocol. As I said earlier, the problem is that mainstream medicine focuses on the disease. The goal is to get rid of the disease and, along the way, the person with the disease and their loved ones, as we have heard, are left behind. We have heard some very moving examples of just exactly that problem.

I believe it stems from the basic orientation of our health care system, which is one which reimburses doctors to diagnose and treat diseases, rather than to ask deep and meaningful questions about how can we really help this human being—besides focusing on what is their tissue diagnosis and what are the current standard protocols calling for.

I think that the problem won't be solved until we decide as a culture that our goal really is to love and care for people, not at the expense of scientifically based medicine but in a context of love and care that says—in which we are honest and say—you know, we can't solve this problem, but we can explore any modality that can help, and we will.

Mr. BURTON. Mrs. Morella, do you have any questions?

Mrs. MORELLA. First of all, I want to thank you, Mr. Chairman, for your efforts to hold this important hearing on integrative oncology.

This last panel is exceedingly moving. Certainly, I am someone who represents the National Institutes of Health in my district and the Food and Drug Administration in my district, and I know that we do have that office and I recognized and appreciated, Mr. Devries, the suggestions that you gave and I marked up—and the others perhaps all agree with it—where he mentioned the need for further research that should be done, research on clinical efficacy of the complementary and alternative therapies.

It seems to me also full information is necessary, too. We need to do more with educating the public, educating our medical community, to be open about it. And I think with the full information I think we need to look at the credentials, history, official information. There is just so much more we need to do, and I think this is what you have pointed out with this very moving hearing.

I continue to have some questions, but I will be following those in terms of what is being done at our medical facilities and what is being done in States in terms of various kinds of licensing. So I thank you for being here and sharing with us your very moving stories.

I thank you, Mr. Chairman, for your leadership throughout on this on this issue.

Mr. BURTON. Thank you, Mrs. Morella.

[The prepared statement of Hon. Constance A. Morella follows:]

Ms. Morella

Government Reform and Oversight

Integrative Oncology

June 6, 2000/Rm. 2154

Mr. Chairman, I appreciate your efforts to hold this important hearing on integrative oncology.

I have an intense interest in our fight against cancer, the progress that has been made, as well as the myriad of issues facing our nation's health care system.

I come today ready to listen carefully to the testimony of the witnesses on integrative oncology.

Complementary and alternative medicine (CAM)--also referred to as integrative medicine, includes a broad range of healing philosophies, approaches, and therapies. A therapy is generally called complementary when it is used in addition to conventional treatments; it is often called alternative when it is used instead of conventional treatment.

Complementary and alternative therapies are used in an effort to prevent illness, reduce stress, prevent or reduce side effects and symptoms, or control or cure disease. Some commonly used methods of complementary or alternative therapy include

mind/body control interventions such as visualization or relaxation, manual healing including acupressure and massage, homeopathy, vitamins or herbal products, and acupuncture.

Although there are few studies on the use of complementary and alternative therapies for cancer, one large-scale study found that the percentage of cancer patients in the United States using these therapies is about nine percent.

Alternative refers to treatments that are promoted as cancer cures. They are unproven because they have not been scientifically tested, or were tested and found to be ineffective. If used instead of evidence-based treatment, the patient may suffer, either from lack of helpful treatment or because the alternative treatment is actually harmful.

I believe that scientific evaluation is important in understanding if and when complementary and alternative therapies work. A number of medical centers are evaluating complementary and alternative therapies by developing scientific studies to test them.

Proven treatment refers to evidence-based, or mainstream medical treatments that have been tested following a strict set

of guidelines and found to be safe and effective. The results of such studies have been published in peer reviewed journals-that is, journals reviewed by other doctors or scientists in the field. The treatments used in mainstream medicine have been approved by the Food and Drug Administration.

Research or Investigational treatments are therapies being studied in a clinical trial. Clinical trials are research projects that determine whether a new treatment is effective and safe for patients. Before a drug or other treatment can be used regularly to treat patients, it is studied and tested carefully, first in laboratory test tubes, and then in animals. After these studies are completed and the therapy is found safe and promising, it is tested to see if it helps patients. After careful testing with patients shows that the drug or other treatment is safe and effective, the Food and Drug Administration may approve it for regular use. Only then does the treatment become part of the standard, mainstream collection of proven therapies used to treat disease in human beings.

One of the most dramatic examples of the success of clinical trials is the increase in childhood cancer survival rates. This is due to the high enrollment of children in cancer clinical trials, about 90%, science has advanced to a point where the overall 5-

year survival rate represents a 74.5% and the 10 - year survival rate is approaching 70%.

There is no doubt in my mind that the cancer death rate has dropped more dramatically for children than for any other age group due to clinical research. Given this information I am very concerned that NIH data shows that the overall patient enrollment in clinical trails is decreasing.

Complementary refers to supportive methods that are used to complement, or add to, mainstream treatments. Examples might include meditation to reduce stress, peppermint tea for nausea, and acupuncture for chronic back pain.

Complementary methods are not given to cure disease, rather they may help control symptoms and improve well-being.

Conventional approaches to cancer treatment have generally been studied for safety and effectiveness through a rigorous scientific process, including clinical trials with large numbers of patients. Often, less is known about the safety and effectiveness of complementary and alternative methods. Some of these complementary and alternative therapies have not undergone rigorous evaluation. Others, once considered unorthodox, are finding a place in cancer treatment, not as cures, but as

complementary therapies that may help patients feel better and recover faster.

One example is acupuncture. According to a panel of experts at a National Institutes of Health Consensus Conference in November 1997, acupuncture has been found to be effective in the management of chemotherapy-associated nausea and vomiting and in controlling pain associated with surgery. Some approaches, such as laetrile, have been studied and found ineffective or potentially harmful.

Mr. Chairman, let us look at the facts, this year more than 1.2 million Americans will be newly diagnosed with cancer. An estimated 552,200 Americans are expected to die of cancer—more than 1,500 people a day.

In the US, 1 of every 4 deaths is from cancer.

The 5-year relative survival rate for all cancers combined is now at about 59%.

The National Institutes of Health estimate overall annual costs for cancer at \$107 billion.

\$37 billion for direct medical costs (total of all health expenditures), \$11 billion for indirect morbidity costs (cost of lost productivity due to illness),

\$59 billion for indirect mortality costs (cost of lost productivity due to premature death).

According to 1996 data, about 19% of Americans under age 65 have no health insurance, and about 26% of older persons have only Medicare coverage.

I am very concerned with these striking statistics.

I hope to learn from the testimonies today, so that this Committee will better understand where we need to focus our energies to ensure the best medical treatment to all Americans.

With growing public interest in complementary and alternative therapies, I want to know how best can patients be protected from harmful therapies while also balancing patient access to therapies they desire? Also, how can patients ensure that they are receiving safe and accurate information?

Thank you.

Mr. BURTON. Let me go to Mr. Cary.

What things can Medicare do to improve the reimbursement structure of the integrated oncology?

Mr. CARY. Basically to include things that Mr. Devries said that many other insurers are waking up to, and that is the fact that many of the naturopathic and complementary things that we are talking about are not that much—they are not that expensive compared to conventional medicine, and the patient outcome is better.

So I would say the licensing of naturopaths as in 11 States, to keep pushing that forward; and then to cover some of the complementary things like psychoneuroimmunology, nutrition counseling, vitamins, botanicals, etc., need to be included.

Speaking from a hospital operation's perspective, many hospitals are having a hard time doing that. We at the present time include it in our therapies, regardless if it is a Medicare patient or anyone else, even though they don't pay, but that's becoming more and more difficult. In talking to my colleagues and in telling some of the other hospital administrators that I relate to, they are telling me they would like to provide more therapy, but they are not able to for financial reasons.

Mr. BURTON. I think it was Mr. Devries that a while ago was talking about some senior patients—I think it was you, or Mr. Cary, I am not sure which—and they were going through chemotherapy and radiation at an advanced stage and maybe some other treatments as well—or maybe it was Dr. Geffen, I can't recall who it was—and had they maybe had some complementary therapy along with it the problem—their life quality of life would have been better and they might have lived longer. And I presume you were talking about massage therapy and the other therapies, maybe acupuncture and other things that went along with that.

I don't know if there are any clinical studies or anything that would bear on this, but when all these things are done together, do people live longer? I mean, do we have any statistics or any empirical evidence that would say that somebody who gets a combination of these treatments instead of just a standard treatment would survive and live a longer and better quality of life? Whichever one of you wants to answer.

Mr. CARY. My answer would be it is still anecdotal. We don't have a large enough sample size, but every patient that goes through it, the quality of life has improved.

On things that we have sample sizes, it indicates that patients are doing better by having those treatments.

As Dr. Geffen was saying, chemotherapy, radiation and surgery benefit many patients. The problem is, those things are toxic on the body. They pull the body down. And by building up the body's immune system, by making it stronger, it is able to tolerate those treatments better, and we also believe there is an immune response.

Mr. BURTON. So you believe—although you don't have statistical evidence but you believe they do live longer afterwards?

Mr. CARY. Yes. I would like to see more funding come into locations like Dr. Geffen and to Cancer Treatment Centers of America where we can prove our point. If we get stuck in phase one and phase two trials forever, we are never going to get it to the

bedsides, and there is going to be more cases like the Navarros and the Horwins in the future.

The longer we wait, time is an issue.

Mr. BURTON. Well, you are not saying this but I am, one of the things that concerns me is that the conventional wisdom and the pharmaceutical companies and the other people who are involved in helping in the quality of medicine have a vested interest in maybe keeping some of these practices going on, and the new alternative therapies that could be combined with conventional therapy are being left out like an orphan child because of the almighty dollar.

I know you guys can't say, especially Dr. Geffen, because he is a physician who might be in jeopardy down the road from some medical entity. I don't know who it might be, but it does concern me. It concerns me a great deal.

We ought to be concerned about the pharmaceutical companies creating new and better drugs that can help improve and extend the quality of life, but we should not keep ourselves in the mold that we are in right now when there is new therapies coming along that, when added to the conventional therapies, can do a better job.

I sometimes think that maybe the FDA and other health agencies in this country maybe are inadvertently controlled in part by the pharmaceutical companies, so we don't get these new therapies and these new things added to the mix. I think that is unfortunate. But we are looking into that, and I can promise you we are going to continue to look into it, look into conflicts of interests and all that sort of thing, to get it as cleaned up as possible.

Does anybody have any final comments? I think we are getting ready to wrap this up.

Mr. NAVARRO. Mr. Chairman, I promise to be brief.

I just discovered Thomas's consent form for radiation and what the doctor said he would face: hair loss, skin redness, fatigue, nausea, vomiting, loose BMs, fluid in the middle ear, hearing loss, hypothyroidism, spinal growth deficit, loss of IQ, memory loss, secondary tumors, hypopituitarism, low level hormones, and radiation necrosis, which is a disintegration of his brain matter. This helped make the decision that we made.

Mr. BURTON. The doctor gave you that and said that was the side effects one could expect.

Mr. NAVARRO. Yes.

Mr. BURTON. Anyone else have any final comments?

Dr. GEFFEN. I just wanted to say, you know, not only am I not afraid to speak the truth, but in fact in my testimony today I said that I really believe one of the most fundamental core issues that sooner or later we are going to have to confront in this country, as we are involved in this discussion of how do we proceed in a way that makes sense, is the fact that, in America, doctors are paid to treat diseases. We are not paid, we are not honored, we are not trained and certainly not reimbursed, to care for people in a comprehensive way. So it is impossible to overestimate the overbearing influence of that on every decision that is made in the medical environment.

I am not condemning physicians, because I believe most physicians are genuinely motivated by a desire to help. But we are oper-

ating as physicians in a health care system that is fundamentally crazy in many, many respects. Because our interest of caring for a person is in opposition to Medicare regulations, insurance regulations, reimbursement structures, that do not allow us to really care for the human being. We have to make a diagnosis and prescribe a drug and move on. And that is a fundamental issue that sooner or later will have to be looked at.

Mr. BURTON. Very good.

Anyone else?

Mr. CARY. The last comment that I would like to make is the proton—the photon and the neutron that hit the tumor do kill the tumor. The problem is, as he said, the side effects are what are so draconian. But through naturopathic and CAM therapies, we can alleviate that. You don't have to have as high doses, or you can pinpoint it more closely, or you can take other therapies and botanicals that have an offsetting effect. Similar to what you said related to your stomach, we have similar things with cancer patients.

In our Seattle practice, we have patients that went through very extensive bone marrow transplants, and the quality of life was so poor, treated somewhere else, but so poor, they did not—they were thinking of—they had suicidal ideations. They had all kinds of problems. But we were able to alleviate the side effects and the results of their conventional therapy through naturopathic medicine, through CAM therapies.

It would be so much better if our integrated health care system could be providing that at the same time, so you get the therapeutic effects of CAM therapies at the same time you can tie in conventional and alleviate the radiation therapy, the surgery, the chemotherapy, by using more CAM therapies.

Mr. BURTON. You know, I will be contacting people at the Food and Drug Administration, the doctors and others, and some of them are still here. And I have talked to some of the people in your facility, and they have told me that where chemotherapy is concerned and radiation, that sometimes they will give smaller doses over a longer period of time, spread out, and, in the interim, they will give vitamins and minerals and other supplements that stimulate the immune system so while the chemotherapy is killing the tumor or cancer, the body's immune system has been boosted. It seems to me that is something that our health agencies ought to take a look at, whether or not just a bombardment by conventional medicine is going to solve the problem, or whether or not it should be maybe extended over a longer period of time, along with the supplements that you are talking about.

Mr. CARY. We find that patients can tolerate treatment much better. Patients that could not take the high doses of chemotherapy can take it over time much better, tolerate it, and the tumor response is very high. And, as you said, the immune system is fired up, and it gives you a better result.

Mr. BURTON. I want to thank all of you for being here. It has been a long day. I apologize for the time we were on the floor and had those votes. But you have all had so much to contribute.

I know that some of you have suffered a great deal, and our heart goes out to you, and we will try to continue to be vigilant in trying to bring about some positive change.

Thank you very much. We stand adjourned.

[Whereupon, at 5:15 p.m., the committee was adjourned.]

CANCER CARE FOR THE NEW MILLENNIUM— INTEGRATIVE ONCOLOGY

THURSDAY, JUNE 8, 2000

HOUSE OF REPRESENTATIVES,
COMMITTEE ON GOVERNMENT REFORM,
Washington, DC.

The committee met, pursuant to notice, at 1 p.m., in room 2154, Rayburn House Office Building, Hon. Stephen Horn (acting chairman of the committee) presiding.

Present: Representatives Horn, Burton, Morella, Sanford, Hutchinson, Waxman, Norton, Cummings, and Schakowsky.

Staff present: Kevin Binger, staff director; David A. Kass, deputy counsel and parliamentarian; Mark Corallo, director of communications; S. Elizabeth Clay and Nicole Petrosino, professional staff members; Lisa Smith Arafune, chief clerk; Robert A. Briggs, assistant clerk; Robin Butler, office manager; Michael Canty and Toni Lightle, legislative assistants; Beth Craine and Robin Daugherty, interns; Josie Duckett, deputy communications director; John Sare, staff assistant; Phil Schiliro, minority staff director; Phil Barnett, minority chief counsel; Sarah Despres, minority counsel; Ellen Rayner, minority chief clerk; and Jean Gosa and Earley Green, minority assistant clerks.

Mr. HORN. Good afternoon. The Committee on Government Reform will come to order.

And I ask unanimous consent all Members' and witnesses' written and opening statements will be automatically included in the record. And without objection, that's so ordered.

I ask unanimous consent that all articles, exhibits, extraneous or tabular material referred to in the hearing will be included in the record. Without objection, so ordered.

Today the Committee on Government Reform begins the second of our 2 days of cancer hearings. This has been a busy week for cancer awareness. It's also been very moving when you see the witnesses that have come before us with their stories and their losses and their benefits.

June 3rd was the Coleman National Race for the Cure event in Washington. 69,000 participated in this Washington event, which is one of the 109 events sponsored across the country to raise awareness and research dollars to work toward a cure for breast cancer. June 4th was National Cancer Survivors Day. Tomorrow and through the weekend, the Third Annual Comprehensive Cancer Care Conference on Complementary and Alternative Medicine, sponsored by the Center for Mind/Body Medicine, the National Cancer Institute, the National Center for Complementary and Al-

ternative Medicine, and the University of Texas at Houston Medical Center.

Yesterday we were pleased to hear from Congresswoman Deborah Pryce, the Horwin family, James Navarro, about the challenges parents face when their child is diagnosed with cancer. We also heard from Dr. Jeremy Giffin and Mr. Roger Kerry about integrating complementary therapies into a conventional oncology environment. They explained the benefits, including better quality of life and at times extension of life, and also the challenges which include the lack of reimbursement for treatments such as acupuncture, guided imagery, massage therapy and naturopathic medicine. Mr. George DeVries outlined advances in the private sector insurance programs regarding the addition of complementary and alternative therapy benefits packages.

We also received updates from the National Center for Complementary and Alternative Medicine, the National Cancer Institute, the Health Care Financing Administration and the Food and Drug Administration. Today I'm pleased that we will be hearing from Mrs. Connie Payton. Mrs. Payton established the Walter Payton Cancer Fund as a living legacy of her husband, the Hall of Fame running back from the Chicago Bears who died last year from cancer.

She will be joined by Dr. Jeanne Achterberg, a psychologist and expert in mind/body medicine. In addition to being the senior editor of *Alternative Therapies in Health and Medicine*, a peer reviewed medical journal, Dr. Achterberg is also a cancer patient. Dr. Harold Freeman, Director of Surgery at North General Hospital in New York City, will address racial disparities in care.

Last year, the *New England Journal of Medicine* published research that highlighted one area of racial disparity. The observational study assessed the rates of resection and survival among elderly patients with early stage, non small cell lung cancer. There is agreement that surgical resection saves lives in patients with early stage non small cell lung cancer.

After accounting for the confounding effects of sex, coexisting illness, socioeconomic status, insurance coverage and availability of care, the study showed that Black patients, once lung cancer had been diagnosed and staged, were 12.7 percent less likely than White patients to undergo surgical resection. Blacks also had a lower 5 year survival rate than Whites. The authors concluded that if Blacks were to undergo surgery at the same rate as Whites, the survival rate among Blacks would be substantially improved and almost equal to that among Whites.

Dr. George Pettit is the director of the Cancer Research Institute at Arizona State University. Dr. Pettit will address the discovery and development of new anti-cancer drugs from plants, marine organisms and microorganisms. If we're going to find a cure for cancer, it most certainly is going to be from nature. It is very important that the National Cancer Institute strike an appropriate balance with genetics research, natural product drug development, complementary and alternative therapies for cancer, prevention research and other research portfolios.

Dr. Daniel Nixon, the president of the American Health Foundation in New York, and a professor of experimental oncology at the

Medical University of South Carolina in Charleston will present testimony on integrative approaches in lung cancer. Dr. Giancarlo Pizza of Italy and Dr. Wolfgang Woepfel of Germany will present testimony regarding developments in integrative oncology in Europe. Burton Goldberg has led the field in providing the informative publications in alternative medicine. These publications include *Alternative Medicine*, the *Definitive Guide to Cancer*. The hearing record will remain open until June 21st for those who would like to submit a statement into the hearing record.

I now will yield to the chairman of the full committee, the gentleman from Indiana, if he'd like to comment at this point.

Mr. BURTON. Thank you, Mr. Chairman. I want to say I really appreciate you handling the hearing today and being chairman of this very important meeting.

I had an opportunity last night to be with Connie Payton, who's with us today. I was a great admirer, Mr. Chairman, of her husband, who was not only an outstanding football player, but a very fine human being as well. He was a real credit to the athletic community as well as to the human race.

And I got to know Connie yesterday, and she's now heading up the Walter Payton Cancer Fund, to also work on cancer research. I wanted to say hello to her and tell her I would be here for her testimony, for the early part of the hearing, but then I have to leave. But I really do appreciate all you're doing and what you've gone through.

I also want to thank the other members of the panels that are going to be here today. I really appreciate them being here, because it's such a very, very important topic. And I want to apologize for my having to leave. It's one of those situations where I've just got double duty. Thank you very much.

Thank you, Mr. Chairman.

Mr. HORN. Thank you, Mr. Chairman.

We have the presence of the Delegate from the District of Columbia. I'm delighted to recognize Ms. Norton for an opening statement.

Ms. NORTON. Thank you very much, Mr. Chairman.

I very much appreciate that the chairman, himself, has called this very important hearing. I had intended to be here for the entire hearing. My staff tells me that a colloquy between myself and Chairman Porter must take place almost immediately during this period, while they're in general debate. So I am literally running to the House floor, because it involves one of my own bills.

Then there is a press conference with our Mayor on school board elections. I will endeavor to get back. I did want to say to Mrs. Payton, who came to speak and spoke eloquently to the Congressional Black Caucus yesterday, how much I appreciate the leadership she is taking on cancer, a disease in outsize proportion in our community.

More than anything that any elected official can do, even the kindness of our chairman in holding this hearing, a role model like you who has suffered a loss which the entire country has felt can help us reach people who we might otherwise have not been able to reach, and to obtain treatments of the kind that have not been popularized because they are so little known. You struck a real

chord when you spoke so beautifully and eloquently yesterday about what the non-traditional treatment had done for your husband, a great athlete and a great man.

So I come on my way to the House, both to thank the chairman, and of course, above all, to thank you for what you're doing and what it means to our country. Thank you very much, Mr. Chairman.

Mr. HORN. We thank you for that presentation.

I now yield to the ranking member of the full committee, the gentleman from California, Mr. Waxman, for an opening statement.

Mr. WAXMAN. Thank you very much, Mr. Chairman.

We continue this hearing today, after the hearing yesterday on the same subject, and we face many challenges relating to cancer. There are many questions about the causes and biology of many cancers and there are ongoing debates about the best treatments. Because so much remains unknown, and because cancer continues to affect so many lives, it is imperative that we continue to concentrate our efforts on developing the most effective prevention, detection and treatment approaches.

We must also work to ensure that all patients have access to appropriate treatment and to accurate information about their treatment options. As we face these challenges, it is important that we keep an open mind about innovative and unconventional approaches to cancer treatment and prevention. But our first priority must be ensuring patients have access to treatments which are proven to offer the best chances of curing them.

Our second priority should be the rigorous testing of new therapies, including complementary and alternative therapies, to determine their safety and efficacy. We cannot rely on anecdotal evidence which sometimes proves to be misleading. Instead, we need to rely on the scientific method, which can give us objective answers about whether a product works and is safe. This standard must be applied to all therapies in order to ensure that patients can rely on the claims made by providers or manufacturers.

Some of the witnesses at our hearings on this subject will share their personal experiences with cancer. Others will highlight ongoing efforts to advance cancer prevention, detection and treatment. There's also been testimony regarding payment for these treatments. This discussion will increase our understanding of the options currently available to people who have been diagnosed with cancer, and of the research efforts we should continue to explore. I join my colleagues in welcoming them and look forward to their testimony.

This hearing marks a truly landmark event. A couple of days ago, President Clinton announced that Medicare will cover the cost of participating in clinical trials. This is a dramatic and enormously important step forward for the health of older Americans. It will speed the development of new therapies and it should lead Congress to ensure that routine patient costs are covered for all who received their health care from Government programs like Medicaid, veterans, community health centers and the Indian Health Service.

Older Americans will now be more willing and able to enter trials for new cancer treatments, as well as for heart disease, ar-

thritis and other common diseases affecting the elderly. So I applaud the President and Secretary Shalala for this decision.

But we should also recognize that Health Care Financing Administration's new policy is based on legislation sponsored by our colleagues Nancy Johnson, Ben Cardin and Ken Bentsen, as well as Senators Rockefeller and Mack. They should be very pleased that their proposal will benefit the health and welfare of older Americans.

I want to welcome the hearings that will be here today, and Mrs. Payton particularly. I'm delighted you're here to share your concerns with us and we're looking forward to hearing from you and from all the witnesses. I have to say in advance that unfortunately on the House floor is the appropriations bill for Health and Human Services, so I'm going to have to be on the House floor and won't be here to personally hear all the testimony.

But I will get a chance to review all the testimony, and I may even ask, if the Chair would permit, to send questions and to receive responses in writing, so those can also be in the record, should these written testimonies reported at today's hearing provoke additional questions that I might have and want to have for the record.

I thank you, Mr. Chairman, for recognizing me and yield back my time.

Mr. HORN. Without objection, both majority and minority staff will have a series of questions. And once we swear the witnesses, we will try to get many of these questions in today. But we know you have travel schedules and so do some of the Members. So we will, if you don't mind, try to respond to these questions. We'll make it part of the hearing record, to round out all the different questions.

So we will now swear in the witnesses, and we would like for panel four, since we had three yesterday, Mrs. Payton, Dr. Achterberg, Dr. Freeman, Dr. Woeppel, Dr. Pizza, and Dr. George Pettit, if you will all come up. There are signs here for you, starting with Dr. Freeman, Dr. Achterberg and Dr. Woeppel and Mrs. Payton. If you'll raise your right hands.

[Witnesses sworn.]

Mr. HORN. Thank you. If there are any staff behind you, let us know.

So we're just going to go down the list. Mrs. Payton is going to have staff behind. So in remarks you will be giving here, please, you will have the truth, the whole truth and nothing but the truth.

OK, the clerk will get the names, put them in the record at that point. I do want to recognize former Congressman Berkeley Bedell, Democrat from Iowa, who's done a lot to help alternative cancer and his great interest. So I wonder, Congressman, if we can—

Mr. BEDELL. Right here.

Mr. HORN. Oh, OK. We don't have a sign for you somehow, but welcome. We're delighted to have you here. Because you've made some of the witnesses possible to be here, and that's appreciated.

Mr. BEDELL. You know, Mr. Chairman, Congressmen do not like to be identified as such, so that's why I don't have a sign.

Mr. HORN. OK. Now, we'll start then with Mrs. Connie Payton, of the Walter Payton Cancer Fund. Mrs. Payton, please proceed.

STATEMENTS OF CONNIE PAYTON, WALTER PAYTON CANCER FUND; JEANNE ACHTERBERG, SANTA FE, NM; DR. GEORGE PETTIT, M.D., DIRECTOR, CANCER RESEARCH INSTITUTE, ARIZONA STATE UNIVERSITY, NATURAL PRODUCT DRUG DEVELOPMENT; DR. WOLFGANG WOEPPEL, GERMANY; AND DR. HAROLD FREEMAN, M.D., NORTH GENERAL HOSPITAL, NEW YORK, MINORITIES ACCESS TO ONCOLOGY CARE

Mrs. PAYTON. Distinguished members of the House Committee on Government Reform, I am honored to be invited here by Chairman Burton to testify at your extremely timely and important hearings.

Our common concern for developing a cure for cancer and promoting creative new methods for treatment for those who are currently suffering from cancer unites us all regardless of our race, creed or political persuasion. I would also like to thank the committee staff, including Beth Clay, T.J. Lightle and Mark Corallo, for their assistance this week on Capitol Hill of the kickoff of the Walter Payton Cancer Fund.

As most of you know, my late husband Walter died November 1st at the age of 45. I would like to share with you today my personal story of how Walter and my family struggled with cancer and why I firmly believe in integrative oncology. And my story is this. Walter was fortunate that he had great insurance coverage. And I'm thankful for that today, because today we're still receiving invoices from bills from insurance companies. So I'm thankful that we weren't burdened with that.

But he also got real good treatment from other major hospitals, but it was in August of last year, after finding out that Walter had aggressive tumors in his bile duct area, that he had started having severe pain and by this time, we were told that there was nothing much the doctors could do for him but just keep him comfortable, and under their assumption, they pretty much just put him on extremely harsh drugs that kept him so out of it that he had no communication at all with family members. He was pretty much laying there and dying.

And through a friend of mine who was a cancer survivor, who had been a patient at the Cancer Treatment Centers of America, she invited me to an outing they were having on nutrition that made me realize that my husband was laying there dying mainly from, he had cancer, but it was malnutrition and dehydration that was going to kill him before the cancer. And thank goodness, we found out about the Cancer Treatment Centers of America, who are real into real innovative treatments. And also, they have a human side. You felt comfortable sharing with them.

And if you're spiritual people, like my husband and I are, they had wonderful pastoral counselors and within a week, they made a difference in my husband's life. The first week there, he had no knowledge of what was going on, because that's how drugged up he was. And within a week, through nutrition and vitamins and relaxation techniques and pastoral counseling to nourish his spiritual side and to continue to give him hope to fight with this dreaded disease, they made a big difference in my husband's life.

So I'm proud to be involved, and I'm proud to be here today because I know it makes a difference in a person's life. And I would

hope that insurance companies and the medical field would be open to these services and use them as a complement to other medicines that are out there. My husband was treated with high doses of radiation. It's not something he wanted, but he was told that was his only help. So what do you do, when you're told that's the only way you can live.

And he did, he went through 4 to 5 weeks of intense radiation that he felt damaged his kidneys, took away his taste, took away his smell. And he couldn't enjoy foods and foods that he normally would enjoy. And my husband was a man who loved smelling wonderful things, but all of that became a burden to him after he had gone through the radiation.

So I'm here to say that integrative oncology and innovative medicines do work, and they gave my husband back to my kids and I for 2½ months, to a way where we were able to interact with him. And he was able to live his last couple of months on this Earth with some dignity. I'm happy to be here, and if launching this Walter Payton Fund will make a difference in our researching new integrative medicines, to make a difference in cancer patients' lives, then I'm happy and I feel like I've done my job and I've done his name justice and for what he stood for. Because he was a good human being, and he was into helping people. And I know he would want us to do something to fight this dreaded disease.

[The prepared statement of Mrs. Payton follows:]

**TESTIMONY OF MS. CONNIE PAYTON BEFORE THE HOUSE
COMMITTEE ON GOVERNMENT REFORM HEARING ON "INTEGRATIVE
ONCOLOGY: CANCER CARE FOR THE NEW MILLENNIUM"**
JUNE 8, 2000

Chairman Burton and other distinguished members of the House Committee on Government Reform, I am honored to have been invited to testify at your extremely timely and important hearings on "Integrative Oncology: Cancer Care for the New Millennium." I congratulate you for the bipartisan initiative you have undertaken to encourage the development of new and creative treatments for cancer. Our common concern for developing a cure for cancer—and promoting creative new methods for treating those who are currently suffering from it—unites all of us regardless of our race, creed or political persuasion. I would also like to thank your marvelous staff, including Beth Clay, T.J. Lightle and Mark Corallo for their assistance with this week's Capitol Hill kickoff of the Walter Payton Cancer Fund.

My late husband, Walter Payton, who most of you remember as the legendary running back of the Chicago Bears—and whose memory I also will always cherish as a loving and devoted husband and father of our son Jarrett and daughter Brittney—tragically died of cancer last November 1st at the age of 45. To millions of adoring fans, Walter was both a hero and a role model. He embodied the best in athletics and humanity. Teammates and opponents alike admired Walter's tenacity, sense of humor, decency, honesty, toughness and dedication to always doing his best. He was a proud man who never let his pride get the best of him.

I would like to share with you today my very personal story of how Walter and our family struggled with his cancer, and what our experience taught me about the vital importance of "integrative oncology" that combines the best of current cancer treatment techniques with the latest and most innovative complementary therapies. These therapies include modern pain management, nutrition, physical therapy, relaxation therapy, and pastoral services.

I will then say a few words about the new Walter Payton Cancer Fund that my family is organizing in Walter's memory under the auspices of the Cancer Treatment Research Foundation. Finally, I will make some brief general observations about the urgent necessity to improve cancer care and health insurance coverage for minorities and the poor, including the removal from the Medicare program of obstacles to the timely treatment of cancer and other chronic illnesses.

**WALTER PAYTON'S STRUGGLE WITH CANCER AND WHAT IT TAUGHT
US ABOUT THE IMPORTANCE OF INTEGRATIVE ONCOLOGY**

My husband, whose aggressive style on the football field masked a playful temperament that earned him the nickname "Sweetness"—likened his battle against his illness to a football game. He said, "It's like you're moving the ball down the field and a flag's

thrown. You take the 15 yards, call the next play and go on.” Drawing from a depth that seemed eternal, powered by an engine of endless energy and durability, Walter Payton simply refused to be stopped. It took cancer to bring him down for good. Walter spent his entire professional life breaking tackles, breaking records, and clearing every obstacle in his path except the one that took his life: cancer.

Watching Walter run the football was like watching a colt prancing through a meadow just for the sheer exuberance of running. His death at such an early age was all the more tragic, ironic and incomprehensible because he had set the standard for durability and productivity by a running back. Nobody in history ever ran with a football more times for more yards. He set the NFL’s all-time record for total yards gained (21,803), rushing yards (16,726) and rushing attempts (3,838) along with many other records while missing only one game over a fabulous 13 year career from 1975 through 1987. His 10 seasons with 1,000 or more yards, his 275 yards in one game, and his 77 games with more than 100 yards rushing also are records that have not been broken.

