DEPARTMENT OF HEALTH AND HUMAN SERVICES

Eighteenth Meeting
of the

SECRETARY'S ADVISORY COMMITTEE
ON
GENETICS, HEALTH, AND SOCIETY
(SACGHS)

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Friday
March 13, 2009

– VOLUME II –

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Hubert H. Humphrey Building
200 Independence Ave., SW
Washington, DC

PARTICIPANTS:

Committee Members

Committee Chair
Steven Teutsch, M.D., M.P.H.
Chief Science Officer
Los Angeles County Department of Health

Mara Aspinall, M.B.A.
Senior Advisor
Genzyme Corporation

Sylvia Mann Au, M.S., C.G.C.
Hawaii State Genetics Coordinator
Genetics Program
Hawaii Department of Health

Paul Billings, M.D., Ph.D., F.A.C.P., F.A.C.M.G.
President and Chief Executive Officer
CELLective Dx

David Dale, M.D.
Professor of Medicine
Department of Medicine
University of Washington

Gwen Darien
Director
Survivor and Patient Advocacy
American Association for Cancer Research

Rochelle Dreyfuss, M.A., J.D. [Not present]
Pauline Newman Professor of Law
New York University School of Law

James P. Evans, M.D., Ph.D.
Professor of Genetics and Medicine
Director of Clinical Cancer Genetics
and the Bryson Program in Human Genetics
Departments of Genetics and Medicine
University of North Carolina at Chapel Hill

Andrea Ferreira-Gonzalez, Ph.D.
Professor of Pathology
Director, Molecular Diagnostics Laboratory
Virginia Commonwealth University

PARTICIPANTS *(continued)*:

Kevin T. FitzGerald, S.J., Ph.D., Ph.D.
Dr. David P. Lauler Chair in Catholic Health Care Ethics
Research Associate Professor
Department of Oncology
Georgetown University Medical Center

Julio Licinio, M.D.
Professor and Chairman
Miller School of Medicine
University of Miami
Department of Psychiatry and Behavioral Sciences

Barbara Burns McGrath, R.N., Ph.D.
Research Associate Professor
School of Nursing
University of Washington

Samuel Nussbaum, M.D. [Not present]
Executive Vice President
Clinical Health Policy
Chief Medical Officer
WellPoint, Inc.

Charmaine Royal, Ph.D. [Not present]
Associate Research Professor
Institute for Genome Sciences and Policy (IGSP)
Duke University

Joseph Telfair, Dr.P.H., M.S.W., M.P.H.
Professor
Public Health Research and Practice
Department of Public Health Education
University of North Carolina at Greensboro

Sheila Walcoff, J.D.
Partner
McDermott, Will & Emery, LLP

Marc S. Williams, M.D., FAAP, FACMG
Director
Clinical Genetics Institute
InterMountain Healthcare

Paul Wise, M.D., M.P.H.
Richard E. Behrman Professor of Child Health and Society
Stanford University

PARTICIPANTS *(continued)*:

Ex Officios

Administration for Children and Families
Naomi Goldstein, Ph.D.
Director
Office of Planning, Research and Evaluation

Agency for Healthcare Research & Quality
Gurvaneet Randhawa, M.D., M.P.H.
Medical Officer
Center for Outcomes and Evidence

Centers for Disease Control and Prevention
Katherine Kolor, Ph.D., on behalf of Muin Khoury, M.D., Ph.D.
Director
National Office of Public Health Genomics

Centers for Medicare and Medicaid Services
Barry M. Straube, M.D.
Chief Clinical Officer
Director
Office of Clinical Standards and Quality

Jeffrey Roche, M.D.
Medical Officer
Coverage and Analysis Group
Office of Clinical Standards and Quality

Department of Commerce
Michael Amos, Ph.D.
Scientific Advisor
Chemical Science and Technology Laboratory
National Institute of Standards and Technology

Department of Defense
Daniel J. Wattendorf, LtCol, USAF, MC
Deputy Chief, Medical Innovations
Office of the Air Force Surgeon General

Department of Energy
Peter Kirchner, M.D., on behalf of Daniel Drell, Ph.D.
Biologist, Life Sciences Division
Office of Biological and Environmental Research

Department of Labor
Amy Turner, on behalf of Thomas Alexander, J.D.
Chief of Staff
Employee Benefits Security Administration

PARTICIPANTS *(continued)*:

Department of Veterans Affairs
Douglas Olsen, Ph.D., R.N., on behalf of Ellen Fox, M.D.
Director
National Center for Ethics in Health Care

Sherrie Hans, Ph.D.
Program Director, Health Policy Coordination
Veterans Health Administration

Doug Olsen, Ph.D., R.N.
Nurse Ethicist
National Center for Ethics in Health Care
Veterans Health Administration

Equal Employment Opportunity Commission
Sharon Alexander, on behalf of Stuart Ishimaru, J.D.
Acting Chair
Equal Employment Opportunity Commission

Kerry Leibig, J.D.
Senior Attorney Advisor
Office of Legal Counsel

Federal Trade Commission
Sarah Botha, J.D.
Attorney
Bureau of Consumer Protection
Division of Advertising Practices

Food and Drug Administration
Alberto Gutierrez, Ph.D.
Deputy Director for New Product Evaluation
Office for In Vitro Diagnostic Device Evaluation and Safety
Center for Devices and Radiological Health

Health Resources & Services Administration
Denise Geolot, Ph.D., R.N., FAAN
Director
Center for Quality

National Institutes of Health
Alan E. Guttmacher, M.D.
Deputy Director
National Human Genome Research Institute

Office for Civil Rights
Robinsue Frohboese, J.D., Ph.D.
Principal Deputy Director

PARTICIPANTS *(continued)*:

Office for Human Research Protection
Michael A. Carome, M.D.
Associate Director for Regulatory Affairs

Office of the Secretary
Michael A. Carome, M.D.
Office of Public Health and Science (Acting Ex Officio)

SACGHS Staff

Executive Secretary
Sarah Carr
NIH Office of Biotechnology Activities

Cathy Fomous, Ph.D.
Senior Health Policy Analyst
NIH Office of Biotechnology Activities

Kathryn Camp
Senior Health Policy Analyst
NIH Office of Biotechnology Activities

Abbe Smith
Capital Consulting Corporation

Darren Greninger
Senior Health Policy Analyst
NIH Office of Biotechnology Activities

Tara Hurd
Program Assistant
NIH Office of Biotechnology Activities

Andrea Collins
Committee Management Office
Division of Extramural Activities
National Cancer Institute

Phyllis Frosst, Ph.D.

Barry M. Straube, M.D.
Chief Clinical Officer
Director, Office of Clinical Standards and Quality

PARTICIPANTS *(continued)*:

Speakers

Mara Aspinall, M.B.A.
Senior Advisor
Genzyme Corporation

Robert Epstein, M.D.
Chief Medical Officer
Medco

Barry Straube, M.D.
Chief Medical Officer
Director
Office of Clinical Standards and Quality
Centers for Medicare and Medicaid Services

Bruce Quinn, M.D., Ph.D.
Senior Health Policy Specialist
Foley Hoag, LLP

Samuel Nussbaum, M.D.
Executive Vice President
Clinical Health Policy
Chief Medical Officer
WellPoint, Inc.

Joanne Armstrong, M.D., M.P.H. [via telephone]
Senior Medical Director
Aetna

Michael Critelli, J.D.
Retired Executive Chairman
Pitney Bowes

Richard Luetkemeyer, M.D.
Medical Director
Population Health Quality Quest for Health
Assistant Medical Director
Caterpillar, Inc.

C O N T E N T S

C O N T E N T S *(continued)*

P R O C E E D I N G S

[8:32 a.m.]

Opening Remarks

Steven Teutsch, M.D., M.P.H.

DR. TEUTSCH: Welcome back. I think we had a terrific day yesterday. I want to thank the Committee for the excellent discussions. I think we touched on a lot of important issues. Clearly, we will need to follow up on a lot of them.

Before I begin today, though, I have a ceremonial function to perform on behalf of the secretary to be named later. I'm honored to do it, but also reluctant, because it really means that we will be saying farewell to two members of this committee who have contributed an enormous amount.

Let me begin. I want to present a certificate to Kevin.

DR. FITZGERALD: I'm getting it just in time to leave.

DR. TEUTSCH: Yes. Don't let the door hit you.

[Laughter.]

DR. TEUTSCH: For outstanding vision and

significant contributions as a member of the Secretary's Advisory Committee on Genetics, Health, and Society, which has helped lay the groundwork for the effective use of genetic information in improving health and transforming medical care in our country and around the world.

You just got back from India, so you have been working, literally, around the world. Kevin, sincerely, you have done an enormous amount on this committee in terms of keeping us on the straight and narrow bioethically but also for all the leadership you have provided on many of the reports. Certainly, the Pharmacogenomics report was an enormous effort, as was the Large Populations study. We aren't going to actually miss you because we are going to keep calling on you.

DR. FITZGERALD: That's what I was afraid of.

[Laughter.]

DR. TEUTSCH: Thank you so much. It has been terrific. We know you're right here in Washington, you brought in the Georgetown mafia yesterday.

[Laughter.]

DR. TEUTSCH: Thank you so much.

[Presentation of certificate.]

DR. FITZGERALD: Thank you.

[Applause.]

DR. TEUTSCH: The other one whom we will be bidding adieu to is Dr. Joseph Telfair.

Joseph, we want to thank you as well. We are going to miss you because you have been bringing a tremendous amount of knowledge and insight, both from a public health perspective and from a consumer perspective. We very much appreciate all the work that you have done on the Large Population studies, and many, many others.

I could read this. It actually says the same thing as the other one, but that's okay, I'll just smile.

As you know, you have begun a major effort here to help us move the public health agenda forward in genetics and genomics. It is going to continue to be a large amount of work. We're going to be counting on you as well.

Thank you so much for all that you have done.

DR. TELFAIR: You're welcome.

DR. TEUTSCH: We wish you well.

DR. TELFAIR: Thank you.

DR. TEUTSCH: Thanks so much.

[Presentation of certificate.]

[Applause.]

DR. TEUTSCH: For those of you who are new members, you know that once you are in, you are never out.

MS. ASPINALL: I keep trying to leave, and they keep pulling me back in.

DR. TEUTSCH: It is extremely gratifying that we have such a deep level of expertise on the Committee, we can't quite let go.

We're going to pick up where we left off yesterday in hearing from our ex officios. As many of you know, when we met last, we had anticipated that we would have a new secretary named. We actually had prepared a progress report, which all of you, I believe, have seen. It is also in your notebooks. It captures where we were, some of our thoughts on the new priority-setting process that we had completed, and a set of the recommendations that we had made, as well as highlighting a few that we thought were ready for action.

That's in your notebooks. Obviously, we are still waiting for a lot of the appointments to be finalized. We will proceed with working with the Administration as they get named.

Obviously, time doesn't wait. We have been asking our ex officios to talk about how they are responding to the new environment, particularly the Recovery Act. We want to turn back to them and see if we can't find out from the agencies that we weren't able to hear from yesterday about where they are.

Alberto, are you ready? Alberto Gutierrez is just joining us from the FDA.

Actually, I have been very neglectful. We actually have a new member, Sam Nussbaum. We introduced you yesterday, so everybody knows who you are, but we are absolutely delighted that you are here as part of the Committee. As those of you who have looked ahead on the agenda know, we were already putting Sam to work before he even arrived. So, thank you, Sam.

Alberto.

UPDATES FROM SACGHS EX OFFICIOS

Update from the Food and Drug Administration

Alberto Gutierrez, Ph.D.

[PowerPoint presentation.]

DR. GUTIERREZ: Good morning. I'm going to talk from here. I'm not used to talking to people behind me. I'm obviously replacing Steve Gutman, and I'll have a few things to say about that later on.

We were asked to give you a quick mission statement, and I wanted to just give you an idea of what the mission of the agency is. I must admit that this is a pasteurized version.

Obviously, I have excluded two major parts of the agency, which are food and veterinary drugs. I think, for this committee at least, the focus is really more on drugs and biologics, which I also seem to have excluded -- sorry about that -- and devices.

What I wanted to point out is that we have a two-fold mission. We are supposed to protect public health, but we are also supposed to promote public health. That is part of a mission that we actually take very seriously. You will see that a lot of what I'm talking about today actually goes towards the area of what we do to promote public health.

We also, obviously, have a part in the post market and what happens to drugs and devices when they are on the market, making sure that they continue to be safe and effective.

The agency has actually moved in a couple of ways to strengthen the role of genomics and its belief as to where genomics is going. Dr. Frank Torti, who is actually our acting commissioner at the moment, created the new position of senior genomics advisor. Presently that position is being filled by Liz Mansfield, who is in the back of the room. She is from our Office of In Vitro Diagnostics and is on detail to that position.

When the commissioner appointed Liz, he also mentioned three areas where the agency has programs that are important to genomics. The National Cancer and Toxicology Research, NCTR, actually has a program on standardization of micro array data analysis, which is very important, among others that they have.

There are two other offices that have programs that are fairly major. Those are the Office of Clinical Pharmacology and the Office of In Vitro Diagnostics. Most of the update that I will be giving you today is

really on what the Office of In Vitro Diagnostics does, but I do have a slide on what the Office of Clinical Pharmacology is doing.

The Office of Clinical Pharmacology looks at the issues with genomics all the way through in terms of discovery and development. They have programs such as the Voluntary Data Submission. That is a nonregulatory program in which they actually allow manufacturers to come in with data, especially genomics data. They help them decide how that is going to influence their drug development.

They also have a Biomarker Qualification Program, and they have programs in terms of how to speed up the development of drugs, such as the end of phase two guidance that they publish.

They do help out somewhat in regulation by acting as consultants for their CDAR colleagues and for the device colleagues. They help us with consults. They look at market surveillance and have a role to play in labeling and research.

In terms of OIVD, obviously I'm not Steve Gutman. You know him well. The good news, I guess, is

that you probably won't be hearing a poem after each talk.

[Laughter.]

DR. GUTIERREZ: But we will miss Steve, actually. His shoes are going to be very hard to fill.

Right now Don St. Pierre is the acting office director. Knowing Don, he will be moving on as soon as he can. He has already opened a search for an office director and has actually interviewed people. We expect that we will have an office director sometime this spring, I hope.

We have also received quite a bit of financing for this year and next year. We have created a staff of personalized medicine that is in some ways a little bit outside our current structure. They will be coordinating both outreach and internal issues that have to do with personalized medicine and genomics in our office.

We continue to put out guidance when we can. We continue to work on them and get them through the system. The IVDMIA final guidance is still in the works. There was a lot of work done by the agency and the Department, but unfortunately we were unable to get it

out before the last administration ended. We are waiting for the new administration to continue the process of putting out the guidance. We also have other guidance that affect genetic testing that we continue to put out.

We continue to do our everyday work on CLIA-approved devices. Among them, obviously, are devices that are genetic tests, such as the influenza test. Actually, as of yesterday we approved two new HPV tests that have just come out.

Among our work, we have continued to have panel meetings when there are issues that are notable and need to be discussed. Some of those have been our panels, some of them actually have been drug panels. We had two panels in December. One of them dealt with a specific device for amino acids and risk of ovarian cancer called ROMA.

The other was more of a general issues meeting by the Oncology Drug Advisory Committee that dealt with K-RAS and all the issues that are arising with the mutations in K-RAS. There are a couple of drugs that influence it, but they discussed whether they work on people who have these mutations or not and whether it is

time to begin to think about label changes. Also, there were a couple of effects on ongoing trials and whether the exclusion/inclusion criteria for those trials should be changed.

We continue to take actions when we see devices that do not meet the definition, for example, of laboratory-developed tests. We sent a warning letter to Lab Corps and to OvaSure, and the test was removed from the market.

We continue to work on critical path programs that have to do with genomics with our colleagues in NCI and CDC.

Among those that we have actually put a lot of work and effort into is the Cancer Biomarker Consortium, in which we have been dealing with issues of biorepositories, bioinformatics, bioassay validation, and data sharing.

We also have an interagency task force which deals with oncology and NCI. This has three areas that we actually are particularly active on, and those are molecular diagnostics, biospecimens, and a new group with pharmacogenomics that is being formed.

Finally, and this one goes to one of the recommendations by this committee, we are beginning to work on a petition that Genentech filed. That petition asks the FDA to regulate all laboratory tests. We are beginning to do the groundwork of putting together background and options for the new administration to figure out how they want to proceed.

That is all I have. Any questions?

DR. TEUTSCH: Great. Thanks so much, Alberto. We obviously have a lot of work to do along with you. This has been part of this group before, so it is great to see that there is a new organization devoted to all of this.

Denise Geolot, can you give us an update from HRSA, Health Resources and Services Administration?

Update from Health Resources and Services Administration

Denise Geolot, Ph.D., R.N.

DR. GEOLOT: Good morning. I'm Denise Geolot. I'm from the Health Resources and Services Administration, which is one of the agencies within the Department of Health and Human Services. It is known as the access agency. It improves access to quality health

care for people who are underserved, uninsured, isolated, or medically vulnerable.

HRSA funds safety net providers, only 1,100 grantees that support 7,000 clinics that provide primary preventive health care services in every single state and almost every community in this country, serving more than 16 million low-income people.

In addition, we have the HIV/AIDS Bureau. The Agency's Ryan White HIV/AIDS Program provides primary care, support services, and antiviral drugs for about 530,000 low-income people.

Within our agency we have the Maternal and Child Health Bureau. HRSA administers a range of programs for women and infants in need and children with special health care requirements. The Maternal and Child Health Bureau includes a specific focus on genetics, which I think is of interest to this committee.

The Heritable Disorders Program supports regional genetics and newborn screening service collaboratives. There is a national coordinating center which was established to work with regional centers and other partners to identify and address issues of

important regarding access to and the utilization of genetic services at the national, state, and community levels. The regional centers have as their primary goal ensuring that children with heritable disorders and their families have access to quality care and appropriate genetic expertise and information.

There are some community-based projects funded under this bureau that support cooperative agreements for consumer information for genetic resources and services that focus on education and community outreach.

There are two new projects, one Screening for Heritable Disorders in Children: The Efficacy from a Consumer Perspective, and Ensuring Access to Quality Information and Education in Genetics.

They have also funded a family history project which will provide a downloadable, customizable brochure that communities and specific genetic disease groups can use.

We also support clinician recruitment and services. The Agency strives to ensure a health care work force that is diverse, well trained, and adequately distributed about the nation. In exchange for financial

assistance through our National Health Service Corps, scholarships and student loans are given out. We have supported more than 28,000 clinicians who serve in some of the most economically deprived and geographically isolated communities in America over the past 35 years.

We support health professions workforce development. HRSA safeguards the foundation of the U.S. health care system by targeting grants to academic institutions to support post-graduate faculty retention, administering scholarships to increase staff in critical specialties such as nursing, and funding leadership development programs. About 10,000 clinicians benefit from these programs annually. I'm sure that many of us in the room have benefitted from these programs.

There are two reports that have been produced that I think are of interest to this group, the Genetic Counselor Workforce Training Program: "Professional Practice: The Issues Affecting Supply and Demand" by Judith Cooksey; and the "Clinical Laboratory Workforce: The Changing Picture of Supply and Demand, Education, and Practice."

We also have a Healthcare Systems Bureau, which

oversees the nation's organ and tissue donation and transplantation system, and we have a Rural Health Office, which makes health care accessible for more than 60 million residents of rural America.

I am pleased to announce that we have a new administrator, who was appointed by President Obama. She joined us this week. Dr. Mary Wakefield, who is an expert in rural health, has recently come from the University of North Dakota School of Medicine and Health Services, where she was the director for the Center for Rural Health, as well as associate dean for Rural Health.

She is an expert in rural health quality, patient safety, Medicare payment policy, workforce issues, and public policy. She is well known in Washington, and I am proud to say she is a nurse.

DR. TEUTSCH: Thanks, Denise. Clearly, there is a lot we can do, particularly on the workforce side. Thank you for that.

Katie Kolor is here representing CDC. Muin is somewhere between Vancouver and Atlanta. Can you give us an update as to what is happening?

Update from the Centers for Disease Control

and Prevention

Katherine Kolor, Ph.D.

DR. KOLOR: Will do. Good morning. I'm Katie Kolor, policy officer in CDC's Office of Public Health Genomics. Muin sends his regrets, and his thanks to the Committee for your work over the years and for this opportunity for us to provide an update on our activities.

CDC's mission is to collaborate to create the expertise, information, and tools that people and communities need to protect their health through health promotion; prevention of disease, injury, and disability; and preparedness for new health threats.

Genomics is a cross-cutting discipline at CDC, focused on the effective and responsible application of genomics knowledge and tools to promote population health, with applications that span chronic disease, environmental health, occupational health, infectious disease, and other areas.

Of particular relevance to SACGHS are ongoing activities at CDC's Office of Public Health Genomics and the Division of Laboratory Systems, which include the

following highlights.

First, CDC's Office of Public Health Genomics is working in collaboration with our partners to accelerate and streamline the effective integration of validated genomic knowledge and tools into the practice of medicine and public health. Recent accomplishments in several focus areas include the following.

In regard to the evaluation of genetic tests, CDC's Evaluation of Genomic Applications in Practice and Prevention, our EGAPP initiative, reached important milestones in January of this year with the publication of three new evidence-based recommendation statements of the EGAPP Working Group. Steve is on that group. These recommendation statements assess the validity and utility of three cancer genetic-testing applications.

Also published in January were two new evidence reports and the EGAPP methods for the evaluation of genetic tests.

In regard to genomics translation research and programs, CDC has recently awarded over $1.5 million per year for three years to fund five projects to conduct genomics translation research, education surveillance,

and policy interventions to help move evidence-based genomics applications into practice.

Also, CDC and NIH are working together to launch a network of research programs, the Genomics Applications in Practice and Prevention Network, or GaapNet. A paper describing GaapNet has been accepted to Genetics and Medicine for publication. An inaugural meeting is planned for October of this year.

In regard to family history and clinical utility, early publications are now coming out from a CDC-funded clinical trial that examined whether family history risk assessment and personal prevention messages influenced health behavior and the use of medical services. A first publication that assessed the risk beliefs across chronic diseases based on family history information was published in February in Preventive Medicine.

In regard to population-based genomics prevalence data, CDC published the first prevalence estimates of 90 genetic variants for a nationally representative sample of the U.S. population that includes major racial and ethnic groups. That was in

November. That is based on the National Health and Nutrition Examination Survey.

These estimates provide the foundation for our Comprehensive Databank of Human Genetic Variation in the U.S. that will serve as an important reference for future investigations, including those into the roles genes play in population-level risk for a disease and how genetic variants might contribute to health disparities.

Lastly, for the Office of Public Health Genomics, I wanted to highlight the personal genomics activities. Greg Feero did a wonderful job yesterday describing the December meeting that NIH and CDC, together, conducted. Also, CDC has conducted consumer and health care provider surveys on awareness and use of personal genome scans. Those analyses are underway.

A few items from CDC's Division of Laboratory Systems, which is working to improve laboratory practice and quality of service to clinicians and patients. First, CDC will publish a report this spring on good laboratory practices for molecular genetic testing for heritable diseases and conditions in the Morbidity and Mortality Weekly Report, MMWR, recommendations and

reports.

This document was developed based on the recommendations by the Clinical Laboratory Improvement Advisory Committee, or CLIAC, with input from both CMS and FDA. It is intended to serve as a guide for considering and implementing good laboratory practices to improve the quality of health care outcomes of molecular genetic testing for heritable diseases and conditions, and to enhance the oversight and quality assurance practices for molecular genetic testing under the CLIA regulatory framework.

Second, CDC is planning to develop a second MMWR document addressing good laboratory practices for biochemical genetic testing. This would be based on a CLIAC recommendation at the September 2008 meeting.

A CLIAC working group was formed to evaluate areas in biochemical genetic testing that need guidance for good laboratory practices and to formulate suggestions for CLIAC consideration. They will meet in June, and a workgroup report is expected at the September 2009 CLIAC meeting.

CDC is funding and working collaboratively with

the Rand Corporation and professional groups to refine and pilot a framework for reporting molecular genetic test results from laboratories to clinical settings that promote both understanding of the relevant genetics and appropriate use of tests for patient care.

Lastly, from the Division of Laboratory Systems, CDC sponsors and supports the Genetic Testing Reference Materials Coordination Program, or GeTRM. This activity fosters coordination among the broader laboratory community to facilitate the development and characterization of publicly available genomic DNA samples and cell lines that can be used by the research and clinical laboratory community for test development, validation, proficiency testing, and quality assurance.

We were asked to also talk about the American Recovery and Reinvestment Act. What I can tell you there is that the efforts at HHS are being coordinated across the departments. CDC is participating in this process to address the provisions of the act, in particular the areas of prevention and wellness, health information technology, and comparative effectiveness.

DR. TEUTSCH: Great. Thanks, Katie. Mike, we

heard a little bit about what was happening in the OHRP, but I expect there is more. Mike Carome from OHRP.

Update from the Office for Human Research Protections

Michael A. Carome, M.D.

DR. CAROME: I'm the associate director for regulatory affairs at OHRP, the Office for Human Research Protections. I'm actually representing two offices today. The parent office of our organization is the Office of Public Health and Science, and that is an office comprised of 12 public health program offices, which include OHRP.

It's located within the Office of the Secretary, it's headed by the assistant secretary for health, and the current acting assistant secretary for health is Dr. Stephen Gossen, who is a rear admiral in the Commissioned Corps of the Public Health Service.

The Public Health Service is also located, and its command structure is, within the Office of Public Health and Science of OPHS.

As the nation's top public health physician, Dr. Gossen, who is the acting surgeon general as well as the acting ASH, is responsible for communicating the best

science, evidence, and data to the American people in order to promote healthy choices and to promote the safety and security of the American people.