Walter faced his illness with the same grit and determination that he showed on the football field. He always had such a positive, optimistic outlook on life. Almost until the very end, he was convinced that he was going to beat the odds and survive. “They’re going to write about me in the medical journals,” he optimistically told Sports Illustrated a couple weeks before he died.

Walter was first diagnosed in the fall of 1997 with a rare liver disease of the bile duct known as “PSC”—primary sclerosing cholangitis. For several months thereafter, we were very hopeful that the “stints” they would periodically implant to keep his bile duct open would prove effective and prevent him from becoming jaundiced. Even after cancerous tumors were discovered in his bile duct in the spring of 1998, we remained hopeful that the tumors would not spread beyond his liver and that Walter would ultimately survive with a liver transplant.

It was a terrible moment for all us when the doctor at the Mayo Clinic told us after performing exploratory surgery in May 1999 that Walter was not a candidate for a liver transplant because the cancer had spread from his bile duct to his lymph nodes. They explained that the “anti-rejection” medications that Walter would have had to take after a liver transplant would have only accelerated the spread of his cancer and hastened his death. I’ll never forget the disappointed look on the doctor’s face as he approached to give us the bad news. I got a sinking feeling in the pit of my stomach knowing just from his expression that Walter’s condition was far worse than we had hoped.

Walter and I are very spiritual people, and I refused personally to give in to the fear that gripped me. Our deep and abiding faith in God sustained us in the months to come, and sustains me still. Walter was very stoical about his illness. He didn’t want the public to know about his cancer, and he only publicly revealed his liver disease when his severe weight loss had become obvious to everyone. Walter was very good at masking his deepest feelings about what was happening to him. He was a deeply private person in many ways. He didn’t want his family, friends and fans to worry about him or feel sorry

for him. Only Walter himself knows the full extent of what was going through his mind as the reality of his impending death sunk in. But even if Walter was fearful, he would always tell the doctors and us “we can beat this thing.”

As Walter’s condition worsened it was difficult for all of us to watch him suffer from progressive weight loss, and then the worsening pain and resultant diminution in his ability to communicate with family and friends. Here was this big strong guy who had tackled and overpowered obstacles all of his life, but who now was steadily whittling away.

Walter never really wanted to submit to the traditional cancer treatments—radiation and chemotherapy—because of the harm he believed these procedures would do to his body. In April 1999, after first trying some experimental injections that didn’t prove helpful, the Mayo Clinic’s doctors finally persuaded Walter to undergo 4-5 weeks of radiation treatment. The exploratory surgery, during which the spread of the cancer beyond the bile duct was discovered, took place the following month. A day after that surgery, he received a final very high dose of radiation. Walter felt that the radiation hurt his kidneys.

While I am grateful for their efforts, the Mayo Clinic seemed to be exclusively focused upon traditional radiation and chemotherapy treatment. I don’t recall anyone there ever counseling us about “integrative oncology”—complementary or alternative modalities that would have included nutritional innovations, pain management, spiritual counseling, meditation, relaxation and other creative approaches as an integral part of his treatment plan. For example, after the radiation, even though Walter’s senses of taste and smell seemed drastically altered and he clearly no longer liked the hospital food, the Mayo Clinic didn’t focus on his nutritional needs. To the contrary, when I asked the hospital personnel if we shouldn’t alter his diet, they said, “no, just let Walter eat whatever he wants.” This didn’t sound right to me, given Walter’s ongoing progressive weight loss, so I took the initiative of going to natural food stores to buy Walter healthier organic foods.

It became apparent to us by August 1999 that Walter had begun to suffer terribly from pain. The pain had become increasingly difficult for Walter to deal with. The hospitals in which he was being treated took the approach that we should “just keep him comfortable.” They proceeded to get Walter so drugged up and overdosed with morphine that he became like a “zombie” and could no longer communicate with me, the rest of the family or his friends. They put patches on him that subjected his body to a steady stream of addictive painkillers. It soon got to the point where Walter was unable to speak and was constantly sleeping. As a result, the quality of his life was drastically reduced, and this created terrible stress on the family.

Finally, I told Walter that he was sleeping his life away. When Walter agreed and pulled the patches off, we discovered that he had become addicted to the pain medications. He went into a terrible “withdrawal” during which he couldn’t sleep or sit still. He was barely communicating with the family at that point. Combined with his ever-worsening malnutrition and dehydration, the quality of Walter’s life had sunk to zero.

I felt strongly that as Walter was approaching the end of his life, it would be important to somehow find a hospital that was knowledgeable about complementary treatment strategies that would maximize his quality of life and his ability to communicate and interact meaningfully with his loved ones. That's when I discovered the Cancer Treatment Center of America's (CTCA) hospital at Zion, Illinois, which specializes in integrative oncology (they also have a hospital in Tulsa, Oklahoma). A cancer survivor I knew (whose daughter was a friend of my daughter) was familiar with CTCA. She enthusiastically told me about its emphasis upon advanced and innovative, patient-focused complementary programs and alternative cancer treatments provided in an integrated fashion with the most modern surgical, radiation, chemo therapies and biological treatments. When my friend subsequently took me to a seminar about CTCA, it was like a light went off in my head, and I said to myself "I've got to get Walter to this hospital!"

When I brought Walter to the hospital in Zion in September 1999, he was suffering from excruciating pain, in a terribly weakened state and almost like a vegetable. It was truly astonishing how CTCA's doctors, nurses, nutritionists, pastoral counselors, physical therapists and other specialists worked with Walter and our entire family to quickly facilitate drastic improvements in the quality of his life during his last two months. They seemed to treat "patient comfort" issues far more aggressively than the other hospitals. It was obvious that they treated the whole person, not just the disease and its symptoms. One of the first things they concentrated on was pain management, and they used creative intravenous methods involving a special kind of Medtronic pump that enabled Walter within two days to be comfortable and yet maintain his sensibilities. It meant so much to Walter to once again feel awake, fully conscious and in control of himself. It was marvelous how quickly Walter regained his ability to once more have loving communications with me, the children, the rest of the family, and our friends. Cancer Treatment Centers of America also has terrific nutrition program that utilizes intravenous techniques that in combination with greater attention to gastrointestinal treatment and use of vitamin supplements, enabled Walter to regain a considerable amount of weight and strength. This in turn contributed to a dramatic improvement in his quality of life during his final two months.

CTCA also appreciates the importance of mind/body techniques, and it has excellent programs utilizing both physical therapy, relaxation therapy, exercise physiology and biofeedback, from which Walter benefited greatly. They recognize that if the body is not in good physical shape, it is hampered in its ability to fight cancer. A strong body is much more likely to have an effective immune system, and although Walter's cancer had progressed too far to reverse, this philosophy made a great deal of sense to me. The hospital also has a wonderful pastoral program, with non-denominational ministers on staff who helped provide comfort, counsel and spiritual guidance to Walter and I in a way that was consistent with our religious beliefs.

The hospital staff took a team approach and provided all of these services with exceptional kindness, grace and sensitivity to Walter's and our family's needs. It was

such a relief to us to have finally found a hospital that practices complementary care and integrative oncology, whose staff didn't laugh at us when we asked for assistance, and for therapies that didn't fit into the traditional categories. The techniques they employed made a dramatic difference in the quality of Walter's last days on Earth, for which my family and I will be eternally grateful.

Walter was able to spend much of his last two months at home, where we utilized home health care services to help us with the intravenous nutrition and pain management. A week before he died, Walter's kidneys started failing; he started retaining fluids and developed a fever. Walter got out of bed, got himself dressed, and had a visit with some of his old teammates before we took him back to the hospital. We tried kidney dialysis, but it was clear by then that he was fading fast. Once his kidneys shut down and it became apparent that there was nothing more to be done, we took Walter back to our home to die, surrounded by his family and friends.

Though the doctors thought he would only live for 24 to 48 hours, we were blessed in that we were able to spend six more days with him after he left the hospital for the final time. Our dear friend and Walter's fellow Hall of Fame Chicago Bears teammate Mike Singletary spent part of Walter's last weekend with us, praying and reading from scriptures with us. Mike said, "outside of anything I've ever seen—the greatest runs, the greatest moves -- what I experienced this (his final) weekend was by far the best by Walter Payton." Our children and I were with Walter when he died in a quiet, peaceful and dignified way.

Institutions utilizing integrative oncology view all of these types of treatments and services—addressing nutrition, pain management, pastoral counseling, physical therapy, exercise physiology, relaxation therapy, psycho-neuro-immunology (PNI), grief and family dynamics counseling and so on -- as integral parts of a well-rounded and comprehensive treatment regimen. Such an approach greatly reduces the stress for both the patient and his family, and enables the entire family to be far more involved with the cancer patient in the weeks and months prior to his death. In addressing a wide range of his needs, Cancer Treatment Center of America's integrative oncology approach focused upon "quality of life issues" far more aggressively than at the other hospitals, in a way that was highly beneficial for both Walter and our family. If these needs had been left unattended, Walter would have been in a perpetual state of distress and unable to meaningfully interact with his family.

Mr. Chairman, by holding these hearings, your committee is doing a great service by educating the American public, the medical community, health insurance providers and others about the importance of offering such services and covering them under private health insurance and through government programs like Medicare. The Payton family thanks you very much for that.

THE WALTER PAYTON CANCER FUND

In celebration of Walter's life and to honor his memory, I decided to use this trip to Washington, D.C. this week to officially announce the creation of the Walter Payton Cancer Fund under the auspices of the Cancer Treatment Research Foundation (CTRF). The initial goal of the Fund is to raise \$10 million for cancer research focused upon integrative oncology and innovative applications for current cancer therapies such as radiation and chemotherapy. The fund will support cutting edge cancer research with the same grit and determination that Walter Payton showed on the football field. It will provide a meaningful opportunity to provide additional financial resources to the fight to conquer the one obstacle that Walter couldn't overcome: cancer. Our family is creating the Walter Payton Cancer Fund to bring to the fight against cancer the kind of exuberance, enthusiasm and optimism for which Walter was so beloved and renowned.

Walter once said that he would like to be remembered as "somebody who stands for hard work and total effort." Through the Walter Payton Cancer Fund, donors can honor his memory by funding important research that reflects the kind of hard work and total effort it will take to find a cure and improved treatments for cancer. Before his final season, in a relaxed moment at the Pro Bowl in Hawaii, Walter Payton "practiced" a retirement speech that now serves as a fitting epitaph: "Chicago, National Football League, world: I am so proud I've had the opportunity to be a part of your lives, to bring some happiness to your lives, and to express my talents on the field and off the field. And if I've done anything that has helped your lives, please use it " In that spirit, through the Walter Payton Cancer Fund, donors can make a contribution to commemorate the joy "Sweetness" brought to our lives.

John Madden, Franco Harris and Mike Ditka all called Walter "the greatest football player of all time," and donations to the Walter Payton Cancer Fund would be a wonderful way to pay tribute to this legendary sports figure. In his memory, the Walter Payton Cancer Fund will help advance the ball in the quest for a new kind of record: groundbreaking research that may one day lead to discovering a cure for cancer. Walter's nickname "Sweetness" described his play on the field and his demeanor off of it, and donations to the Walter Payton Cancer Fund would be the "sweetest" way to honor his memory. Just as the elusive "Sweetness" could find hidden holes in the defense as he ran the football with more energy than anyone in the history of the game, your donation to the Walter Payton Cancer Fund will fund research to help find the elusive cure for cancer.

Walter worked so hard, displayed so much talent, succeeded so greatly, cared so much for so many, and had so much love in his heart. We were all blessed to watch him graciously make his way through life, and now, through the Walter Payton Cancer Fund, we have an opportunity to make a meaningful gesture to honor his life. No man ever played football harder, with more heart, or loved it more. Walter Payton used to fly, legs scissoring in a graceful vault, fallen bodies beneath him. When Walter got hit, he'd keep driving. Through the Walter Payton Cancer Fund, we have the opportunity to fight

cancer with the determination with which he continuously broke tackles with his legendary first, second and third efforts.

Like the Cancer Treatment Research Foundation, the Walter Payton Cancer Fund is committed to assisting all Americans, including minorities and the poor. The Fund's board will include participation by all minority and ethnic groups.

**INADEQUACY OF CANCER TREATMENT FOR AFRICAN-AMERICANS,
OTHER MINORITIES AND THE POOR GENERALLY**

I am delighted that Dr. Harold Freeman—an expert on the disparities in the quality of cancer treatment generally available for African-Americans, other minority groups and the poor generally -- is a witness at these hearings. I am sure that he and others will articulate in detail the full extent of this serious issue. The generally inferior quality of cancer treatment available to the poor in America was something about which Walter Payton was deeply concerned, and my family and I share that concern.

Scientists and clinicians have long recognized that there is clearly a racial divide in cancer treatment in our country. For instance, studies have shown that African-American patients in the early stages of cancer are far less likely to have surgery than white patients with exactly the same diagnoses. This is one important factor contributing to the ongoing phenomenon of shorter life expectancies for socially disadvantaged Americans as compared with the advantaged. I call upon this committee and Congress to take concrete measures that address this serious issue.

I am very thankful, Mr. Chairman, that you and the distinguished members of your committee are very much aware of this problem and that you are determined to do something substantive about it. I am aware that the Congressional Black Caucus and its Health Brain Trust chaired by Delegate Dr. Donna Christensen of the Virgin Islands—the first female physician ever to serve in the U.S. Congress—is also addressing this issue. A truly bipartisan approach is required to rectify this situation. Please know that you can count on me and the Walter Payton Cancer Fund to assist you in your valiant efforts to educate the public about the importance of bringing top quality cancer care within the reach of all Americans, regardless of their race or socio-economic status.

HEALTH INSURANCE AND MEDICARE ISSUES

Finally, I would like to briefly address the serious related problem of lack of adequate and timely coverage by Medicare and many private health insurance plans for treatment of cancer and other chronic illnesses of millions of Americans.

I realize that our family was most fortunate that Walter could afford the kind of health insurance coverage that made it possible for him to avail himself of superior cancer treatment. However, he was acutely aware that tens of millions of Americans are not so lucky and that every day, people are being denied treatment for cancer and other chronic illnesses because they lack adequate—or any—health care coverage. Furthermore, many

of the innovative types of cancer treatment that comprise integrative oncology are not covered by any kind of insurance.

There are millions of Americans with cancer or other chronic illnesses who have "fallen through the cracks" of the American health care system and are therefore receiving either no treatment or poor treatment. Throughout America, we have an extremely unjust situation where many low-income citizens who cannot afford medical treatment simply don't receive the care they need or are forced to try to raise funds from friends and relatives in their desperate struggle to pay for surgery, doctor visits and prescription drugs. Many cancer victims and others are literally dying because of the 24 month waiting period imposed upon social security beneficiaries before they become eligible for Medicare. I hope that Congress will find a way to put an end to this tragic situation.

I'm not a politician or a public policy expert, and I realize that these are complicated issues, but I want to make it clear that this issue was extremely important to Walter during his lifetime. It seems to me that there are many intermediate steps that could be taken in the near term, on a bipartisan basis, to help address this serious problem.

For example, I would like to urge the distinguished members of this committee and other Members of Congress from both parties to work together to find a way to eliminate the 24-month waiting period preventing timely cancer and other chronic illness treatment for millions of social security disability beneficiaries. I am aware that Rep. John Conyers has started to draft legislation to address this problem. I fervently hope that you will join in this effort.

Again, Mr. Chairman, thank you very much for inviting me to testify before your committee. I wish you well in your efforts to promote integrative oncology and other major improvements in cancer treatment for all Americans. I can assure you that Walter Payton is with us here today in spirit, and I hope that his presence today, through me, will help bring success to the hard work that lies before you.

Mr. HORN. A very moving statement, just as the ones about children were yesterday. So I think we get a feeling, although we can never be in your shoes, we get a feeling of how moving that is. And I know your husband would really appreciate what you've done.

Our next witness has a travel problem, Dr. Wolfgang Woeppel, so we're going to ask you to speak next, sir.

Dr. WOEPPEL. I am Dr. Wolfgang Woeppel. I operate a medical hospital in Bad Merghentheim, Germany, specializing in the treatment of cancer.

We operate from a different basic belief in regard to cancer as compared to conventional cancer treatments. Conventional treatments focus exclusively on the destruction of the cancer tumor, primarily with surgery, chemotherapy and radiation. We believe that cancer is a disease of the whole body, and our cancer treatments focus on the patient's entire body, enabling the body to overcome the disease.

We believe that it is insufficient to destroy the tumor if one does not also focus on restoring the patient to sufficient health so that the body will prevent the reoccurrence of cancer. Our treatments consists of several individual methods, directed at detoxifying the body, strengthening the immune system and restoring the patient's total health.

Statistics show that for 30 or 40 years, there has been a certain stagnation in the healing rate of cancer with conventional treatment. We need, therefore, a change in the thinking.

I am able to use some medical treatments, for example, that are legal in my country but not in yours. All of these medications are essentially non-toxic and I believe highly beneficial.

A study done by the University of Wuerzburg of our treatments stated, "We found that the survival time from the beginning of general metastases here was much longer than those mentioned in conventionally treated groups. The earlier such a treatment began, the longer was the survival time."

The cost of treatment at my clinic is about \$240 per day, including room, board, medication and doctor's consultations. The treatment usually lasts from 4 to 6 weeks. In Germany, this is covered by government health insurance.

To summarize, first, I believe that the lack of progress in the treatment of cancer in spite of the billions of dollars spent for cancer research means that we need to take a new look at cancer treatment. Second, I am administering essentially non-toxic cancer treatments focused on the patient's entire body as compared to treatments focusing exclusively on destruction of the tumor. These conventional treatments frequently not only destroy the tumor but also damage the patient's health as well.

Third, studies have confirmed the effectiveness of my treatment. Fourth, I am advised that these non-toxic treatments are substantially less expensive than conventional cancer treatments in the United States.

Fifth, some of the parts of my non-toxic treatment are prohibited in the United States. And I am absolutely convinced that your cancer patients might benefit greatly if such treatments could be made available in your country.

I thank you.

[The prepared statement of Dr. Woepel follows:]

TESTIMONY OF DR. WOLFGANG WOEPPEL, M.D.

I am Dr. Wolfgang Woepfel. I operate a German medical clinic in Bad Mergentheim, Germany, specializing in the treatment of cancer.

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Our treatments consist of several individual treatments directed at detoxifying the body, strengthening the immune system and restoring the patient's total health.

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5. Some of the parts of my non-toxic treatment are prohibited in the United States and I am absolutely convinced that your cancer patients might benefit greatly if such treatments could be made available in your country.

A handwritten signature in black ink, appearing to read "W. W. W. W." with a stylized flourish at the end.

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FOR HOLISTIC IMMUNOTHERAPY

Bad Mergentheim - Germany

III d Homeopathic adjuvant therapy

Therapists well versed in homeopathy will obviously carry out homeopathic adjuvant therapy, depending on the case concerned. There is not enough space here to detail the possibilities offered by homeopathic therapy.

To summarize, the aim of basic therapy is to identify and eliminate as fully as possible the individual harmful factors affecting the patient and to restore a normal environment and normal regulation. This process must form the basis for any kind of cancer treatment and can easily be combined with conventional cancer therapy, thereby reinforcing its positive effects and lessening its negative effects. (It is clear, that the steps I, II, III can not be clearly separated from one another as I did it here for didactic purpose.)

2. PSYCHOTHERAPY

The psychological care of cancer patients is particularly important. Simply talking openly with patients about their problems as well as their illness, but also about death and dying, is an important first step. Autogenic training, Deep relaxation exercises, visualization exercises and meditation techniques can also be beneficial. We know that cancer patients are frequently isolated because neither their family nor their doctor are prepared to talk openly to them about their disease. Absolute honesty and dealing frankly with the patient must be the doctor's highest precept. This is the only way of bringing patients out of their isolation and showing them a way of living positively and purposefully with and despite their illness.

Le Shan, B. Siegel, Simonton, Lerner and many other authors have laid great emphasis on the link between emotional problems and the development of a tumour. Anyone wishing to look into this subject in more depth would be well advised to consult the relevant literature (listed at the end) because, in this brief survey, it is impossible to cover all aspects of this very important part of the strategy for treating cancer. More than average co-operation is needed from patients in this respect if they are to make use of their opportunities. A doctor can merely give encouragement and show possible ways forward; the patient has to make the journey himself. Unfortunately, most patients fail to appreciate that fact; many become ever more demanding instead of really exploiting what is there. Psychotherapy in the widest sense also means patients finding out about their disease for themselves, for which self-help groups can provide the first place of refuge.

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3. IMMUNE THERAPY

Relatively little is yet known about immunological resistance to cancer. However, in the case of malignant tumors, which have spontaneously regressed, it has been noted that the proportions of the macrophages and natural killer cells in the nonspecific immune system are particularly important. For instance, the number of macrophages in a gram of tissue from a tumour, which is in a state of spontaneous regression, is five times higher than when in a state of malignant growth. The immune system alone is probably not capable of coping with a larger tumour. When larger tumors have spontaneously regressed, several phenomena - not merely of immunological origin - have usually been observed.

Merely carrying out immune treatment for cancer without the basic therapy described above would be inadvisable. Basic therapy really must provide the foundation for any kind of cancer treatment. **As long as the body's regulatory mechanisms are blocked, any attempt to bring the immune system into the battle against the tumour is bound to fail.** On the contrary: we now know that specific circulating antibodies, for instance, block the cytotoxic influence of cellular defence mechanisms by the formation of antigen-antibody complexes. In effect, the tumour causes the immune system to inactivate itself. I would therefore strongly advise against uncritical use of immune-stimulant substances. These can trigger reactions, which lead to complete blockade of the body's defence mechanisms and effectively speed up tumour growth.

Based on our experience, treatment with fresh thymus extracts is strongly recommended. Thymus therapy must not be used as long-term treatment and it must be adapted to the individual patient. Treatment with mistletoe extract is helpful in many cases (but not all!). In our clinic treatment with high-dose mistletoe infusions, which we give in combination with other infusions by a very specific method, has proved effective.

Current research in this area is constantly opening up new therapeutic approaches, e.g. treatment with cytokines (interferons, interleukins), with special antibodies or with modified resistance cells. It is far beyond the scope of this short survey to look at all these diverse new possibilities, which may also be worth using in conjunction with conventional methods.

In conclusion, immune therapy demands a great deal of knowledge, experience and very precise observation of a patient's reactions and therefore must be applied on an individual basis and only by an experienced physician. Successful immune therapy can halt the development of a tumour or even cause it to regress, markedly improving the patients' general well being.

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4. CONVENTIONAL THERAPY

The conventional treatment methods - surgery, chemotherapy, radiotherapy and hormone therapy - have been constantly improving in recent years and, if used in a carefully targeted way, are thoroughly justified. It is certainly wrong to reject these methods as a matter of principle merely because one prefers to be treated in a basically biological way. Biological therapy must not be seen as an alternative, but it must always be a complementary therapy to all the other conceivable and familiar forms of treatment.

As mentioned above, biological therapy must form the basis of any type of cancer therapy, but in the majority of cases, it is not enough on its own to halt tumour growth effectively. At the same time, it must be said that the conventional forms of treatment, particularly chemotherapy, are too often overvalued by many orthodox clinicians and too frequently administered when they are inappropriate. In a remarkable article, Professor G. Nagel stated that the problem of over-treatment is increasingly being encountered in the palliative care situation. He attributes this kind of over-treatment largely to personal motives. These include the fact that some doctors are poorly informed, they over- or underestimate the effects and side-effects of the treatment, they display an uncritical acceptance of study results which have been published too early, they lack an understanding of the value of meaningful palliative cancer therapy because they are in the autistic grip of a scientifically orientated, quantifying way of thinking and furthermore they have an exclusive view of themselves as the healing doctor.

It is extremely important to apply strict diagnostic criteria when using conventional treatment methods and to integrate them meaningfully and individually into the therapeutic approach. This obviously requires appropriate experience on the part of the doctor, who must be as knowledgeable about orthodox medicine as about biological healing methods. As a rule, all conventional treatment methods have negative effects on the condition of the patient's immune system. The worst of these is radiotherapy, which is why strict demands must be placed on its use. On the other hand, we know that low-dose chemotherapy, even as part of immune therapy, can be used in many cases when the immune system is blocked by an excess of suppressor cells. In some circumstances, chemotherapy would even help to improve the patient's immune condition, however paradoxical that may sound.

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CONCLUSION

Cancer therapy according to the approach outlined here requires a great deal of experience on the part of the doctor. The most important objective must be to find the best possible treatment strategy for each individual patient. We should strive for a synthesis between scientific medicine and experience-based healing and should always check which of the well-known treatment methods - conventional and unconventional - can be used meaningfully for that particular patient in order to provide the greatest help. Since cancer is a multi-factorial condition, treatment has to go beyond merely removing the tumour. Instead, multi-component treatment must be employed in an attempt to restore order to the disrupted regulatory cycles in the body because these disruptions appear to be a causal factor in tumour formation. In this respect, oncological after-care should not be confined to the usual follow-up examinations, as it has been hitherto, but all patients who have undergone successful surgery should immediately be offered treatment to strengthen their immune system. It should no longer be the case that patients are thrown into a state of absolute despair simply because scientific medicine has nothing more to offer. We have a whole range of patients whose conventionally incurable tumors have shown lasting and complete regression on biological therapy alone. This fact shows that the body has effective defensive mechanisms against cancer and gives us our justification for carrying out a treatment that activates these mechanisms and thereby helps the patient to help himself. For sound theoretical reasons, we are more or less obliged to regard this all-embracing therapy with biological treatment methods as an integral part of optimum cancer therapy.

COST OF TREATMENT

In Germany all insurance companies pay for a treatment in the HUFELAND KLINIK. The cost of treatment including doctor's consultations, medical treatment, ECG, laboratory findings, medicines within our basic treatment (conventional as well as non-conventional), board and lodging etc. totals 495.- DM per day in the clinic (about 240.- US \$, subject to the value of the U.S. dollar abroad). If extra medical services are necessary such as consultations with other specialists (dentist etc.) or scans or hospitalization, these are charged for (in addition to the above figure) by those performing these services, directly and separately. This low costs indicate that such a therapy must not be expensive.

HUFELAND Clinic
FOR HOLISTIC IMMUNOTHERAPY

Bad Mergentheim - Germany

WHAT IS PROVED?

Two studies performed by independent investigators show that there is a benefit for nearly all patients in respect of:

- *A better quality of life for nearly all patients*
- *A prolonged lifetime especially for advanced cancer patients*

Title of the first study performed by the university of Wuerzburg: "Therapieergebnisse bei der Behandlung von Mamma - Karzinom - Patientinnen mit adjuvanten alternativen Heilweisen." Vorgelegt von Birgitt Reinhardt - Pallesche; [„Results of a therapy of breast cancer patients with adjuvant non-conventional methods“ (by B. Reinhardt-Pallesche under the supervision of Prof. Maiwald)]

Quotations:

.....**A longer survival time depended in this study from the beginning of an adjuvant biological treatment. The earlier such a treatment began the longer was the survival time.**" (page 70)

.....**We found out that the survival time from the beginning of generalized metastases here was much longer than those mentioned in conventionally treated groups.**" (page 71)

Title of the second (psychological) study performed by the university of Freiburg: "Angebote alternativmedizinischer Krebstherapie: Motive der Inanspruchnahme, Erwartungen und Erfahrungen der Patienten." [„Offers of unconventional cancer treatment: Motives of patients, their expectations and experiences“ (by C. Bertsch under the supervision of PD Dr. Dr. F. Muthny)]

Quotations:

....**These results confirm that the patients' expectations were in nearly all fields surmounted by the effect of the treatment.** (page 107)

....**The conclusion of this study is that nearly all the patients had a benefit from the clinic's treatment in physical and psychological respect as well.**" (page 158)

Spontaneous remissions

A second hint to the effectivity of the biological treatment is the fact, that the HUFELAND KLINIK presented a very high rate of so called "spontaneous remissions" (about 7 in a total of about 3000 patients who were treated in the Hufeland Klinik). According to definition, these remissions have to be considered as spontaneous ones, as no specific therapy of the tumour had been implemented to induce them. This would correspond to a ratio of spontaneous remissions of about 1 to 430, which would be much more favorable as could be expected according to the worldwide standard set at about 1 spontaneous remission to 80 000 cancer patients. At the moment a "best cases study" is performed together with the National Foundation for Alternative Medicine to evaluate these data.

Mr. HORN. Thank you very much. We appreciate that statement. I know you have to leave, so bon voyage. If you can stay for some questions, we'd appreciate it.

Our third witness now on this panel is Dr. Jeanne Achterberg. Please proceed.

Ms. ACHTERBERG. My name is Jeanne Achterberg, and I'm a psychologist and a physiologist by training, and a human being by birth, which is one thing that we need to keep in mind as we begin to talk about cancer.

The crisis of cancer is one of immense proportions and it calls forth all the resources and makes glaringly clear the deficiencies in the culture of modern medicine. It is, in fact, ladies and gentlemen, a crisis of the soul, and for the first time in our lives we may be asking questions about our immortality or mortality. And when cancer is diagnosed in oneself or a loved one, that which is cream rises to the top and trivialities float down.

To think that cancer can be treated with only pills and potions and surgery and radiation, no matter how advanced they are, misses the whole point of this journey through cancer, which is awesome and terrible. The field of mind/body medicine, which is now being called mind/body medicine, includes many therapeutic techniques, including counseling, biofeedback, hypnosis, imagery, meditation, and is now being expanded to include prayer and community support.

I, along with my co-chairs, Dr. Larry Dossey and Dr. James Gordon, published the state-of-the-art of this field in *Alternative Medicine: Expanding Medical Horizons*, which was a report to NIH which I have included with my materials for this presentation. We concluded that the evidence was strong that the interactions between mind and body and spirit were primary to the practice of medicine and not secondary.

Furthermore, in comparison to other so-called alternative or integrative or complementary treatments, the mind/body field is soundly researched and provides a very, very good data base as well as a standard for other types of alternative therapies to follow. The mind/body work is not just something you do while you're waiting for the undertaker to come, I have to tell you that.

There is good evidence now that well crafted support groups may increase your life span by two times over. We know that certain activities, such as spending 20 minutes a day relaxing or meditating, increase the power of the immune system. We also know that joy, love and expressing your emotions from a deep level stimulate your immunology. And that having company, community, support group or the lack thereof is the single greatest risk factor in death from all disease, including cancer. So again, they're not nice little activities to do to keep you from thinking so much about the diagnosis you've received.

Over the past year, however, I learned about cancer in a far more profound way than I did over 25 years of being a research scientist. On July 23rd, I was diagnosed with an ocular melanoma in my left eye and I was going blind. The ironies were too great. I had written a book which is regarded as a classic text on imagery and the use of inner vision. My work for the past 25 years has been

about and with cancer and its psychological and spiritual dimensions.

St. Lucy, the patron saint of vision, was on my book, *Woman as Healer*, 10 years ago. And over the past few years, I've been senior editor of *Alternative Therapies*, which is a peer reviewed medical journal. I know virtually everyone in the alternative and complementary community, and I taught at a medical school, got tenure, was there for 12 years. So I'm fully aware of the politics of cancer and medicine.

And as I say this, I do it with some humility. For now I have a disease so rare that there are no records in the world of a single case of primary ocular melanoma being treated by so-called alternative methods. In the United States, the treatment of choice is high-tech radiation, or for me, because of the size of the tumor, removal of the eye. And ladies and gentlemen, I could not do it. I simply could not have my eye removed.

Although I fully anticipated using western medicine, when it came right down to it, I said, there must be a better way. Removal of my eye would not save my life. In fact, there is some evidence that eye removal is followed by an increased instance of metastasis. But I knew that my tumor was very immunoreactive.

So I gathered from all around the world everything that I knew about stimulating the immune system. And I became a walking chemical stew. Happiness stimulates the immune system. So I worked consistently, since the diagnosis, to bring more happiness into my life. The evidence that prayer heals is overwhelming, and I became the subject of hundreds of prayers, thousands of prayers, from all around the world. And the healing power of community was given to me and touched my heart on a daily basis. Love, gifts, cards, poetry, songs, from so many people who said, we have no medicine, but we have these. And on November 17th in Washington, DC, I held on to the sides of a bed in a hotel room for 5 days while whatever it was in the back of my eye exploded. I knew that I could not present myself to modern medicine because the treatment would be cortisone, and that would stop the inflammatory process. And at some level, instinctual level, I knew that my eye needed to inflame.