Dr. Gossen has identified four current priorities for his Office of Surgeon General. They include disease prevention, eliminating health disparities, increasing public health preparedness, and improving health literacy. On the website for the Surgeon General are descriptions of each of those key objectives.

In addition to the Office of Human Research Protection, there are 11 other major program offices within OPHS. There are two regulatory offices in addition to our office, and then a series of offices that deal with various areas of public health, including the National Vaccine Program Office, the Office of Disease Prevention and Promotion, the Office of HIV and AIDS Policy, the Office of Minority Health, the Office of Women's Health, the Office of Population Affairs, and some offices that staff various advisory committees to the Assistant Secretary and the Secretary.

In terms of some current or recent activities

of OPHS that may be of interest to the Committee, we wanted to note to the Committee that there was a recent release in early January of an updated health care tool which was initially issued by the Office of Surgeon General. That is the Surgeon General's Internet-based Family Health History Tool.

This newer version, which is Web-based like the last one, can be used in electronic health records and personal health records, and can be easily shared with relatives and physicians because of those mechanisms.

Completing the Family Health History online is very simple and takes about 15 minutes. The uploaded information, for those who have privacy concerns, is not retained by the government.

Another initiative coming out of OPHS is the development of Healthy People 2020. Healthy People provides science-based, 10-year national objectives for promoting health and preventing disease. The first one came out in 1979 for the period 1981 to 1990. They are now developing the new Healthy People Objectives for the Years 2011 to 2020.

That effort is being led by the Office of

Disease Prevention and Promotion. For those who want to know more details about how that is being developed, you can go to the website of OPHS and click on "Office of Disease Prevention and Promotion," and there is a detailed description.

I would now like to turn to the Office of Human Research Protections, which many of you are familiar with. We take a lead role in promoting the protection, safety, and welfare of human subjects who participate in research conducted and supported by the Department of Health and Human Services. The office is headed by Dr. Jerry Menikoff. He joined the office in the fall of last year.

Our programs include assurance with compliance, which you must have as an institution if you want to get money for human subject research funded by our department. We have an IRB registration process in which IRBs that review and approve research covered by the assurances have to register with our office.

We have a variety of education and training programs to promote the protection of human subjects. We have a compliance oversight program that oversees

compliance with the regulations. We have staff who develop policy and provide guidance documents to the community.

In terms of a couple of important things that may be relevant to this committee, we have developed a guidance document on the Genetic Information Nondiscrimination Act that describes important implications for IRBs and investigators to consider when doing genetic research and the types of protections that are provided by that act. That is going through its final clearance through the Department, and we hope it will be released within the next few weeks. When it is released, there will be public notice of that through our website and through a listserv notice.

We also published and sought comment on a draft document, Guidance on Important Considerations for When Participation of Human Subjects in Research is Discontinued. A companion document was issued by the FDA regarding issues related to data retention when subjects withdraw from research and what can investigators continue to do with the data they have already collected up to that point. Our document talks about parallel

issues and, in particular, issues related to what you can do with tissue samples that have been already obtained but a subject chooses to withdraw their consent for that research.

The public comment period is closed. There was a 60-day public comment period that closed in late January. We are reviewing those comments and hope to issue a final guidance document on that within the next few months.

That is all I had. Thank you.

DR. TEUTSCH: Thank you, Mike. That is great. We will turn to our colleagues in other agencies. Dan, do you want to give us an update from the Department of Defense? Dan Wattendorf.

Update from the Department of Defense

Daniel Wattendorf, LtCol, USAF, MC

LT COL WATTENDORF: Good morning. I'm Dan Wattendorf. I work in the Office of the Air Force Surgeon General. I'm here, at least today, on behalf of the Office of the Assistant Secretary of Defense for Health Affairs.

Just briefly, DOD's mission, which is a little

bit unique in the health care setting, is a dual health care mission. There is the readiness mission, which is the one that people may be familiar with, which is the care and support of the war fighter or military operation, but there is also the healthcare benefit, which is over 9 million beneficiaries worldwide.

It is a very complex health care system, with military treatment facilities all over the globe, including many in the United States. There are over 75, for example, just in the Air Force alone.

A lot of the activities of the Committee are very germane to the Department of Defense, even to include what we heard yesterday by CMS. DOD's reimbursement structure, although a separate department of government, still receives its funding based on reimbursable amounts based on the care that we provide under CMS structure.

One of the important issues for us, particularly for our readiness mission, is the ability to perform preventive care. If our funding streams are dependent on the treatment of disease, CPT codes, ICD-9 codes, and coding recapture, just like in the civilian

sector -- and our need for our readiness mission is a highly preventive mission -- it is very difficult for us to align our funding streams with the preventive care that we provide, often out of our own budget.

Given that, DOD has always been very, very supportive, and closely associated with any types of programs looking at prevention and strategies for our health care system.

Additionally, the Department of Defense is very actively engaged in the changes to personalized health care and the electronic health record. We have representatives on HL-7 and HITSB. We closely follow the Offices of the National Coordinator, particularly in areas where they are looking at aggregating research in federated systems, like we heard about yesterday.

Given the number of patients that we have, millions and millions of patient encounters all coalesced in one site where we have those clinical data, phenotyping and genome-wide association studies obviously have a high possibility in the Department of Defense, but have not occurred to date.

In terms of research in the genetics setting,

most of our research in this arena comes from the supplemental. DOD's medical research [which is] coming out of our baseline budget, has not changed much over the past decade, but the supplemental budget has gone dramatically up.

We have many, many programs that are very related to genetics. The largest amount of breast care research money in the world is handled by MRMC, which is a congressionally directed research program. It is a peer-reviewed, NIH-style of research, and many people in the genetics community are on those research panels, including others like prostate cancer, neurofibromatosis, autism, tuberous sclerosis, and the genetics of food allergies, for example, just in this year's appropriations alone.

Two others that are rather large and new, and have a lot of genetics in them, are the Armed Forces Institute of Regenerative Medicine, and the Clinical and Rehabilitative Medicine Research Program, both of which have just started in the past two years. They have a lot of stem cell research in them and a lot of regenerative medicine using genetic reprogramming of cells. Those are

areas that the Department of Defense is actively engaged in.

Additionally, in our beneficiary mission, just as an example, we heard yesterday there were 4.1 million deliveries in the United States each year. DOD has over 50,000 alone under our covered benefits. That is about, I suppose, one in 80. DOD is actively involved with the Secretary's Advisory Committee on Heritable Disorders in Newborns and Children. Additionally, we are looking into aggregating their newborn screening data with a national registry for DOD, as well as a national contract, so that all of our members, wherever they are worldwide, will be getting the exact same newborn screening.

You can imagine the complications of a highly mobile community. If a child is born overseas and doesn't have a newborn screen, and moves into a military treatment facility where the expectation is that the child has had that newborn screen, there can obviously be clinical challenges at the point of care.

DR. TEUTSCH: Great. Thanks, Dan. We really do appreciate it.

Mike Amos, from the National Institute of

Standards and Technology.

Update from the Department of Commerce

Michael Amos, Ph.D.

[PowerPoint presentation.]

DR. AMOS: Thanks. Good morning. I am Mike Amos. I'm going to talk about the Stimulus Act and the recent omnibus appropriation, and how it affects what we do at the Department of Commerce. I am actually at the National Institute of Standards and Technology.

I can tell you that our mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve the quality of life.

At the Department of Commerce, we received $7.9 billion in the Recovery Act. A lot of that goes to these types of things. The thing you are probably most interested in is the next-to-last line down, the National Institute of Standards and Technology, because that is mostly where the health care stuff is.

What we received was $610 million, including $360 million to work on some construction things, $180

million to provide competitive construction grants for science facilities around the U.S., and $10 million for our interoperable smart grid.

The fun part is that we got $20 million in funds transferred from DHHS for working on developing test beds for health IT infrastructure and $220 million for grants, fellowships, and equipment and supplies. Basically, it is pass-through money from Congress to NIST to dole out and spend. Unfortunately, the spending plan is still pending, since we don't have a Secretary, either. I guess that slows things down.

Historically, what I can tell you is that we have had about $15 million in diagnostic spending and, for total health care, about $21 million in 2008. Of that, only about $5 million was ever appropriated by Congress specifically for health care-related activities. The rest of it has been reprogrammed from other things that we do based on decisions by the directors of the different laboratories.

I'm happy to say that under the 2009 omnibus appropriations bill we will receive an additional $3 million this year to work on current generation

diagnostic measurements. Basically, that will focus on laboratory medicine and medical imaging, with the justification of trying to improve the information that goes into the electronic health record. Since we are going to be spending so much money on that, it is good to have good information that goes into it.

Three million dollars may not sound like a lot, but NIST doesn't traditionally get big budget increases. This year we received $27 million in new money, for a total of about $819 million for NIST. Three million is a pretty fair-sized chunk of that, considering all of the other things that we have to work on. We are very happy about that.

The fun thing is that we are planning, in our 2010 and 2011 budgets, on expanding our work in laboratory medicine and medical imaging and delving into more of the next-generation things that I talked about in my talk at the last meeting, like focusing on multiplex technologies and new ways to get into medical imaging, and focusing on more molecular imaging as well in the future.

Things that we are going to work on in

laboratory medicine are nucleic acids and proteins. The things in black are the things that we are working on. The things in red are the things that we are not going to work on because other national measurement institutes around the world are doing that and have more expertise. We are going to focus on nucleic acids and proteins. I think you will be happy that we are working on nucleic acids.

In medical imaging, we are going to focus on MI, PET, CT, and medical optical imaging in the short term, expanding that into molecular imaging, as I said. With that, thank you.

DR. TEUTSCH: Thank you very much, Mike. That is great. Clearly, there is lots going on across the government that is germane to our work.

We have a couple of minutes if people have any questions for any of the speakers about what is going on in their agencies, their plans, or all that Recovery Act money, where it is going and how it can be used.

MS. ASPINALL: Do they need any advice from the Committee? Give it out quickly.

[Laughter.]

DR. TEUTSCH: Hearing none, thank you to all of our speakers. We really do appreciate all that you do, not only to keep us informed as to what is going on but your participation in all of our work.

As we did yesterday, we will be hearing from the public again. We do serve as a public forum and welcome all the comments from the public. We set aside time at each of our meetings to do this.

This morning we have Daryl Pritchard, who is the Director of Research Program Advocacy at BIO, the Biotechnology Industry Organization. We look forward to your comments. Welcome.

PUBLIC COMMENTS

Comments by Daryl Pritchard

Biotechnology Industry Organization

MR. PRITCHARD: Good morning. I'm Daryl Pritchard with the Biotechnology Industry Organization. We appreciate this opportunity to testify before the Committee this morning.

BIO is the largest trade organization to serve and represent the biotechnology industry in the United States and around the globe. BIO represents more than

1,200 biotech companies, academic institutions, state biotech centers, and related organizations in the United States.

Today, the Committee is set to discuss the future of the health care system. We would like to suggest and reiterate a few things that the Committee might do that may be able to help ensure that novel molecular diagnostics are used to improve outcomes and efficiency in health care delivery.

Some of my comments may echo the comments made by my colleague, Theresa Lee, from AdvaMed yesterday. I think this exemplifies that across industry we share some of the same concerns in the reimbursement system for molecular diagnostics.

First, payers must recognize that innovative diagnostics can provide tremendous value by optimizing patient management and reducing the overall cost of an episode of care. Diagnostics must receive timely and adequate reimbursement that reflects this value.

The current reimbursement landscape also emphasizes treatment of acute conditions rather than prevention and chronic disease management. It is

necessary to develop new policies that expand payer coverage and reimbursement and diagnostics and services focused on disease prevention.

The CMS reimbursement methodology must be modified so that it encourages appropriate use of beneficial diagnostics. Right now, the current reimbursement system imposes obstacles to both the use and development of innovative tests, and I wanted to just point to some examples of those obstacles in today's public comment period.

As the Committee considers the future of the health care system, BIO encourages that you move forward in submitting an action plan, if possible, for the implementation of your recommendations made in your February 2006 report, Coverage and Reimbursement of Genetic Testing Services, an excellent report, and to consider areas in that report that may need to be updated or reemphasized that take into consideration some of the problems in the CMS rate-setting methodology that we are going to probably discuss today.

To have an immediate impact, we also encourage SACGHS to recommend to the Secretary immediately to

direct CMS to take the long overdue action to update and reform the antiquated clinical lab fee schedule.

We also encourage SACGHS to look a little more closely at ways to create a transparent and predictable reimbursement system that reflects the value of diagnostic tests. We appreciate the opportunity to briefly discuss and point out some examples on these points.

As health care reform proposals are developed, it is imperative that the DHHS include reimbursement system reform and consider the recommendations made by SACGHS in this area.

Health care reform must take into consideration the tremendous value of novel diagnostics to patients in terms of clinical outcomes, quality of care, and potential cost savings. Reimbursement policy must reflect this value. The CMS rate-setting methodology and the clinical lab fee schedule is an example of a system that does not adequately reflect the value these diagnostics provide.

Currently, new diagnostic test rates are determined by CMS by either crosswalking the test into an

existing code or rate or creating a new code for the test and allowing the carriers to gap-fill or establish their own prices for a period of time until a national rate is calculated. Neither methodology is market-based, and the pace of innovation is slowed accordingly.

BIO looks forward to working with SACGHS and the Secretary to implement reforms to the CMS rate-setting methodology that may stimulate and reward innovation and that reflect the value of these tests. Developing and bringing to market new generation of diagnostic tests, typically, is far more costly and complex than for traditional lab tests.

Even under CMS's gap-filling methodology aimed at new tests for which there are no comparable existing tests, BIO is concerned that pricing variations among Medicare contractors may be so great and so unpredictable that they will impede patient access to these tests and stifle innovation.

We also are concerned that setting a national payment amount when the market for the test is not yet well established, and for which little claims experience is available, will lead to inappropriate reimbursement

with little opportunity for adjustment in pricing later, even if it is acknowledged that rates have not been set appropriately.

In addition, because many of the new tests are proprietary and may be offered or performed by only one lab in the country, the gap-fill price established by the carriers serving that lab becomes a de facto national price. If it is insufficient, it may not be economically feasible for the lab to offer that test at all.

BIO believes that the rate-setting process lacks transparency and predictability. CMS also does not clearly state its decision-making process when determining reimbursement amounts via the crosswalking process. Lack of a transparent and predictable rate-setting methodology can discourage industry from entering the development process for important new diagnostics, particularly those requiring expensive prospective clinical trials.

By ensuring appropriate value recognition of molecular diagnostic tests, the Department can create financial stability and attractiveness for industry, further facilitating continued investment and development

of these diagnostics. This will go a long way toward improving outcomes and efficiency in our health care system.

Thank you for the opportunity to provide this statement for BIO. I would be happy to take any questions.

DR. TEUTSCH: Thanks so much. We do have a few minutes if people have questions or comments.

[No response.]

DR. TEUTSCH: These are clearly important issues, as you know and recognized, of course, in our Reimbursement Report from a couple of years ago. There has been an ongoing dialogue with CMS on a number of them.

I don't know if you were here yesterday. Dr. Straube talked a little bit about them. I don't think he went into depth about some of the reimbursement issues in lab testing, but that is a subject of continued dialogue. Thank you very much.

Why don't we take a 15-minute break. Then we are going to spend the remainder of the day on the key issue of how genetics and genomics can inform the

changing and evolving health care system. Grab your coffee and come on back. We have a terrific lineup of presenters.

[Break.]

DR. TEUTSCH: Welcome back, everyone. We took a little longer break than normal. Dr. Straube is going to be a few minutes later than we had originally anticipated, but we can go ahead and get started now with the main agenda item for today, which is our roundtable discussion on the health care system.

This discussion will be part of our work on one of the new priority topics, genetics and the future of the health care system. We will be focusing today, and at the next meeting, on beginning to understand the role that genetics can play in a new approach to health care.

Clearly, this work fits in with the new Administration's interest in reforming health care, which they hope to do within President Obama's first year in office. I think that is a bit faster than we had initially anticipated, which probably should spark us to move more rapidly.

The Administration's hope, which we of course

share, is that a reformed health care system will be less costly, more effective, and more equitable.

As we move forward with our own work in this area, we are particularly interested in examining what kinds of systems are needed to ensure that new genetic technologies and genetic approaches to provide good value for our health care dollars.

Today's roundtable guests can particularly speak to the issues of cost and value, since they are all members of the payer community.

Before I turn things over to Mara Aspinall, who has been the Committee lead in this area and has done a terrific job in helping pull all of the session together, I wanted to note that at our June meeting we will have a roundtable discussion again from some other stakeholders in health care reform.

Our hope is that after hearing from various groups, including the payers, health care providers, and patients, we will be able to provide a comprehensive assessment of the role genetics could play in a reformed health care system.

As I said, because the Administration intends

to move forward quickly with health care reform, we will also continue to monitor their progress in the area. Should our views on health care reform be needed on short notice, perhaps ahead of our time frame, we will be prepared to provide any relevant guidance and information to the Secretary.

It should be a fascinating year. I'm truly looking forward to this session, because I think we have a terrific group of speakers who have a lot to tell us. Let me turn it over to Mara. She will give us a greater introduction. Thanks, Mara.

ROUNDTABLE ON GENETICS AND THE FUTURE OF THE HEALTHCARE SYSTEM

Roundtable Purpose and Overview

Mara Aspinall, M.B.A.

MS. ASPINALL: Thank you, Steve. Thank you, everyone. Today's session is going to focus on looking at the future. There are a lot of discussions about the future. The Committee spent time with six futurists, which is a profession that is very interesting to put your kids in but there aren't actually a lot of jobs in it right now. Another way to think about it is, everyone

is a futurist but these are people who actually have it on their cards.

When you think about the future, a lot of the discussion is very abstract, what might happen, what might occur. There is a lot of brainstorming about systems of the future. We are going to take that aspect of the future and combine it with a very practical aspect of the future, which I would call preparedness. As I see it today, and as the Committee has talked about, everyone is talking about genetics.

I heard a statistic yesterday, that 14 percent of "USA Today" front pages, over the last three years, have had stories about genetics. Whether that be on the first page or the Life section or occasionally in Sports, that means that genetics has arrived.

I don't know about your households, but when my mother talks about genetics -- if you're watching on the Web, hi, Mom -- and my kids talk about genetics, genetics has very much arrived. The real question I have is avoiding the "should have knowns." If you look back to the '70s and '80s, many people were saying we would have a crisis in the number of nurses in our health care

systems. What happened? Indeed, 10 years later we had a crisis of not enough nurses in our systems.

What we need to do now is use the time and really step back and ask, how can we prepare for what is possible, maybe likely. Everyone is talking about the onslaught of genetics, genetic testing, genetic-based drugs, genetic information.

What the group is about to kick off, both today, and then in our continuing work, is sharing with us your thoughts about, as a Committee -- but really HHS, and more broadly the health care system and the Administration -- what do we need to be doing today to prepare for a future where genetics and genomics play a larger role.

That is the basic objective that we have. We want to really have some fun with this. We have an interactive presentation. We have Committee members, non-Committee members, and leaders in various parts of the industry. We have somebody on the phone to give an appearance. I feel like we should have her picture up there so you know what she looks like at the same time. This will be an opportunity, hopefully, for a lot of

discussion with some very interesting people.

With that, I'm going to start with just a couple of slides to say why I think this is important and what I see today when we consider genetics.

[PowerPoint presentation.]

MS. ASPINALL: When I think about genetics and the future of health care, the first thing everybody talks about is the $1 million genome. That is one thing to prepare for. What we really need to prepare for, I think, is the $1,000 genome.

Everyone talks about education for physicians. We heard that yesterday. We need to educate our physicians to really say what is genetics and the future of health care. It doesn't stop there because it is counseling for patients at the same time. It's not just our physicians, it's directly to our patients.

Are there going to be labs on a chip, is the first level of preparedness. Maybe more importantly, is the chip going to be on your arm or in your arm? Is the chip going to be in your wallet? A lot of companies are talking about it being not just in your wallet but in your kids' wallets.

How do you define kids? Maybe it's their knapsack, or their diaper. When will we start being told about our genetics and genomics, and how does that work? Is it, from an industry point of view, about companion diagnostics? That is a term that has been used very frequently.

I'll be provocative here and say, does companion diagnostics say it is centered on the therapeutic? Maybe it's companion therapeutics that is centered on the diagnostic. Both of these happen when you have genetics playing that link between diagnostics and therapeutics.

Lastly, and fundamentally -- and this committee has really attacked these issues and talked about it in meeting after meeting -- are we in a world of genetic exceptionalism, or have we already moved to the point where genetics is the new normal?

These are the kinds of questions that we will be asking, and each of our panelists will be talking about, to really have a provocative session about how we move forward to be prepared for a future where genetics plays a very different role than it does today.

With that, I would like to introduce our first speaker, who is going to give an overview for the field. Then we are going to have three separate sessions looking at each of the aspects.

Our first speaker is Rob Epstein. Rob is senior vice president and chief medical officer at Medco Health Systems. He has broad responsibility, from formulary to clinical guidelines, research, accreditation, and, as we like [to call it], personalized medicine services.

Rob is trained as an epidemiologist, and is a true leader in the field. He has spoken frequently and has written dozens of articles in the area. He is involved in a number of policy statements and policy organizations. Most recently, last year, he was appointed a member of EGAPP.

With that, I would ask Rob to give us our overview. Thank you.

Overview of Key Issues in Healthcare Reform

Robert Epstein, M.D.

[PowerPoint presentation.]

DR. EPSTEIN: Good morning, everyone. It is a

real pleasure to be here this morning, and to be invited to speak. I was asked by Mara to do something that is so much fun. I get to talk about some of the key issues and not have to solve them. It's just perfect. I really like this particular role in life.

I know I only have about 10 minutes, so I'm going to try to stick to it and get us back on schedule. I do want to, however, open this up with a cartoon that was published in 2000. Yes, I do have the copyright approval to show you this.

This was from 2000. There was a person coming into a pharmacy saying, "Here's my sequence," and they are looking at all these jars and pills and looking at the pharmacist for help. That was the vision nine years ago. Actually, that is becoming a reality today.

Where I work, even though we cover about 60 million lives, we have tens of thousands of people who are genotyped, who are expecting our pharmacists to actually do something with the genotypic information and provide them advice. Should I take the drug; should I take a lower dose, a higher dose; am I at the wrong dose. It's actually happening. It might have taken nine

years, but it's happening.

I'm going to cover, in my 10 or less minutes, these six areas. I won't read them all off for you, but for me, these are probably six very key issues in trying to drive genetics into our health care system over the next several years. None of these are easy to solve. All of them have issues not just to do with genetics but other novel technologies or things that are coming to the marketplace.

Let me start with the proposition that I'm sure many of you know about only too well. It has been shown and has been published that on average it takes 17 years for what we know from our heart of hearts in the science to actually turn out at the bedside. Is that something we are satisfied with when we think of this emerging genetic information? Probably not.

There are lots of reasons for it. A lot of them are up here on the slide. The one that resonates for me is that there are more than 2 million articles published in the peer review journals every year. I'm a complete geek. I read everything, and I get maybe 20,000 articles a year, if that much. I'm doing pretty well,

but a practicing doctor out there, how do they screen through 2 million articles and figure out what they should learn and not learn? It is not possible.

We don't have an information infrastructure today in the healthcare system that prompts providers with new information. It doesn't exist, really. We have to think about that if we want to drive adoption of this great new science into the bedside.

Secondly, and it is a whole big conversation, but what is our evidentiary basis for decision-making in health care. Certainly since the early '60s with the change in the Food, Drug, and Cosmetic Act we have been really hooked on randomized control trials as the be all and end all, but let's back up a minute and think about everything else we have ever proven or looked at in health care.

Cigarette smoking and lung cancer. Have we randomized people to smoke? I don't think so. We actually had a whole series of observational studies that were rolled up into what are called the Bradford-Hill criteria which are used for proving causation minus or absent a randomized control trial.

I raise that because I wonder if the standard for assuming genetic information is useful always requires RCTs. If so, it is going to really slow this field down.

Third, I would say that the payer community in particular really needs a framework for providing access to this technology. This may not be the right framework, but all this genetic information needs to fall into some sort of buckets. The payers can say yes, I can see the value in that one and maybe not that one. If you think of diagnostics like "Do I or don't I have a genetic disease?", I don't think you would have a problem with people saying yes, it makes sense that people need to know if they have that genetic disease.

Predisposition testing. In 30 years am I going to have Alzheimer's? That may not be something that all payers would feel they are on the hook for providing to their membership.

Monitoring for effects. Certainly that might be something that people feel compelled to do. That is probably important, if there is a value equation there. The same for pharmacogenomics.

Whatever the framework is, I'm hearing from the payer community they need some help on how to evaluate all these things and put them into areas so they can concentrate and think about, and say, I get it, I don't get it; maybe yes, maybe no.

That leads to a whole controversy on return on investment. How is that calculated? When is that decision being able to be made for someone to say they do or don't reimburse. Are the benefits that are derived from all this technology outweighing the costs. I would say there is some controversy even here, and I think there could be some help provided here.

Is it a straightforward health economic evaluation, something like what economists talk about, cost benefit? You put everything into dollars and cents, both the costs and the benefits, and you just do the equation. Is that the right thing to do over some time horizon?

Is it something that is more commonly practiced in the U.K., Australia, and elsewhere, cost effectiveness analysis, cost per quality-adjusted life-years or cost per life-years saved, something we don't do so much in

the U.S. but people do elsewhere for this kind of decision-making?

Or, forget both of those things. Maybe it's just tallying up the costs on the one hand, and the benefits on the other, and somehow making a value judgment. Is it good enough that people should be providing access or reimbursement?