So molecule by molecule, photon by photon, I'm getting well. I'm still alive, I don't have a safety net of conventional medicine. I am the most privileged of all people with this grim diagnosis, and yet still in the middle of the night, I wake in sheer terror.

My conclusions about the practice of medical care in this country for cancer are that it must be imbued with trust, caring, effective communication and a remembrance that all medicine practiced in all places in the world is connected to the divine. And that medicine for cancer, as practiced in this country, is brutal. That's a fact.

With all the critical flaws in the institute of medicine, though, I've found that there are mystics and sages and healers in the health care professions, and they too seek to resolve this crisis of human values. Research into the causes and cure of cancer will not provide effective treatment unless the broad spectrum of mind/body and even spirit issues is addressed. And in years to come, finally,

any medicine that does not honor the deepest core of humanity with love, caring and recognition of the interaction of mind, body and spirit, will be declared both inhumane and unethical.

Thank you.

[The prepared statement of Ms. Achterberg follows:]

Integrating Oncology—Cancer Care for the New Millennium**Mind/Body Approaches to Cancer**

Jeanne Achterberg, Ph.D.

My name is Jeanne Achterberg. I am a psychologist and physiologist by training and a human being by birth. My life goal has been to make the care of persons diagnosed with cancer more humane. For 25 years, I have done this in any way that I could, but especially through scientific research which has demonstrated the interconnection of mind and body, and the absolute necessity to recognize that caring, itself, is curative. The crisis of cancer is one of immense proportions, one that calls forth all the resources we have available and makes glaringly clear the deficiencies in the culture of medicine. The crisis of cancer is a crisis of soul, and perhaps for the first time in one's life, the fact of mortality is faced, and the deeper questions revolving around meaning and purpose are examined. Life is raw, as never before, and what is of value floats to the surface like cream, and trivialities are put in their proper place of little consequence. To think that it can be "treated" ONLY with pills, portions, surgery, or any other manipulation of the body—however advanced these may be—misses the whole point of this journey of terror and awe.

The field of mind/body medicine, as it is now called, typically includes therapeutic techniques such as counseling, biofeedback, hypnosis, imagery, meditation, the expressive arts, among many other things. It has grown recently to include the healing power of prayer, religious activities, and community or group support.

I, along with my co-chairs, Dr. Larry Dossey and Dr. James Gordon, published the state of the art of this field in Alternative Medicine: Expanding Medical Horizons, a report to NIH on alternative medical systems and practices in the United States. I am including the Mind/Body Interventions section with this report. We concluded that the evidence was strong that the interactions between mind and body were primary to the practice of medicine, and not secondary, as is usually believed. Furthermore, in comparison to other so-called alternative or complementary practices, the mind/body field was exemplary and strong in the design of research and the scientific evidence accumulated to date. The report contains information showing cost-effective figures, as well as research areas that could be strengthened.

Over the past year, however, I learned about cancer in a far more profound way than could ever be offered by a lifetime of research. On July 23, I was diagnosed with ocular melanoma in my left eye, and I was going blind. The ironics are too great. I had written a book, which is still regarded as a classic text, on imagery and the use of inner vision for healing.¹ My work for the last 25 years has been with and about cancer and its psychological and spiritual dimensions. St. Lucy, the patron of vision, was on the cover of my book, Woman as Healer. And, over the past few years, I have been Senior Editor of a medical journal called Alternative Therapies. I know virtually everyone in the complementary and alternative medical community, and am no stranger to mainstream medicine. I taught at a medical school for 12 years, and I know full well the politics of medicine and especially of cancer. My own vision, as I mentioned earlier, has been to

¹ Achterberg, J. (1985). Imagery in Healing. Boston: Shambhala.

bring humanity into the treatment of people who are in crisis, and to do that in any, shape or form that I could.

I write this history with some humility, however, for now I have a disease so rare that there are no records in the world of a single case of primary ocular melanoma being treated by so-called alternative methods. In the United States, the treatment of choice is either to remove the eye, or to treat it with high tech radiation, sometimes delivered by nuclear reactors normally dedicated for purposes of defense. My tumor was too large for some of the newer treatments involving a radioactive plaque. Although I fully anticipated using conventional Western medicine, I found I could not accept removal of my eye. It would not save my life; in fact, there is some evidence that removal increases metastasis to the liver—which is a very fast track to dying.

The type of tumor I have is very immunoreactive, there are a host of known botanicals and supplements that stimulate the immune system, and I became a chemical stew of immune stimulation. Happiness stimulates the immune system, so I have worked consistently since the diagnosis to bring more joy into my life. The evidence that prayer heals is overwhelming, and I became the subject of hundreds of prayer groups and recipient of thousands of prayers all over the world. The healing power of community touched my heart—on a daily basis—as love gifts, cards, even songs and poetry poured in daily.

I am obviously still alive, without a safety net of conventional medicine, and, as they say, not going in the “expected direction,” meaning I am gradually getting better. Without a doubt, I am the most privileged of all persons with this grim diagnosis. I have friends and family, resources, accesses to all available medical and integrated care. Even

so, it was not enough to prevent the sheer terror of the diagnosis, or to avoid egregious treatment from a medical system that does not have humane care as its first priority.

My conclusions about the essence of medical care needing to reside in trust, caring, communication, and honor and regard for the paramount crisis of a physical, psychological and spiritual dominion have been validated. I have included my ideas from an article I wrote entitled "What is Medicine?" with this information. I have, as a result of the last year, reached four more conclusions:

- (1) Medicine for cancer, as it is practiced in this country, with all its advances and technology, is basically brutal and an assault to both patients and their loved ones.
- (2) In years to come, any medicine that does not honor the deepest core of humanity with love, caring, and recognition of the interaction of mind, body, and spirit, will be declared both inhumane and unethical.
- (3) With all the critical flaws in the institution of medicine, there are still healers, mystics, and sages in the health care professions, and they, too, seek to resolve the crisis of human values.
- (4) Research into the causes and cure of cancer will not provide efficacious treatment unless the broad spectrum of mind/body and even spirit issues is addressed.

ORIGINAL PAPER

WHAT IS MEDICINE?

Jeanne Achterberg, PhD

Presented at the closing plenary session of **Creating Integrated Healthcare**, the first annual *Alternative Therapies* Symposium; January 1996, San Diego, Calif.

Jeanne Achterberg is senior editor of *Alternative Therapies* and a professor of psychology at Saybrook Institute.

Medicine is that which helps or heals—the standard dictionary definition. I will invoke this term in reference not only to what medical doctors do, but to what anyone does who practices helping and healing, caring or curing. At this conference we have been treated to a magnificent array of helping and healing. We have heard about research, epistemologies, and clinical practices that expand the definition far beyond the pills, potions, and manipulations of the healthcare system in this and other industrialized countries. The concepts we have shared embrace the traditions and history of the world, and reach forward to the frontiers of modernity. The clinical innovations suggest that our babies and grandbabies might grow and flourish in ways undreamed of in history, and that we can live into the prime of our lives in a sprightly and nondisabled fashion—alert and attuned, excited and productive.

BEYOND MEDICINE

A medicine that cures and cures, helps and heals has an even greater consequence for humanity than that of merely mending, tending, patching, or preventing the various ailments that are the result of being alive; and it is this: unlike political bodies or even religious institutions as they are now formed, it is the agencies and the individuals who staff them (whose mission is to help and heal) that embody the common basis for addressing human need. Helping and healing—or curing and caring, if you prefer those words—have the potential to link the disparate interests of the world. We all hurt from the task of living life; we all seek help for our suffering; and some of us, most of you here, have chosen a vocational path—a life path—to amend in whatever way you can the aches and pains of fellow human beings. The act of giving service in this way—in the way of medicine—is the purest gesture of peace and communication.

PERSONAL AND CULTURAL DIMENSIONS

Healing ministrations must be given on the terms in which individuals view their own needs, and their personal or community definition of disease, health, and healing. We can no longer take the lofty role that we, as Americans—as healthcare professionals, or purveyors of a particular system of health—know what is the best or only form of medicine. The movement toward complementary or alternative medicines can and must embody this pluralistic wave in health.

In order for any practice of healing to be of true service, we must honor the fact that anything can cure somebody, nothing discovered to date cures everybody, and nothing works forever—neither vaccines nor antibiotics. We change; the environment changes. Therefore, we must look deeper into the medicines of all cultures and times for the true reasons and purpose of healing. When we do so, our mantles of arrogance will be distinctly eroded.

Medicine is predicated on what representatives in a given time and place consider to be disease. Is it disease to be in the throes of menopause, with hot flashes, memory loss, and a body that seems to be melting before your eyes, or is it a rite of passage? Is it truly cancer to have a few unusual cells in your prostate gland, or is it a reasonably normal function in a male who is getting older? Is it schizophrenia to claim to envision many levels of reality simultaneously, or is it the elemental basis for poetry, shamanism, and all manner of creative processes? Is dying itself a part of the natural order, or is it a disease that should be struggled against with all available resources? The manner in which such questions are answered will determine the intentions of medicine in any culture—what is to be treated, what is to be ignored, and what is to be honored as a special circumstance.

When addressing conditions in North Africa, the World Health Organization defined disease as a rupture in life's harmony. This definition is the most honest and ecumenical I have ever heard. And, if we agree, then disease and the healing process extend from diseases of cells and body organs to disruptions in the broader aspects of community and interplanetary health.

SEVEN FUNDAMENTAL ASPECTS OF MEDICINE

Now I would like to describe what I believe are the seven fundamental, essential, and time-honored aspects of medicine:

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1. In effective medicine, the power imbued in the caregiver is based on trust, which may itself be integral to the healing process. In the most mainstream terminology, even compliance or adherence to prescriptions has trust as a foundation. If people have trust and confidence in their provider, they follow their provider's recommendations. If trust is absent, they don't.

Trust blossoms not only out of competency and skill; it is also deeply rooted in respect and sensitivity to another's worldview. Trust evolves out of the persona of the caregiver—and it is incumbent upon us, as caregivers, to live our own lives in ways that indicate that we walk our talk. This becomes even more critical when our "talk" includes trying to act and think in wholesome, harmonious ways that acknowledge the holistic nature of health.

In earlier times, healers were not trusted unless they had experienced crisis themselves and had gained wisdom through their own suffering and revelation. Viktor Frankl once said, in another context, that what is to give light must endure burning. Perhaps this observation can be extrapolated to the idea of wounded healers—those who come into their vocation through personal experience.

Trust in healers historically and cross-culturally is based not only on their having survived their own dark night of the soul, but also on their gray hair, years of training, and apprenticeship with elders. Life itself, and the rich negotiations with it, made the healers trustworthy and gave them power.

2. Real medicine is based on communication. The seeds of malpractice suits are not necessarily in the practice of bad medicine, but in failures to communicate. When anesthesiologists first began making rounds on their patients the evening before surgery, legal suits dropped markedly—evidence of the relationship between communication and litigation.

In several hundred studies in the nursing and psychological literature, it has been well documented that when patients (of many different diagnoses) are given clear, accurate information on what they will experience in *sensory terms* during procedures, remarkable things happen. Pain medications, anxiety, distress behaviors, the number of days in the hospital, and the length of recovery time decrease significantly. Communication in sensory terminology (how events would feel, taste, smell, sound), and not the technical details, which are often poorly related and poorly understood, is what matters to the patient.

Communication is powerfully entrenched in the images that are conveyed by everyone in the healthcare system—by their gestures, body postures, demeanor, and the language they use in their interactions. Bringing this form of communication to conscious awareness is critical.

I submit, however, that real medicine is based on a dual process. Not only should caregivers be able to articulate the diagnosis, treatment, and prognosis in meaningful ways, but we should be fully present with those we serve, listening to their needs without blame, judgment, or preconceived ideas about what "ought" to be. Several systems of medicine described at this conference, such as homeopathic medicine, have extensive "lis-

tening" built into the diagnostic procedures, and it is *being heard* that patients report as one of the greatest benefits of complementary practices.

3. Medicine, as it has been practiced throughout history is invariably linked to the divine. Healing is conducted in sacred spaces and healers are cast in the same mold as the gods of a culture: if the gods are women, the healers are women; if they are old men, the healers are old men. In a culture that worships technology, more and more of the medical process is assigned to high-tech developments—diagnosis to computers, treatment to machines. This is neither incorrect nor correct—it simply is, and it reflects beliefs that are deeply embedded in the human psyche.

At the dawn of Western medicine, Hippocrates admonished healers to remember that they were in service to the gods. When a collective acknowledges this, the practices of healing are carried out with reverence. Healing work is a spiritual practice—it always has been and it always should be. After all, the souls of our patients or clients are being tested with chronic or catastrophic problems; they are facing the gravest challenges of their lives—and perhaps to their lives—and confronting their mortality or immortality, their life's purpose and meaning, perhaps for the first time. This is spiritual work, as anyone knows who has ever received a diagnosis of cancer or heart disease, or been told that they will be infirm for the rest of their lives. The fact that ideas you have heard at this conference have spirit woven into them is no surprise—spirit has always been fundamental to the practice of medicine.

4. Systems of healing evolve out of the shared worldviews of a culture. They work because of this shared belief system; they are empirically derived—not only from beliefs, but from the resources available. The maintenance of practices is also empirical: if practices work, they are sustained; if not, they are avoided. Therefore, we must be *wary* about co-opting practices out of the context from which they were developed—and by "wary" I do not wish to imply that such practices should be ignored, as we are discovering with research on the effectiveness of Amazon pharmaceuticals, traditional Chinese medicine, and Ayurvedic medicine.

5. Medicine is inseparable from the rituals with which it is practiced. Elizabeth Targ, a psychiatrist and researcher, suggested the idea—one with which I concur—that all medicine is high ritual magic. Allopathic medicine, the medicine practiced and legalized in most industrialized nations, is replete with its own ritual. The idea that ritual forms the container for efficacy is suspected, but as yet it is not well studied.

A traditional form of folk medicine in Europe, which was imported to the Americas in the 17th and 18th centuries, is to write words, letters, numbers, or even pictures of healing shrines on paper, then ask the patient to eat the paper. We can laugh about the superstition, but we might also ask whether writing a prescription illegibly, with foreign words and abbreviations, and having the patient carry it to a pharmacy also contributes to whatever effect the so-called "active" medication might have. (If so, we might find a use for all those old *Physicians' Desk*

References) White coats, diplomas, special settings for offices and clinics, the formality of intakes and assessments, the admissions person, at the portal of the hospital, the procedures that continue long after their effectiveness has been challenged—these are the rituals of modern medicine. The difference between these and traditional healing systems is that the sacred element usually has been forgotten.

6. The practice of medicine is a privilege—a holy privilege. A secret, not so well kept, is that all of us in the healthcare professions can have the experience of healing ourselves with each human connection. Our patients are mirrors of our own lives, and through them we learn to live with more clarity and intention, and remain conscious of the present. Burnout is the natural consequence of forgetting our privilege, or the negative and toxic effect of finding oneself in situations with people who do not remember what medicine, caring, and curing are all about.

7. In medicine that effectively meets the needs of its subscribers, acts of caring and compassion are seen as inseparable from acts of curing. In 1986, the Association of American Medical Colleges published a landmark report¹⁰⁰ on the training of physicians for the 21st century. The project's panel stated,

We believe that every physician should be caring, compassionate, and dedicated to patients—to keeping them well and to helping them when they are ill... ethical sensitivity and moral integrity, combined with equanimity, humility, and self-knowledge are quintessential qualities of all physicians.

The abundant research on the health-promoting effects of social support, community, touch, presence, and even prayer, suggest that caring is critical to the practice of any medicine. Curing implies that there is a problem to be fixed and suffering to be relieved—laudable and commendable, and certainly the reason most of us entered the healthcare profession: we saw problems and we wanted to fix them, make them better.

On the other hand, according to Thomas Moore, therapist and author of *Care of the Soul*, caring implies time to watch the mystery of life unfold—equally laudable. Drawing from the imagery of Rainer Marie Rilke's very famous *Letters to a Young Poet*, I sense that life is like entering into one box after another: each box is a question, and the answer may or may not be found, the problem may or may not be fixed. The point is to live the question, to explore the question.

QUALITIES ASSOCIATED WITH HEALING AND PERSONAL TRANSFORMATION

Now I would like to shift from ideas that form the basis of medicine across cultures and time to four qualities that, in my experience, transcend all medical applications—qualities that trigger remarkable recoveries and/or a rich and fulfilling journey through the course of illness.

1. The first quality that can invoke a reweaving of the torn fabric of life is *passion*. Regardless of diagnosis, pain and suffer-

ing, or the difficulty of treatment, passion for something—anything—seems to allow one to grow larger than the problem, larger than the fact that a death sentence may accompany the diagnosis. Bodies don't need nearly as much food and rest and medicine as we think they do. They need the nurturing juices that flow with passion, with adventure. At age 87, Joseph Campbell said,

People say that what we're all seeking is a meaning for life. I don't think that's what we're really seeking. I think that what we are seeking is an experience of being alive, so that our life experiences on the purely physical plane will have resonances with our innermost being and reality, so that we actual feel the rapture of being alive. That's what it's all finally about.²

2. The second quality that can provoke or induce healing, in its broader sense, is *creativity*. And perhaps it is the cessation of creativity that triggers disease. In W.H. Auden's poem "Miss Gee," he writes of cancer,

Childless women get it
And men when they retire;
It's as if there had to be some outlet
For their foiled creative fire.

The creative fire bursts from the exercise of unique products of the imagination—whether it be in the simple tasks of everyday life or in fine art. On a handmade greeting card by J. Stone, I found the following:

The most visible creators I know of are those artists whose medium is life itself. The ones who express the inexpressible—without brush, hammer, clay, or guitar. They neither paint nor sculpt—their medium is being. Whatever their presence touches has increased life. They see and don't have to draw. They are the artists of being alive.

The creative force—the fire—is the life force. The complementary therapies finding their way into medical settings, using art, music, and dance, may be integral—and not peripheral—to the cure.

3. The third quality associated with healing is *intentionality*, and it seems to work both ways: the intentions of the healer/healthcare practitioner and the person seeking help create a kind of two-pronged placebo effect. The effectiveness of any therapeutic intervention may well reside in intentionality—otherwise one cannot account for the observation made earlier: Anything can cure somebody, nothing cures everybody, and nothing works forever. I have never witnessed any cliff-hanging cures—from any medical application—when the patient had other agendas.

4. The fourth and final quality associated with healing, in my experience, is the deeply rooted sense of *self-discovery*, of finding

true self, of placing circumstances—no matter how taxing or dreadful—into the appropriate chapters of one's life story. And the story, the personal mythology, is often reconsidered, rewritten, and framed anew in the wake of crisis—and in ways that were not thought possible.

The broadening of the concept of medicine to include alternative and complementary practices offers a door of awakening to the soul work of ourselves and those we serve. When we begin to risk the challenges this doorway offers, nothing will ever again be the same: careers change or are cast off, our circle of friends shifts as we seek out healing communities of like-minded ones, and the regard for the preciousness of what cannot be seen (the invisible worlds of dreams and feeling) is manifested. But it is only a door. For those of you who stand on the threshold of challenge, of change, of immigration into the rich perspectives offered by this conference, I say, quoting Adrienne Rich's poem, "Prospective Immigrants, please note":

Either you will
go through this door
Or you will not go through.
If you go through
there is always the risk
of remembering your name

Things look at you doubly
and you must look back
and let them happen

If you do not go through
it is possible
to live worthily

to maintain your attitudes
to hold your position
to die bravely

but much will blind you,
much will evade you,
at what cost who knows?

The door itself makes no promises
It is only a door.

To those of us who have accepted the challenge of entering into the rooms and living the questions posed by a broadened conceptualization of medicine, I would like to suggest these ideas in closing: We can actively redeem the good, the beautiful, and the truth from the professions to which we owe allegiance. Creative collaboration, integration, and bridging—of language, wisdom, and technologies—will bring the acts of medicine, of helping and healing, into their next and finest dimension. We can add to whatever skills we have the ability to listen carefully, to learn daily, and the courage to be with others on their own

terms as they move through the transformative nature of crisis.

If life is viewed as the precious poetry it is, in light and shadow, illness and health, then we have remembered the fundamental and essential practices of all medicine, in all times and places.

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Mr. HORN. Thank you very much. That is a very sensible presentation for us.

The next witness I would like consent of my colleagues to have Representative Salmon of Arizona introduce Dr. Pettit. So if you want to come down this way, you've got any choice of seats.

Mr. SALMON. Thank you very much, Mr. Chairman.

I'm pleased to introduce to the committee Dr. George Robert Pettit, the director of the Arizona State University Cancer Research Institute, which is based in my district. Dr. Pettit has devoted 43 tireless years to cancer research. In that time, he's discovered numerous anti-cancer drugs in nature, marine life, plants and microorganisms. Six of the drugs discovered by the ASU Cancer Research Institute are in clinical trials, and dozens more are in pre-clinical development or heading toward pre-clinical development.

Dr. Pettit's anti-cancer drugs have been acknowledged by CNN, Fortune Magazine, Time Magazine and U.S. News and World Report, just to name a few. The ASU Cancer Research Institute, under Dr. Pettit's brilliant leadership, is the National Cancer Institute's most prolific source of drugs derived from natural products and is regarded as one of the most productive anti-cancer drug discovery research groups in the world.

I'm also pleased to be here as the chairman of the Honorary Advisory Council of the International Foundation for Anti-Cancer Drug Discovery, a charitable organization founded and chaired by my friend Sid Rosen of Phoenix, which works hard to accelerate the Nation's drug discovery pipeline. They also have a wonderful executive director, and her name is Marcia Horn. I think you might know her.

Mr. HORN. I think I do. [Laughter.]

Mr. SALMON. Finally, I'd like to wish a very happy birthday to Dr. Pettit today. Happy birthday. I'd sing to you but I'm a little off key. Thank you.

Mr. HORN. Well, since he only looks in his forties, I'd hate to admit what his age is. Welcome. We're delighted to have you here.

Dr. PETTIT. Distinguished chairman, distinguished members of the committee, the Honorable Matt Salmon from Arizona, who I thank very much for that most kind introduction.

Mr. Chairman, I'm here as a friend of the Congress, your committee, cancer patients and their families and the U.S. National Cancer Institute. What I'd like to relate is an ongoing problem that we have suffered over the last 25 years in our Government's cancer conquest program.

To begin with, thanks to the Congress, we are now saving, in the United States, several hundreds of thousands of cancer patients a year, and over the world's population, that amounts to millions of cancer patients. That had its start in congressional action in 1937, with the establishment of the U.S. National Cancer Institute.

The next really crucial step was followed about 1955 with an appropriation of \$5 million for starting an anti-cancer drug discovery program in the U.S. National Cancer Institute that actually became viable by about 1957. In fact, it was September 1957, and that's when I had the honor of starting to work with the U.S. Na-

tional Cancer Institute when I was a 2-week old assistant professor at the University of Maine.

As a result, I either have the fortune or misfortune of being the only chemist that has the institutional memory of our Government's anti-cancer drug discovery program over the past 43 years.

The next really major event which was again the result of the wonderful actions of Congress, namely the passage of the Cancer Conquest Act of 1971, that allowed the National Cancer Institute's anti-cancer drug discovery program to be greatly accelerated and by 1974, the stage was set to actually double the discovery of anti-cancer drugs. However, due to the retirement of the brilliant director of the Division of Cancer Treatment at that time, the window was opened for massive attacks on the NCI anti-cancer drug discovery programs. And as a result, within the next year or so, we lost all the research in the NCI for the structural modification synthesis of new anti-cancer drugs.

And the next event was in 1981 when we lost all the natural products based anti-cancer drug discovery research. And that was an especially disastrous event, because most of the drugs that are now in use in the United States and worldwide were discovered in the period up to 1974. And had our Government's program been allowed to continue after that period, we would not be losing 600,000 patients this year, and in the next year getting to the point where cancer will actually exceed and become the No. 1 killer of people in the United States, in a year from now, after heart disease.

So we have allowed a devastating series of events to take place. And if one realizes that in nature, we have some probably 800,000 plant species, of which only about 5 percent have ever been investigated for anti-cancer constituents, we have some 30 million microorganisms, again which a very small percentage have ever been looked at. We have 2 million marine animals, for example, of which only 20,000 have even had a cursory examination so far.

If you assume that you can extract 3,000 or 4,000 compounds from each specimen, that would lead to some 140 billion to 140 billion compounds that would be available, not only for cancer, but for the various medical problems right across the spectrum. To give you an idea of some of the successes up to 1974, and those subsequently from the NCI's anti-cancer drug discovery programs, you need only look at the drugs such as Taxol, camptothecin and its derivatives, such as 9AC, CPT-11, topotecan and so on. And I see my time is getting very short.

Mr. HORN. Go ahead.

Dr. PETTIT. Thank you, Mr. Chairman.

So I would like to point out that in 1984, thanks to a new director of the Division of Cancer Treatment in the early 1980's, it was possible to restart some of the natural products based anti-cancer drug discovery. One of the deputy directors, Dr. Michael Boyd, who is the second really brilliant leader in the National Cancer Institute over this timeframe, demoted himself and became the head of the new laboratory for discovery of new anti-cancer drugs and their development.

However, over the past 4 years, that remaining anti-cancer drug discovery program in the National Cancer Institute has been undergoing successive destruction. And the situation now is that we

have roughly a half a dozen chemists left in the National Cancer Institute. That's out of a staff of nearly 3,000. Whereas we really need not 5 but 5,000, and at least 500 chemists working on this problem. Otherwise, it's going to continue and will haunt all of us for the rest of our days.

What I'd like to do is make a plea to save what is left of our National Cancer Institute discovery programs, and also to make a series of three recommendations that could turn the situation around rather abruptly, not only for cancer, but for the remaining lethal and debilitating diseases that our population suffers from, and again, across the world.

And this could be achieved by first of all the establishment of a new Division in the National Cancer Institute designated the Division of anti-cancer drug discovery and development. Then as efficiently as resources permit, that Division could be developed into an institute for cancer treatment drug discovery, not only for the drugs that you need directly to treat metastatic cancer patients, but also the drugs you need for AIDS and related viral diseases involved in the cancer problem, and of course in general. Also the antibiotics, the antifungal agents that you need to help cancer patients and a variety of other drugs that are very necessary to improve cancer treatment in the United States and elsewhere.

Furthermore, to ensure that this new Division is properly directed, it should be written into statute that the new Division director be an internationally respected organic chemist, natural products chemist and/or medicinal chemist. And the reason for this is that this type of chemist is the one who discovers new drugs. And that is what's been missing for 25 years now in our National Cancer Institutes, in our Government's programs.

And this person should have a tremendous motivation and knowledge of pharmacology and cancer medicine. That organizational structure would make maximum use of our country's best chemists, pharmacologists and cancer biologists in a new and greatly accelerated war on cancer that would soon be extraordinarily successful.

It will also have a multitude of critics, just as your congressional action in 1971 did, where you're going to have many private sector critics. However, the result today is that what you did in 1971 and prior to that is now saving hundreds of thousands of people in the United States every year.

Second, I would like to urge and recommend that you consider the addition of a new drug discovery and development Division in each of the NIH institutes. Again to ensure that the new Division be properly directed, it should be written into statute that the new Division director be an internationally respected organic chemist, natural products chemist and/or medicinal chemist with tremendous motivation and a knowledge of medicine important to that institute.

This is what we've been missing in our NIHS through my whole knowledge over the past 50 years. We have not undertaken the discovery of the drugs in our NIH that will really cure these diseases that the NIH is directed at.

Third and finally, I also strongly urge and recommend the creation of a completely new institute in the NIH called the institute

for drug discovery and development for all other diseases that are not covered by our present NIH system. As with the new NCI Division director, the new NIH institute director must be highly respected and motivated and either an organic chemist, natural products chemist or a medicinal chemist with a knowledge of pharmacology, and in this case, general medicine. These qualifications too should be memorialized in statute.

Mr. Chairman, members of the House Committee on Government Reform, thank you for inviting me to participate in this important congressional hearing on cancer care for the new millennium. I have high hopes that your work will result in the proper redirection of the NCI to its core mission, namely the discovery and development of the new anti-cancer drugs and a renewed war against cancer. That would be a fitting tribute to all who fought in the cancer crusade and hammered out the National Cancer Act of 1971 30 years ago next year.

Mr. Chairman, members of the committee, thank you very much.
[The prepared statement of Dr. Pettit follows:]

Five Minute Summary

TESTIMONY OF
DR. GEORGE R. PETTIT
DIRECTOR OF THE CANCER RESEARCH INSTITUTE
AT ARIZONA STATE UNIVERSITY
BEFORE THE U. S. HOUSE OF REPRESENTATIVES COMMITTEE
ON GOVERNMENT REFORM HEARING ON
"INTEGRATIVE ONCOLOGY--CANCER CARE
FOR THE NEW MILLENNIUM"
JUNE 7-8, 2000

Mr. Chairman, Honorable Members of the Government Reform Committee:

Let me start with some historical perspective.

Within a week of my appointment as assistant professor of organic chemistry in September 1957, at the University of Maine, I began collaborating with the National Cancer Institute (NCI) in the discovery of naturally occurring anticancer drugs.

During my entire 43 year professional career, and continuing today, I have been completely committed to public service. From 1959 forward, I have had no obligations, ties, or any financial arrangements with any commercial enterprise. Over the past 43 years, I have continuously assisted the NCI drug discovery and development efforts. Unfortunately for me, I'm the remaining chemist with an unbroken institutional-type memory of the NCI anticancer drug research from 1957 to today.

The Cancer Research Institute (CRI) at Arizona State University (ASU), which I founded and direct, is

entirely devoted and sharply focused on the discovery and development of naturally occurring anticancer drugs and their synthetic modification in collaboration with the NCI.

The CRI at ASU is operated primarily with the Outstanding Investigator funds I have been awarded by the NCI, by funds awarded competitively by the Arizona Disease Control Research Commission, and by philanthropic donations that come to the Institute from private citizens with no obligation except to do cancer research and find drugs to cure cancer.

I would like to turn next to a brief history of the NCI's anticancer drug discovery and development program.

The drug discovery program of the NCI began in earnest in 1957 utilizing the discovery of anticancer drugs already available in plants and microorganisms, and through organic chemical structural modifications and syntheses of such new discoveries. In 1966, that very successful approach was extended to marine organism anticancer constituents.

After 1957, a majority of the most effective anticancer drugs now available were discovered and/or developed in these NCI intramural and/or extramural contract research programs. These include the now well-known and widely used marine animal, microorganism, and terrestrial plant-derived anticancer drugs such as ARA-C, Bleomycin, camptothecin (and simple derivatives such as 9AC, CPT-11 or irinotecan, and topotecan), 2-CDA, Cytarabine, Daunorubicin, Doxorubicin (Adriamycin), Etoposide, fludarabine phosphate, FUdR, Mitomycin C, taxol,

Teniposide, vinblastine, and vincristine, and a good number of others including bryostatins 1, CA4P, as well as synthetic modifications and a series of cancer treatment hormones.

By 1974, as a result of the beneficial impact of the 1971 Cancer Conquest Act, combined with the enlightened leadership of Drs. Gordon Zubrod and Frank J. Rauscher, the NCI's cancer treatment drug discovery program reached a level of very high productivity.

By 1982, of some 40 anticancer drugs that were discovered, 27 became available for general use. This translated into a splendid accomplishment whereby about 46,000 formerly incurable cancer patients in the United States were being cured each year.

Many millions of other lives, here and abroad, were substantially and usefully extended because of the pioneering successes in improving cancer treatment. Without a doubt, the NCI cancer drug discovery and clinical programs were viewed as a spectacularly successful contribution to civilization.

The continued discovery and development of more curative and generally improved anticancer drugs is desperately needed to greatly reduce the nearly 600,000 untimely and terrible deaths of cancer patients every year.

Unfortunately, from time to time, drug discovery and development research at the NCI has come under heavy but carefully disguised attack from the pharmaceutical sector. One of the worst events occurred in 1975, when all of the NCI's major research in the area of synthesis and structural modification of anticancer

drugs was dismantled.

Another attack took place in October 1981, when the NCI's major effort to discover naturally occurring anticancer drugs was dismantled.

One of the truly outstanding decisions in the NCI during the past 15 years was to appoint Dr. Michael R. Boyd to lead the new human cancer cell line evaluation and natural products based anticancer drug discovery research.

In spite of overwhelming challenges and year-by-year reductions in his staff and financial support for his Laboratory, Dr. Boyd continues to make progress.

Against all odds, he has shown a remarkable and unique ability to successfully advance the most challenging areas of anticancer drug discovery that require organic chemistry, bioorganic chemistry, biochemistry, pharmacology, and cancer cell biology.

Tragically, the events of 1975-76 and 1981 are being repeated today. For example, the botanical and other specimen procurement contracts are being phased out, including the vitally important and necessary discovery of the anticancer and antiviral constituents. Here, I should add that the NCI anticancer drug discovery and development programs, based on naturally occurring substances and their synthetic modifications, has been tremendously successful and truly the best in the world.

Needless to say, instead of being abandoned, the NCI animal, microorganism, and plant anticancer constituents and drug synthesis research needs to be

greatly expanded rather than be dismantled. The potential for discovering new treatments was, and remains, truly immense and offers great promise of many curative approaches to the cancer problem. Consider that the world's flora may number up to 800,000 species and the more conspicuous members of our terrestrial vegetation, the angiosperms, may number from 300,000 to some 500,000. Furthermore, enormous numbers (over 30 million) of microorganism species are available for investigation. Probably less than 5% of the earth's higher plants have received even a cursory effort to detect anticancer constituents. Marine animal species may number two million and only less than 20,000 have been subjected to exploratory evaluation in the NCI and elsewhere. Terrestrial arthropods provide an additional million or more species for investigation as potential new sources of anticancer drugs.

Natural products are the result of 3.8 billion years of evolutionary biosynthetic organic reactions aimed at even more specific molecular design and targeting. The net result of these trillions upon trillions of biologically directed organic reactions (biosynthetic combinatorial processes) is an astronomical number of candidates for use as anticancer drugs and as drugs necessary across the medical spectrum. But, they need to be discovered and developed in the clinic. Without the slightest exaggeration, the most important plant, animal, and microorganism anticancer cancer drugs await discovery.

Members of the Committee, I am extremely hopeful that the work of this Committee on Government Reform can repair the destruction of the NCI anticancer drug discovery and development programs and begin to

rebuild them.

*RECOMMENDATIONS FOR MAJOR GOVERNMENT REFORM IN
CONTROLLING CANCER AND OTHER LETHAL AND/OR
DEBILITATING DISEASES*

As I have said, when the American public finally wakes up to what has been done over the past 25 years to impede the NCI's discovery and development of curative anticancer drugs, I believe there will be tremendous negative repercussions. But I am extremely hopeful that the work of the Committee on Government Reform can repair the destruction of the NCI anticancer drug discovery and development programs and begin to rebuild them. Members of the Committee, the key to improving the treatment of cancer patients and finding curative procedures rests in your hands. I have three concrete and vitally necessary recommendations to put before the Committee that will result in strike force approaches to our country's most severe medical problems where cancer is at the forefront. Our nation's urgent requirements during World War II that led to the tremendously successful Manhattan Project to end the War and the NASA strike force to land a man on the moon can serve as useful models for more rapidly terminating the cancer problem and other lethal and/or debilitating diseases. The most certain path to these long awaited successes in controlling cancer and other severe medical problems can be rapidly achieved for the public benefit as follows.

First, I urge you to consider the establishment of a new division in the NCI designated the "Division of Anticancer Drug Discovery and Development" (DADDD). Then, as efficiently as resources permit, that Division would be developed into a new "Institute for

Cancer Treatment Drug Discovery" (ICTDD). To ensure that the new Division be properly directed, it should be written into statute that the new Division Director be an internationally respected organic chemist, natural products chemist and/or a medicinal chemist with tremendous motivation and a knowledge of pharmacology and cancer medicine. That organizational structure would make maximum use of our country's best chemists, pharmacologists, and cancer biologists in a new and greatly accelerated War on Cancer that would soon be extraordinarily successful.

Second, and at the same time, I urge you to consider the addition of a new Drug Discovery and Development Division in each of the NIH Institutes. Again, to ensure that the new Division be properly directed, it should be written into statute that the new Division Director be an internationally respected organic chemist, natural products chemist and/or a medicinal chemist with tremendous motivation and a knowledge of medicine important to that Institute.

Third, and finally, I also strongly urge and recommend the creation of a completely new Institute in the NIH called the Institute for Drug Discovery and Development (IDDD) for all other diseases. As with the new NCI Division Directors, the new NIH Institute Director must be highly respected/motivated and either an organic chemist, natural products chemist and/or medicinal chemist with a knowledge of pharmacology and general medicine. These qualifications, too, should be memorialized in statute.

Mr. Chairman, Members of the House Committee on Government Reform, thank you for inviting me to participate in this important Congressional Hearing on

Cancer Care for the New Millennium. I have high hopes that your work will result in a proper re-direction of the NCI to its core mission--the discovery and development of new anticancer drugs in a renewed War Against Cancer. That would be a fitting tribute to all who fought in the Cancer Crusade and hammered out the National Cancer Act of 1971 30 years ago next year.

Thank you very much!

TESTIMONY OF
DR. GEORGE R. PETTIT
DIRECTOR OF THE CANCER RESEARCH INSTITUTE AT ARIZONA STATE UNIVERSITY
BEFORE THE U. S. HOUSE OF REPRESENTATIVES COMMITTEE ON GOVERNMENT REFORM
HEARING ON "INTEGRATIVE ONCOLOGY--CANCER CARE FOR THE NEW MILLENNIUM"
JUNE 7-8, 2000

Mr. Chairman, Honorable Members of the Government Reform Committee:

Let me start with some historical perspective. Within a week of my appointment as assistant professor of organic chemistry in September 1957, at the University of Maine, I began collaborating with the National Cancer Institute (NCI) in the discovery of naturally occurring anticancer drugs. During my entire 43 year professional career, and continuing today, I have been completely committed to public service. From 1959 forward, I have had no obligations, ties, or any financial arrangements with any commercial enterprises.

The Cancer Research Institute (CRI) at Arizona State University (ASU), which I founded and direct, is entirely devoted and sharply focused on the discovery and development of new anticancer drugs in collaboration with the NCI. We accept no support from any pharmaceutical company or any other commercial source. I might add that I believe this is quite unique for myself, the research compliment in the Institute, and for the CRI itself. The CRI at ASU is operated with the Outstanding Investigator funds I have been awarded by the NCI, by funds awarded competitively by the Arizona Disease Control Research Commission, and by philanthropic donations that come to the Institute from private citizens with no obligation except to do cancer research and find drugs to cure cancer.

Over the past 43 years, I have continuously assisted the NCI drug discovery and development program. This includes more than 11 years (1965-76) as a special government employee of the NCI, helping to guide its anticancer drug discovery and development research program. Part of my duties as a special government employee, and in other advisory capacities as well, has been to review NCI research contracts related to anticancer drug discovery and development.

Unfortunately, from time to time, drug discovery and development research at the NCI has come under heavy but carefully disguised attack from the pharmaceutical sector. These attacks have led on several occasions to very destructive governmental policy decisions. One of the worst events occurred in 1975-76, when all of the NCI's major research in the area of synthesis and structural modification of anticancer drugs was dismantled. By way of illustration, the NCI Division of Cancer Treatment (DCT) had been allowed in 1975 to continue with developing an efficient total synthesis of Taxol through the NCI synthetic organic chemical research, the near environmental tragedy for the Pacific yew would have been averted, and the present cost of Taxol to cancer patients would have been much more economical.

Another took place in October 1981, when the NCI's major effort to discover naturally occurring anticancer drugs was dismantled. In 1982-83 I was able to convince the then-Director of the NCI Division of Cancer Treatment (NCI/DCT) to restart the research aimed at the discovery of new naturally occurring anticancer drugs. I was asked to restructure that research for the NCI and I recommended greatly expanding the collection of terrestrial plants, along with marine organisms and various microorganisms as well as addition of the Ph.D. level organic and natural products chemists necessary for isolation, structural

determination and synthesis of the resulting anticancer drug candidates. However, the result was a very minor infusion of resources.

Tragically, the events of 1975-76 and 1981 are now being repeated and both the botanical and other specimen procurement contracts are being phased out. Here, I should add that the NCI anticancer drug discovery programs based on naturally occurring substances and their synthetic modifications, has been tremendously successful and the best in the world. So, there is no scientific or medical rationale for either the current or past destructive tactics. Most importantly, some 600,000 cancer patients will die this year in the United States, and this carnage will continue until we discover more effective anticancer drugs. Consequently, every time the attacks on the NCI's drug discovery and development program have arisen, I have fought vigorously to avert a disaster for cancer patients.

An important focus of the restructuring I outlined for the NCI in 1982-83 was to have each of the constituent extracts from all new plants, marine organisms, and microorganisms processed go into a central repository in the NCI. The objective was to have the extracts of plant and animal materials there as a national resource for the NCI, and for other federal research laboratories, such as in the NIH and U.S. Army Medical Research Command. They were not to be distributed to private companies. Until recently, that exceptionally valuable resource has been preserved for our government research laboratories. However, unfortunately, over the past few years, it has been opened to private companies. That is such a travesty and it completely defies the objective for federal research programs aimed at the discovery and development of new drugs for controlling serious medical problems. The net result is that specimens of, for example, plants going

into the NCI's programs from any of the contract sources are, in effect, going right in the front door to private companies for their exploitation. In sharp contrast, the specimens that are collected by our Institute at ASU will forever remain in the Institute for use in government research laboratories as required. Given my deep commitment to public service and to my unswerving desire to protect public funds and resources, you can be completely assured that no specimen from our national forests or anywhere else in the world collected by our Institute will reappear as part of some commercial scheme unless licensed for the public good with revenues remaining in the public domain.

Yet, in spite of my most vigorous opposition, each time the NCI drug discovery and development research comes under siege, the attacks seem to intensify. I have reacted by redoubling my efforts to strengthen our Cancer Research Institute at ASU, allowing for at least some of the momentum of the NCI drug discovery research to continue.

Next, I would like to briefly testify to the early federal drug discovery and development programs and their early success, from 1955 to 1975. I will then turn to a more detailed discussion of the unhappy and disastrous high level policies of the NCI including anticancer and antiviral drug discovery since 1975.

EARLY FEDERAL DRUG DISCOVERY AND DEVELOPMENT PROGRAMS: 1955-1975

Because of a vitally necessary and visionary Act of Congress in 1937, the United States National Cancer Institute (NCI) was organized and it quickly became the first truly world class scientific-medical research institute devoted to the treatment of human cancer. Fortunately, the NCI and the public has benefitted

greatly from the relatively small number of brilliant leaders who possessed the in-depth knowledge, vision, and courage to direct a small amount of resources to the discovery of new and curative anticancer drugs, especially based on animals, plants, and microorganism sources.

A 1981 study prepared by the General Accounting Office summarized that the "NCI's anticancer drug development program began when Congress provided \$5 million for that purpose in 1955. This was prompted by the discovery that two chemicals--nitrogen mustard and methotrexate--were effective in treating leukemia and some lymphomas. Also, according to a 1957 NCI report to the Congress, industry activity in anticancer drug development had been intermittent because (1) most pharmaceutical firms considered anticancer drug development to be a risky, low return investment; (2) testing methods were expensive, slow, and uncertain; (3) clinical trials were difficult to conduct; and (4) industry believed that any new anticancer drugs would become part of the public domain, which would limit the opportunity to recover costs or make a profit.

The establishment of a cancer chemotherapeutic drug discovery program in the NCI was originally known as the Cancer Chemotherapy National Service Center (CCNSC) within the NCI. It was a long overdue response to the need for improving cancer treatment and, eventually, for curative management of human cancer. With the very necessary \$5 million special appropriation by the Congress, this most enlightened and far-sighted endeavor became known by 1972 as the Developmental Therapeutics Program of the Division of Cancer Treatment (DCT). Prior to the CCNSC programs, about ten anticancer drugs were under development in the NCI.

The NCI drug discovery program began in earnest in 1957, utilizing the discovery

of anticancer drugs already available in plants and microorganisms, and through chemical structural modifications and syntheses of such new discoveries. In 1966, that very successful approach was extended to marine organism anticancer constituents. After 1957, a majority of the most effective anticancer drugs now available were discovered and/or developed in the NCI intramural and/or extramural contract research programs. These include the now well-known and widely used marine animal, microorganism, and terrestrial plant-derived anticancer drugs such as ARA-C, Bleomycin, Camptothecin (and simple derivatives such as 9AC, CPT-11 or Irinotecan, and Topotecan), 2-CDA, Cytarabine, Daunorubicin, Doxorubicin (Adreamycin), Etoposide, Fludarabine Phosphate, FUDR, Mitomycin C, Taxol, Teniposide, Vinbastine, and Vincristine, and a good number of others, including Bryostatins 1, CA4P, as well as synthetic modifications and a series of cancer treatment hormones.

By 1974, as a result of the beneficial impact of the 1971 Cancer Conquest Act, combined with the very enlightened leadership of Dr. Gordon Zubrod, oncologist and then-director of the NCI Division of Cancer Treatment and Dr. Frank J. Rauscher, virologist and NCI Director, the cancer treatment drug discovery program reached a level of very high productivity. By 1982, of some 40 important anticancer drugs discovered, 27 became available for general use. This translated into a splendid accomplishment whereby in 1982 about 46,000 formerly incurable cancer patients in the United States were being cured each year with the drugs that were discovered and/or put into clinical use via the NCI during this period. Many millions of other lives, here and abroad, were substantially and usefully extended because of the pioneering successes in improving cancer treatment. Despite numerous efforts by some interests to weaken or eliminate this vital endeavor, the NCI anticancer drug discovery research and development

missions evolved into the world's most productive and successful programs. The early NCI cancer chemotherapeutic drug discovery and clinical programs were viewed as a spectacularly successful contribution to civilization.

The NCI anticancer drug discovery and research remained, until recently, the world's best. It has led to nearly all of the anticancer drugs (the most effective being primarily from animal, plant, and microorganism constituents) developed in the NCI Developmental Therapeutics Program (DTP) in the Division of Cancer Treatment, Diagnosis and Centers (DCTDC) which have saved the lives of several hundred thousand cancer patients a year in our country. The continued discovery and development by the NCI DTP/DCTD of more curative and generally improved anticancer (and antiviral, especially for AIDS) drugs is desperately needed to greatly reduce the nearly 600,000 untimely and terrible deaths of cancer patients every year.

Fortunately for the NCI and our country, the United States Congress passed the National Cancer Act (Conquest of Cancer Act) in 1971. The overall thrust of the Cancer Conquest Act of 1971 was to rejuvenate and strongly invigorate the NCI, including the elimination of the NCI's Director's reporting to the NIH Director and it established strong White House oversight of the NCI's War on Cancer. One of the top priorities of the Act was a focus on the discovery and development of new anticancer drugs. That emphasis was directed at improving human cancer treatment, and the discovery of curative anticancer drugs.

Consequently, from 1972 to 1974, the NCI/DCT drug discovery and development programs were significantly strengthened by increased levels of personnel and support funding. Indeed, by May 1974, the NCI/DCT was prepared to double its

anticancer drug discovery mission. Then, much to the distress of everyone supporting this most important objective of the NCI, the extraordinarily capable DCT director, Dr. C. Gordon Zubrod, retired. Fortunately for the NCI and the public, Dr. Zubrod had clearly understood the destructive disinformation emanating from the pharmaceutical companies. Their lobbyists and academic associates had clearly been aiming to impede the NCI drug discovery efforts. With the retirement of Dr. Zubrod in May, 1974, a window of opportunity opened for them to seek to weaken and eliminate the NCI's drug discovery research program. As noted above, their window of opportunity resulted in the termination of the NCI-DCT major anticancer drug synthesis research during the 1975-76 period. Here it should be pointed out that most (over 90%) of the useful anticancer drugs of today were discovered and/or developed by the NCI-DCT during the 1960-74 period. These included the naturally occurring anticancer drugs such as taxol, camptothecin (and structural modifications such as CPT-11 and topotecan), etoposide, the anticancer antibiotics, and other well known anticancer drugs. Also, about 75% of the World Health Organization's list of essential drugs for cancer treatment are from natural products--plants and microorganisms--discovered and/or developed by the NCI from 1957-75. Clearly, the dismantling of the golden era of NCI anticancer drug discoveries was primarily orchestrated by the private sector lobbyists noted above who were determined to weaken and/or eliminate the NCI's drug discovery research.

LATER NCI DRUG DISCOVERY AND DEVELOPMENT RESEARCH: 1975 TO THE PRESENT

I turn next to the difficult times in the NCI's drug discovery and development research activities, from 1975 to today.

The NCI was fully authorized by the 1971 National Cancer Act to accelerate the discovery and development of new anticancer drugs for improving human cancer treatment. As noted above, under the brilliant leadership of Dr. Zubrod, then-Director of the NCI Division of the Cancer Treatment and its Developmental Therapeutics Program (NCI/DCT/DTP), a majority of the best known anticancer drugs used today were discovered and/or developed in that NCI program in the period September, 1957 to the Spring of 1974.

However, with the appointment of a new Director of DCT/DTP later in 1974, NCI anticancer drug discovery research concerned with the synthesis and structural modification of badly needed anticancer drugs was discontinued over the next year. Parallel destructive events occurred in October, 1981 as well when the anticancer drug discovery in the NCI based on new and powerful anticancer drugs derived from marine organisms, terrestrial plants and microorganisms was also discontinued. Because of vigorous public objections to those destructive decisions, efforts were made, albeit slowly, beginning in 1984, to reinstate the NCI anticancer drug discovery research based on leads from marine animals, plants, and microorganisms.

The fallacy in destroying successful NCI research based upon obtaining new cancer chemotherapeutic drugs from plants, microorganisms, and animals is apparent to most when one considers that about 25% of the medically useful drugs in Western medicine have been derived from just plants. Moreover, most traditional medicinal drugs have been prepared from plant and animal sources (e.g., Aloe, Belladonna, Cinchona, Colchicum, Digitalis, Ergot, Ipecac, Periwinkle, and Rauwolfia). The NCI program directed at the discovery of new and clinically

useful terrestrial plant anticancer constituents that was organized in 1957 and well implemented by 1960 amply demonstrated that 3-4% of plant species produce a great variety of anticancer agents. By 1968, we were able to prove that about 10% of marine animals contained detectable anticancer constituents.

The dramatic discoveries arising from these early NCI studies stimulated a great deal of worldwide interest and began to spawn analogous programs elsewhere. As a result of this vitally important NCI endeavor, new antineoplastic and/or cytotoxic biosynthetic products were being discovered at an ever increasing rate.

However, the development time lag between the discovery of the anticancer drugs and their clinical applications is, generally, seven to twenty or more years. This has confused some who insist on evaluating such complex research and development solely on the basis of what number has quickly reached commercial production and distribution.

Needless to say, instead of being abandoned, the animal, microorganism, and plant anticancer constituents and drug synthesis research needed to be greatly expanded rather than be dismantled. The potential for discovering new treatments was, and remains, truly immense and offers great promise of many curative approaches to the cancer problem. Consider that the world's flora may number up to 800,000 species and the more conspicuous members of our terrestrial vegetation, the angiosperms, may number from 300,000 to some 500,000. Furthermore, enormous numbers (over 30 million) of microorganism species are available for investigation. Probably less than 5% of the earth's higher plants have received even a cursory effort to detect anticancer constituents. Marine animal species may number two million and only a minute percentage have been subjected to exploratory evaluation in the NCI. Terrestrial arthropods provide an additional

million or more species for investigation as potential new sources of anticancer drugs. Natural products are the result of 3.8 billion years of evolutionary biosynthetic organic reactions aimed at even more specific molecular design and targeting. The net result of these trillions upon trillions of biologically directed organic reactions (biosynthetic combinatorial processes) is an astronomical number of candidates for use as anticancer drugs and as drugs necessary across the medical spectrum. But, they need to be discovered and developed in the clinic. Without the slightest exaggeration, the most important plant, animal, and microorganism anticancer cancer drugs await discovery.

Fortunately, the 1984 NCI reconstitution of the natural products based anticancer drug discovery research has been brilliantly implemented and led by Dr. Michael R. Boyd. Indeed, Dr. Boyd has been tremendously dedicated to the successful fulfillment of this key mission of the NCI. He even demoted himself ten years ago from a position of NCI/DCT Associate Director in order to lead a new Laboratory of Drug Discovery Research and Development (LDDRD) in the Division of Cancer Treatment and Diagnosis (DCTD/DTP) which, until about four years ago, was known as DCT/DTP. Unfortunately, following the appointment of Dr. Richard Klausner as Director of NCI about four years ago, Dr. Boyd's Anticancer Drug Discovery and Development Laboratory has undergone a systematic dismantling.

I would like the members of the House Committee on Government Reform to know that Dr. Boyd is a brilliant NCI superstar. And, he continues to provide extraordinary creativity, vision, and leadership in the discovery and development of new anticancer drugs, consistent with the 1971 Congressional mandate, but under increasingly formidable opposition. Until his parallel laboratory for the

discovery of new antiviral drugs for AIDS (HIV) patients was dismantled following Dr. Klausner's appointment, the HIV research activity of Dr. Boyd and his colleagues was world class and exceptionally productive. The dismantling of Dr. Boyd's anticancer and antiviral drug discovery research has been carried out heavy handedly by his DTP/DCT and NCI superiors. I find this to be an abominable defiance of the public interest and it demonstrates a cold and callous attitude toward cancer and AIDS patients by his NCI DCT/DTP senior level NCI officials.

This incredibly bad situation would never withstand honest scrutiny. Dr. Boyd is an exceptionally productive scientist/physician who earned degrees in chemistry and pharmacology, leading to the Ph.D. and M.D. in medicine. He is the author or coauthor of over 400 refereed scientific publications. In fact, his publications comprise nearly 50% of all peer reviewed publications emanating from the large NCI DCTD/DTP over the past five years. In the same five-year period, he and his chemist colleagues in the LDDRD have been the most productive inventors of taxpayer owned patents of any organizational unit in the NIH. Importantly, Dr. Boyd is either the inventor or coinventor of all of these inventions assigned to our government.

Mr. Chairman, Members of this Committee, I ask you to ponder these questions: Why has Dr. Boyd's laboratory and research complement been degraded over the past four years such that it now includes only two senior research chemists and four assistants? This year, our country will lose some 600,000 cancer patients. In the face of this reality, the NCI actually needs 300 or more senior and Ph.D. level research organic chemists and natural products chemists assigned to the discovery of new anticancer and anti-HIV drugs. A pharmaceutical company, by comparison, deploys several hundred Ph.D. research organic chemists on relatively

trivial modifications of existing drugs. As a corollary question, why has the current NCI Director chosen to preside over the dismantling and destruction of a significant national treasure? The ongoing destruction of Dr. Boyd's laboratory requires your closest scrutiny.

I urge you to look into these questions as well: Why have the DCT and DTP Director and Associate Director respectively, Drs. Wittes and Sausville, insisted on unprecedented reviews of Dr. Boyd, his colleagues and laboratory over the past four years by reviewers brought in from various pharmaceutical companies and from university faculty linked financially with the drug industry? Furthermore, why have these reviewers been chosen to likely reflect hostility toward the NCI anticancer drug and antiviral drug discovery research and, especially, toward Dr. Boyd's Laboratory? Why is this being done with carefully hand-picked reviewers? Were these reviewers given the mission of simply rubber stamping pre-existing dispositions to eliminate the NCI Laboratory for Drug Discovery Research and Development (LDDRD) which has been directed so outstandingly and successfully by Dr. Boyd?

At this point, I would like to reiterate and summarize my major points.

The political actions directed at dismantling the NCI-DCT anticancer drug discovery research which began in 1975 culminated in October, 1981 with the near elimination of natural products based anticancer research. Fortunately, the NCI-DCT then-Director, Dr. Bruce Chabner, and his staff were able to partially reverse that calamity in 1984. He and his staff were able to redirect the DCT to a renewed effort at discovering new anticancer drugs, particularly those derived from structurally unprecedented constituents of marine animals, plants,

and microorganisms.

During the next ten years, the earlier drug discovery (by isolation and synthesis) and development programs were partially reconstituted. However, due to inadequate funding, the programs were unable to achieve again their very productive 1972-74 levels. In fact, the NCI intramural and extramural funding and staff devoted to the actual discovery and development of new anticancer drugs began to decrease steadily after 1975. Carefully concealed and politically motivated attacks on the NCI/DCT/DTP drug discovery research continued. Actually, they intensified their efforts. The pharmaceutical/biotech companies were apparently afraid that the public would come to realize that new anticancer and other urgently needed drugs could be readily discovered and developed in the public sector in federal, state and university laboratories at a small fraction of the private sector costs.

As I already testified, one of the truly outstanding NCI/DCT (DCTD) decisions in the past 15 years was to appoint Dr. Michael R. Boyd to lead the new human cancer cell line evaluation and natural products based anticancer drug discovery research. In spite of overwhelming challenges and year-by-year reduction in his staff and financial support for the Laboratory of Drug Discovery Research and Development (LDDRD), Dr. Boyd continues to make progress. In fact, I would say he has been able to make exceptional progress even under the most stifling conditions. Against all odds, he has shown a remarkable and unique ability to successfully advance the most challenging areas of anticancer drug discovery that require organic chemistry, bioorganic chemistry, biochemistry, pharmacology, and cancer cell biology.

Here it needs to be emphasized that the scientific expertise required to discover new anticancer drugs contained in marine organisms, microorganisms and plants requires the highest levels of intellectual ability, professional knowledge, and experience. The NCI has been extraordinarily fortunate to have the contributions of Dr. Boyd and his experienced colleagues. All of us who understand in detail the monumental challenges of discovering new anticancer and anti-AIDS drugs know that it would be most prudent and well-advised for the NCI to do everything in its power to *strengthen* DCTD/DTP drug discovery and development research. Unfortunately, rather than having his good work enhanced, Dr. Boyd and the LDDR is on the verge of virtual extinction in the NCI.

It is important for the members of the Committee to understand that the key to improving the treatment of cancer patients and finding curative procedures for these patients resides in increasing the NCI's infrastructure and funding for the purpose of discovering and developing new anticancer drugs. The private sector has never had any real interest in anticancer drug discovery and development because of their perception that the research investment is too large in terms of expected financial returns. However, they will never admit that in any public forum. Rather, they prefer a "dog in the manger" approach to the NCI's drug discovery and development research. The reality is that some of the major pharmaceutical companies have been and are currently licensing anticancer drug discoveries made via NCI intramural and extramural research programs. And, I might add, they are benefitting greatly. Bristol Myers Squibb, for example, has gross sales in excess of \$1.5 billion a year just selling the NCI discovered Taxol. And that is on top of at least another billion from Cisplatin and Etoposide (which arose from the NCI's Podophyllotoxin discoveries). Nevertheless, in spite of this reality, the carefully concealed private sector

efforts to destabilize the NCI DCTD/DTP anticancer drug discovery research continue with a vengeance.

I would like to provide you with an illustration of how subtle (and at times, not so subtle) biases have been operating behind the scenes in the dismantling of the NCI's drug discovery and development program. A few years ago, I came upon the list of reviewers the NCI Director was considering for a forthcoming DCTD/DTP appraisal. Frankly, from my inspection of the list, it would be difficult to assemble a more overt and/or covert list of foes of the NCI. The list represented anything but a fair or even helpful approach to an evaluation of DCTD/DTP. One of the group personally helped engineer destruction of the NCI's DCT-DTP anticancer drug discovery research in 1975 and in 1981. Virtually everyone on the reviewer list either worked for a pharmaceutical or biotech company, or had financial arrangements with that sector. Indeed, one of the academic individuals on the list, together with his partners, recently sold their small biotech company for \$58 million. Subsequent reviewer lists targeting the NCI/DCTD/DTP anticancer and antiviral drug discovery and development research have been similarly constituted.

The rather dramatic slant of the reviewer list toward pharmaceutical and biotech company personnel has created a series of serious ethical problems that have impacted the NCI adversely and that have stifled the creative and inventive staff of the NCI to the detriment of the general public. How can government employees protect their inventions when individuals such as these are made privy to the intimate details of inventions in progress in the NCI DTP and elsewhere in NCI DCTD? If any pharmaceutical or biotech company officer allowed such a group to review their ongoing drug discovery and development research in depth, you can

be certain that person would be fired in a hurry. It is difficult to understand how the NCI can benefit from such a group of reviewers. The obvious expertise of recent review groups has also been tilted primarily toward molecular biology rather than where the emphasis should be, namely, on the discovery and development of new synthetic and naturally occurring anticancer drugs for the NCI's most vital mission--improving human cancer treatment. I pointed these serious matters out in a letter to the NCI Director in March of 1996.

It is significant for the members of this Congressional Committee on Government Reform to know that the present NCI Director is a molecular biologist/cell biologist and was, formerly, Chief of the cell biology and metabolism branch at the National Institute of Child Health and Human Development. He is a physician with little experience treating cancer patients and he lacked substantial scientific accomplishment in the field of cancer research. With such a background, I feared that his appointment did not bode well for patients with cancer in need of new drugs to alleviate and cure their devastating diseases.

My worst fears were realized. One of Dr. Klausner's first initiatives upon becoming NCI Director was to impose a series of reorganizations. One of the most profound, in terms of future impact on improving prospects for cancer patients, was to reorganize most of the NCI intramural research laboratories under a single Division Director (Dr. George Vande Woude). At the time, Dr. Woude was employed by Advanced BioScience Laboratories, Inc., a prime contractor for the NCI Frederick Cancer Center, which raised ethical and conflict of interest questions.

Dr. Edward Scolnick, President of Merck and Co. Research, was selected by Dr.

Klausner as a key advisor for the NCI Drug Discovery and Development Research Programs. Dr. Scolnick, a physician/molecular biologist, had no training in the discovery of new anticancer drugs. Another key advisor recruited for drug discovery and development was Dr. Stuart Schreiber, a molecular biologist from Harvard University. He also did not appear to have any expertise in the discovery of anticancer drugs. These kinds of appointments had the effect of diverting and seriously impeding the prime mission of the NCI--namely, to find curative treatments for cancer patients. To make matters worse, pressures from the academic community for more NCI grant support were placated by removing sorely needed funds from the NCI's intramural research programs.

Next, it was reported in *Science* (March, 1996) that the NCI Director may have misused his authority by allowing the transfer of about \$3 million of NCI intramural research funds to two molecular biologists in Seattle to begin a "drug discovery think tank". These two cell biologists had received support from Merck and Co for a related genetics research endeavor. This seemed to me to be another circuitous route to assist Merck and Co. with federal resources which were urgently needed by the NCI for its own intramural anticancer drug discovery research.

Paradoxically, in the field of medical genetics, the prospects for improving cancer treatment have been greatly hyped by various financial interests. Given that tremendous resources have gone into such endeavors, without any noticeable clinical success, it seems obvious that *the same resources ought to be devoted to the discovery and evaluation of new anticancer drugs based on already proven methods*. That, in my judgement, would lead to the discovery of successful drugs.

In sum, from 1975 onward, owing to a series of callow, and bizarre policy decisions, the personnel and financial resources available to the NCI/DTP for the discovery and development of new anticancer drugs based on the scientifically most sound and proven directions (i.e., from natural products--animals, plants, and microorganisms) have been steadily decreasing. A major reason this has taken place is because the current NCI director lacks research experience or expertise in anticancer (and antiviral) drug discovery. Moreover and unfortunately, he has surrounded himself with key advisors of like mind from outside the NCI. As a result, the NCI new drug discovery research based on natural products (biosynthetic constituents) leads has been nearly destroyed. And, the attacks on the NCI/DTP research missions to discover better anticancer and antiviral drugs continues today. These attacks, in turn, have severely demoralized a number of the most talented NCI scientists. When cancer patients and their families, along with the broader general public finally awaken to what is currently being done, I firmly believe there will be a tremendous outcry.

As I mentioned earlier, soon after Dr. Klausner was appointed NCI Director, he named Dr. Vande Woude Director of all scientific research at NCI. You will recall that Dr. Woude was managing the private contracting firm (Advanced BioSciences Laboratories, Inc.) for the NCI. The first result of Dr. Woude's appointment was a very unnecessary and disruptive reorganization of the NCI research groups that were dependent in part on his company for sub-contracting services. As if that wasn't bad enough, the NCI Director allowed Dr. Woude to be paid from his contracting company for three years prior to converting him to a government employee. During this period, 200 personnel from his Advanced BioSciences Laboratories, Inc. were transferred to government employee status with the NCI. The move was justified because NCI was obtaining "the best and the

brightest". In reality, the NCI became bogged down with 200 unnecessary employees from a company whose focus was on molecular biology. At the same time, those 200 unneeded employees have so filled the ranks of the NCI that it has resulted in the non-replacement of important NCI scientists and administrators that retire, die, or otherwise leave the NCI.

Members of the Committee, thanks to you, all is not yet completely lost. Everyone concerned about improving the treatment of cancer patients and allowing the NCI to fulfill its vitally important drug discovery mission will be most grateful and appreciative to this Committee if it results in a reversal of the current destructive actions on the NCI anticancer and antiviral drug discovery and development research and if you would, in addition, seek to reinstate sufficient resources to make that research the world's best again.

I would like to conclude my testimony by offering, if I may, three extraordinarily important recommendations for your consideration.