Those are thorny questions. Luckily, I don't have to answer them today, but I'm throwing them out as issues that do need to help get resolved in order for this field to really move faster.

Also, I would challenge some of the subsequent speakers to think about this. We live in a very disarticulated, siloed health care system. Data sits in various silos. Stuff is sitting over in the encounter data in a claims file, one place. Pharmacy data is over here. Ambulatory care and electronic medical records are somewhere over there. Laboratory is computerized over there. Personal health records, now a big thing, are over here. It is here, there, and everywhere.

If we want to be able to pull it all together, link it, and do something with it so that we take

advantage of the information that is being gleaned, we have to figure out a way to make that happen.

There needs to be a framework, not only for standardization of the data itself that goes into this idea, but maybe the placement of all these data into some repository somewhere that is password-protected or rolls-based, or some way to get into it and out of it. I know, inside the Beltway, people talk about this all the time, but we are not going to get the mileage out of all this information if it is all sitting in various silos and the only place it comes together is on paper in a file in a doctor's office. We really aren't leveraging all of what we are collecting when it is all over the place the way it is today.

On top of that, I would say we need to think about a protocol-driven system to layer on top of the information. In other words, it is great if all that data is sitting in an electronic place somewhere, but who is saying if you have Gene X you shouldn't take Drug Y? If there is somebody who says that and puts it into the system as a protocol, who writes that protocol?

That goes beyond a guideline. I'm talking

about literally a computerized protocol that messages a doctor or a member or somebody that says, "Danger, danger, this is not good. These are bad combinations."

I can tell you the world of pharmacy has been linked electronically since 1990. All 60,000 pharmacies in America are electronic and real-time. There are those kinds of edits about things like age. You are over 65, don't take this drug.

There was a paper in JAMA using the late Mark Beers criteria which outlined which drugs are unsafe in the elderly. When you push those messages to pharmacists, 25 percent of the time physicians change the drug. That is good. Why don't we think about genomics information. Push it out there. Get people to say Gene X, bad idea for Drug Y, or whatever it might be. That has to be part of the plan here.

I'm going to close and gain you back some time. Given all of the conversation about health care reform, I think the opportunity is right now to start addressing some of these major issues, which I do believe will help facilitate the adoption and the dissemination of this great science that is all out there.

Certainly, I believe that the science is exploding right now. There are new journals every day being formed to look at genetic information. There are tons of these genome-wide association studies and what not. We have to harness this in a delivery system that is linked in order for us to get the best value for generating all this information.

With that, I'm going to stop. I don't know if there is time for Q&A now or if we will wait for discussion afterwards.

MS. ASPINALL: We will take some questions after Rob and each of the panels. Right after lunch we will have quite a bit of time to have a panel discussion amongst all the speakers. With that, Marc and then Michael.

Question-and-Answer Session

DR. WISE: This goes back to your return on investment sub-flag, which I know for time considerations you dramatically simplified, to say the least. The issue in the United States is extremely problematic just because of the different stakeholders and the different types of reimbursement. The answer is, your cost to

implement something is different if you are under a capitated system versus fee-for-service system.

I work in an integrated system, so we can actually track costs and do different things. It is funny, we always think it is the payers that are the thing, but when we wanted to introduce a tumor-based screening system to identify patients with lymph syndrome, it is actually the hospital that takes the hit because they are being paid off of the DRG and the pathology cost comes out of the DRG. The insurance company doesn't get anything until a patient actually goes for molecular genetic testing.

It is important to have cost effectiveness and cost benefit and all those things out there to give us a rough idea, but I don't see it as actually helping implementation because of the different amount that each stakeholder has in the game. That is a question and a comment.

DR. EPSTEIN: Sure. Let me first say that I agree with you that we have a patchwork of decision-makers in this country which use different approaches to answering this question. At the very least, I think we

ought to have greater transparency so that whoever the stakeholder is, is transparent about what they put in their equation.

I would say that then opens up dialogue. So to your question why would this help adoption, it may be that -- and I'm making this up -- some stakeholder today is not transparent but tomorrow is transparent. It serves up good discussion, and they revise the way they approach the question. That will help force adoption. Today you really don't know exactly what goes into the mix of how you calculate that return, how are you coming to that decision, what are you using in your institution versus the person two seats over. That is not necessarily transparent. At the very least, I think that is what we need.

DR. EVANS: I am really glad that you brought up the issue of how we determine when something is ready to pay for or, more importantly, introduce into clinical practice. I just wanted to amplify that because I think that as we proceed that is going to be one of the really critical questions.

You are right. Your implication that we can't

afford RCTs for everything is absolutely correct. On the other hand, we have to be very cognizant of the lessons, the most recent of which is probably HRT, in which we can easily be misled. I think that I'm as enamored of genetics and genetic technology as anybody as a geneticist, but I think we have to be very careful not to get carried away with our enthusiasm and begin to implement things that don't have good outcome data.

DR. EPSTEIN: I agree with you. I think, honestly, it wouldn't be a bad idea to go back and look at something like the Bradford-Hill criteria because they really outline strength of association across multiple studies, consistency, dose-response relationship, a lot of things that you think should be there in order to feel comfortable about causation. It is not a single retrospective study.

DR. EVANS: There are models like provisional coverage which might be very important as we move forward.

DR. EPSTEIN: Perhaps provisional coverage could be based on that kind of criteria, waiting for something else.

DR. EVANS: As we collect more data in the real world.

DR. EPSTEIN: There you go. Yes. I'm with you.

DR. BILLINGS: Rob, first of all, I want to thank you. Your company touches a lot of lives. The fact that you are thinking broadly and even thinking about genetics is a tribute to the view and the vision of your company. I wanted to say that.

I want to return to the return on investment topic. It seems to me that, given the economic environment, there is going to be a lot of pressure for near-term returns on investment, but the general feeling in the technology world is that technology investment and the incorporation of new information usually increases cost first. Benefits in terms of lower cost or return on investment are five or 10 years delayed. I'm not sure that there is much appetite for that right now.

So I'm curious about what you think the low-hanging fruit is. Where is there near-term cost reduction that we could demonstrate in this system?

DR. EPSTEIN: That is a great series of

questions, actually. I have had the fortune of speaking to probably close to 1,200 payers on this topic individually over the last four or five years. I would say, to the earlier point, that we do have a patchwork of decision-makers who have different time horizons. There is somebody in this audience who was telling me they have their employees for 20 or 30 years, so they are not looking at the one- or two-year time horizon. Some other folks I have met with say, "I have to have an ROI in one year."

First of all, let me just say that different audiences have a different time horizon of what they are most concerned with.

I'm seeing that for things that aren't major outcomes, like cancer recurrence and those kinds of things, people are looking for the shorter time horizon. When you are looking at something that is so-called serious like that, people give you a little bit of a bye on the topic.

Pharmacogenomic testing, if you do some of the models, can get you to a one-, two-, or three-year time horizon for not all but many of the tests that are out

there. We are finding a lot of payers are really interested in those kinds of things. When it is predisposition testing, like "I'm going to get Disease X in 20 years," that is a little tougher, I would say.

MS. ASPINALL: Thank you. I have one question and one heads-up to the panel. I would like to come back to the issue of how do you make this kind of change happen because I think that would be great for the whole panel.

Just a quick question on the survey that you showed at the end with the pharmacists and the data that went out that seniors shouldn't be taking certain prescriptions. How do you evaluate 25 percent of the time, in the sense that this is increasingly -- and we talked about this yesterday -- an information business? It seems that the pharmacy may be the most integrated part of our health care system now and you can get that information out. Why isn't it 100 percent of the time? Should we be expecting in the future that this is 100 percent of the time? What should we look at as a good standard?

DR. EPSTEIN: That is a great question. In the

pharmacy system that exists today, it is only as good as the data that are in there. It is never as good as all the information a physician has. While you can send the message out, it may be that the person has been on the therapy for three years and doing just fine. Maybe they are allergic to the other drug. There are lots of reasons why it may be overrulable. You can't think 100 percent is the right number.

I will tell you the background rate on this, absent this system, was 2 percent. So you went from 2 percent to 25 percent. I think that is not bad.

MS. ASPINALL: Julio.

DR. LICINIO: I have a question. What do you think are the biggest barriers to bringing these things to practice? For example, the vast majority of people who take important drugs that are metabolized by a certain gene are not tested, yet this has been known for a very long time. Why? What can we do to shorten the gap?

DR. EPSTEIN: I will just reveal a little bit of information, but I'm holding the rest back for a publication submission.

This I can reveal because both partners have supplied this little piece of information. We collaborated with the American Medical Association to do a national survey of physicians to find out their attitudes and awareness to pharmacogenomics information.

The one piece of good news is that nearly 90 percent of physicians believe that genes do provide information about drug response. That is cool. That means, to me, doctors get it. They at least know that genetic information can inform a prescription or drug-related decision.

Get this one, though. Nearly 90 percent of physicians say they don't remember having genetic training in medical school and don't feel comfortable ordering the test or understand how to interpret it.

Quite frankly, the good news is people believe it; the bad news is they don't feel comfortable with it yet. This is a general statement about a national survey, not by specialty. That at least points out one big uphill battle that I think you must have talked about yesterday, which is that we don't have people feeling comfortable yet, outside of genetic counselors, on what

to do with the information, even though to you and I it may seem very clear.

MS. ASPINALL: Gwen. Then we will end the session and move on to the public payers piece.

MS. DARIEN: I have a couple of clarifications and questions. Just to frame it, I work in cancer advocacy, so that's what I know the most about. I think that there is often a confusion between causation and increasing risk. Certainly, there is an association between smoking and lung cancer, but smoking doesn't cause lung cancer. It just increases your risk significantly.

The other thing that I thought about was when you were talking about seniors getting certain types of medicine. There is a lot of work in the cancer field because there are so many different ways of being over 65. There is 'young 70s' and there is 'old 70s.' A lot of people that work in geriatric oncology are very concerned about the fact that there are these standards that don't necessarily apply to everybody.

I know that you are trying to make standards and guidelines. How do you reconcile guidelines with the

reality of the diversity of a population between 65 and 85?

DR. EPSTEIN: I love that question. I was on a panel recently where there was a speaker who has made a career out of writing guidelines. I said, I think this whole personalized medicine approach is going to threaten all that you have done over the last 30 years. He was like, "What do you mean?

[Laughter.]

DR. EPSTEIN: We came back to this by thinking we can refine things like guidelines and make them more personalized. Instead of having the glib statements to your point that a chronological 65-year-old shouldn't do something, maybe the next set of rules would be, if you are over 65 and your BUN and creatinine are something, then you should be more careful.

We can still use this approach, but we may need to come forward with more personalized guidelines. So they are not just XY, XY, they are more like X, and then there is a little subset.

Not to incorporate all the science and information that you were describing would be a mistake,

or to throw out the concept because it can't get granular enough. It needs to get more granular. Otherwise we are in the sloppy system we are in today.

MS. ASPINALL: Thank you, Rob. That was terrific. Keep the questions coming. We have some more great speakers.

Our next panel is on the public health payer perspective. I don't think it is an overstatement to say many in the industry would believe all roads lead to and from CMS. We are going to start with Barry Straube, who is the chief medical officer of CMS and who gave a terrific presentation yesterday on how the agency thinks about genetics and how they are going to move forward.

Our second speaker on this piece of our panel will be Bruce Quinn. Bruce brings us the perspective of a physician, a researcher, and a policy expert. He is the senior health policy specialist for Foley Hoag and the former contract medical director for the California Medicare Part B Program.

We will take the two speakers and some quick questions if it is clarification. Otherwise we will take questions at the end of both of the talks. First Barry,

then Bruce. Thank you.

Public Health Payer Perspective

Barry Straube, M.D.

DR. STRAUBE: Good morning to you again. I'm going to be sharing some anecdotes about CMS again, as I did yesterday, with some of the frustrating things we have to encounter. My flash stick came up, was put into the computer, and we are so well encrypted, and it is so secure, we can't open my slides up this morning.

[Laughter.]

DR. STRAUBE: There are handouts that I'm going to be talking from. We will, just quickly, go through some of these.

MS. ASPINALL: Everyone should have them.

DR. STRAUBE: There is a two-pager, front and back, and then there is a diagrammatic handout that I'm going to refer to because you probably can't read the writing on the six-slides-per-page presentation.

We were given, Bruce and I, two framing questions to use this session for. One was, how can the value of emerging genetic and genomic technologies best be evaluated in a timely manner for coverage

determinations. The second question was, what changes in coverage and reimbursement determination will be necessary to address the increasing trend in prevention-based medicine. The example given was Medicare covering only a limited number of screening tests, which we talked about yesterday.

I thought I would continue. I wanted to, again, thank Steve and the Committee for giving me the time that I had yesterday to give you Coverage Decision-Making 101 at CMS. There were two issues that I didn't bring up in that presentation that I think are germane to this session. The first is for you to look at the diagrammatic scheme for how coverage decision-making is made within CMS. This gets at the timeliness issue. That is the one that is also on the larger slide that is easier to read.

Go over to the top left-hand corner and you will see that we begin with coverage decision-making at any point in time. We have preliminary meetings with technology developers, people in industry, and advocacy groups for patients or other entities, and we actually discuss what needs to go into a proposal for a national

coverage decision at CMS.

This can include a discussion about what type of data points are needed by us at CMS for coverage determinations in the research protocols that are being developed. I think this is a very key point in the discussion which probably has been underemphasized, or under-utilized even, in the past but is very important to making more timely decisions and perhaps getting more new technologies to be covered than have been in the past.

There is then a benefit category request that needs to be made to the agency. That is, folks have to be able to be given a decision as to whether CMS, in this case for Medicare, actually covers the potential device or not, whether there is an actual benefit category for that. As we discussed yesterday, there are some things that are specifically excluded by statute.

As you go to the right on this middle tier of boxes, a formal request is made to us. As I said yesterday, you have to have some degree of information that would warrant us to move forward. That is, it can't just be a black box and say, we would like to cover this. You have to present some kind of information that it has

been tested and there is some relevance in the medical literature for us to be able to make a reasonable and necessary determination.

As you can see there, on a routine national coverage decision we go through six months where there is staff review, they draft a decision memorandum, and we post that.

The variation down below with the dotted lines, as you go downward, is that in some cases we don't believe that we have the necessary information and/or the subject expertise within the agency or within our direct consultants to make a decision or a proposed decision. We seek outside technology assessment. You can see that. It is done through AHRQ, as I mentioned yesterday, or through the MEDCAC, or through other entities.

After a decision memorandum is posted, there is 30 days of public comment, which I believe is very, very important in our process and not replicated in many other coverage decision-making processes. Then we have 60 days after public comment is closed to issue a final decision memorandum, with instructions on how to implement that.

That is how the process works. The next slide,

Slide No. 4 on the 10-slide handout, is another process we did not discuss yesterday. Many of you are probably familiar with this, but for those who aren't, this is CED, or Coverage with Evidence Development.

In the past, if you look up at the top, on the left-hand side there is an oval box that says R&N. Again, we discussed the definition of reasonable and necessary yesterday. In the more remote past, it was a yes or no decision process, either yes, things were covered, or no, things were not covered.

In the more recent past, that was extended so that sometimes there was a yes but it was with conditions. For instance, you might have a technology that could only be implanted or provided to the patient in a specialized center that had passed certain criteria with CMS.

About four or five years ago, we introduced the concept of coverage with evidence development. It is a long, complicated story to talk about reasonable and necessary, but suffice it to say that, if you go down the left-hand schema here, we now have some instances where we determine that there is almost sufficient evidence to

say yes to coverage. It is just barely away from our standard criteria, but getting a little bit more information would tip things over the edge in a positive manner.

So we now have guidance documents out that allow us, in those instances where we need more evidence to be developed and/or where we are almost there and we just need a little bit more evidence, to make a yes decision, dependent on the gathering of more data, referred to as appropriateness data.

There are other situations where we can make a reasonable and necessary determination and the answer is actually no, we don't have enough evidence there to really say yes. However, the statute does allow us, if we prescribe specific data collection, usually through a randomized clinical trial but sometimes through registry collection of data, to in fact make a determination of yes coverage but only for people who would be going through a randomized clinical trial or some other specific, very defined data collection process.

Keep those two concepts in mind. If you would now go to Slide No. 5, the first question had to do with

timely evaluation of genomic technology options. For your consideration, I put down here some of the ways that we might be able to achieve more timely determinations.

The first is -- and if you would go back to that first diagrammatic scheme where there is a preliminary meeting -- there needs to be research coordination to define research output needs. I think, right now, FDA has certain needs for its determination of safety and efficacy. We have certain needs for reasonable and necessary. There may be other needs through the process, including determining payment amounts, especially as we get into cost effectiveness analysis going forward.

I said here in the bullet that we have to meet the statutory requirement of reasonable and necessary, but we do, we always have, and we should continue to consult with appropriate entities prior to any coverage decision-making. I think if we can coordinate and define what the research needs for the various federal, let alone private sector, entities are, it would make for a more efficient process so that people wouldn't have to redo research or come back and meet multiple times to try

to crop together other research that perhaps was not included in their own primary research process.

The second opportunity for more timely presentation, going back again to the schematic, would be to try to streamline that NCD process. I think this is not likely to cut the time frame significantly. The staff review time is the longest period of time that I have there, as well as the technology assessment times. I think, again, that trying to shorten those in some cases is possible, but we are only talking about shortening things by a month or two or three at best. That is probably not our greatest opportunity for shortening the timeline.

I do think the public comment is extremely important and needs to be preserved in whatever process we continue to have.

If you would go to Slide No. 6 on technical analysis and technology assessment, we could shorten the process by having a technology assessment done not just within the coverage decision process but up front, sooner. I think that in addition to defining research needs, as in the first bullet on the prior slide, we have

to think about whether we can do technology assessments sooner in the process and have those available at the beginning of the national coverage decision process. I think as we get into discussions about comparative effectiveness institutes and such that we might be able to include technology assessments sooner.

We talked about the difference between national coverage decisions and local coverage decisions yesterday. One of the possibilities here is to use the local coverage decision vehicle more frequently. We talked about pros and cons of LCDs. If people were to approach the local contractors earlier in the process and work with them in a more coordinated fashion, it could be that we could speed things up, also.

The flip to that, of course, is if you fall into the other camp that feels that local coverage decisions are not the most effective way to deal with things, we could consider in fact centralizing things at a national coverage decision institute, if you will. That is something to be considered and debated, as it has been, as I said yesterday, for the past few decades.

I think that we are going to increasingly get

into the need for comparative effectiveness of genetic screening, genetic testing, and genetic interventions -- genetic therapies if you will -- so that comparative effectiveness and cost effectiveness will become very, very important in the process. Again, the sooner that can be done, potentially before the coverage process is even begun, it might help us.

We could lower the standards of evidence. That was alluded to in the first presentation indirectly, I think. Now we have very strict standards as to levels of evidence that need to be met. We could consider lowering those.

Finally, I think there is some confusion when people have to deal with private and public sector entities at the same time. I think discussions about how we might align both of those processes will be warranted.

Slide No. 7 gets into the second question, and that is potential coverage changes that we might have to consider at CMS. Again, I alluded to some of these yesterday. I think the first issue that we are going to have to discuss that might get into changes has to do with what is the definition of a screening test versus a

diagnostic test. In fact, should there be a change, which would require a statutory change, in the exclusion of screening tests in the Medicare program.

I think that this whole issue of preventive services and screening tests is rather murky. In fact, in some instances a diagnostic test can be a screening test. I think getting at that definition is something that we are going to have to do going forward. Whether we go so far as having Congress change its prohibition on use of screening tests remains to be seen.

However, as I put here, Section 101 of MIPPA, as I said yesterday, provides some relief of this. As you will recall, Congress has allowed CMS to make preventive services coverage decisions, including using cost effective analysis in those determinations going forward. So we don't have to rely on Congress to tell us that they have passed a law and a certain preventive service is covered. We can now begin that process by ourselves, without congressional approval.

Another area was to broaden the use of CED, coverage with evidence development. As you can see from the diagram, if we were to use CED more liberally we

would be opening up the possibility of covering some of the genetic testing or genetic interventions sooner rather than later, but with the requisite that additional information is going to be covered.

Just to finish up, we can review, update, and revise as necessary the National Coverage Decision Manual, the definitions, and the guidance documents that we have. Remember we talked yesterday about the NCD we have on cytogenetic testing and I showed you the rather antiquated language that is in there. I think we need to review all of those issues and bring them up to date. That gives us the opportunity to move forward.

We should do horizon scanning of the current genomics local coverage decisions, which we talked about yesterday a little bit, and determine whether there are some inconsistencies. We ought to do a national coverage decision on those that are inconsistent.

Should we in fact consider genomics as a perfect pilot situation where we try to have better coordination between the local carriers and CMS going forward.

Finally, this is a process that we have been

working on for the last three or four years. We have had many discussions with FDA about so-called parallel review. This gets back to my earlier point about the need to work together early in the process and instruct people on what they need to do in their clinical trials that would satisfy as many people as possible.

I will end there, Mara.

MS. ASPINALL: Bruce will join us as our next speaker, and then we will have questions for both.

Presentation by Bruce Quinn, M.D., Ph.D.

DR. QUINN: Thanks very much. It is great seeing you, also, Barry. Barry was my regional medical officer when I was a local medical director in California. It is great to be here together again.

Also, I have been reading SACGHS transcripts for years. The next time I read one it is going to be like those fairy tales where you appear inside the story.

[Laughter.]

DR. QUINN: I have a few comments. I'm going to use the same framework that Barry used.

From my perspective, having been a local medical director, this question that we cover diagnostic

tests with science and symptoms of disease but we don't cover screening tests actually can be very murky in practice, or simply very illogical.

For example, there is a benefit that if you are African American or have a parent or grandparent who is African American, you get an automatic glaucoma screening benefit, even though your elevated risk for glaucoma is probably just a few percent, if it is even measurable. If you have six relatives with glaucoma and a parent with early-onset glaucoma, you can't have a test for glaucoma unless you are starting to lose your vision.

So if you have a 70 percent chance of having glaucoma, you can't have the screening test. If you have a 2 percent chance of having glaucoma, you can. So there are times when it is inconsistent.

Another example is the BRCA gene. In actual clinical management, if a woman has six relatives with early-onset breast cancer and she has a peanut-sized lump at age 35, it is going to be managed in the context of her family history, but the BRCA testing can't be managed in the context of family history yet. So there are some things that just don't make sense.

There is actually an interesting story. When we talk about how much evidence we need, and we hear that at conference after conference, no one ever asks how you define evidence. Is it in meters, cubic yards, pounds, joules, miles per gallon? There is no quantity or number for evidence, yet we say, how much evidence do you need, and we need to define the evidence.

There is an interesting parallel between "safe and effective" at FDA and "reasonable and necessary" at CMS which I just noticed in the last couple months. Congress gave Medicare the phrase "reasonable and necessary" in 1965. We are constantly trying to understand how to apply it.

Three years earlier, Congress gave FDA the phrase "safe and effective." They immediately had to apply it and immediately shift it into rulemaking and guidance documents. They revised their definition of "safe and effective" several times, particularly in '69 and '70, and then they moved into other things, like fast track and accelerated approval and so on, in the next decades.

I think one of the differences is, Congress

gave them more than a phrase. Congress said safe and effective means that there is reasonable assurance through a substantial body of evidence for a panel of experts that the claims being made for the product are correct. That paragraph actually makes it much easier to move forward, as the FDA did.

Also, the FDA had to make its judgment all the time. Every month there is a new application packet and a new decision. When Medicare started in 1965, there were billions of claims flowing through. Most of them just flow through and you don't have to make a coverage decision on all of those claims. It crept up, like putting the frog in the pot of cold water that becomes boiling water, while the FDA was confronted with its problem in its face right away.

There is also a third standard which is used in some contexts at the FTC and FDA which is called "scientifically reasonable." I think "scientifically reasonable" changes depending on the context. There are things like the K-RAS studies in colon cancer where there are several retrospective trials with retrospective analysis that virtually everyone agrees give the right

answer. In fact, it wouldn't be ethical to do a new forward-looking randomized control trial.

So the level of data you use has something to do with the way people interpret the data. The wonderful anecdote there is from a woman named Hack at the University of Miami. She points out that if you go back to the Watson and Crick original paper, they had five kinds of evidence. Put together, it made it clear that DNA was a double helix. Any one of those pieces of evidence was entirely inconclusive. It is only writing the five together and putting it in the brain of Watson and Crick and the brain of the reader that it becomes obvious that DNA was a double helix. Evaluating medical decision for reasonable and necessary is often like that.

The other topic was making the process faster or more reasonable. Everyone has talked about the reimbursement issue. There are fixed prices for molecular lab tests, $10 or $20 per step, and it is not rational. For a while I thought maybe that is the market power of Medicare. It is a monopoly, it has a lot of market power, it must be a natural process.

It is not actually market power. Those prices

were fixed in 1984, generally. It is price fixing, which is a different thing than having a lot of market power.

John Kenneth Galbraith wrote a book about price fixing during World War II. The biggest problem they had was not a black market, it was dealing with innovation. Their innovations weren't things like new cell phones and new plasma screen TVs, but it was innovation in clothing. Clothing was not the same year to year. There were new styles, new brands, new fabrics. It drove the price fixers bananas.

With lab tests, we fixed most of the prices in 1984. There is no relation to value at all.

Now, sometimes that works. People can make a genomic kit for Warfarin testing. I'm making up numbers, but let's say the kit costs $50 and you sell it to the hospital and they code-stack it to $100 or $200, and it actually works, with the overhead, the management, the legal costs, and so on.