*RECOMMENDATIONS FOR MAJOR GOVERNMENT REFORM IN CONTROLLING
CANCER AND OTHER LETHAL AND/OR DEBILITATING DISEASES*

As I have said, when the American public finally wakes up to what has been done over the past 25 years to impede the NCI's discovery and development of curative anticancer drugs, I believe there will be tremendous negative repercussions. But I am extremely hopeful that the work of the Committee on Government Reform can repair the destruction of the NCI anticancer drug discovery and development programs and begin to rebuild them. Members of the Committee, the key to improving the treatment of cancer patients and finding curative procedures rests

in your hands. I have three concrete and vitally necessary recommendations to put before the Committee that will result in strike force approaches to our country's most severe medical problems where cancer is at the forefront. Our nation's urgent requirements during World War II that led to the tremendously successful Manhattan Project to end the War and the NASA strike force to land a man on the moon can serve as useful models for more rapidly terminating the cancer problem and other lethal and/or debilitating diseases. The most certain path to these long awaited successes in controlling cancer and other severe medical problems can be rapidly achieved for the public benefit as follows.

First, I urge you to consider the establishment of a new division in the NCI designated the "Division of Anticancer Drug Discovery and Development" (DADDD). Then, as efficiently as resources permit, that Division would be developed into a new "Institute for Cancer Treatment Drug Discovery." To ensure that the new Division be properly directed, it should be written into statute that the new Division Director be an internationally respected organic chemist, natural products chemist and/or a medicinal chemist with tremendous motivation and a knowledge of pharmacology and cancer medicine. That organizational structure would make maximum use of our country's best chemists, pharmacologists, and cancer biologists in a new and greatly accelerated War on Cancer that would soon be extraordinarily successful.

Second, and at the same time, I urge you to consider the addition of a new Drug Discovery and Development Division in each of the NIH Institutes. Again, to ensure that the new Division be properly directed, it should be written into statute that the new Division Director be an internationally respected organic chemist, natural products chemist and/or a medicinal chemist with tremendous

motivation and a knowledge of cancer medicine.

Third, and finally, I also strongly urge and recommend the creation of a completely new Institute in the NIH called the Institute for Drug Discovery and Development for all other diseases. As with the new NCI Division Director, the new NIH Institute Director ought to be highly respected/motivated and either an organic chemist, natural products chemist and/or medicinal chemist with a knowledge of pharmacology and general medicine. These qualifications, too, should be memorialized in statute.

Mr. Chairman, Members of the House Committee on Government Reform, thank you for inviting me to participate in this important Congressional Hearing on Cancer Care for the New Millennium. I have high hopes that your work will result in a proper re-direction of the NCI to its core mission--the discovery and development of new anticancer drugs in a renewed War Against Cancer. That would be a fitting tribute to all who fought in the Cancer Crusade and hammered out the National Cancer Act of 1971 30 years ago next year.

Thank you very much!

Mr. HORN. Well, thank you. That's very positive and it's something that I'm sure the full committee and the relevant subcommittees will do the work and see what can be done to get just that line that you've suggested.

So the next witness on panel four is Dr. Harold Freeman, the North General Hospital in New York. And he's a specialist in minority access to oncology care.

Dr. FREEMAN. Thank you, Mr. Chairman. Thank you for inviting me.

Dr. Pettit mentioned the declaration of the war against cancer in 1971 by President Nixon, something about which we can all be proud. That stimulated the research that has been translated into much improvement for the American people. I don't think the research effort is perfect, but I think we've had a lot of success in the treatment of cancer when you compare the point that in 1900, only 20 percent of cancer victims survived, and in the year 2000, two-thirds survive, so progress has been made.

But despite that, what I am aware of through my personal experience as a surgeon in Harlem for three decades is that there's an unequal burden of cancer in our country. And I've struggled over these 30 some years to try to understand why some people don't do as well as others when they develop cancer. One of the issues that we looked at closely was race. And we know, for example, that Black Americans have the highest death rate from cancer compared to all racial groups.

But when we looked at poverty, as part of the research that I've done, we found that most of the disparity, but not all, in Black Americans, disparity was corrected when it corrected for economic status. But something was left over that we couldn't explain.

Recently, in the last 7 or 8 years, there have been at least a dozen major published papers in the peer reviewed literature that have showed that the problem is beyond poverty. The problem also includes the point that Black Americans, and sometimes Hispanic Americans, don't get treated the same way at the same stage of disease at the same economic status. And this is very troubling to me.

An editorial that I was invited to write in the New England Journal of Medicine goes into this, and to cite some instances of this failure to treat people the same according to race, include the point that in a large veterans study, national study, Black men were not worked up as vigorously when they had chest pain that might mean that they had coronary heart disease. In another study from Harvard, they found that Black people, male and female, were not as likely to be referred for renal transplantation at the same economic status.

Other studies have shown differences in the treatment of pain according to race, and in a study just published in New York City, for Mount Sinai, it was found that the pharmacies in Black and Hispanic neighborhoods tend not to carry the morphine-like medicines, so it's harder for people who are Black and Hispanic to obtain medicines for chronic pain related to race.

The study that you mentioned in your introduction, Mr. Chairman, was a study by Bach at Memorial Sloane Kettering which showed at the same stage of early lung cancer, stage one lung can-

cer, Blacks and Whites are not treated the same although the economic status is the same. So this is a troubling set of issues which is superimposed on the point that Blacks don't do as well related to disproportionate poverty and lack of education.

And I would like to indicate the way that I see this issue. I was asked to give my opinion in the New England Journal of Medicine. I believe that doctors don't intentionally hurt anybody. I have no evidence that doctors don't treat people fairly, in their own thinking. But I believe that even within the medical profession, there are reflections of society itself, doctors and others are socialized before they become educated. So it is very possible that certain biases are carried with the person into his higher level of education or her higher level of education that influence the assumptions that are made when they look at different groups of people, without intending to do harm.

So I believe that leads us to the question of what could be done, if this is correct. Certainly the findings are correct. The question is, is this a bias situation, do the patients themselves have a role in not accepting treatment. That has to be studied. Are there problems on the side of patients who don't accept treatments because they don't believe in treatment. That's another issue that has to be looked at.

But yet it is such an important issue, Mr. Chairman, that I believe that it requires further studies. And the studies should look at, for example, not only are we doing the right research, which has been brought up here, but have we paid attention to the point that there is a disconnection, Mr. Chairman, between discovery and delivery. The discovery system is working rather well. But I believe that we don't always apply across the entire population what we discover. And this is a problem.

I believe we need to consider the training of a more diverse research and care giving force in our Nation. That would create more sensitivity, because if the people who we train mirror the population, in whatever that may mean racially and ethnically, and in every other way, there would be more of a chance that these kinds of insensitivities, if they do occur, would not occur.

Also I think we have to tear down the economic and cultural barriers to early diagnosis and treatment. I also recognize the point that there are geographic areas in America that can be defined economically and culturally which need very special attention. An example of that is described in a paper which I authored in 1990 which showed that males in Harlem have less of a chance of reaching age 65 than males in Bangladesh, which is a Third World country by that definition.

Let me end by saying that I think there's a lot we can say positive. We have conducted a war against cancer that we've fought rather well. But we have trouble now in translating the findings to all people in a fair way, including racial differences. Cancer is a broad societal problem as well as a scientific problem and that must be considered.

Finally I think we must see cancer disparities not only as a scientific problem, but also a moral and ethical challenge to our Nation. Thank you very much.

Mr. HORN. We thank you. You've made some useful suggestions. As I listen to them, having spent about 40 years of my life in civil rights matters, I find that a lot of those studies are very clear, and we know what the problem is. Now we have to figure out a way to get people into the hospital, into preventive care, all of that at the same time. So I don't know if we need too many studies, we just need to do it, as Churchill's greatest commencement address was, when he got up and looked at the students and he said, "Do it," and he sat down.

And I think we all know what the do its are. You've made a very good rounding out of that total situation, and you're living it every day. So we appreciate your presentation.

We will now go to questions. And we'll go with majority, minority, 5 minutes to a side and the first will be the senior member here of the Government Reform, the gentlewoman from Maryland, Mrs. Morella.

Mrs. MORELLA. Thank you. Thank you, Mr. Chairman.

I want to thank you all for testifying. As I listened and tried to digest the elements from your very moving testimony, I was reminded of a definition that Robert Frost once gave to a poem. He said it begins in delight and it ends in wisdom. And at the end, it tells me something I didn't know I knew, because there were elements of what each of you have stated that should be common sense, that some time we tend to not think about in the total context. And that's of course what integrative technology and oncology is really all about.

Your story was very moving, Mrs. Payton, and I guess one of the elements I got from it was the fact that nobody ever told you about integrative technology, and that we are not unilateral elements, that we are a combination of elements. And in listening to your wonderful comments, Dr. Achterberg, I realized even music, as well as faith, and I've often thought that what every hospital, every health care provider institution should have should be a humor ward, I mean, truly where there is humor, where people can laugh. Because I think if they can laugh, this is another element of a totality.

And Dr. Pettit, you had some very interesting comments with regard to every institute of NIH, which is in the district I represent, should have some drug discovery facet of it with chemists. I would be interested in at some point pursuing how you do that and what does it mean, are you adding a whole extra element, could it not be done right now with what they have and why aren't they doing something like that in some way. And Dr. Freeman, your concept of the disconnect between discovery and delivery and the need for studies.

So I think you're all saying we need more research, we need more studies, and we shouldn't have blinders on in terms of what the elements are beyond just trying to give somebody chemotherapy or whatever traditional mode of curative or medicine might be, to not be so traditional, but remember those things we take for granted.

OK. Out of each of your statements, if you could give me maybe one sentence that you think is most important that you want to make sure that this subcommittee, those of us who are here, of

those who aren't here who will be able to read the testimony, remember, what would it be? I could start with any one of you. Dr. Pettit.

Dr. PETTIT. Representative Morella, I'll try to be very brief in response to your question about chemists in the National Institutes of Health and the National Cancer Institute. The National Cancer Institute's program, when it was set up for discovery and development of new anti-cancer drugs, and that was primarily in 1957, that was the best program in the world. It was a model program, it was serving as a model program for the rest of our country's endeavors. That was because there were chemists there that were actually discovering the drugs. They were doing it both in the National Cancer Institute and in research contract type endeavors that were supervised by chemists from the National Cancer Institute.

Unfortunately, it was that absolutely marvelous initiative that began to undergo dismantling in 1975 to 1977 and again in 1981. However, had it been preserved, again, we would not be losing 600,000 cancer patients this year.

Also in the other NIHS, they could use that model very effectively for the other diseases that they are involved with, everything from coronary diseases to mental illness. And the fact that we have in our country, with our resources, not made better progress toward the solution to these medical problems, I think you can point to very accurately is a result of this lack of focused effort in the discovery of new drugs in the various institutes. Because when you look at the personnel in the various institutes, you'll find very few chemists, I mean really few, you can count them on one hand, and they are primarily involved in various administrative duties rather than directing substantial and very productive programs to discover the new drugs necessary to patients with those particular afflictions.

So we know how to do it. But the focus and motivation has been lacking and that has been primarily due to attacks from some segments in the private communities. Sorry about that long answer.

Mrs. MORELLA. If I could just ask the rest of you if there's any brief comment you'd like to make. And I appreciated that, Dr. Pettit.

Ms. ACHTERBERG. Just a brief one. I would also like to reiterate that it's time to do it, that the research base for the mind/body therapies, mind/body techniques is sound, it's old, it's phenomenal and it's really time for implementation.

Dr. FREEMAN. Congresswoman, I would like to say that since I believe that the critical problem that produces the unequal burden in cancer is the disconnect between what we know we should do and what we actually do, the disconnect between discovery and delivery, I believe that we need to find ways to eliminate the barriers that prevent the benefits of research from reaching all American people, irrespective of who they are, economically and racially.

Mrs. MORELLA. Mrs. Payton.

Mrs. PAYTON. And my statement would be to ensure adequate research in the areas of complementary medicines and to provide coverage and assets to complementary therapies for all people. And hopefully that will allow, no, I should say I know it would allow

a family to function better, to work, to go to school, because I know in my case, when my husband was lying there in the state that he was in, it affected all of us. He might have been physically ill, but it affects the whole family, it affects friends, it affects everybody that is involved.

Mrs. MORELLA. I want to thank you all very much. I yield back, Mr. Chairman.

Mr. HORN. I now yield 5 minutes to the gentleman from Maryland, Mr. Cummings, for questioning.

Mr. CUMMINGS. Thank you very much, Mr. Chairman.

I too want to thank all of you for being here. As I'm sitting up here, listening to you, and I think about all the people that suffer from cancer.

It sounds like you're saying that there are much better ways to address this dreadful disease. But in this country, which can send a man to the moon, and a country that is basically the world leader in so many areas, is it that we just don't get it? Or is it that there are such forces going against traditional methods that we just don't do it? We don't do the things that make sense?

As I'm listening to you, you sound like you're making sense. But I'm trying to figure out, when you think about something like cancer, and you think about something like death, it just seems as if in this country, we would connect them. You talked about discovery to delivery, Dr. Freeman. Dr. Pettit, you talked about having, you use the word attack, and I couldn't remember what you were saying, you said, Mrs. Morella asked you a question, and you said because of attacks from folks in the private sector, I think you said, can you elaborate on that for us a little bit?

Dr. PETTIT. Thank you, Congressman Cummings. I certainly would.

The problem in our system, in the NIHS and the National Cancer Institute, is that primarily there are some forces coming from the pharmaceutical companies and elsewhere and also in some scientific quarters, too, that are avidly against having new drugs discovered in our Government laboratories and in our university laboratories. And this of course is abominable, because we are all in the same jeopardy from cancer and all of the other diseases. And everybody in this country should be pulling on the same oar and trying to get these problems solved, instead of some political agendas that prevent this from being done.

And as our great chairman has just indicated, with a statement from Mr. Churchill, we need to do it. We need to be disciplined and get it done. Because we have the resources, both financially and intellectually, to solve these problems. And at the state-of-the-art in various scientific disciplines, now in the year 2000, there is no reason why we can't solve these problems relatively rapidly, if we marshal the forces.

But again, having the correct leadership. We have lacked the correct leadership terribly in these various medical areas.

Mr. CUMMINGS. When you heard the story of Mrs. Payton, when you heard her story, about how her husband was in this vegetative state and then basically came back to life for 2½ months, have you heard those kinds of stories before? Have you seen examples of that?

Dr. PETTIT. Representative Cummings, I have. In fact, I'm in the difficult position of being a director of a cancer research institute where we do not treat patients, because we're focused entirely on the discovery of new anti-cancer drugs. However, daily I have discussions with cancer patients who wish to talk about the possibility of new drugs coming, and of course their own personal involvement, or with family members. And it's enough to tear your heart out every day.

But you do see that with the anti-cancer drugs that are available and the treatments that are available today, that depending on the type of cancer, you can get curative results, at least a certain percentage with certain types of human cancer. But there is nothing that will do it 100 percent. And this is why we desperately need the new drugs, to save patients.

Also, you will find too that 1 cancer patient in 1,400 will have a spontaneous remission. No matter what you do, that patient will get well by his or her own. And of course, that confuses many issues, too.

Mr. CUMMINGS. Thank you very much, Mr. Chairman.

Mr. HORN. Thank you. I'm going to ask a few questions on my 5 minutes, and then will yield to Ms. Schakowsky.

Dr. Pettit, I'm curious. What drugs have been developed from your various discoveries? What drugs, just to get it in the record here, have been developed from your discoveries?

Dr. PETTIT. Thank you, Chairman Horn.

For example, bryostatin 1, was a lead that we started on 32 years ago, in 1968, from a marine bryozoan. And fortunately, in 1993, the National Cancer Institute decided to proceed ahead with it in its clinical trials programs. Incidentally, the U.S. National Cancer Institute's clinical trials programs are second to none in the world. They are absolutely excellent. The oncologists that work in the CTEP division are routinely excellent.

That drug is either in trials accruing patients, or with trials that are already closed, there have been some 90 human cancer trials either initiated or completed. And the current trials that are involving combination drug therapy are giving excellent results. And that's just one example.

Another example might be our combretastatin A4 pro-drug. That was a drug that we discovered in a tree, used primarily by the Zulus in southern Africa, with a long history of primitive medical use. And we found that drug is one that turns out to be a powerful cancer anti-angiogenesis drug. It will actually go right to the metastatic tumor, and cutoff the blood supply, so within a few hours, I might add too, this is just finishing the first four human cancer clinical trials, and what the oncologists are finding is that this drug will generally cause pain in the tumor about 2 hours after the injection of the drug. And that's because the blood is being cutoff to that metastatic tumor.

And within 24 hours, there's a 100 percent cutoff of the blood to the tumor. There have been several patients, just among the first few, that have now been saved with that drug. And we're hoping as the clinical trials expand, and that's certainly in combination with other drugs that might remove the last of the viable cancer

cells around the peripheral aspects of the tumor, that it's going to be a very successful treatment.

But these are only two examples, one from a plant, one from a marine animal. That gives you some good feeling, not only good feeling, but every expectation that if we could concentrate in this area and certainly have our national effort focused far more strongly than the half dozen chemists in the National Cancer Institute directed by, superbly, the NCI superstar, Dr. Michael Boyd, and that if that program could be expanded, we would have all sorts of drugs of this sort being discovered and developed.

And of course, it's a tragedy, a travesty for our country that we are in that position.

And also, some of these new drugs are exactly what we need, for example, for bettering the treatment in our Afro-American population, which has, for example, a higher incidence of prostate cancer. And we need drugs like the one I was just talking about that will go to those tumors, cutoff the blood supply and put that patient on the road to complete recovery.

Mr. HORN. Let me ask all of you, and particularly Dr. Freeman, this next question. We've been looking at the role of complementary and alternative medicine now for several months in our health care system, and in particular in relation to cancer. Are there differences in access to these treatments for these types of therapies?

Dr. FREEMAN. In my own experience, I don't have much experience with alternative treatments. Complementary treatments I know more about.

I think that there's a need to open up our ability to test these drugs that are brought up as complementary and alternative, and bring the same scientific analysis to those drugs that we bring to drugs coming up in the routine way. I believe that there's little debate now in the medical world about a complementary treatment, in other words, going along with the so-called traditional treatment, and adding a complementary treatment that doesn't have an untoward effect.

The question is, how much more resources we should put toward providing complementary treatments. And I believe we should put resources toward proving the so-called alternative treatments which displace the traditional treatment. That needs a lot more effort.

Mr. HORN. Any other thoughts on that by any of you? Yes, Dr. Pettit.

Dr. PETTIT. Mr. Chairman, in 1973, I had the experience of being sent to the People's Republic of China by the U.S. National Academy of Sciences and the National Cancer Institute. That was the first scientific medical delegation, and the intention was to explore medicine in the People's Republic of China. I had a very interesting experience in about 60 different hospitals and research institutes and what was left of the universities at that time, and found that the Chinese were doing exactly as some of my colleagues here have suggested. They were combining, in fact, Dr. Freeman just made this suggestion, the combination of alternative treatments, of course, with the sharply focused, for example, anti-cancer drug treatments.

That was exactly what was going on in China. The mission there was to use the traditional medical treatments of China, where they have roughly 5,000 plant materials that have been found to have use against various types of medical problems in China. And in the case of cancer, to use some of those therapies in connection with the drugs that at that time had been discovered in our U.S. National Cancer Institute's programs, to improve the patient's immune system, to reduce toxicity, and in fact, in general, to reduce nausea, and in general make the life of the patient far more manageable.

And I'm convinced, as I was then and today, that there is an excellent place for alternative therapies in the treatment of cancer patients. But fundamentally, you must have the drugs that we know will give curative results.

Mr. HORN. Any other comments? Dr. Achterberg.

Ms. ACHTERBERG. I just would like to make three observations, brief observations, based on the history of cancer and medicine as I know it. And that's that nothing cures everybody. Nothing. And that everything cures somebody. And that's a fact. Everything cures somebody, and that nothing works forever. That's another fact. I think if we take that kind of a dogma, which I believe it is, into consideration, we have to acknowledge the versatility of the human condition and the need to be versatile in our conceptualization of what medicine might be for the treatment of cancer.

Mr. HORN. That's well put. Mrs. Payton.

Mrs. PAYTON. Well, I would just like to say that it saddens me to know that today that still we have to worry about things like all Americans, regardless of race, not being treated equally, with any types of medical care. And hopefully through this fund, we will use it as a platform to address those issues. And I just think everybody should be treated the same.

And it happens, because my husband, like I said, was fortunate to have good insurance. But there are times, too, that we walked into hospitals, and if he was not recognizable right away, he was treated differently. And things like that really bothered him, too. And that even today, we are still being faced with those types of issues. So I'm glad those issues are being brought up today and hopefully will be taken care of in the future.

Mr. HORN. Well, you're right. I think almost every family in the Nation sometimes, when you look at the bill, they always have that old gag that they put you in a wheel chair to wheel you out, and that's because you see the bill on the way out. [Laughter.]

I will now yield 5 minutes to the gentlewoman from Illinois, Ms. Schakowsky.

Ms. SCHAKOWSKY. Thank you, Mr. Chairman.

First, I want to say to Mrs. Payton that, and to all of you, that I apologize for not being here for your testimony. I have read some of it. But Mrs. Payton, I'm from Chicago and represent a district in Chicago where your husband, for so many wonderful years, was our hero in the way that he played, but also in the way that he lived, and finally in the way that he died as well.

And I know that while your pain is incomparable to anyone else's, that Chicagoans are also grieving for him. And I want to

thank you for taking your pain and your grief and your knowledge now and using it as an opportunity to save lives. So thank you very much for all that you do, being here today, but everything else as well. We really appreciate it.

I wanted to tell you a personal experience of mine. My father lived with me for the last 6 years of his life. He had prostate cancer, and was pretty healthy until about the last few months. And then at the end had hospice care. It wasn't until he had hospice care that there was a whole new attitude. Now that all hope was gone, there was this emphasis on comfort, on his emotional as well as his physical well-being.

Suddenly, quite frankly, there were all kinds of different options available to him, and a new level of caring and concern. And it seemed to me, in retrospect, at the time we were just grateful for that, that why is that? It's not until hope is gone, there is no longer a chance of life being greatly extended. And I read in your testimony, Mrs. Payton, that it seems in a way that that was true and you had to fight for it, to make sure that pain was really well controlled and appropriate.

I just wondered if any one of you had thoughts on that, and maybe all of your testimony already referred to that. I apologize if it has already. It seems like there's a disconnect here that we're not treating the whole person until that person is about to die.

Dr. FREEMAN. In my experience as a teacher in a hospital and residency program, I'm always concerned about this point. I think in general in America, my opinion is that our technology has outstripped our humanity. You get into a technical setting, and the CT scans and MRIs. Sometimes my residents are paying more attention to the tests than they are to the patient.

I think somehow we have to reinject the humanitarian part into the people, the doctors and others who are treating people for cure, or at the point even where treatment fails. And to get a balance between the wonderful technological advances that we all are proud of, but at the same time, I think there's been a diminishment about the human concerns. And that needs to be fixed.

Mrs. PAYTON. I just feel this is probably where educating people as to other alternatives. Because if you don't know any better, then you won't do better. And I think in our case that was it. You sort of do what your doctors tell you, and you followed their lead. And like I said, thank goodness for some lady who was an angel in my life, and saw fit to come to me and give me another alternative. I think educating people that they do have other choices and that they can feel comfortable with these other choices is what we need to do.

Ms. SCHAKOWSKY. And that's a good segue. I wonder, Mr. Chairman, if I could have included in the record an article that was in the Wall Street Journal on June 6th, "Cyberspace is Spurring Demand for a New Leukemia Treatment."

Mr. HORN. Without objection, it will be put in the record at this point.

[The information referred to follows:]



THE WALL STREET JOURNAL.

Blood Test: News About Leukemia Unexpectedly Puts Novartis on the Spot --- Promising Trial of New Drug Spurs Demand, Prompts The Chairman to Step In --- An Outcry on the Internet

Wall Street Journal; New York, N. Y.; Jun 6, 2000; By [Stephen D. Moore](#);

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Abstract:

The unexpected success played havoc with Novartis's plans for the rest of the testing program. The company had calculated the amount of STI-571 needed for the early phases of testing by assuming that many patients would drop out when the drug stopped working. But with almost every chronic-phase patient continuing to respond after months of treatment, says drug-development chief Joerg Reinhardt, "nobody could be removed from the drug, which limited the amount of STI-571 free for new patients."

The number of would-be patients was surging. Sandy Craine, a 50-year-old [London](#) restaurant owner, was all set to have a bone-marrow transplant for her advanced CML last year when she stumbled onto the Web site of a [U.S.](#) support group touting more clinical trials to come. "I decided to sign up, just out of the blue really, but I didn't expect anything to come of it," she recalls. Within days she got an e-mail with a detailed account of the STI-571 trials. "My oncologist was amazed I'd looked up the research but told me to put off the bone-marrow transplant and go to [Portland](#) right away if I could get in," Ms. Craine says. She did, and today she is in remission.

Meanwhile, Novartis will proceed with elaborate Phase III trials aimed at winning broader approval of STI-571, for patients whose CML is still in the initial, chronic stage. These trials, which are about to begin, will compare STI-571 against alpha interferon, the current standard treatment. They could take three to four years before yielding statistically significant data. Long before that, Novartis hopes to have the drug on the market in the [U.S.](#) for advanced cases.

Full Text:

Copyright Dow Jones & Company Inc Jun 6, 2000

BASEL, Switzerland -- For Novartis AG, the news from the laboratory early last year was extraordinary: In preliminary tests, a drug for a common form of leukemia had driven it into remission in more than 95% of patients with an early stage of the disease.

Just as gratifying, side effects were few. Researchers began laying plans for a second and larger phase of testing. After that, in the time-honored calendar of drug development, would come a final round of human trials that might last for years, and then, if all was still well, an application to regulators for permission to market it.

But that leisurely schedule wasn't made for the Internet, or for results as dramatic as these. Word of the

initial success, against a deadly disease for which there are few alternatives, quickly began to fly through cyberspace. In short order, patients from around the world were clamoring for the compound known only as STI-571. Politicians and celebrities lobbied Novartis on behalf of friends and relatives desperate to join a clinical trial -- and right away.

Yet Novartis had nowhere near enough of the substance to meet this demand, even if it wanted to. Scaling up production is an elaborate process, all the more so for a complex, lab-invented compound like this.

Meanwhile, inside Novartis, competing interests were tugging in different directions. While researchers saw STI-571 as a potential scientific coup and wanted to plunge ahead, others were concerned about the small size of its market. They wondered if the hundreds of millions of dollars needed to develop what might still fail would be better wagered otherwise.

STI-571, while still experimental and not a cure, has excited leukemia researchers like nothing before. But STI-571's story also shows how, in an age of instant global communications, a potential breakthrough treatment poses entirely new business and moral questions for a drug company.

The disorder that STI-571 targets is chronic myelogenous leukemia, or CML, one of four forms of leukemia. CML progresses over four to six years from a chronic stage with few symptoms to an intermediate "accelerated" phase and finally a so-called blast crisis, which kills most patients within a year. Alpha interferon can delay its progression, and risky bone-marrow transplants greatly help some patients. But for most, once the disease reaches its acute stage, no really effective therapy is available.

CML was one of the first kinds of cancer traced to a genetic flaw, in this case, mismatched copies of a chromosome in white blood cells. The mutated gene in this "Philadelphia" chromosome -- it was identified in Pennsylvania in 1960 -- gets stuck in the "on" position and causes cells to divide uncontrollably. They gradually crowd out healthy white blood cells and cripple the immune system.

Researchers long dreamed of a drug to block a mutant enzyme that this defect produces. But because it would have to be highly selective -- able to hit this precise target while sparing hundreds of close chemical cousins -- many companies doubted such a drug could be devised. One of the few willing to tackle the challenge was Ciba-Geigy, the Swiss company that merged with Sandoz in 1996 to create Novartis. After seven years and hundreds of ineffective compounds, Ciba synthesized one that seemed to meet the test.

Just one problem: It caused liver toxicity in rats and dogs. Was this the end of the line? Ciba scientists ordered one extra, make-or-break round of tests in a species closer to man, trying STI-571 on monkeys. It passed.

Still, the compound languished while research executives focused their attentions on drugs for diseases affecting far more patients. CML strikes only about 10,000 people in the U.S. and Europe each year. First-stage human trials finally got going at sites that included the laboratory of Brian Druker at Oregon Health Services University in Portland, a longtime advocate of STI-571.

One of his first patients was a man named Ed Crandall. Although Mr. Crandall got only a low preliminary dose and it didn't help him, he affected the development of STI-571 nonetheless: He created the first Web site devoted to it, posting reports from other clinical-trial patients and chronicling his own battle with CML, which ended with his death in February 1999.

By then, Dr. Druker and others were seeing a striking number of remissions. In all, the blood counts of 57 of 59 chronic-stage CML patients in the Phase I trials rapidly returned to normal.

Roughly a third of them registered an even bigger benefit: sharp drops in the proportion of white blood cells that carried the defective Philadelphia chromosome. Although STI-571 still hasn't been tested over the long term, this was seen as a heartening result, raising hopes that progression to the acute stages of CML might be delayed significantly, perhaps even indefinitely. In any case, driving CML into remission would make the patient eligible for a bone-marrow transplant if a match was available.

The unexpected success played havoc with Novartis's plans for the rest of the testing program. The company had calculated the amount of STI-571 needed for the early phases of testing by assuming that many patients would drop out when the drug stopped working. But with almost every chronic-phase patient continuing to respond after months of treatment, says drug-development chief Joerg Reinhardt, "nobody could be removed from the drug, which limited the amount of STI-571 free for new patients."

And the number of would-be patients was surging. Sandy Craine, a 50-year-old London restaurant owner, was all set to have a bone-marrow transplant for her advanced CML last year when she stumbled onto the Web site of a U.S. support group touting more clinical trials to come. "I decided to sign up, just out of the blue really, but I didn't expect anything to come of it," she recalls. Within days she got an e-mail with a detailed account of the STI-571 trials. "My oncologist was amazed I'd looked up the research but told me to put off the bone-marrow transplant and go to Portland right away if I could get in," Ms. Craine says. She did, and today she is in remission.

Peter Rowbotham, who sent her the e-mail, estimates he has read 13,000 messages about STI-571 on CML chat boards over the past year. Mr. Rowbotham, the husband of a CML patient in Vancouver, British Columbia, says, "The huge amount of information that's flowed through the Internet has become quite sophisticated, and it's given patients a tremendous feeling of power."

Their voices added to the pressure on Novartis to increase production. But besides being logistically difficult, this would carry some financial risk. If the substance never became a marketable drug, the costly effort would go to waste.

Novartis Chairman Daniel Vasella, a physician himself, took personal charge of the situation early last summer, ordering a steep increase in production. "I told people not to worry about excess supplies of STI-571 that might never be sold," Dr. Vasella recalls. "People had been trying to manage the testing program in a controlled way," he adds. "We want to get this drug available to patients quickly, and to do that you simply can't stick to bureaucratic rules."

Output for this year was originally planned at just a few hundred kilograms. The new schedule calls for 20 tons.

Novartis began making up for lost time. Initial results of clinical trials normally remain under tight wraps within the company, but a big production boost required other tactics. Gregory Burke, global head of oncology clinical research, assembled production executives in August and told them that in a few dozen patients, STI-571 had produced responses "unprecedented for any cancer compound at a comparable stage of development."

Morale soared, recalls Andreas Rummelt, head of global technical operations. "After hearing such results, people volunteered to work Saturdays and Sundays to make the whole thing go much faster," he says.

That wasn't so easy. Swiss labor laws include tight curbs on overtime. So the STI-571 development had to be moved to a pilot plant already authorized to work round-the-clock shifts.

And scaling up manufacture of a new drug from a few kilograms in the lab to tons in gleaming steel reaction vessels is a delicate process. Development teams usually spend two to three years fine-tuning each step in chemical synthesis before production shifts to the company's main pharmaceutical factory in [Ireland](#). Even though STI-571 requires a marathon 12-step chemical synthesis, the handover was completed in just over a year, Dr. Rummelt says.

Even that wasn't fast enough to keep pace as news about STI-571 spread around the world at Internet speed -- to people like Tracey van Houwelin.

Ms. van Houwelin, a Dutch CML patient for whom interferon therapy had failed, heard about STI-571 in early 1999 after joining a [U.S.](#) support group via the Internet. She says her hematologist wouldn't help her find a clinical trial to join, so she talked her way into one. Learning through the support group that [London's](#) Hammersmith Hospital would take part in the next round of trials, the 37-year-old housewife and mother phoned staff members several times a week for months "so they wouldn't forget my name," she says. When the hospital enrolled patients, she was the first one in.