There are other things where it doesn't work at all. I'm constantly running into companies that have some tests they could develop. Maybe it would cost $200 to amortize their costs, but they know Medicare would fix

the price at $15 or $20. They would grossly lose money on it, even if that item would save $2,000 every time it was used. The system is so irrational that we don't see things that people aren't developing.

We all remember the Sherlock Holmes story about the dog that didn't bark. They knew somebody had to be the murderer because nobody went out a certain door because the dog outside that door didn't bark. The dog that doesn't bark usually doesn't get much attention. All these things that could be developed at a somewhat higher price point and save money, can't be developed because of the fixed fee schedule.

Of course, there are times when it works. Troponin testing has huge value in quality-adjusted life-years, I'm sure. The pay is $15. So we are caught with things that work on the $15 or $20 fee schedule and things that aren't being developed that would actually save money.

When I see the multi-trillion dollar health care deficit, I keep thinking about Clayton Christianson's work at Harvard on disruptive innovation. Things get so expensive that it creates room for people

to come in underneath with cheaper cost with a disruptive technology. In genomics, this enormously important field with a $15 fixed freeze, we are not letting people do that, come in and save money, although it is below current costs but above $15.

I think that is one of the paradoxes that we really need to address, whether it is by congressional action, a special committee, or a working group. So many people have talked about that. It is time to move forward.

The last point I will make is, I realized that as a Medicare carrier we couldn't change the fee schedule and pay doctors more but we could try to run the operation to make it as easy as possible for doctors. Lost checks and erroneous claims processing all raise the doctors' costs. Even though we couldn't raise the fee schedule, we could try and reduce those costs for the doctors.

Occasionally, Medicare has come out with rules that someone thought looked good in a narrow context but were very counterproductive in society.

One of the things we have today is much more

complicated but high-value genetic testing. Just like the enabling technology for genomics is actually robotics, the enabling technology for these tests is actually Fed Ex. We can get a sample from any place in the country to the lab that does it overnight. You can have institutions like XTX and Genomic Health.

The problem is a rule that Medicare came up with very recently called the 14-Day Rule. If a hospital draws a specimen, for weeks into the future the hospital is responsible for any lab tests on that specimen. It doesn't work in the modern system.

You can have a breast biopsy in Sioux City, Iowa. The patient goes to Mayo Clinic for a cancer chemotherapy. They need to run some special tests in the Mayo Clinic. St. Mary's in Sioux City has to pay for those tests.

Then, maybe the patient also needs a gene panel test or a tumor of unknown origin test, which is done in California. Mayo then sends it to California, and again St. Mary's Hospital in Sioux City, Iowa, is expected to pay for it, even though they have never heard of the doctor at Mayo Clinic, don't know anything about the

patient's management, and don't know anything about where the test is.

One of the problems the hospital runs into is then they are responsible for future audits and recoupments on that payment. If they are later audited, they have to produce medical records from Mayo Clinic or anyplace else the patient went to. They have to produce the lab reports three or four years in the future from the lab in California, which might not even still be in business.

I would say it actually made more sense the way we did it up until 2008, where the lab was responsible for billing and the lab was responsible for recoupment. I have a lot of interest in program integrity in Medicare, which means recoupment. It was actually easier when the money stayed at the lab because you could go to the lab, audit 1,000 claims, and take a million dollars back. It actually has financial advantages for Medicare.

Those are some of the things I have seen. I think it is definitely true that more national coverage decisions, as Barry supports, would be a good idea. We actually had several tests in California that I referred

for national coverage decisions, none of which had been taken up yet, but Medicare may still cycle back to those and come to them. Thank you very much.

MS. ASPINALL: Thank you, Bruce. Barry, if I may ask you to come up. Bruce, if you can stay? Let's have a few questions before we go to our public-private payers panel. Jim?

Question-and-Answer Session

DR. EVANS: Once again, Barry, you have shed some light on the black box of CMS. Thank you.

One of the things I was wondering about that struck me, listening to you describe how difficult it is to come to these decisions, is that our country isn't in this alone. We may be uniquely fragmented and have unique challenges that make it difficult, but it does seem like many of these things must be being debated in many other countries. Is there a way to take advantage and not duplicate all of that work and inform those decisions?

DR. STRAUBE: I think there are two responses, Jim, to your question. One, if you are asking whether we entertain results of decision-making processes that have

occurred in other countries, or the other analogy would be commercial health plans, the answer is yes. It is not a primary piece of decision-making, but it educates us and may influence the final decision, especially if we were to see that many carriers or payers were not covering a certain technology and had good reasoning behind that to support what we had already come up with.

That is one setting. We do look nationally and internationally at decisions that are made for whatever technology we are looking at.

If the other part of the question is, should we be looking particularly internationally to other models for coverage decision-making, the answer to that is yes. I think that will be a major part of the debate for health care reform coming forward.

You have several articles in your packets that get at some of this, but you can look at NICE in the U.K. We have had a relationship with them for many, many years, sharing information and sharing concepts about how we do our various coverage decision processes. I think they are very intrigued by the coverage with evidence development. We are very intrigued with some of their

comparative effectiveness decision-making that they have been doing for years. I think that needs to be debated in the public sector as we go forward.

MS. ASPINALL: Kevin.

DR. FITZGERALD: I'm intrigued, as we wrestle with how this is going to go forward, that certain words come up constantly, like "benefits," "harms," "the calculation," "the balance," and all that sort of thing. They keep being raised, but one of the things I want to come back to is this whole concept of what is the benefit.

With personalized medicine, as we were starting to get into, let's take lung cancer as an example. Let's say somebody says, look, I have had my genome sequenced for $1,000 and I found out that I'm resistant to lung cancer. I'm not likely to get it, even if I smoke. So you should let me smoke and this should not be something that is held against me as far as my health is concerned, except when we have the public concern of secondhand smoke. There are other people around that might be affected by it.

Or, let's say we find that somebody actually is

susceptible to type II diabetes from weight gain. Is that a personal responsibility of the person to address that with preventive medicine? Are we going to reimburse somehow along the lines of whether or not that person, or the employer, or whomever, takes responsibility? Are we going to shut down McDonald's? I have no stock in any of these companies, obviously.

[Laughter.]

DR. FITZGERALD: As we go forward and this glut of information comes out, how are we going to build in processes that are going to take that into consideration?

Are we going to take into consideration the very practical issue of mistakes in hospitals and the idea of cutting back reimbursements if the hospitals aren't taking care of the fact that they may be transmitting drug-resistant pathogens around? Obviously, getting adequate sleep for the health care professionals that are involved in that has an effect on that. Do we take that into consideration? How do we structure these kinds of things?

My concern is that personalized medicine is going to open this floodgate of information. I like what

you have put down here about a way to more rapidly integrate that, but I'm just wondering if we indeed are really preparing for that and trying to look ahead, as Mara is doing? Or, are we still too focused on the short term and what we are putting together now is not going to be adequate in even five or 10 years?

I know it is another easy question. I apologize.

DR. QUINN: I will let you take that.

[Laughter.]

DR. STRAUBE: I think, Kevin, I can answer it in a couple of steps. First, I haven't mentioned the overall financial status right now. For the Medicare program, as you probably know, we spend about $700 billion a year right now. The Medicare Trust Fund revenues are now less than the outflow.

The CMS actuary has estimated that it will be 2016 when the Medicare Trust Fund will be depleted, if we don't change something quickly. That will be within President Obama's administration if he gets a second term. So this is unequivocally something that will be paid attention to during probably this term, or at least

leading up to the election.

Actuaries have estimated that in order to correct that problem and make the trust fund whole over the next 30 years you would have to raise premiums immediately by 120 percent or you would have to reduce benefits immediately by 50 percent, or some combination thereof. Those two things are not likely to happen.

I'm saying this because whatever we do is going to be in the context that we are running out of money to pay for basic services, let alone, in some cases, to gather information which may be, arguably, discretionary. In a personalized medicine context, it may be very important to the individual to have that kind of information. That complicates the field.

The second point, as I said yesterday, right now it is pretty black and white. For our reasonable and necessary, it has to lead to improvement in outcomes. Whatever we do in the process of covering something, it has to lead to improvement in outcomes for the affected individual. So for now, our marching orders are pretty clear.

What you are suggesting is Point No. 3, and

that is, there may be these situations where it is not clear from a societal standpoint that outcomes are going to be better but from a patient's individual standpoint, they want to know as much information as they can, even if it is like flipping a coin in terms of the outcomes to that.

I think that is where the rubber really hits the road. To what extent are we going to diverge from population health principles, where we are doing the greatest good for the greatest number of people, to in fact allowing exceptions for individuals. In this case, it is probably more for information. I don't have the answer to the last one.

MS. ASPINALL: Steve, then Gurvaneet, and then we will conclude this session.

DR. TEUTSCH: Barry, you raised the issue, of course, of paying for all of this going forward. Most of the technologies that get introduced, even the ones that are highly cost effective, are still cost additive. Given the challenges that you just talked about and the constraints on using cost effectiveness within the Medicare program, which as you pointed out was limited to

some fairly specific uses, how do you think this can move forward so that you can balance those public needs and the public good and keep us solvent?

DR. STRAUBE: Steve, I think that, first, the Recovery Act that just passed, as you know, has three major components in the health care arena. One is adoption and use of health information technology. The second is a whole series of prevention and wellness issues. There will be some attention paid to personalized medicine, I think, and the expenditure of those monies.

The third area has to do with comparative effectiveness, which NIH and AHRQ in particular are going to be leading but all the rest of HHS is involved with.

I think comparative effectiveness is going to happen in the next several years, where there will be, certainly at the federal level, use of comparative effectiveness research. I don't see how we can do comparative effectiveness research without incorporating and dealing with the question of cost effectiveness, in this economic environment especially. I think that that is going to happen and we will end up answering some of

these questions.

There might be a good example, though, of Section 101 of MIPPA. We just completed and issued a national coverage decision on the use of CT colonography for use in the prevention of colon cancer. Our determination on that -- and it is out for public comment right now, so people can make comments on this. We have not made a final determination yet -- was that the literature didn't show that there was any advantage over existing technology in terms of using CT colonography.

We felt that the literature also didn't specifically address the Medicare population. If you are doing this in 70- and 75-year-olds, are you in fact creating more problems by picking up asymptomatic polyps that will never get to be cancer. You are then subjecting them to unnecessary tests and such.

The final thing was, to be cost effective compared to existing technology -- and we did not deny the use of CT colonography for specific diagnosis -- we would have to have the reimbursement from what we are paying currently. I don't think that the providers would find that to be acceptable on their end.

That is an example of what we are already dealing with, insofar as the statute limits us, with these issues. I think it is going to explode into everything.

MS. ASPINALL: Gurvaneet.

DR. RANDHAWA: Thanks. I have two questions, one for Barry and one for Bruce.

I'm not an expert in GINA, but my sense of GINA is that there is a prohibition of using genetic information in coverage decisions. If that is right, is there a potential for limitations in how coverage with evidence development is done for genetic tests when, by definition, we need to have some outcome information from the genetic test before a final coverage decision is made?

DR. STRAUBE: Gurvaneet, thank you. Our understanding of GINA is such that we can still gather genetic information through clinical trials and so forth. We obviously have to respect the privacy components of GINA, but we think we can do that.

DR. RANDHAWA: For Bruce's presentation, I wasn't very clear. You had mentioned cost of the tests

as being a critical factor, and many of the tests are being charged $15 or $20. I wasn't sure the difference between cost and value was brought out in your presentation. There can be tests that can be offered for free but still may not be cost effective or of value because of the downstream interventions that may not be effective.

On the other side, there are certainly many genetic tests, especially in breast cancer, that are in the several-thousand-dollar range.

So, I just wanted to make sure. I got the sense that you were distinguishing cost from value in your presentation.

DR. QUINN: I was thinking mostly of cost. If you have a $500 procedure that could be replaced by a $100 test, yet the fixed fee schedule for the test is $10, then nobody will develop the $100 test to save you the $500 thing.

I know cost effectiveness can have different value depending on where you draw the circles around the service and the assumptions you use, but there are some things that are cost effective under nearly any

assumptions. That is where I was going. That would be a place to start.

MS. ASPINALL: Thank you. We appreciate that. That was terrific. Now we are going to hear from the other pillar of the payer community, which are the private health insurance companies.

Today we have two speakers, Sam Nussbaum and Joanne Armstrong. Both of these folks are leaders not only within their own companies but within the industry more broadly. Let me introduce them. Joanne will give the first presentation, and I will control the slides here. Then Sam will do that, and then we will continue to have this multimedia and have Joanne on the phone.

Let me start out just introducing Joanne, who is the senior medical director for Aetna. She is, again, an M.D. and M.P.H., and has a strong background in both public health and epidemiology. She heads up the Women's Health and Genetics Unit for Aetna, and has been a frequent speaker both nationally and internationally on the area.

Joanne, thank you for your willingness to do this. We are all set. We are on the cover. Let me know

when you want to go to the next slide.

Perspective of Private Health Insurance Companies

Joanne Armstrong, M.D., M.P.H. [via speakerphone]

[PowerPoint presentation.]