She now travels to [London](#) every other month for treatment, while her family doctor in Holland does blood tests and faxes the results to Hammersmith. Although Mrs. Van Houwelin now is in remission, she remains irked by the cautious attitude of her doctors in the [Netherlands](#). "They say it isn't right to tell patients about STI-571 until they see what the long-term effects are," she says. But "patients don't sit still with Band-Aids over their mouths waiting to die any more. I don't have time to wait on the long-term effects."

Even the pace of the [London](#) trials owes something to patient activism, in this case by a 33-year-old [Montreal](#) woman named Suzan McNamara. By mid-1999, her CML was outwitting interferon and on the verge of progressing to the accelerated stage. "I was very sick and in a panic because once you go into accelerated stage, STI-571 isn't as effective," she says.

Ms. McNamara also had heard about STI-571 from Internet chat groups, and in September she called Dr. Druker, hoping to be accepted into the [Portland](#) trial. He warned that chances were slim because limited supplies made it impossible to expand testing as rapidly as he wanted.

Ms. McNamara drafted an online petition pressing Novartis to step up production of STI-571. "My goal was 500 signatures," she says. My mid-October, she had more than 4,000, and sent the petition to Dr. Vasella.

"Before that," the Novartis chairman says, "I'd never had any contact with the power of the Internet."

He was able to offer the kind of reply the petitioners wanted: Novartis told them it had already stepped up production.

Moreover, it said it had decided to open Phase II trials in [Europe](#) and the [U.S.](#) in January 2000, several months ahead of schedule, and set up a hot line to help patients find the nearest trial site. Ms. McNamara joined Dr. Druker's trial and has had a strong response to STI-571.

Not everybody was satisfied with Novartis. Internet chat groups debated whether to adopt the more aggressive tactics of AIDS activists and try to embarrass the company into moving even faster. Working

behind the scenes, Dr. Druker persuaded patients to hold off until December 1999, when he was scheduled to present preliminary data from Phase I trials at a meeting of the American Society of Hematology in [New Orleans](#).

His presentation there electrified an audience of nearly 10,000 physicians. Since the conference, Novartis executives have been deluged with calls and letters, including overtures from a queen and a prime minister, on behalf of friends or relatives desperate for access to STI-571.

Production still trails demand, and as 32 cancer centers move into Phase II trials, rationing the supplies has become a delicate problem. Novartis rejected the idea of a patient lottery and instead set strict eligibility criteria -- incurring criticism from advocacy groups and excluded patients. The question, says Novartis Research Director Paul Herrling, was "Who are people with CML who can wait another month and who should have it tomorrow to save their life?"

The criteria ended up excluding the operator of a key CML Web site, Jerry Mayfield, because his disease is still controlled by interferon.

And the company has adopted an aggressive, two-track strategy for gaining regulatory approval. Instead of proceeding through all three phases of human testing before seeking any approval -- the normal practice -- it will try to get the drug approved for advanced cases based just on Phase II tests. The [U.S. Food and Drug Administration](#) has agreed to such a fast-track approach, reflecting greater flexibility the agency has shown lately in getting important cancer drugs on the market.

Meanwhile, Novartis will proceed with elaborate Phase III trials aimed at winning broader approval of STI-571, for patients whose CML is still in the initial, chronic stage. These trials, which are about to begin, will compare STI-571 against alpha interferon, the current standard treatment. They could take three to four years before yielding statistically significant data. Long before that, Novartis hopes to have the drug on the market in the [U.S.](#) for advanced cases.

It might not be limited to them. Once a drug is approved for any condition, doctors are free to prescribe it for other cases.

Some Novartis scientists worry about this testing speed-up. "One of the benefits of going slow in a trial is that the number of patients at risk of bad things happening at any one time is small," says Dr. Burke. "Without having information about longterm exposure, you could put a whole mess of patients at risk."

But luminaries in the cancer establishment are keeping up the pressure. The director of the U.S. National Cancer Institute, Richard D. Klausner, recently called Dr. Vasella with an offer to collaborate on tests of STI-571 against certain solid tumors, based on indications it might help there, too.

Recruitment into clinical trials has exploded, with more than 1,000 CML patients now getting STI-571 and hundreds more about to, in the Phase III trial. It will be done simultaneously in 14 countries.

Despite the huge risks associated with a drug still in early stages of testing, Novartis officials now expect to submit applications for regulatory approval early next year and STI-571 could reach pharmacy shelves before the end of 2001, a pace previously matched only by a handful of AIDS medicines.

Credit: Staff Reporter of The Wall Street Journal

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Ms. SCHAKOWSKY. Thank you.

I wanted to direct a comment about that, in the brief time I have, to Dr. Freeman. It talks about how a clinical trial with a new drug for a certain kind of leukemia became communicated over the internet and suddenly there was this great demand by the growing number of patients who are trying to take care into their own hands. But I wanted to raise this issue, does this not make the digital divide, that is the problem that you've raised in your work of the disparity between perhaps low income people, so if they don't have access to the internet, they may not even know about this, or other treatments that may be available.

Dr. FREEMAN. Congresswoman, you've touched on a very critical issue. The problem is that the more advances we make, technological and computer and things like the example you mentioned, the wider the disparity becomes between those who don't have resources and those who do. And so there's a catch-22. We clearly want to advance, and we will advance, and we're going to keep putting money into research. We need to do that.

But we have to be aware of the point that when we do that, we widen the gap between the people who are poor and uneducated and not include into the mainstream of the American society. So it's an issue that becomes a deep moral and ethical issue for U.S. policymakers and for the Nation as a whole.

Ms. SCHAKOWSKY. Thank you, Mr. Chairman.

Mr. HORN. Quite welcome. Good line of questioning.

I'm going to ask a few more on the subject of the alternatives. And Dr. Achterberg, I'd like to know, how important is music and visualization to healing in your judgment?

Ms. ACHTERBERG. I think what they represent is essential to healing. Not everyone will like music and not everyone wants to do visualization. But it's the idea that they tap deeper into our humanity than the pills and potions that are being administered.

So rather than focus on those two things, I'd like to broaden it to the whole base that they represent, which is the creative, expressive arts, for example, ways of self-care. It is absolutely true that what we believe and our thoughts affect our bodies. And anything that influences a sense of hope, a sense of peace, a sense of well-being, a sense of trust, is bound to be healing. Not just in the sense of healing your mind or healing your psyche, but healing your body.

Mr. HORN. I happen to agree with you, having once wanted to be a music major. And Louise Slaughter from New York and I are the co-chairs of the Arts Caucus. We've been trying to educate them on just what you're trying to talk about.

Ms. ACHTERBERG. Arts are healing.

Mr. HORN. You're right.

Where can individuals find good information on the mind/body techniques to use when facing cancer?

Ms. ACHTERBERG. I think a place to start is the report that I mentioned that was created for the National Institute of Health.

Mr. HORN. Is that still in print?

Ms. ACHTERBERG. I assume it's still in print—is it, Beth? It is truly the state-of-the-art as of 1994, anyway, and there haven't been that many developments since that period of time. So I would

recommend that they start there. It was written with great integrity for this purpose.

Mr. HORN. I've found Norman Cousins books are also very helpful.

Could you explain some of the alternative approaches to pain management?

Ms. ACHTERBERG. Pain is a confusing phenomena, because we're not ever sure how much pain is really depression, and for cancer, especially, how much pain is really, stems from anxiety. So many of the alternative techniques which are attempting or based to stem factors of anxiety would be recommended for cancer pain.

Interestingly enough, cancer pain has not been given the attention that it should have been over the years. When I first started this work in 1973, there wasn't a single pain protocol for a child with cancer. I think we made the assumptions, or the assumptions were made that children with cancer don't feel pain. That's improved somewhat but not a lot in recent years.

Mr. HORN. Yesterday we had a doctor from the Health Care Financing Administration on one of our panels. And he testified about Medicare's coverage of complementary and alternative therapies for cancer patients. Do you think that treatments such as acupuncture, massage therapy, music therapy, we could add art therapy, a whole series of them, should be reimbursed by Medicare?

Ms. ACHTERBERG. To some extent. But we need to go back and take a look at the data base for all of those therapies. For example, acupuncture has been shown effective for pain. But not for a lot of other conditions associated with cancer. Yes, they should be reimbursed provided they can come forth with research, a data base.

Mr. HORN. Anybody else want to get in on that? Dr. Freeman?

Dr. FREEMAN. I agree that you need a scientific base of proof before Medicare will pay for something.

Mr. HORN. Dr. Pettit, any thoughts on that?

Dr. PETTIT. I'd like to add that as part of the experience in 1973, I had tremendous exposure to acupuncture in some of the large hospitals in China. And it was pretty clear that for pain management, it can be very, very effective. In fact, I watched numbers of different types of pretty severe surgeries being conducted under acupuncture anaesthesia.

I'd also like to add that, as a general thought, that three quarters of the world's population now are treated with traditional medical materials, materials from plants and animals. That's only about, again, a quarter of our world's population, normally here in the western world, that are treated with the drugs that we normally know.

And it tells us that there's a vast treasure house of substances that we could find in these various natural materials on our planet that could very well solve essentially all of the medical problems that we're confronted with.

Mr. Chairman, I'm sorry, I need to add one other thought. In the United States today, probably 30 percent or more of all prescriptions written are for plant and animal products. And the other drugs that we use, if you trace back, when you're thinking as an organic chemist, you'll find that all of those leads pretty much all go back to naturally occurring substances.

And also these substances that you find in nature have chemical structures that we organic chemists would have never thought of. And as a result, they're just absolutely superb for the ever-increasingly more effective design of new drugs.

Mr. HORN. I remember when I was a little boy of 7 or so, and I'd put my hands and pulled up some poison ivy in the east, poison oak in the west. And my father, being a chemist, said, well, go look and see what plants are around that. And sure enough, there was a plant you could put in, boil, take all the itching out of it. So a few things are in nature.

Now, is there anything any of you would like to say before we ask the next panel to come up? Mrs. Payton. Anything you want to add that we haven't asked?

Mrs. PAYTON. No, when you were talking about alternative medicines and being picked up, I was just going to say, from a personal side, the treatments that Walter had, he didn't have acupuncture, but he did have a naturopath who did real deep tissue massage therapies on him. And the nutrition and the relaxation techniques and some of those therapies he used, and they did make significant difference.

I think if it's proven that these things work, then I would hope that they would be looked at and covered by some insurance.

Mr. HORN. Well, I think you're right about that. And we started prodding the gentleman yesterday.

Dr. FREEMAN. Mr. Chairman, I think that I'd like to end with one thought. I think we know how to fight a war in this country. We have a military that understands how to fight war. And what I've noticed that they do is they create these weapons of destruction, and then when a war occurs, they use them against where the enemy is invading the most.

I think there's something to be learned from that philosophy. We develop weapons in research, in cancer, but we don't use them where the enemy is invading the most. And there's something to be learned by that.

Mr. HORN. Well, I think you're right. Some of this is a management situation where there has to be a goal set, whether it be President Kennedy saying we go to the moon, or all sorts of things, we've had a makeover with the nuclear navy, they achieved great things. And we need to do the same in this field, obviously.

Yes, Dr. Pettit.

Dr. PETTIT. Mr. Chairman, I'd like to followup on those thoughts. It's exactly what the cancer problem needs, and it's sort of all the other terrible problems that we have that kill people. And we've had good experience in our Nation, for example, with the Manhattan Project that helped to end the second World War. As you just indicated, we had another strike force approach with NASA to put a person on the moon.

And this is what we've been missing in the cancer problem. And that's what we need, to have a strike force. And the only way you're going to do this is to have several hundreds or several thousands of chemists, organic chemists, discovering the drugs, to solve the cancer problem. And that can best be done through our U.S. National Cancer Institute. But it would have to be reorganized along the lines that I've been urging.

And the same applies to our NIHS.

Mr. HORN. Well, I want to definitely pursue some of that, since we are a subcommittee dealing with that organization. But obviously, we've got to get them to come along and not just fight everything, or maybe set up two NIHS or something.

Does the gentleman from Maryland have any more questions he'd like to ask?

Mr. CUMMINGS. Just very briefly, Mr. Chairman.

Mr. Chairman, and to our panel, I want to thank you for being here. We've heard from Dr. Harold Freeman of North General Hospital, and I thank you, Dr. Freeman, for being here. And I think I had something to do with having you here. And the reason why I wanted you to be here was because according to the American Cancer Society's publication, and I'll be brief, Mr. Chairman, cancer facts and figures for African Americans, African Americans are more likely to develop cancer than persons of any other racial and ethnic group. For a number of years, it has been assumed that health disparities were due to social and economic differences.

But as reported in the Journal of the National Cancer Institute, a study conducted at the University of Pittsburgh suggested that differences in diagnosis and treatment accounted for a higher number of some cancer cases. I certainly appreciate the invitation extended to Dr. Freeman to speak about racial disparities in cancer treatments. But I feel the issue merits a separate hearing.

As such, the minority members of the committee have joined in a letter to request such a hearing, Mr. Chairman. I'll submit that to you at this time. Thank you very much.

Mr. HORN. Well, thank you. Does the gentlewoman from Illinois have anything else?

Is that for the record?

Mr. CUMMINGS. It's for the record, Mr. Chairman.

Mr. HORN. OK. We thank you very much. We know we've taken a lot of your time, but I think a lot of good ideas came out of this, and that's why we have the hearing process. We learn a lot. Hopefully some of you might have learned from the iteration of your colleagues.

We're now going to move to the last panel, panel five. Mr. Dan Nixon of the American Health Foundation, Mr. Giancarlo Pizza from Italy, Mr. Burton Goldberg from Tiburon, CA.

Gentlemen, the tradition of the Government Reform is we have the oath administered to all of the witnesses and any of their life supports, as we say nowadays, I guess.

[Witnesses sworn.]

Mr. HORN. The clerk will note the witnesses have affirmed the oath. And we will go in the order on the panel five, on the agenda. So Dr. Dan Nixon of the American Health Foundation will be first. Please proceed. And automatically, your written statements are in the record. We'd like a summary, really.

STATEMENTS OF DR. DANIEL WALKER NIXON, M.D., PRESIDENT, AMERICAN HEALTH FOUNDATION; ALICE AND HAYNE FOLK PROFESSOR OF EXPERIMENTAL ONCOLOGY, MEDICAL UNIVERSITY OF SOUTH CAROLINA; DR. GIANCARLO PIZZA, ITALY; AND BURTON GOLDBERG, TIBURON, CA

Dr. NIXON. Well, I am Dr. Dan Nixon, president of the American Health Foundation, which is a National Cancer Institute funded cancer prevention center. It's in Valhalla, NY and in Manhattan, with affiliates throughout the United States.

I'm honored to accept this invitation, and I want to first explain what the American Health Foundation is all about and hopefully to broaden the focus of the discussion today into a consideration of the 70 percent of cancers that are preventable in this country today. That means about 300,000 lives that we lose that we don't have to lose.

American Health Foundation is a translational research organization, taking prevention research from the lab to the clinic to the community. We have about 60 senior scientists and 130,000 square feet of labs. We are vigorously pursuing the ways to prevent malignant disease. This includes integrative medicine. We're looking at nutrition, phytochemicals, nutrients, tobacco carcinogenesis prevention, and how to put all that into the clinic.

Specifically, we're looking at, and I appeal to the committee to support this kind of research, the effects of phytochemicals in lung cancer prevention, and colon cancer and breast cancer. We have a number of preventive chemicals, several thousand actually exist in fruits and grains. We are focusing specifically on phytochemicals in teas, anti-neoplastic effects of certain chemicals in berries, such as raspberries, strawberries, blackberries and mulberries. And certain synthetic chemicals, along with some organic materials like selenium. We have very good data that these chemicals will kill cancer cells in the lab.

We're now moving these into clinical trials. And we also have evidence that a high fat diet is very effective as a cancer promoter, even in lung cancer. My predecessor, Dr. Ernst Wynder, was very perceptive in figuring out that a high fat diet might promote the development of cancer of the lungs, so we have clinical trials in this area as well.

So how do we really put this together so that it's a translational, real prevention process? And you have to think about this not so much as prevention in the traditional sense, it's really almost treatment before the tumor develops. We know that for example prostate cancer takes about 30 years to develop, so that before the tumor is there, you've still got a malignant process going on. And this is what we're targeting, those cells that have gone down the road toward malignancy, but haven't actually started to invade and spread.

I'll give you three examples of what we're doing. We have a grant from the National Cancer Institute that's looking at molecular epidemiology. Why do some patients get cancer and why do some patients not get cancer, even though they're exposed to the same carcinogens? Very interesting question. One out of eight women get breast cancer. Seven women don't get breast cancer. Why is that? Could we identify that one and focus on that one and leave the

other seven alone throughout their lives, for example, no mammograms or anything would be necessary.

The second item I want to mention to you is the WINS project, the Women's Intervention and Nutrition Study. We have the largest breast cancer recurrence prevention trial currently in the world. We've got over 40 hospitals around the country entering patients into this trial. It's a trial to determine if decreasing fat in the diet will prevent recurrence of breast cancer. We now have almost 2,300 patients in this trial, and should finish accrual at the end of this year.

To put all this together and to try to address some of the disparities that Dr. Freeman and others have mentioned, we are now establishing an informatics system so that we can link our laboratories with clinics in the low country of South Carolina, the Beaufort Jasper Comprehensive Health Care Agency, and clinics in the inner city of Harlem and other inner city areas, so that we can reach those who are at disproportionate risk of cancer with our chemo preventive clinical trials.

And the final item I want to mention to you is our new clinical trial that we are about to start with certain chemicals from berries in lung cancer. We know that some of the anticyanidins from berries, this is a natural product area, do affect malignant cells in the clinics. So now we're going to look at the people who have stopped smoking, who are still at cancer risk, or who have continued to smoke, give them a various variety of berry extracts, which will be produced by a group of botanists in Canada, and use certain intermediate markers of oxidative damage and stress to see if we can stop the malignant process before it becomes a tumor.

So in summary, we've got to concentrate on cancer prevention research as well as cancer treatment research. I'm a cancer treater by trade, so I'm now convinced that we must do this cancer prevention research as well. Cancer prevention and intervention, chemo prevention, nutritional strategies, when proven, are especially appropriate for integrative medicine approaches and cancer control. To give the one sentence summary that Mrs. Morella asked for earlier, we can save 300,000 lives in this country every year by prevention, so let's do it.

Thank you very much, Mr. Chairman.

[The prepared statement of Dr. Nixon follows:]

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American Health Foundation

OFFICE OF THE PRESIDENT

SUMMARY OF TESTIMONY

**DANIEL W. NIXON, M.D.
PRESIDENT,
AMERICAN HEALTH FOUNDATION
NEW YORK, NY**

**BEFORE THE COMMITTEE ON
GOVERNMENT REFORM HEARING
ON**

**"INTEGRATIVE ONCOLOGY—
CANCER CARE FOR THE NEW MILLENNIUM"**

JUNE 8, 2000

Mr. Chairman, Honorable Members of the Committee.

I am Daniel Walker Nixon, M.D., President of the American Health Foundation, a National Cancer Institute-designated cancer prevention center located in New York City (14th Congressional District, NY), and in Valhalla, in Westchester County (19th Congressional District, NY). Concurrently, I am also Alice and Hayne Folk Professor of Experimental Oncology at the Medical University of South Carolina in Charleston (1st Congressional District, SC).

I am honored to accept your invitation to testify at this hearing on "Integrative Oncology – Cancer Care for the Millennium." You specifically asked that I address the issue of integrative approaches to lung cancer. As a clinician, I underscore the need for full exploration of all medical and scientific pursuits that promise to contribute to the reduction of mortality from cancer. I also strongly recommend that ways be found to make promising modes of complementary cancer therapies accessible to all patients. However, as the President of the American Health Foundation, I am here foremost to promote prevention research. Primary Cancer prevention must get higher priority if we are to win the war on cancer.

This Committee is well aware of the reasons for the lung cancer epidemic that is ravaging this nation and will continue to prematurely end millions of lives throughout the world as long as people continue to use tobacco. Statistics inform us that here in the United States 164,100 new cases of lung cancer (89,500 in men and 74,600 cases in women) are expected to be diagnosed in the year 2000. 156,900 people (89,300 men and 67,600 women) are expected to die from the disease this year. Nearly 90% of these deaths are attributed to cigarette smoking. My predecessor in the presidency of the American Health Foundation, the late Dr. Ernst L Wynder, pioneered the research that documented the causality of cigarette smoking and lung cancer. He established the Foundation to engage in research and application of preventive principles. Since the inception

of the American Health Foundation, the scientists of this organization have maintained that there are four approaches toward reducing tobacco-related diseases:

1. Teach children not to use tobacco.
2. Help people quit tobacco use.
3. Ensure safeguards for those who are unable to give up tobacco chewing, snuff dipping, or smoking and who did not succeed in tobacco withdrawal efforts by encouraging the development of tobacco products that have the lowest feasible levels of toxicity, habit-forming potential, and carcinogenicity.
4. Advance the development of chemopreventive agents for the many former smokers who are still at risk for lung cancer (*currently 50% of lung cancer cases in the United States are diagnosed in ex-smokers*), and for those tobacco users who can't quit.

In view of the magnitude of tobacco-related illness and deaths worldwide we need to continue these strategies. We also must pursue further research and apply current knowledge in nutrition-related sciences, in genetics, and other host factors that render people either highly susceptible to the insults of tobacco-derived lung carcinogens or protect them against initiation and propagation of cancer.

The American Health Foundation is engaged in research in all of these areas and is deeply committed to translating research findings into public health action and clinical application for a healthier America.

Specifically, I appeal to this Committee to ensure the integration of complementary therapies in the prevention of lung cancer, i.e., the clinical application of tumor inhibitors for which we have good laboratory evidence of effectiveness in model assays in the laboratory. These include naturally occurring selenium compounds, especially organoselenium compounds of low toxicity and high efficacy when given as dietary supplements. They also include certain isothiocyanates, constituents of cruciferous vegetables that have been effective in blocking development of lung tumors, and they include tea and especially certain polyphenolic constituents of tea. At this time, we are investigating several natural products, especially berries, and their specific anti-oxidant constituents that are variously effective in preventing oxidative damage to DNA and can thus be effective in diminishing the risk for cancer. There is likely also promise in combining conventional therapy with these kinds of complementary approaches. This is an area that requires intensive research, because data concerning anti-oxidants in lung cancer are controversial.

We also have evidence that diets with high-fat content aggravate the development of lung tumors. Research on the role of vitamins and micronutrients has had at times encouraging results and then we have had setbacks in these investigations. Clearly, we need to increase research efforts to establish optimally protective diets. There is no single chemopreventive component or group of components that can be viewed as a "magic bullet." We have to learn step by step what is crucial and what is significant in inducing and promoting tumor development and what is crucial and significant to the protection of the human body against development of cancer.

These research efforts must take into account the evidence for the role of genetics in cancer susceptibility that points to different metabolic capacities for activation and detoxification of cancer causing agents between people of different races and gender. Much remains to be learned about these host factors that are either risk enhancing or protective.

The effective prevention of lung cancer is uniquely tied to the prevention and control of smoking. Thus, it must be our foremost aim to intensify health education efforts, like the Foundation's 'Know Your Body' program for children throughout all grades of school. We also must continue to help people quit the tobacco habits that are so clearly related to cancer of the lung, the upper aerodigestive tract, the bladder, kidney, and uterine cervix. We should not forget that there are 45 million ex-smokers in this country who benefit from modulation of nutritional remain at risk for developing these diseases and that this population would most factors, including trace minerals, and various forms of anti-oxidants. Reaching this high-risk population with appropriate nutrition counseling, intervention and, where indicated, access to clinical trials with effective chemopreventive agents could significantly reduce the burden of lung cancer.

The question of reimbursement of the cost of secondary prevention in these cases could conceivably be addressed through mechanisms involving funds that come from the tobacco industry; from a tobacco settlement funds or from a special tax on tobacco products

Thank you very much for allowing me to present these comments to the Committee on Government Reform at this important hearing.

Mr. HORN. Thank you very much.

Dr. Pizza.

Dr. PIZZA. Mr. Chairman, I am very pleased to be before you to report on my experiences as medical doctor in Italy, particularly as it relates to the treatment of cancer. I operate in a 2,000 bed hospital in Bologna, Italy. My treatments for cancer are paid for by our national government health insurance and are very different from those generally administered in the United States. They are essentially non-toxic and include treatment with transfer factor, interleukin 2, human monoclonal antibodies and other medications. Specific transfer factor is the treatment which Congressman Bedell believes cured his Lyme disease.

I believe I can document for several kinds of cancer that this non-toxic treatment is significantly more effective than current treatments being administered in your country. For example, I have done a study of 122 metastatic renal cell cancer patients treated with my non-toxic protocol in which I have documented a survival of over 11 years by 25 percent of the patients. I am informed that an 11 year survival from such cancers with conventional treatment is less than 10 percent.

I believe that the patients with other types of cancer also treated with my non-toxic treatments could show significant longer survival than patients only conventionally treated.

Except for renal cell cancer, metastatic, my treatment consists of one injection per month. For an American coming to Italy to be treated by me for such cancers, our charges would be about \$20 per month. This is partly subsidized by our government. Without such subsidy, I estimate the cost would still be less than \$200 per month for treatment.

In summary, I believe that I am an example of an Italian medical doctor where I am administering treatments that are, first, generally more effective for the cancers I treat than are conventional treatments for such cancers, with documented increased survival in studies I have done. Second, these treatments are essentially non-toxic. Third, the treatment costs significantly less than conventional cancer treatment. Fourth, these treatments are not administered in the United States because of your laws and regulations, and I believe it would be to the benefit of American cancer patients if such treatments could be permitted in your country.

Thank you.

[The prepared statement of Dr. Pizza follows:]

TESTIMONY OF Dr. GIANCARLO PIZZA, M.D.

I am pleased to be before you to report on my experiences as a medical doctor in Italy, particularly as it relates to the treatment of cancer.

I operate in a 2,000-bed hospital in Bologna, Italy.

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4. These treatments are not administered in the United States because of your laws and regulations, and I believe it would be to the benefit of American cancer patients if such treatments could be permitted in your country.

A handwritten signature in cursive script, appearing to read "W. Diu".

Washington, June 8, 2000

Testimony to the hearing: “Integrative Oncology – Cancer Care for the New Millennium” held by the Committee on Government Reform, Congress of the United States House of Representatives, 2157, Room 2154, Rayburn House Office Building, Washington, DC 20515-6143

From: Giancarlo Pizza, M.D., Immunotherapy Module-Operative Unit-Fornarola, S.Orsola-Malpighi Hospital, Department of Urology, Via P.Palagi, 9, 40138 Bologna, Italy.

Introduction

While surgery, chemotherapy and radiotherapy are the primary modes of cancer treatment, enhancement of the immune response has an important role as well in determining prognosis. Our studies have emphasized utilization of immune defenses using immune products already produced by the body but which, for unknown reasons, are not sufficient to destroy the malignancy. To facilitate the evaluation of our approaches I will describe quickly our results on immunotherapy against each different tumor giving our rationale. It is worth mentioning here that only a part of our treatments are experimental, i.e. the approach of vaccine-therapy in metastatic renal cancer (MRC) in progression of disease using engineered tumor cells to produce IL2. Such treatment, approved for 10 patients by the Italian National Committee for medical experimentation and by the ethics committee of our hospital, is now under investigation.

In fact we are currently using very well known immune-products such as Interleukin-2 (IL2), interferon (IFN), Transfer Factors (TFs) and in vitro produced human monoclonal anti-tumor antibodies (h-MoAb) to enhance the patient's immune defense against the malignancy. We differ from other Centers in the way we administer the immune products to our patients, in their dosage and in making, at the same time, a synergistic use of their potentiality.

In the last 25 years on our Unit we have treated 463 urological cancer patients using integrative immunotherapeutic adjuvant approaches (metastatic renal cancer=122, metastatic prostate cancer = 167; superficial bladder cancer =174). We have also contributed to the treatment of 145 cancer patients in other institutions (lung=127; Burkitt's lymphoma= 14; nasopharyngeal carcinoma=12, and glioblastoma=15).

Metastatic Renal Cell Cancer (MRCC)

Our first published data on the immunotherapy of urological cancer with IL2 date from 1984 when we observed for the first time tumor regression in infiltrating bladder cancer caused only by the intralesional injection of IL2 [1]. The tumor biopsies performed during and at the various intervals of time after treatment appeared clearly related both to the intralesional injection of IL2 and the clinical course of the disease [2]. No adverse clinical side effects were observed during the intralesional injection. [1,2].

Continuing our local immunotherapeutic approach we injected some inguinal and supraclavicular lymph nodes of the patients who had previously undergone nephrectomy for adenocarcinoma of the kidney with low doses of IL2 (2400 U) and lymphokine activated killer cells (Lak= 20×10^6 in 3-7 days). At the same time the patients were injected with transfer factor. We were surprised to observe the disappearance not only of the injected metastatic lymph node, but also of the untreated distant ones. The histological studies performed on uninjected lymph nodes confirmed the presence of strong inflammatory phenomena and wide necrosis in the metastatic tumor. What we learned by this experience was the possibility of activating most of the immune system simply by injecting lymph nodes with a very small amount of IL2 and Lak cells.

The following step was relatively simple: we decided to evaluate whether or not the direct injection of IL2 and Lak into the main external lymphatics of the feet could be of help in "activating" the immune system and controlling the tumor growth. We were lucky because the first patient treated in such a way showed a complete disappearance, in six months of monthly treatment, of 7 metastatic renal lesions to the lung [3]. We confirmed this observation in 1991 publishing our results obtained in 17 patients observing 3 complete remissions (CR) of the indicator site over 17 patients treated with a duration of 6-26 months [4].

From 1985 we treated consecutively 122 metastatic renal cancer patients monthly by intralymphatic injection of low doses of natural IL2 and Lak cells and i.m. injection of low dose of IFN and TF obtaining a median survival among the best of those reported from the literature reaching 32 months against the 10 months of the non treated historical control group (27 pts). 25% of patients are alive at 11 years from the beginning of the immunotherapy. The adverse side effects of the treatment are negligible and the patients continue their normal life. In the MRC-attachment1 and 2 are depicted the patient population, protocol treatment and the clinical results including the survival curves according to the grading of the histology.

The treatment is given on both an in- and outpatient bases and because of the paucity of adverse side effects the treatment could be administered completely on a outpatients bases diminishing the costs. The administration protocol is the following:

- 250U IL2N, intralymphatic, monthly
- Lak 15-60x10⁶ intralymphatic, monthly
- 250U IL2x4/die, 3dd consecutively by aerosol, monthly
- 10⁶U interferon alfa-2a, biweekly
- 3,5U TFPBL(Transfer Factor from Peripheral Blood Lymphocytes), monthly.

The IL2N is produced in our laboratories using a gibbon lymphoblastoid cell line (MLA-144) spontaneously producing IL2 in the culture supernatant. TFPBL is extracted from buffy coats obtained from pools of at least 100 of our Blood Bank donors; 1U is the extract of 10⁸ mononucleated cells. The interferon is commercially available.

The cost of the treatment is fully covered by the Italian National Health Service (NHS) and is very low. We calculated that the cost of the commercially available recombinant IL2 for treating one patient with 2 cycles of 8 weeks (4 months) according to the most commonly suggested protocols of the literature, is about 6.000 US\$. On the contrary the production cost for the same 4 month period of time using the natural IL-2 produced in our laboratory and according to our protocol of intralymphatic administration, is about 75 US\$, roughly 80 times less. This is a treatment cost saving that doesn't even consider the additional savings in the cost of the treatment of the adverse side effects, both in suffering for the patients and in budget for the NHS. It is worth mentioning here that because of the positive clinical results observed in our patients the Region Emilia-Romagna, which is responsible for the expenses of the patient's care, recently deliberated the inclusion of the intralymphatic administration procedure in the list of the treatments performed. They informed all the regional hospital directors and the Italian Ministry of Health that it's cost is 150,000 Italian liras (about \$75) for the injection and the same cost for the preparation of the Lak cells.

To our knowledge the intralymphatic administration of IL-2 and Lak cells is not performed elsewhere. In the literature there are reports of some phase I trials but using high IL2 doses and these trials were then abandoned.

Treatment of metastatic renal cancer patients using recombinant administration of IL-2 by aerosol is also in use in Germany. To our knowledge the expenses are covered by the NHS of this country.

1] Pizza G, Severini G, Menniti D, De Vinci C, Corrado F: Tumour regression after intravesical injection of Interleukin-2 (IL2) in bladder cancer: preliminary report. *Int J Cancer*, 34, 359-367, 1984.

2] Pizza G, Severini G, Menniti D, De Vinci C, Corrado F. Interleukin 2 in the treatment of infiltrating bladder cancer. *J Exp Pathol* 3(4):525-531, 1987

3] Pizza G, Viza D, De Vinci C, Vich I Pascuchi JM, Busutti L, Bergami T. Intra-lymphatic administration of interleukin-2 (IL-2) in cancer patients: a pilot study. *Lymphokine Res*, 7:4548, 1988

4] Corrado F, De Vinci C, Corrado G, Pizza G: Direct lymphatic immunotherapy for metastatic renal cell carcinoma. In: *Immunotherapy of Renal Cell Carcinoma. Clinical and Experimental Development*. Debruyne et al Eds, Springer-Verlag, Berlin, 105-112, 1991

Metastatic Prostate Cancer

As conventional treatment is unsuccessful, survival rates of patients with stage D3 prostate cancer are very poor. Some years ago reports suggested the existence of humoral and cell-mediated immunity (CMI) against tumor-associated prostate cancer antigens. These data prompted us to start treatment of D3 stage prostate cancer patients using an in vitro produced TF able to transfer, both in vitro and in vivo, CMI against bladder and prostate cancer tumor antigens. 74 patients entered this study and received monthly one intra-muscular injection of 2-5 units of specific TF. Follow-up, ranging from 1 to 14 years, showed that complete remission was achieved in 2 patients, partial remission in 6, and no progression of metastatic disease in 18. The median survival was 104 weeks, higher than survival rates reported elsewhere for the same stage. Encouraging preliminary results were also observed in a group of 23 patients in stage D2 treated with hormonal therapy and TF: the median survival rate was 210 weeks, again among the highest reported in the literature. These results and the absence of adverse side effects indicate the importance of extending these studies, in prospective randomized trials, to D2 and D3 stages. In the attachment Prostate-Attach1 we reported the patient population, the periods of treatment and the clinical results including the survival curves. No side effects have been observed.

The treatment, fully covered by the NHS, is offered as outpatients. Its cost is \$300 per patient per year.

To our knowledge this treatment is not offered elsewhere.

Lung Cancer, Non-Small Cell-histological type (NSCLC)

Cell-mediated immunity (CMI) plays an important role in controlling the proliferation of tumor cells. Since transfer factor (TF) is able to increase CMI, it was tempting to plan clinical trials whereby it could be used to increase cancer patients' cellular immune response to their tumor cells. In 1975, Levine et al. [1] were among the first to produce evidence for *in vitro* and *in vivo* transfer of reactivity to tumor cells. They extracted transfer-factor from osteosarcoma patients whose lymphocytes were showing cytotoxicity against tumor cells and injected it into osteosarcoma patients whose lymphocytes became subsequently cytotoxic and able to kill autologous tumor cells. At that time, we have shown that specific transfer factor, obtained from patients with high levels of CMI to Tumor-Associated Antigens(TAA)

of bladder carcinoma - as assessed by the leucocyte migration inhibition test - was able to transfer to the leucocytes of the recipient, by in vitro incubation or by in vivo injection, the reactivity observed in the TF donor [2-4]. Such observations encouraged tumor immunologists to treat cancer patients with transfer factor in the hope that the modulation of their immune response against TAA could interfere with the tumor growth. The prognosis of patients with NSC lung cancer remains disappointing, with an overall 5-year survival rate of 14% for advanced stages [5]. Surgical resection of the tumor remains the principal treatment but its success is closely related to the stage of the disease at the time of surgery. Despite early diagnosis, and improvements in surgical techniques and adjuvant radiotherapy and chemotherapy, the 5-year survival rate ranges from 57-75% for patients in stage I-II to 0-14% for the advanced stage III-IV.

The concept of stimulating the patient's immune system against the tumor has been applied to NSC lung cancer using active immunization with lung cancer TAA, whereas TF has already been used in NSCLC with apparently favourable results both in early and advanced stages [7-8]. Additional preliminary results were reported by us [9] and others [10-11]. Thus, we decided to start a longitudinal study of immunoprophylaxis by treating NSCLC patients immediately after the surgical removal of the primary tumor.

From January 1984 until April 2000, 127 patients suffering from NSCLC were treated with i.m. injection of TF after surgery or chemo-radiotherapy as out-patients and were compared to 283 controls. Survival of the treated patients appeared significantly increased for all stages ($p < 0.05$) both for patients in stage IIIa ($P < 0.05$) and for patients with regional lymph node involvement (N2+ve, $P < 0.05$) and for the patients without lymph nodes involvement ($P < 0.01$). No side effects were ever observed.

The treatment is administered as outpatients and is fully covered from the NHS. Its cost is \$300 per patient per year. To our knowledge TF for lung cancer is offered only in our Unit. In the past was offered in some centers of US and Japan. Chinese have state industry extracting "TF" from pigs. Also in Czech Republic there is a state industry producing TF from blood bank buffy coats.

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Superficial Transitional-Cell Carcinoma of the Bladder (TCCB)

Approximately 80% TCCB are, at diagnosis, superficial tumours that have not penetrated the lamina propria [1]. They are classified as Ta and T1 according to TNM classification. The behavior of these tumors is characterized by the simultaneous presence of many foci in the bladder mucosa and often by increasing malignancy of the relapses [2]. Between 40% and 73% of the superficial TCCB will relapse in 2-5 years after transurethral resection (TUR)[3]. The frequency of relapse is linked to tumor grade and stage, to invasion of lamina propria, and to invasion of many foci and microscopic dysplasia in apparently tumor-free urothelial areas [4]. The 5-year survival rate of TCCB correlates with the stage, being 70% for Ta, 43%-77% for T1, and 60% for T2. [5]. As regards the grade [4], Authors report a 3-year survival rates for 92% for stage T1G1 and 57% for T1G3.

Because the tendency of TCCB to relapse with increased malignancy after TUR, the importance of the adjuvant treatment appears clear. Unfortunately radiation and chemotherapy give disappointing results. Similarly, endovesical prophylactic treatment using chemicals like thiotepa, epodyl, mitomycin C, doxorubicin or bleomycin, although able to diminish relapses by 30% to 70%, are accompanied by significant adverse side effects [6].

In addition, recently, a randomized clinical trial for the chemo-prophylactic treatment of stage TaT1 bladder cancer performed in Europe with 2500 patients under the supervision of the Medical Research Council and the European Organization for

Research and Treatment of Cancer (EORTC) confirmed that this type of adjuvant treatment is unable to diminish progression and improve survival of the patients [7].

Anti-tumor h-MoAbs produced in our laboratory from human lymphoid cell-lines and from a mouse-human hybridoma fused with one of our human lymphoblastoid cell lines [8-9] producing antibodies against various tumors (bladder, breast, colon, glioblastoma) were extensively used to treat, in the last 14 years, 174 relapsing superficial bladder cancer patients (stage T1, G2) after trans-urethral resection (TUR) as prophylaxis of the relapse. Every month for 3 consecutive days the patients, previously selected by testing the reactivity of the tumor (only patients showing at least 40% of tumor cell reacting with the antibodies in a in vitro indirect immunofluorescence test) were given 10 micrograms of antitumor IgM antibodies in 5 milliliter (ml) of saline and 1 ml of complement (human pooled AB serum obtained from the blood bank) into the bladder by catheter.

In a cumulative follow-up of 1093 years regarding all the patients and corresponding to 6.3 years per patient, we observed 605 recurrences before and 447 during/after immunoprophylaxis. The mean relapse rate (RR calculated as: number of recurrences x100/number of months of follow-up) observed in a mean follow-up of 2,6 years before (RR=16,6) and 3,7 during/after the antibody treatment (RR=7,46) for each patient was significantly less than the pretreatment as assessed by statistical Wilcoxon test for paired data ($P < 0.0001$). No side effects were observed.

It is worth mentioning here that the source of lymphoid cells for obtaining the antibodies are the same patients with TCCB or renal cancer patients. In fact, in our experience, at least 65% of these patients present antibodies against TCCB in the serum; we often used this source for obtaining cell line producing antibodies, being necessary few milliliters of blood donation for the scope.

In addition in about 60% of cases when the TCCB patients have a relapse they show antitumor-complement-fixing antibodies in their serum. The collection by plasmapheresis of the 200-400 milliliters of plasma was an important and inexpensive source of antibodies and complement that was used for the same patient, for a long period of time (1-3 years according the need of the immunoprophylaxis). The plasma was aliquoted and stored at -80°C or lyophilized and stored at room temperature.

The use of low doses of interferon added to the antibodies improved the efficacy of the treatment as we observed [10]. In fact, the interferon facilitates the increase in the expression of tumor associated and differentiation antigens, and class I of HLA on the cell membrane.

The cost of production of the antibodies for the treatment of one patient during one year is about 60 US\$ and is completely covered from the NHS. Both in Europe and in the USA the research on mouse or humanized monoclonal antibodies against blood cancer for therapeutic purposes is very active but, to our knowledge no clinical reports have as yet been published.

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In faith,



Giancarlo Pizza, M.D.

Mr. HORN. Thank you very much.

Dr. Goldberg, Tiburon, CA. Beautiful part of the world, I know. What are you doing here this afternoon?

Dr. GOLDBERG. I came here to make a difference.

Mr. HORN. Great.

Mr. GOLDBERG. Cancer is epidemic. The American Cancer Society now says every other man in America will have cancer in his life. Breast cancer is one in eight. In Marin County, where I live, in Paradise, it's one in six. In Long Island, it's one in seven, breast cancer of the female.

In 1960, that number was 1 in 14. In 1950, that number was 1 in 20. And in 1900, 1 in 33 Americans, men, women or children, had cancer of any kind, shape or form. So you see the escalation, and we know the escalation, we know what's causing cancer.

When I was born in 1926, and through the 1930's, cancer was the 10th cause of death in children. Today it's the second, behind accidents, both. The holistic, alternative, complementary, there's all kinds of names out there, but they all mean the same thing, getting out of the paradigm of conventional treatment, which is surgery, radiation, and chemotherapy, the object and the paradigm is to treat the person rather than the disease.

You and I could be diagnosed with the identical cancer, yet the causes are totally different. The mind/body plays a role. You have a bad marriage, it could be 90 percent of it, the emotions which affect the immune system. But the main cause, and when you ask conventional oncologists what caused cancer, they say, well, sun and smoking and we don't know. And yet their medical journals are full of the research.

And let me give you an example. Israel, 1973, they discover the relationship between female breast cancer and pesticides and herbicides. They then do a 10-year study, and the citizens are outcryng and the government forbids the use of pesticides and herbicides in only two things, the feed of milk cows and cattle. And there was a 10-year study, 1976 to 1986. And here are the results. Women under 40, the female breast cancer rate plummeted 34 percent. Now, this is in medical journals that is accessed to everyone else. I'm a medical journalist and I know it. For all women for those 10 years, it dropped 8 percent, while we in the United States went up 4 percent for those 10 years.

The causes are pesticides and herbicides. They did the same thing in the Connecticut General Hospital where they took two tumors and they did what they call a split biopsy. Half went to pathology, it was cancerous, the other half went to toxicology. Inside the tumor in the one that was benign and one was cancerous, they found through toxicology, DDT, DDE and PCBs. The same thing is in prostate cancer, because the breast and the prostate are both fatty tissue and they suck up like a blotter, these toxins.

And in the prostate, they find when they do digital examination that the hard part, the BPH, is next to the colon. So it seems to transfer the poisons. Because when they split biopsies, they find arsenic, chlordane and DDT. Why aren't conventional doctors talking about it? We must go to the causes. We must get the poisons out of our food supply, whether it's the Agriculture Department.

But this is not being talked about. You've got to first go to the cause to stop this holocaust.

Alternative medicine paradigm and treatment is 180 degrees different than conventional medicine. You first have to find out what the insults to your immune system are. You can transfer all kinds of organs, but you can't transfer the immune system. And the immune system is how the holistic physicians treat it. First, you have to get food that has nutrition and lots of our food is produced by factory techniques, where they throw chemicals at the crops. So the corn looks beautiful, but what's missing is one part per million the selenium, molybdenum, chromium, the zinc, the nutrition that we need to flourish on.

So it's important to stop and put nutrition back in food. Organic food is different.

Quite often you hear that fat causes cancer, high fat diets. And it's true, because it's what's inside the fat. When they produce beef in this country, they feed them corn to fatten them up with pesticides and herbicides laden. They then put hormones into the animal so that the animal gets big and fat, so that they get more weight. What happens to us when we consume that fat?

They use antibiotics to keep them alive in filthy conditions. That goes for chickens as well. And these antibiotics come into our body and they kill the flora, the good enzymes within our body. Antibiotics are a double edged sword. They're marvelous. They saved my life. But if you don't take probiotic, acidopholus and lactobacillus and a whole bunch of other things to reforestate, you end up with acid alkaline imbalance and you end up with the parasites living within you and candida and yeast infections and the breeding grounds for disease.

The early detection, now I'm going to say something that is absolutely going to blow you out, and that is, mammograms cause cancer. People can't buy that. But we've studied it. We've looked at the research of Dr. Goffman at Berkeley University who finds that 90 percent of all breast cancer is in part due to medical x-rays. Now, let me give you an example. You go to the dentist to have your teeth x-rayed. They put a lead sheet over your sexual organs and then they run. Why are they running? Because it kills the DNA in the cells.

Now there's a reason for x-rays, you have to do surgery, you have to do an x-ray. But there's a safer way, and that's thermography. Thermal imaging where you can see cancer coming much earlier. In the case of breast cancer, you can't see it through a mammogram before it's multiplied 25 to 30 times. By the time it's multiplied 40 times, it's lethal. And yet the simple, using thermal imaging, which is less expensive and can see disease coming 3 to 5 years earlier, with no radiation, far less false positives. And in mammography, they squeeze the breast. And if there is a pustule or something, it can go into the blood stream. Because cancer is systemic, it travels through the blood. So if the knife comes in and inadvertently hits some of the cancer, it travels through the blood and metastasizes.

In early detection, we have the Darkfield microscope, which conventional medicine won't take a look at. It reminds me of Galileo, he said, gentlemen, look at the moon and the stars, look at my tele-

scope. And they refused. It's the same thing going on today with the Darkfield microscope. With the prick of a finger on the slide, you can see the aberrant blood. You can see disease coming as much as with a competent physician, 5 to 10 years in advance.

Those are only a few of the techniques. We have electric dermal screening, which uses a meridian system of the Chinese, which is ignored by mainstream medicine. The basis of acupuncture, the river of energy, charted by the French and Koreans, totally ignored and not taught in medical schools unless they're teaching acupuncture. And it affects the mouth. The nervous system and the meridian system and the teeth, teeth. One of my mentors, a Catholic priest from Germany, finds that the dental implication can be as much as 50 percent in the removal of cancer and the reversal of cancer. And I'm here to tell you that if you don't have chemotherapy and radiation, sometimes surgery is necessary and if it is, the holistic physician encapsulizes the tumor by using enzymes and nutritional substances that Dr. Pettit talked about.

I know of a cancer clinic in Tijuana that's using his drug right now. This is an over the counter anti-angiogenesis, and using it on the young boy who testified yesterday, lovely Thomas Navarro, who I visited down there, and he's doing extremely well using the system. Whereas conventional medicine has really truly no cure.

But it's a system. You go to the causes, you remove every single insult to the immune system. Then you feed the body absorbable nutrients, usually intravenously, orally. The diet is essential, because cancer loves sugar. No sugar.

Which brings up the subject of the National Cancer Institute. I'm here to tell you that the General Accounting Office caught them, and caught the smoking gun, where it proves that the National Cancer Institute doesn't want anything other than chemotherapy, radiation and surgery. There is a drug called hydrazine sulfate that could have helped Mrs. Payton's husband. I don't say it's going to cure, because it does have a small aspect of curing. But it helps cachexia, the wasting away process.

This drug was said by Dean Burk, the head of cellular biology of the National Cancer Institute many years ago, he said in his 35 years of experience, there's not another drug like it. And yet DeVita, who came much after him, said, we throw away better drugs than this. And the study was scuttled, even after the General Accounting Office did a study of 14 months. It was brought about by Representatives Towns and Shays of Connecticut. They muddied the report.

And let me give you an example of how this is done. The original report that Barry Tice, a 28 year veteran of the General Accounting Office, which is usually impeccable, the title that he put in here was, the National Institute's actions spur continued controversy over hydrazine sulfate therapy. After politics, after this report was sent to the National Cancer Institute, they came back and argued with the political powers that be at the time, and then it was changed. And here's what the change was. Contrary to allegations, the National Institute of Health studies on hydrazine sulfate were not flawed.

And yet in studies in UCLA, Harbor Hospital, and in Petrov Institute in Russia, which came up with the identical results, 51 per-

cent of the population got results, in some cases even remissions, provided the proper dose was given. And when they did it at Sloan Kettering and other areas in this country, there were higher doses. And Dr. Gold, who developed this, said, I'm telling you, if you go on the higher doses, it's not going to work. As a matter of fact, you're going to get death.

And another proviso, no barbiturates, alcohol, sleeping pills, tranquilizers and things along that line. If you do, it will negate it. Every single person by the independent investigator used that kind of product and negated the results. That's a smoking gun you can easily verify. It will show you why Dr. Pettit's work is being diminished, why you don't have the chemists that he called for. They don't want to cure cancer. And this is the proof.

I believe in order to have the Office of Alternative Medicine function as it should, thanks to the great work of Berkeley Bedell, you are spending now \$2 billion, it's now up to \$3 billion a year on cancer. And where is it going? Nowhere. And the reason? They don't want to cure cancer.

The Office of Alternative Medicine must be managed by people who understand alternative medicine. The whole system, there are no magic bullets, there's no essiac tea, there's no one drug or one vitamin. It's a system that has to be understood.

And there are 50, in the books I gave you, the book on cancer that I did, *Alternative Medicine, Definitive Guide to Cancer*, we have 50 different therapies, many of which are used to help the patient.

I believe that the Office of Alternative Medicine must be pulled from the National Institute of Health. Because I've been tracking it since its inception. The attitude at the NIH is, how dare you tell us that we've been hurting people all these years.

Billions of dollars, and we're going nowhere. I think that's it. God bless.

[The prepared statement of Mr. Goldberg follows:]

Congress of the United States, House of Representatives,
Committee on Government Reform
Hearing on "Integrative Oncology—Cancer Care for the New Millennium"
June 7 and 8, 2000, Washington, D.C.

Outline of Testimony of Burton Goldberg

Founder and CEO of AlternativeMedicine.com;
Publisher of *Alternative Medicine: the Definitive Guide*,
the *Definitive Guide to Cancer*, *Cancer Diagnosis: What to Do Next*, etc.;
Publisher of *Alternative Medicine Magazine*

1) Difference in Paradigm between Alternative and Conventional Medicine

- a) First do no harm. Do not weaken the body—or spirit—because ultimately it is the body and mind that heals itself
- b) Treat the root cause of the disease; don't just try to suppress symptoms
- c) Each patient is unique with different genetic predispositions and life histories: two people with the "same disease" might have to be treated entirely differently
- d) Treat each patient holistically: each organ and biological function is connected and must be treated with regard to the entire organism

2) Prevention vs. Cure

- a) It is possible to see disease coming years before symptoms manifest using alternative medical techniques, including
 - Darkfield Microscopy
 - ElectroDermal Screening
 - Thermography
- b) The importance of nutritional, lifestyle and stress management education and counseling

3) The Suppression of Alternative Medicine

- a) Why conventional medicine sees it as a threat
 - Financial threat to corporations
 - Intellectual/emotional threat to individuals

4) Examples of Alternative Cancer Therapies

- a) General Approach
 - Evaluate and Diagnose
 - Mobilize the lymphatic and excretory functions
 - Detoxify
 - Fortify and balance
 - Apply individual anti-cancer protocols
- b) Examples of alternative anti-cancer protocols:
 - Insulin-induced hypoglycemic therapy
 - Local and whole body hyperthermia
 - Anti-mycoplasma and immune-stimulating vaccines
 - Advanced nutraceutical immunotherapies

5) The Need for Activism

- a) Environmental
 - Reduced toxins in our air, water, food, households
- b) Consumer
 - Clear labeling of irradiated and transgenic foods
- c) Political
 - Access to medical freedom
 - Medical insurance reform
 - Independence and funding for the National Center for Complementary and Alternative Medicine

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Testimony of Burton Goldberg

Founder and CEO of AlternativeMedicine.com;
Publisher of *Alternative Medicine: the Definitive Guide*,
the *Definitive Guide to Cancer* and twelve other titles in the
Alternative Medicine Definitive Guide Series of books;
Publisher of *Alternative Medicine Magazine*

When it comes to medical emergencies, contemporary conventional medicine is magnificent. For the treatment of trauma and when extreme, life-saving interventions are called for, conventional medicine’s heroically complex surgical techniques and arsenal of pharmaceutical drugs are without parallel.

When it comes to the prevention of illness, however, and the treatment of cancer, heart disease, diabetes and the epidemic of degenerative diseases that presently afflict our society, conventional medicine has proven catastrophically inadequate.

A century ago, one in 33 people had cancer; today, according to the American Cancer Society (ACS), it is more than one in three, and growing. When I was born in 1926, cancer was the tenth leading cause of death among children—now I am 73 and it is second. No other health topic today has the urgency of cancer because no other health condition is escalating as fast.

In March of this year, the National Cancer Institute (NCI) released its *Annual Report to the Nation on the Status of Cancer, 1973-1997*. According to the report, some types of cancer had declined more or less, while others had increased. But the NCI proudly trumpeted the fact that for the first time ever in this country, overall cancer incidence and mortality rates had both declined from 1990 through 1997. The amount of decline was the same for both: 0.8%. Taking this number at face value (the field report's raw data has yet to be analyzed by objective sources), while it might be statistically significant, this less than 1% decline pales in the face of the grim reality of the ACS's prediction that one out of two men in this country will get cancer. Or that, while in 1950 one out of 20 women got breast cancer, in 1960 it was one in 14, and today it is one out of eight. This is not much to show for spending \$2 billion per year—now \$3 billion per year—for over a quarter of a century.

Conventional medicine still admits ignorance as to the causes of cancer: without knowing the cause how can there be prevention and cure?

Our message is simple, direct, and lifesaving: cancer can be—is being—successfully reversed using alternative medicine. Although many of the alternative methods for treating cancer have been with us for perhaps 50 years, it is only recently that these approaches have achieved major clinical breakthroughs and moved into wider public awareness. I wish I had known more about them myself when my sister and my mother were dying of cancer. Seeing them ravaged not only by cancer but by the toxic treatments of conventional medicine made me think there must be a way to treat cancer without poisoning the body and destroying the immune system, and I vowed to find it.

This is another aspect of conventional medicine that is too little addressed: even in cases in which surgery, radiation and chemotherapy can extend life, at

what cost to the *quality* of life? Another year—or month—of debilitation and pain may be statistically significant, but is it meaningful?

Over the years I have met with hundreds of alternative doctors. I visited their clinics and talked to their patients. I looked at their records, their lab results, their x-rays and scanning images. I learned how a myriad of health conditions are successfully treated using alternative methods. Their recommendations and views became *Alternative Medicine: The Definitive Guide*, a national best-seller that changed the lives of many readers by showing them, as I tell everyone I meet, “You don’t have to be sick.” You can get better using safe, effective, inexpensive, and nontoxic methods from the world of alternative medicine. Let me give you an example. I have given you a copy of our latest book, *Cancer Diagnosis: What to do Next*. In Chapter One is the story of Cheryl Wilkins, who used alternative medicine to reverse malignant melanoma. Instead of chemotherapy, which she had been told would probably not be effective for her cancer, she underwent a detoxification and nutritional therapy program. Today, she is healthy and cancer free. But she is only one of a thousand I have met and spoken with.

A great deal of what you will hear about alternative medicine will probably be new to you and you may well say, “If alternative medicine for cancer were any good, my doctor would know about it and would have told me.” I offer you two reasons why this is not the case. First, your doctor may not know about it. Very few physicians are taught in medical school even the rudiments of nutrition or the immune system. Until the mid-1990s, no conventional medical school discussed alternative approaches to treating illness. Too often, physicians blindly follow the conventions of their field and never look beyond to see what might work better.

Presently, 60% of medical schools teach courses on alternative medicine. They are doing so because patients and younger doctors are demanding it.

Conventional doctors are losing patients to alternative practitioners. The reason for this is the superior results many patients receive from alternative medicine: it works. Sadly, while a great deal of new information about alternative approaches to cancer actually appears in mainstream medical journals, too few doctors seem to pay any attention.

Conventional doctors and laypersons alike still tend to think of “alternative medicine” as an umbrella term encompassing a number of separate, unrelated types of therapy—acupuncture, chiropractic, herbal remedies and nutritional supplements are the most familiar—in the same way that conventional medicine encompasses a number of basically unrelated specialties, such as radiology, anesthesiology, oncology, etc. Alternative medicine still connotes naïve and ill-trained practitioners claiming that a little St. John’s Wort is all that is necessary to cure depression. But true alternative medicine is a comprehensive system, incorporating more than 50 different disciplines, and employing sophisticated diagnostic techniques to determine the causes and mechanisms of a patient’s health problems. Having determined a person’s unique condition and needs, it then incorporates the appropriate detoxification regimens, nutrition programs and any of a number of treatment protocols ranging from ancient Asian traditions to high-tech, cutting edge devices using light or sound waves to enhance the healing process. This is an entirely different paradigm from conventional medicine; it is something that can hardly be grasped, let alone mastered, by taking one or two courses in medical school.

The second reason your doctor might not have told you about alternative medicine is, sadly, that he or she may not want *you* to know about it. Many powerful economic forces—pharmaceutical drug companies, physicians’ trade groups, insurance companies, the Food and Drug Administration (FDA) and the National Institutes of Health (NIH)—want health care to stay exactly the way it

is because they are thriving under it. The reason alternative cancer treatments are not yet mainstream has little to do with alleged therapeutic ineffectiveness and far more to do with political control over the therapy marketplace. Successful alternative approaches to cancer are seen as a direct financial threat to this system. The politics of cancer have an overriding influence on the science of cancer and, ultimately, on what the public thinks about cancer treatment options.

If you think that authorities in the government health agencies would never sacrifice the wellbeing and lives of Americans to maintain the status quo—if you think that “it couldn’t happen here”—let me give you an outrageous example that has been well documented and would be easy for you to verify.

In the early 1970s, physician and independent researcher Joseph Gold, M.D., had an idea about a new approach to treating cancer. He realized that most people do not die from the invasiveness of cancer tumors themselves but from the side effects of the cancer process. One of the chief side effects is a wasting process called cachexia: this is extreme weight loss due to the loss of lean tissue and muscle mass.

Cancer cells use sugar (glucose) from the body as fuel and release lactic acid as a waste product. The body detoxifies the lactic acid in the liver and reconverts it into glucose with a huge energy drain on the patient. This new glucose is once again taken up and used as fuel by the cancer cells, and the vicious cycle continues; the body uses up its reserves and healthy tissue turning toxic cancer wastes into new fuel for cancer cells.

Dr. Gold came upon a reference to a chemical called hydrazine sulfate, an easily synthesized substance that could block a particular liver enzyme necessary to convert lactic acid into glucose. He reasoned that this could break the cycle and inhibit the growth of cancer tumors while preserving normal tissue. He first proposed using hydrazine sulfate to combat cachexia in 1969.

Preliminary animal studies supported his concept and by 1973 about 1,000 cancer patients were using hydrazine sulfate. The FDA issued a few Investigational New Drug permits and Dr. Gold organized the Syracuse Cancer Research Center to develop the drug and its protocols.

In clinical trials in the United States, the compound significantly improved the nutritional status and survival of lung cancer patients. In a study of 740 patients with various types of cancer, 51% of patients reported tumor stabilization or regression. Almost half the patients also reported subjective improvement, notably decreased pain and better appetite. Further, and this is crucial, similar studies were performed in Russia with almost identical results. Dean Burk, M.D., at that time the head of cell chemistry research at NCI, called hydrazine sulfate the “most remarkable anticancer agent I have come across in my 45 years of experience with cancer.”

Dr. Gold's research revealed two important caveats to the protocol:

- 1) Dosage amounts were critical: too high a dose would not only be devoid of beneficial effects but could create a toxic environment that would increase mortality.
- 2) Patients had to absolutely avoid certain other drugs, including alcohol, barbiturates and antidepressants; these negated hydrazine sulfate's action.

Then, in late 1973, Memorial Sloan-Kettering Hospital in New York started clinical trials—but used dosages far higher than what Dr. Gold considered safe or effective. It is no coincidence that Sloan-Kettering is a bastion of the cancer establishment, heavily supported by pharmaceutical companies. It was clear to Dr. Gold that they were setting things up to scuttle his research and, indeed, in these trials hydrazine sulfate not only failed to work properly but produced the predicted negative results.

Nevertheless, independent trials still went on, including four double-blind, placebo-controlled studies conducted in the 1980s by Harbor-UCLA Medical Center that reported increased survival rates for cancer patients using hydrazine sulfate. Because of this success, certain officials in the FDA began to look for a pharmaceutical company that would agree to undertake the expensive testing necessary to get the drug approved and so widely available.

Traditional chemotherapy attempts to kill cancer cells with poisons—cytotoxins—which also poison and weaken the entire body. Chemotherapy is expensive: every approved cytotoxin is the patented product of a pharmaceutical company that spent tens or hundreds of millions of dollars developing it and bringing it through the approval process. Hydrazine sulfate, on the other hand, was unpatentable and dirt cheap—treatment cost less than a dollar a day. In proper doses it was without side effects. It represented an entirely new approach to cancer treatment. And it worked. It was, in other words, a huge threat.

At that time NCI's director was Vincent DeVita, M.D., considered one of the fathers of cytotoxic chemotherapy. In 1981 he appeared on ABC News and flippantly discounted hydrazine sulfate: "I'm very unexcited," he said about the UCLA and Russian studies. "We throw away drugs that are better than hydrazine sulfate." What a far cry from Dr. Burk's ringing endorsement!

It was at this time that NCI decided the best way to handle the situation was to sponsor studies of hydrazine sulfate themselves, which allowed them complete control. And in trials they sponsored they administered hydrazine sulfate to patients who were also taking those very drugs that Dr. Gold had determined would deactivate hydrazine sulfate and even increase mortality. The mechanism which made hydrazine sulfate incompatible with barbiturates, alcohol, etc., was well understood and well publicized. Dr. Gold had even written a letter to NCI before their trials began, warning them of the dangers. Yet an

analysis of a study by one of NCI's test managers, Dr. Michael Kosty of the Scripps Institute, revealed that almost everyone in his test group had ingested one or more of the incompatible substances. By sabotaging the trials, NCI managed to discredit the drug's use in the minds of most of the world's doctors who take the word of the NCI as the last and final word on cancer treatments. NCI made it as difficult as possible for other studies to be continued or to have research published. Armed raids were even staged, confiscating the substance from suppliers.

Nevertheless, hydrazine sulfate, properly administered, just worked too effectively to be totally quashed. In 1987, Jeffrey Kamen, at that time Washington correspondent for Independent Network News television, had seen almost miraculous results from hydrazine sulfate therapy administered for his mother's metastasized lung cancer. He started investigating all the bad press it was receiving and ran a series of articles on how NCI was trying to suppress the truth about hydrazine sulfate. His stories gained the attention of two members of Congress, Edolphus Towns of New York and Christopher Shays of Connecticut, ranking members of the House oversight subcommittee with authority over the National Institutes of Health (NIH). They ordered the General Accounting Office (GAO) to investigate the matter.

In 1994 a 14-month investigation was begun under the leadership of GAO assistant director Barry Tice, a 28-year veteran of probes of government agencies. His group compiled a report that scathingly criticized the NCI: "NCI did not conduct adequate oversight of these trials. It did not take sufficient measures to appropriately address concerns over alleged incompatible agents. . ." The report was initially titled "NIH Actions Spur Continued Controversy Over Hydrazine Sulfate Therapy."

On June 5, 1995, the report was sent out to the FDA, the Public Health Service and NCI for review and comment. When top officials at NCI read the

report their reaction was characterized by eyewitnesses as going “ballistic,” and “really crazy.” NCI went on a campaign to have the GAO change the report—and they succeeded. In-house politicians at the GAO altered or deleted damning portions of the report and retitled it: “Contrary to Allegation, NIH Studies of Hydrazine Sulfate Were Not Flawed.”

Barry Tice strongly objected to having his 14 months of work distorted: “You can imagine how upset I was—and still am—about that title,” he told Mr. Kamen in a subsequent interview. “The impact of the changes and a few key deletions was tremendous. Those changes took NCI almost completely off the hook.” Mr. Tice has since left the GAO and is a consultant to the healthcare industry.

Mr. Kamen wrote another article on this cover-up by the GAO that caught the attention of attorney Jeff Robbins who was acting as chief counsel on the Senate Subcommittee on Investigation. Mr. Robbins ordered officials of the GAO to appear before him and explain the mutation of the report, from criticizing the NCI to exonerating it.

After going through mountains of documents and, after having to overcome GAO stonewalling before being able to locate the original critical report, Mr. Robbins brought to light the facts as to how the GAO overruled its own staff and buckled under political pressure from the cancer establishment. He sent a letter of record to the GAO denouncing their handling of this affair.

Mr. Robbins returned to private practice but, in an interview later, Jeff Kamen asked him about the validity of the NCI trials of hydrazine sulfate. “The studies are flawed to the point of being meaningless,” he said. Did the GAO tell the truth about NCI? “No,” he replied. “And let me add this: I am not a doctor. I do not know if hydrazine sulfate cures cancer, but I do know that the American people did not get what they paid for in all of this: an unbiased test of the drug,

or for that matter an unbiased report on the conduct of the NCI. That is wrong and should not stand.”

Dr. Gold, along with a few other independent physicians, is still championing the use of hydrazine sulfate. Looking back over nearly three decades of work, he tallies up the numbers of Americans who endured needless suffering because of NCI's tactics. The data from the UCLA-Harbor Hospital trials indicated that out of the one million new cases of cancer every year, about 50% would be helped. Some could have been cured outright, others have considerable extensions of their survival rates, and most would have lessened pain and an improvement in the quality of their lives. All from a substance that, in contrast with chemotherapy drugs that cost hundreds and even thousands of dollars per dose, would cost about a dollar a day—and in many cases works far more effectively.

But that is precisely the point. Such is the power of the cancer establishment that hydrazine sulfate is slated to be banned by the FDA in November of this year. Members of this subcommittee, I appeal to you: do not let this happen. Do not let ego and greed triumph over true science and possible help for millions of cancer patients.

Alternative approaches are not just a financial but also a serious intellectual threat to the belief systems of conventional medicine. Nutrition and the immune system are crucial to health and healing from cancer but they have never been addressed either, and this means conventional doctors will have to “go back to school” to catch up.

For all their crowing about science, most conventional doctors are highly unscientific in their practices. Studies published in the likes of the *Journal of the American Medical Association* reveal that many doctors get the majority of their information about new medical treatments from sales representatives from the

pharmaceutical companies. There is presently one pharmaceutical salesperson for every 11 doctors in the United States, and the drug companies spend over \$5 billion dollars annually “educating” doctors about their wares, and sweetening their presentations with little—and not so little—“extras.”

As the *New York Times* reported in their January 11, 1999 article, “Fever Pitch: Getting Doctors To Prescribe Is Big Business”: “These [extras] range from reprints of pertinent articles and colorful charts to hang in the office, to ballpoint pens and pocket calendars bearing product or company logos, to trays of cookies, bagel breakfasts and pizza lunches. Many representatives routinely lug cartons of drug samples with them to keep office cabinets stocked with their product.

“And often the extras take on another dimension entirely, always in the name of education. Some representatives buy expensive textbooks or pay for trips to conferences for a doctor or the doctor’s trainees. Others sponsor golfing outings, river cruises or lavish dinners at expensive local restaurants where an after-dinner speaker discusses the state-of-the-art treatment of a given condition and, inevitably, the place therein of the sponsor’s drug.”

It is no wonder then that many physicians are unaware of or simply ignore reported results of failed treatments (such as standard chemotherapy) and instead refuse to change their “scientific” methods regardless of outcome. They forget that the true meaning of being scientific is observing patients and studying what works, then adjusting the therapy accordingly.

In spite of its promise, hydrazine sulfate is no miracle cure for cancer. There is no single magic bullet cure for cancer. Many factors contribute to the development of cancer and many modalities and substances must be used to reverse it. To be successful, cancer doctors must become generalists and address the whole person along with the many interdependent factors that contributed to this cancer. Nutrition, diet, the vitality of the immune system, and the emotional

life and beliefs of the person with cancer must all be examined. Doctors must use safer, more effective ways of treating cancer must be utilized, from fields such as naturopathy, acupuncture, and homeopathy, which have long been recognized for their nontoxic holistic approach to treating illness.

Now I am going to say something that might shock you: mammograms cause cancer. Since mammographic screening was introduced in 1983, the incidence of ductal carcinoma in situ (DCIS), which represents 12% of all breast cancer cases, has increased by 328%, and 200% of this increase is due to the use of mammography, reported *The Lancet* in July, 1995. This increase is for all women: since the inception of widespread mammographic screening the increase for women under the age of 40 has gone up over 3000%.

According to *The Lancet*, even for women over the age of 40 it does more harm than good: "The benefit is marginal, the harm caused is substantial, and the costs incurred are enormous, [so] we suggest that public funding for breast cancer screening in any age group is not justifiable."

How does mammography cause breast cancer? First, because of the mutagenic effect of the ionizing radiation used in the x-rays. And second, the extreme mechanical pressure on the breasts during the procedure can cause the metastasizing of existing cancer cells. This is acknowledged by the American Cancer Society, but they feel the benefits outweigh the risks—that more women are saved by the procedure than are killed. Whether this is actually the case or not is still a matter of controversy.

For instance, in general, about 40 replications or doublings of the breast cancer cells create a potentially lethal burden, yet mammography cannot detect a mass until 25 to 30 such doublings have already occurred. By this time, the cancer is far less treatable than it would have been after 15 to 20 doublings.

There is an alternative medical technique that is able to detect breast cancer earlier: advanced thermography. Thermography uses natural infrared radiation from the body and, by measuring temperature variations, can spot abnormalities. Without using any ionizing radiation or mechanical pressure, the latest thermographic equipment can see breast cancer developing years before mammography could image a tumor. Thermography accomplishes this because it is able to detect the beginnings of angiogenesis, when cancer cells first try to form their own blood supply—a necessary step before they can grow rapidly and metastasize.

Briefly, the pooling of the blood caused by factors secreted by cancer cells as a prelude to creating blood vessels is not under the control of the sympathetic nervous system. The normal response of the sympathetic nervous system to cold is to reduce blood circulation near the surface to conserve heat. But areas of angiogenesis in the breast are not under control of the sympathetic nervous system, and are not affected. They will therefore, in contrast to normal breast tissue, give off a heat signature visible to a thermographic device.

Thermography is by no means the only diagnostic device that allows alternative physicians to see disease coming earlier than conventional techniques. Another important technique is called ElectroDermal Screening (EDS), which is a form of computerized screening based on acupuncture. By taking readings at the different acupuncture points, doctors can tell the health of the organs and of the body itself. Then by having the patient hold substances or remedies while the EDS tests the acupuncture points, the physician can tell what the patient is reacting to and what might heal him or her. EDS can be used to detect many disease states, plus the presence of chemical toxins, food and substance allergies, and imbalances in the body.

Darkfield Microscopy is another invaluable tool in early disease detection. This is a technique that allows physicians to observe the form and motion of

blood components, including living organisms such as mycoplasma. Mycoplasma are extremely small microorganisms present in one form or another in everyone and active in the blood of many persons with cancer. Smaller than DNA, mycoplasma are cell-wall deficient and therefore able to easily evolve into different forms. Often called pleomorphs (form changing), they are normally able to hide away in the body.

Using a Darkfield microscope to look at live blood cells, an experienced physician can observe the changes in platelets caused by mycoplasma that are predictive of or evidence of cancer. Some alternative cancer clinics using Darkfield Microscopy report that they see evidence that mycoplasma are highly active in 80% of their cancer patients. (Mycoplasma are also implicated in the autoimmune process, playing a role in conditions such as lupus and rheumatoid arthritis.) The forms that the pleomorphs take and the extent of damage they do to blood cells correlates with the stage a cancer or other disease is in. With this information some alternative physicians create immune-stimulating anti-cancer vaccines produced from the patient's own blood.

These diagnostic techniques are safe and very effective. Properly trained doctors using them can see cancer coming years before any presently available conventional methods. "Early detection" is not the best protection: preventative medicine is. This is true healthcare, as opposed to our present system of sick care. But early detection is important, especially in cancer, because it gives patients many more options for treatment and cure than mutilating and debilitating surgery, radiation and chemotherapy. Yet alternative techniques are being used by only a tiny percentage of doctors in this country.

Here is another area in which the members of this committee could do much to advance the state of healthcare in this country. Give the National Center for Complementary and Alternative Medicine the independence and funding to allow them to train doctors and sponsor trials of thermographic breast

cancer screening, ElectroDermal Screening and Darkfield Microscopy. This branch of the NIH was set up with only \$2 million (I spent more than that of my own money publishing my first book, *Alternative Medicine: The Definitive Guide*). The NCCAM is presently just a poor cousin in NIH. It needs to be run not by doctors from or beholden to the NIH, but by physicians who are experienced in and advocates of alternative methods.

In the book *Cancer Diagnosis: What to Do Next*, which I have presented to you, you will learn about 33 contributing causes to cancer. You will see how each of these factors can weaken your immune system, start breaking down your health, and make you more susceptible to developing cancer following additional exposure to one or more of the causes. You will see also that a healthy, strong, and vital immune system can withstand a great deal of such exposure and prevent cancer from ever starting.

Why is there so much cancer today? In simple fact, we are being slowly poisoned to death. The list of poisons includes pollution, pesticides, carcinogens in our food, air, and water, electromagnetic radiation, tobacco smoke, antibiotics, conventional drugs, hormone therapies, irradiated foods, nuclear radiation, mercury toxicity from dental fillings, diet and nutritional deficiencies, parasites, toxic emotions, x-rays, and more. Most conventional doctors do not take these factors into consideration when treating cancer.

Here is a telling example. A man was diagnosed with prostate cancer. His tumor biopsy was examined by two different types of doctor: one a pathologist, the other a toxicologist. The pathologist saw only clear signs of cancer in the tissue sample, but the toxicologist found something more because she knew what to look for. She found abnormally high levels of a variety of carcinogenic chemicals including arsenic, DDT, DDE and chlordane. In other words, there was evidence of pesticides and other environmental toxins in the tumorous

tissue sample itself. The patient was overloaded with toxins and his liver could no longer detoxify his body.

If you know the toxin, you can remove it. But first you have to be looking for toxins and, here, conventional medicine is inexcusably lax. Most conventional oncologists disregard toxicity as a factor in cancer. The pathologist missed the point entirely: he did not understand that in a tumor itself are some likely causes of the cancer. With this gap in understanding, he designed a treatment for the patient that could not possibly be effective, because it would fail to address the root causes.

Is this an isolated incident? No. In 1973, a study conducted by the Department of Occupational Health at Hebrew University-Hadassah Medical School in Jerusalem found that when cancerous breast tissue is compared with non-cancerous tissue from elsewhere in the same woman's body, the concentration of toxic chemicals such as DDT and PCBs was "much increased in the malignant tissue compared to the normal breast and adjacent adipose tissue." Following public outcry, Israel banned these chemicals from being used on feed for dairy cows and cattle. Over the next ten years, the rate of breast cancer deaths in Israel declined sharply, with a 30% drop in mortality for women under 44 years of age, and an 8% overall decline. At the same time, all other known cancer risks—alcohol consumption, fat intake, lack of fruits and vegetables in the diet—increased significantly. During this period, worldwide death rates from cancer increased by 4%. The only answer scientists could find to explain this was the reduced level of environmental toxins.

Members of this committee, this information has been published in peer-reviewed journals. Why is it being ignored?

Not only can our doctors show you the multiple causes that lead to cancer, they offer steps that lead to the removal of these causes. Alternative medicine does not offer a simplistic "cookbook" solution to cancer treatment. Rather, it

emphasizes the unique individuality of each case, with certain consistent elements in its approach: mobilize the lymphatic and excretory systems and then detoxify the body of its many cumulative poisons; fortify the body with nutrients; do everything possible to strengthen the immune system; stress the importance of early detection and preventive strategies; and honor the Hippocratic Oath—first, do no harm.

Conventional cancer doctors today cannot uphold this vow. Chemotherapy and radiation are toxic and often do as much damage to the body as the cancer itself. Even though conventional medicine presents and often forces these treatments (along with surgery) as the only options in existence for cancer, this is simply and unequivocally not true. There are many successful alternatives to conventional care that can remove the root causes of cancer and restore you to health without further poisoning or damaging your body.

Even when conventional treatments are employed, there are ways to minimize the side effects of chemotherapy, radiation, and surgery, to prevent nausea and hair loss and fortify the weakened body. There are also techniques, such as localized hyperthermia, that amplify the effectiveness of chemotherapy agents, and so allow half or even one-fifth of the normal dosages to be used, with a concomitant reduction in deleterious side effects.

Patients often hear their oncologist say, “Well, this or that drug works in 35% of our patients, so we’ll try it and see how you respond.” Robert A. Nagourney, M.D., founder and medical director of Rational Therapeutics in Long Beach, California, developed a lab test that takes much of the guesswork out of conventional—and alternative—cancer treatments. His “Ex Vivo Apoptotic Assay” takes a living tissue sample of cancer cells obtained from a patient by biopsy and determines which substances produce cancer cell death during a 72- to 96-hour process in which the cancer is grown in a test tube. The result objectively indicates the likely human response of the individual patient to specific drugs.

The test can also indicate just how much of a particular drug is needed, thus minimizing its side effects.

You can see here that the emphasis in alternative medicine is on treating the individual; there is no one school of dogma. Alternative medicine is the antithesis of the “one size fits all” approach of conventional medicine.

Compared to even more sophisticated alternative modalities, conventional medicine seems barbaric and medieval. While mainstream medicine ignores such techniques, this information is available to empower and inspire doctors and patients by demonstrating proven, successful ways to reverse cancer—even end-stage cancer.

The situation today seems similar to one over three centuries ago, when accused of heresy, the astronomer Galileo pleaded with his critics to simply look through his telescope. In a letter to his friend Johannes Kepler he wrote, “My dear Kepler, what do you say of the leading philosophers here, to whom I have offered a thousand times of my own accord to show my studies, but who, with the lazy obstinacy of a serpent who has eaten his fill, have never consented to look at the planets or moon, or telescope? Verily, just as serpents close their ears, so do men close their eyes to the light of truth.”

There is a famous saying by the physicist Niels Bohr that I love to quote: “Science and medicine advance funeral by funeral.” This means old beliefs and practices die out and give way to new approaches only when the older generation of scientists holding them literally die off and leave the field. We no longer have time to wait for those who swear by conventional medicine to leave the field. The escalation of the rate of cancer demands this urgency. Doctors of all ages must open their minds to new possibilities, to alternative approaches that have been clinically proven to work. Otherwise, the toll of cancer deaths will continue

to mount as thousands of cancer patients fail to hear about alternatives that could save their lives.

Let me adapt that previous famous quote: Cancer care will advance patient by patient. As each cancer patient recovers his or her health, thanks to alternative medicine, and tells a friend and the family doctor, this will transform Western medicine. Conventional physicians will have to start using alternative approaches because these are the only ones consistently getting results and saving lives. If they do not, both their patients and more progressive colleagues will leave them behind in the archives of failed medicine. With your help, we can make this change happen quickly and decisively.

— Burton Goldberg

Mr. HORN. You stated it very eloquently.

The gentlelady from Illinois, for questioning.

Ms. SCHAKOWSKY. I wanted to ask Dr. Nixon a question.

In your written testimony, actually you referred a little bit more even to the issue of smoking as a way of preventing many, many thousands of death, and smoking in children. And you probably are aware of the recent Supreme Court decision that struck down FDA regulations that would have prevented tobacco companies from marketing products to children. And it was not because they think that they should be marketed to children, but basically turned, passed the ball back to the Congress and said that the Congress should act on this. And so far, Congress has failed to do so.

I wondered if you had any suggestions for us on what we might do to make sure that we have done everything possible to prevent children from beginning to smoke and thus creating the most preventable cause of disease that we have in this country.

Dr. NIXON. Yes, you are correct, the cause of cancer, the percentage of cancer attributed to cigarettes and tobacco use is about 35 percent of the total, and about 30 percent from nutrition. How do you convince children not to do hazardous things? We have a pediatric task force, headed by one of the leaders in the Nation's pediatric development research community addressing these issues now. We have an affiliation with a group in New Orleans to look at our Know Your Body program and to move that into a younger age group, rather than the grades one through six, but at the pre-K and the K.

What we're trying to address is the situation that we all see as parents, that if you tell an adolescent not to do something, they're going to do it. Don't drive fast, they go drive fast, don't smoke, they tend to smoke. So what we want to do is through the pediatric task force and another task force on spirituality and health is try to teach a philosophy of health to very young children, which would include smoking cessation, proper dietary habits, drug avoidance, all the good things of life and health promotion.

We haven't been able to do it in the current KYB milieu of teaching, the age group that we're looking at. So I again would call for congressional attention toward teaching, learning how to teach very young children, perhaps as young as the age of 2, not facts, but philosophy, and how to maintain their health.

Ms. SCHAKOWSKY. Are you concerned at all that the financial interests of the tobacco companies may have some undue influence in policymaking? In your view, is this an issue?

Dr. NIXON. I think it's clear that the tobacco companies would like to sell more cigarettes to whoever they can, overseas, young people, any age group. Whether that influences congressional thought, I would hesitate to say that.

Ms. SCHAKOWSKY. I don't mean congressional, necessarily. We find all kinds of races being sponsored by tobacco companies and all kinds of institutions, private as well as public, where there's a close relationship between tobacco companies and there seems to be a contradiction there.

Dr. NIXON. There's clearly a contradiction there. The American Health Foundation's founders first linked tobacco and lung cancer, so we go back at least 50 years in this area. And it's focusing spe-

cifically on youth education as one of the things that Dr. Wynder did for decades. And the KYB program is designed as a smoking cessation program, and now we're just trying to move it backward into earlier ages.

The problem of what to do with tobacco companies' influence is immense. I don't have any bright ideas there, I'm sorry.

Mr. HORN. The gentleman from South Carolina, Mr. Sanford, 5 minutes for questioning.

Mr. SANFORD. Yes, sir.

I would first of all say to Dr. Nixon, thank you very much for coming up this way, or down this way, I'm not sure which direction we're coming from today. But as one who lives down in the low country of South Carolina, I appreciate all that you've done to make a difference in people's lives back home.

I went to the University of Virginia for graduate school. And there they believed in the Socratic method. So it struck me as Mr. Goldberg was speaking that some of what he was saying was contrary to some of what you had said. It would help me if you all would just bicker a little bit back and forth. In other words, would you pick out three things that he said that didn't make any sense, and then if you would say why he's wrong in suggesting that what he's suggesting you said didn't make sense, and really does make sense, just a little bit of back and forth would help me a whole lot in trying to get to the bottom of the cancer thing.

And at the end, if you would just tack on as a personal supplement to me one, I notice that you're not pasty white. And I thought that, I grew up on a farm down in South Carolina, I love being outside. We've got four young boys, I'm constantly outside. But I never grew up putting on sunscreen. My mother-in-law says, whatever you do, don't put on sunscreen, it actually causes cancer. So which is the truth there?

And too, if you would give me sort of three personal pointers, Mr. Goldberg, aside from hell no, I won't go to the dentist, what would be two other pointers in terms of things you'd suggest in terms of personally avoiding cancer. But Dr. Nixon, if you'd lead off.

Dr. NIXON. Thank you very much. I do disagree with a number of things that were said, and I think that would be pretty apparent.

Let's talk first about pesticides. There is no doubt that pesticides occur in human tissue. There is no doubt that pesticides, that exposure to pesticides 20 years ago can still lead to pesticide residues in the breast.

The problem with the argument, and I'm not saying it's a good thing to have pesticides in your breast, maybe it's related to the asthma epidemic or something like that, but as far as cancer is concerned, breast cancer rates increased in this country extraordinarily rapidly around the turn of the century and before, about 1870 and 1900. And in fact, the American Cancer Society was founded on the recognition of a group of surgeons in New York that there was an epidemic of breast cancer.

The pesticide argument fails here because there were not any pesticides at that point in widespread use, and breast cancer rates went like that. The last 50 years or so, they've been sort of wavering up and down a little bit at a very high level.

So in the pesticide era, breast cancer has not changed a great deal. So that would be my first point. Do you want to respond to that, or do you want me to go with the other three?

Mr. SANFORD. Let me just throw one more zinger at them, because I'm going to be tight on time with 5 minutes.

Mr. HORN. Don't worry about the 5-minutes. I have a special rule for South Carolinians. [Laughter.]

Dr. NIXON. We're neighbors on Sullivans Island.

The other big thing I take strong exception to is the contention that the National Cancer Institute does not want to cure cancer. I take absolute violent almost exception to that. I've worked at the NCI, I've been in the cancer field for now 30 years. Never seen anybody in cancer research or cancer treatment that didn't hate the disease and want to get rid of it in any way that they can. There is not a conspiracy against, to promote cancer. It's just not there. I'm sorry, but it's not.

Mr. BURTON. Well, I don't believe you have read the report of the General Accounting Office and the article, and I'd like you to have a copy of my testimony where I lay it forth. The report absolutely shows this. As a matter of fact, Barry Tice, the man who did the report, this 28 year old veteran, Barry Tice strongly objected to having his 14 months of work distorted.

This is a quote from Barry Tice. He's now retired, living in Maryland, and I spoke to him the other day. You can imagine how upset I was, and still am, about the title, he told Mr. Kamen in a subsequent interview. The impact of the changes and a few key deletions was tremendous. Those changes took NCI almost completely off the hook. This is Mr. Tice of the General Accounting Office, and you know what kind of a reputation they have. There's politics.

As far as pesticides are concerned, I give you numbers that I get from medical journals. The New England Journal of Medicine had an article on, one of the gentlemen said, we've lost this war on cancer. We've got to do so many other things. But the numbers are this. Breast cancer in 1950 was 1 in 20 women. Pesticides started coming in 1950, big time. In 1960, it was 1 in 14 would have breast cancer. In other words, it was 1 in 20, and today, in other words, it comes down, the lower the number, the more women have it today. One in eight American women have breast cancer. This is in the world of pesticides, the wonderful world of chemistry.

Now, how do I know this? Because when you look at the research at Connecticut General Hospital on split biopsies and toxicology, you don't hear this. They don't talk about this, because this flies in the face of the food industry, the chemical industry, the pharmaceutical industry, the medical industry and everybody else whose economic, petroleum industry where a lot of these things come from, it's in their interest. And you don't hear it in the media, because they're the recipients of the ads. How many ads have you seen for drugs now, going directly to the patient? And then with the side effects of the drug, your left ear will turn yellow and fall off, your nose will this, you'll have a headache, you'll vomit and so forth and so on.

Drugs today are the third cause of death in our society. First is heart disease, cancer and then drugs. Used to be fourth behind strokes.

The sun, melanoma usually occurs where the sun doesn't shine. It is important, most of our doctors will agree that the sunshine, getting vitamin D3 on the pineal gland and on the face, not too much sun, certainly you don't want to injure the skin, so that's why you put the stuff on. But the sun God provided to nourish us. Our eyes get the light of the sun and it affects us. So many people living in Wisconsin, so far away from South Carolina, have the SADD disease, because there's not enough sun and they go into depression and so forth.

The dentist, silver fillings are 50 percent mercury. If your kid broke a thermometer in the mouth, you'd go crazy. You would put him in a hospital. The American Dental Association says it doesn't leach. But if you put a device in that measures the vapors, you will see that it's wrong. It does leach. And it goes into the ganglia and all through the bodies.

And one of the techniques of detoxification, which is the word you will hear for this century, your liver is the filter of the body. And if it gets clogged and dirty, it can no longer filter, it's like a barrel you put the poisons in, one thing on top of the other. When it overflows, that's when we end up with degenerative disease, including cancer.

And mercury goes into the ganglia. In the case of breast cancer, the blood supply and the lymph system, which is not paid attention to at all by conventional medicine, which is the seat of your immune system, lymphocytes in the small intestine, control and help your immune system. And if you don't open up that lymph system and allow the garbage to come out of the body, as a matter of fact, in chemotherapy—

Mr. SANFORD. Could I interrupt on that point? Dr. Nixon, I'd be curious to hear your thoughts on that. I had a friend that actually went to Switzerland and had the traditional fillings taken out of his teeth to put in some kind of plastic or whatever. But then I talked to another friend who's a doctor who actually said the data is bad on that, taking out the fillings really doesn't make any difference. Do you agree or disagree?

Dr. NIXON. I disagree that the tooth filling has anything to do with malignant disease, the tooth filling composition, the amalgams that dentists use. There is certainly mercury toxicity, there's a Japanese disease that is a central nervous system disorder from excessive mercury. There's no doubt that mercury is toxic. But the link between teeth, fillings of teeth and cancer is in my opinion very, very weak and tenuous.

Mr. GOLDBERG. I would like to balance that out with, the Coors Beer people had a daughter-in-law and she was not doing well, out in Colorado. So they sent her to Hal Huggins, a dentist in Colorado Springs. And they paid, after she got well by having in part her dental work done and other things, they paid for a study. And here's how the study went.

There were 33 patients with silver fillings, I think there were an average of 18, 20 fillings in the mouth. They gave a quarter of a million dollar amount for this study. They took the immune system competence by blood test before they removed the fillings. Then when you remove these fillings, you have to properly do it, otherwise the patient can get very bad, you have to use oxygen in the

nose, they use a dam in the mouth and they have the suction, and most of the doctors wear gas masks in the chamber in the office.

They remove the fillings and then they put in plastic fillings. They then took the competence of the immune system and it went from the basement to the ceiling. They then removed the plastic, put back the mercury and the immune system went back into the basement.

I'm going to tell you a story of a little boy by the name of Smith in Denver, CO. He couldn't swallow when he was born. And the mother took him to all the hospitals, Denver Children's, he even went to Boston, and nothing they could do. They were about to put a tube in his belly to feed him, for his life. I directed the family to Dr. Lee Cowden in Dallas, TX, who's a holistic physician and who is my co-author of my cancer book. He discovered that the boy was laden with mercury, and the mercury was in the ganglia of the throat.

He used the DMPS, which is a drug out of Russia, and there are studies done in this country, to pull out mercury. The child got back his swallowing ability and no longer needed the tube and is living a happy, normal life. That speaks to dentistry.

How to avoid cancer. No. 1, organic food, chicken, beef, vegetables, range-grown beef and chicken, vegetables that are organically grown. If you can't afford to have organic, use grapefruit seed extract from a health food store or Blue Label Clorox, wash your vegetables there, a tablespoon per gallon. It will take care of pesticides, herbicides and parasites. And parasites play an enormous role.

No. 2, filter all your drinking water. And your shower water, you have eight times more poison from the skin, the largest organ in your body then from the shower. Avoid fluoride. They tell you that it stops children's cavities. Not true. There is no difference between those areas that fluoridate and those that don't. It's a rat poison.

And the union for the Environmental Protection Agency is totally against fluoridation of the water, and another thing, one of the reasons we have so much Alzheimer's in this country, they use aluminum sulfate by the truckload to take the cloudiness out of water in communities. And then they put it back into the rivers after they complete it and it goes into the next village. And it builds up, and that's one of the reasons you find aluminum in Alzheimer's.

We can go on and on and on, because in my book, which you will receive a copy of, we give you the 33 categories of the causes of cancer. Now, we have a holocaust. What's causing it? Come up with another solution, Mr. Nixon. How do you explain this holocaust, this increase? One in two men in America, by the American Cancer Society, will have cancer in his lifetime? This is outrageous.

Mr. SANFORD. Any last refutation point?

Dr. NIXON. Well, the example of the kid with the swallowing difficulty may have been mercury toxicity. I'll give you that. But that's not a cancer case, that's something else.

Mr. GOLDBERG. Well, you say there's no relationship.

Dr. NIXON. No, I said mercury is toxic.

Mr. GOLDBERG. Well, we know mercury is toxic.

Mr. SANFORD. Could we say this? In other words, if you listen to his suggestions in terms of organic food, filtering water, because

my mother-in-law, in fact, she must have read your book, she says the same stuff, which is you need to filter your shower, filter the water, eat organic food, whatnot. If you were to do those things, do you think that would reduce one's chances of cancer, or it would be a placebo?

Dr. NIXON. Well, he asked what I think the cause of cancer is. I think it's nutritionally based and too much exposure to toxins from tobacco. Those are the two big things. So if you eat a vegetarian diet with lots of fruits and vegetables and grains, we are in agreement there. I wouldn't fuss on whether it's organic or not. But fruits and vegetables and grains are preventive and cancer protective.

Mr. SANFORD. How about filtering your water in your shower and whatnot?

Dr. NIXON. I don't do it at home. Although the Sullivan's Island water may need it some. But it's a different problem. But no, I think that that is not very high on my worry list for cancer, the water.

Mr. GOLDBERG. Mr. Sanford, I'd like to know who is financing your studies and whether we have chemical companies, agricultural companies and pharmaceutical companies that are funding your research.

Dr. NIXON. No, actually, 99 percent of our funding comes from the Federal Government, the National Cancer Institute. We are a cancer center funded by the NCI.

Mr. GOLDBERG. And we're back into old things, the how dare you prove us wrong. They're not going to find the cause of cancer. They haven't been able to do this—with \$3 billion a year, to be able to go on satellites, as Mr. Cummings said, and we can't knock out cancer? I have many clinics that can knock out cancer, even end stage cancers, using the system known as alternative medicine.

Mr. SANFORD. I thank you all for your time. Mr. Goldberg, my mother-in-law is going to be calling you. Mr. Nixon, I look forward to seeing you back on Sullivan's Island.

Mr. Chairman, I yield back to you.

Mr. HORN. Thank you very much. We really appreciated that line, and I've learned a lot from you today, as I've learned throughout the campaigns in the last year. There's where we ought to get something changed, is with all you experts on how you change things. And campaigns can do it.

A number of us tried to talk to previous Presidential nominees about a decent war on cancer. And we never got much attention from them back in the, like 4 years ago and 8 years ago and so forth. So there's a lot of things that we have learned today, and I think we've got to followup on them. And we will, because Mr. Burton is pretty well focused, our committee chairman. And I'm partially focused, so anyhow, we really thank you for coming and we've learned a lot.

Mr. SANFORD. Mr. Chairman, if you're closing out the time, could I ask one last question?

Mr. HORN. Please.

Mr. SANFORD. And this would be of Dr. Pizza. Sir, if you were to suggest from the European or from the Italian perspective, two things that we're doing wrong in terms of either addressing the

cancer issue from the standpoint of surgery, or from the standpoint of research, what would they be?

Dr. PIZZA. I think surgery and chemotherapy and radiotherapy are the most important approach in treatment. But it is not enough to cure cancer. We do immunotherapy, we did immunotherapy the last 27 years. And we cured a lot of patients, using very simple products that are used from the immune cells of our body to communicate each other to do something.

One of these molecules is called the transfer factor, it is extracted from the lymphoid cells of the spleen or blood, and it can be produced also in vitro. This small molecule is completely non-toxic. It is today wasted in your country, because you could take for example, the buffy-coat of blood bank and extract it from the buffy-coat and inject to cancer patient, mainly two types, in which we showed, demonstrated the effectiveness.

Prostate metastatic cancer in stage D3, when the tumor is not more responsive to the hormones, we showed that the median survival for these patients treated also with the transfer factor is about 110 weeks, with respect to 55, 40 weeks of untreated patients. And in lung cancer, we treat the patients with lung cancer and we have a long experience with that. We have 14 years of experience of treatments for lung cancer. And we have a long series of patients treated and control series also, evaluated longitudinally. And we observe that the transfer factor improved significantly the survival of patients in stage III of the disease and in stage II.

So my suggestion is not to say, to do more research in your country. I believe that your country is more advanced, I think it is the most advanced. I have been visiting scientists at NIH, National Cancer Institute, in 1980. I have collaboration with the epidemiology branch of National Cancer Institute. I collaborate also with George Washington University. So I cannot suggest to do more research. It would be not right.

What I am suggesting is to do today what can be done, and what can be done is to use the new products that we are already sure that are working. You can take transfer factors simply from the buffy-coats that you put into garbage. A very simple way to take this is one source. If you want to go to the specific transfer factor, you can produce in vitro.

So I would not suggest to make different research. But being a practitioner, being a medical doctor treating patients, I would suggest to do that, because this can be done today.

Mr. HORN. We thank you, gentlemen. And one of the traditions we have here is to thank the staff that worked on this hearing. And we had T.J. Lightle as legislative assistant, Beth Crane, intern, Robin Daugherty, intern, to my left here and your right is Beth Clay, the professional staff member in charge of this area. And Lisa Arafune is the clerk and Bob Biggs is the assistant clerk.

So with that, we thank all of you for coming and spending your time with us. We are adjourned.

[Whereupon, at 3:29 p.m., the committee was adjourned.]