DR. ARMSTRONG: Terrific. Good morning, everybody. I'm sorry I have added extra complexity by not being there and going through it this way, but I do appreciate the opportunity to share our perspectives about driving value in personalized medicine.

I'm on the second slide, Mara.

I think Rob spoke about this this morning, but we can't say it often enough. Personalized medicine is emerging at a really critical time in the delivery of health care in the United States. The challenges are well known to this committee and the people who are attending there.

Primarily, the cost of health care has outpaced our ability to pay for it. There are wonderful technologies, wonderful opportunities, but they are just, in aggregate, expensive. We simply don't have the money for all of it.

What we do know in the delivery of health care

is that needed care is often not delivered. There are more than 40 million individuals without health insurance in the U.S. Delivered care is often not needed or is of poor quality, and that has been very well documented by the IOM and others. And then, needed and appropriately given care is often ineffective. We know of lots of examples of that. Only half of the patients who initiate antidepressant therapy experience some significant reduction in symptoms.

It is in this latter area, where needed and appropriately delivered care is ineffective, that I think personalized medicine has some of the most promise. The concept that you can deliver the right care to the right person at the right time has the potential to improve the efficiency of care, certainly the safety of care, and the cost effectiveness of care. I think that is certainly where health plans are beginning to focus their attention.

The next slide is just to illustrate that the size of this opportunity in personalized medicine is vast because of this increasing appreciation that all areas of medical care and a lot of things that we now consider

social problems have some genetic link.

Slide No. 4 is a snapshot of what personalized medicine looks like when you just look at the activity in this space. Everyone is familiar with these graphs that come out of gene tests. I think every year we marvel at the height of the curves that come out in terms of the new tests that are available.

We see about a 10 percent increase in the new testing that is available year over year. In our own data, we have looked at the utilization of genetic-based testing, and that increases by about 20 percent per year. So there is significant interest on the part of clinicians and patients to use these technologies.

This slide also illustrates what the challenges are in staying on top of what the open space is to support coverage, reimbursement, and clinical use of these tests.

Slide No. 5 is a look at what the emerging cost information is in the area of genetic tests. In aggregate, the total spending in genetic diagnostics is still very small, less than 0.5 percent of total medical spending, but the trends are significant. We see in

Aetna data that the cost trends are about 20 percent per year. We have been tracking these for the last four or five years or so, and that trend rate continues.

We are also seeing the emergence of some breathtaking prices in diagnostic testing, $3- and $5,000 each. We certainly recognize that many of these are also currently on the market at $20 and $100 a test. That is not a statement about value, simply a comment that many of these are coming on the market at really significant price tags.

Much of this pricing is said to be based on value and value-based reimbursement. I will comment here that there is just scant literature that actually links price to value. I don't think we have really defined what value looks like, but we do see, from a marketing perspective, the language that these price tags are based on is value. I will just comment that there is not really evidence that that is the case.

On the next slide, the diagnostics, of course, are increasingly being linked to therapeutics and to companion diagnostics. Most of these are the biological therapies. We are seeing similarly high unit costs and

trends in this area. The biologic cost trends are about 17 percent, and they have been running at about that rate for years. That compares to non-biologic drugs that are about half of the price. That is, again, not a statement of value, just the reality of what the trends look like.

From a prescription cost, again, therapy costs are coming in at $50,000 a drug or $200,000 a drug. It really is incumbent upon us to understand what consumers are getting for some of the costs that are coming in.

As to the slide with the cartoon, I think this is like a Rorshach test for where you see genetics or personalized medicine going; will it actually deliver on its promise of improving quality, safety, and the cost effectiveness of delivered care, or will it just be additive medical cost with marginal health care gains.

From an Aetna point of view, we have been watching this and trying to plan it carefully over the last three or four years. I think many health plans are doing the same. We do recognize the inherent value in the approach of right person, right drug, right time, but given the amount of technologies that are just pouring into the market, there is the possibility of a collision,

so it does need to be planned for carefully.

On the next slide, I have highlighted probably four of the many challenges that we are facing in trying to effectively integrate personalized medicine and genetic-based medicine into medical care. There are many more than this, but I think these are the four high-level problems or issues.

The first one is to ensure that the evidence base for these technologies is strong, both to support the coverage and reimbursement for the technologies but also to prioritize which of these technologies are introduced into clinical practice and that they are used well.

The second challenge is the need for clinical and economic outcome data that demonstrate the value of personalized medicine strategies compared to the status quo. That is critical. I think comparative effectiveness research will help there, but there are, again, many more examples than what the capabilities will be in comparative effectiveness research.

The third major challenge is the need for decision support tools for clinicians and consumers and,

quite frankly, health plans and everybody else who uses these technologies, to make sure that they are used in an effective manner.

The fourth challenge is to look again at the CPT system for laboratory testing. Many people have spoken to this today, but it is a really important one. The current system does hinder our ability to use genetic tests and to really look at our data and understand the activity that is taking place there.

That information could help us plan medical management strategies from a health plan perspective and work in the area of reimbursement strategies, including value-based reimbursement, if we intend to do that, or even things like coverage with evidence collection. How do you actually plan and allow for that in your data if you don't have the suppleness in the reimbursement system to allow for and enable that.

Finally, I think Rob and many people have spoken to the potential utility of all the data that we have in our systems for various types of research activities. We are hindered by the lack of specificity of the coding to really identify the testing that is

being done and the clinical conditions that it is being used for.

I'm just going to take us into a little more detail around these four challenges. The first one is from a coverage and reimbursement point of view. From a health plan perspective, it is really critically important that the technologies that are covered and that are promoted and used have a strong evidence base.

The coverage policies that guide reimbursement for genetic and personalized medicine technologies are the same as for all other technologies. Specifically, the services need to relate to the prevention, the diagnosis, and the treatment of an illness.

There is significant interest in information utility in genetic tests. A lot of the boutique genetic tests I think fall into that. Some of them that are not boutique tests but have a longer-term potential implication, like APOE-4 testing for Alzheimer's, I think are examples of tests that, while they may have personal information utility for financial planning needs, et cetera, are currently not related to prevention, diagnosis, and treatment of illness and so are not

covered in a reimbursement environment.

Secondly, the information needs to affect the course of treatment of the member, the care and/or treatment needs to be likely to improve health outcomes, the improvement should be attainable outside of investigational settings, and importantly, the services need to be consistent with plan design. I don't think there has been a lot of activity in plan design in genetics. I'm not sure that that is going to happen.

I think that it is a risk if these technologies come in priced at very, very high levels. I will just put that out there as a potential future issue to watch.

In terms of the evidence standards that are required for the coverage of genetic or personalized medicine technologies, the summary is that it is similar to all other technologies. For the early years of personalized medicine discussion we talked about whether there should be an exceptional status for genetic technologies. I think there is a greater consensus that the answer to that is no.

The evidence standards are information from the published peer-reviewed scientific evidence. That

permits conclusions concerning test performance and the effect on health outcomes, specifically analytic validity, clinical validity, and clinical utility. I think a legitimate question is, what is the evidence standard. What is sufficient versus optimal. More conversation needs to take place in that area.

We look for the final approval from the appropriate governmental regulatory bodies when it is required. I think this is a challenge in the area of the diagnostics, where it is not required for almost all of it on the market. What that means is that we, as health plans, do much more technology assessment than any of the medical professional bodies or the governmental health agencies that are potentially tasked with this. I think certainly in the short term we will be doing this. It is not necessarily by choice but by necessity.

Finally, the covered services need to demonstrate improved net health outcome and be as beneficial as an established alternative. This is where comparative effectiveness has a role to play.

Slide No. 11 is a little bit outdated, but it speaks to the disconnect between the conversation we have

in this field about value-based activity and what we actually know about the value of the technologies that are on the market. This slide is a summary from Katherine Phillips' work in pharmacoeconomics. It looks at the cost effectiveness of targeted therapies. There are very few that have been systematically studied. The outcome data on it is next.

It is a fair question, what is value. We don't have the answer to it. I don't think that we have really had a decent conversation about what it should be, whether it is cost effectiveness, the balance of risks versus gains, et cetera.

From a health plan perspective, while there may be a perception that we do these analyses on every technology we cover, the reality is that they are done on a tiny minority of the services that are covered, simply because there is very little data. We ourselves are challenged with the resources to do this type of work, and where we do it, in many ways we do it to figure out where we are going to prioritize our own activities and whether some of these technologies would warrant being incorporated into utilization management, disease

management, and other types of programs.

Slide No. 12. I won't go into much detail here. I understand it was discussed yesterday. Suffice it to say, there are significant challenges in delivering decision support tools for both consumers and for physicians to use this effectively.

Then the coding issue is on Slide No. 13. That we have talked about before.

We are sensitive, on Slide No. 13, to the privacy issues. Health plans and AHIC have been very active both in supporting GINA and now in support of the regulations around GINA. We are aware that consumers' confidence to share this information is based on the confidence they have that it will be used appropriately.

Then there is the graphic on how you actually use all this data aggregated together to help consumers and physicians make decisions. Rob talked about this in a pharmacy setting. I will say that Aetna, WellPoint, and others are doing this already in a broader pharmacy and general medical setting in total.

This is an example of Aetna's personal health record. It takes all the data that is available. You

will see that on the left-hand side of the schematic there. It is laboratory data, member self-reported data, all the administrative data that we have. We aggregate that into basically a big data aggregator and on top of that apply rules about what best practices are. Those rules come from the evidence-based literature, from the guidelines of medical professional societies, from the FDA, and from governmental bodies that speak to these.

We apply these rules looking for gaps in care. We look for under-use of services, drug-drug interactions, et cetera. Then we send those messages out.

This type of personalized medicine is taking place today already. The question is, how do we personalize it in a genetics context. What you see in orange on the slide are the areas that we need to do more work in, particularly on the rural side. In order to message to patients we have to be confident that the content that we are messaging to them is appropriate.

The final slide, Slide No. 16, are the priorities from a health plan perspective on where we should be going in this area. Just to restate, we need

to strengthen the evidence basis for these technologies, these more than 1,400 type tests that are available. We need to review the evidence framework to support coverage policy, specifically looking at ideal versus sufficient data to make coverage decisions; are we asking the right questions.

We need to generate outcome data that helps us identify value so that we can both prioritize it and help support these services that we are covering.

We need to promote physician and consumer engagement and decision support tools to push this information to providers and to patients. It is impossible, as Rob said, to read 20,000 journal articles and synthesize and integrate it into your own clinical decision-making. Other entities are going to be needed to help with this work.

I will stop there. Thank you for your interest.

MS. ASPINALL: Joanne, thank you. With that, our next speaker is Sam Nussbaum, a new member of the Committee. He is executive vice president and chief medical officer of WellPoint. Sam.

Presentation by Sam Nussbaum, M.D.

[PowerPoint presentation.]

DR. NUSSBAUM: Thanks, Mara. I'm delighted to be with all of you this morning and to be a new member of the Committee. I want to build on what was shared I'm sure yesterday and then earlier this morning. Like a tale of two cities, we do live in the best of times and the worst of times.

This is the best of times because all of this extraordinary new genetic and biological information should lead us to personalized medicine that is timely, that improves health and health outcomes. We have breathtaking advances in medical technologies.

Yet it is the worst of times because we have care that is unaffordable. Half the time we don't get the appropriate care. We have too many medical errors. We need desperately to transform our health care system.

When we look at what the drivers of health care costs are, the key driver in many ways is advancing medical technologies applied to an aging population with chronic illness. If we could manage that with better care coordination and better use of evidence-based

medicine, that is our greatest opportunity to immediately control cost.

I believe it is so necessary to immediately control cost because that will leave us the head room for innovation, the biology, and the opportunity that we are talking about.

If we look at what the Institute of Medicine has done and the new legislation on comparative effectiveness research, we have an opportunity to determine what really works in health care. We need to understand this to balance this against these extraordinary costs.

In this slide, I share with you some of the new biological therapies we are using to treat cancer, rheumatoid arthritis, and multiple sclerosis. These are drugs that are no longer several thousand dollars a year but treatments that are $30- to $50,000, in some cases several-hundred thousand dollars.

There are over 600 specialty drugs still in development, in addition to the large number we have today. Part of our understanding of the new biology, personalized medicines, and genetics, is how to use this

approach.

Let's take a look back a few decades ago when bone marrow transplantation was thought to be the best treatment for women with breast cancer. It took a decade before we realized that billions of dollars were spent on a treatment that did not work and there was no difference in survival. Think of the pain for these women and their families as the women were undergoing therapy, and think of the delay in developing more opportune and better therapies.

Today, how do we approach this. We approach it biologically and genetically. Women whose tumors express certain receptors are candidates. They should be treated with Herceptin. We want to be sure of the new models to make sure that if this treatment can work in the biological setting of women's breast cancer that they receive it.

Think about where health plans were two decades ago, opposing these mandates, which in retrospect was right, but today, making sure that women get opportune therapy.

What I would like to do now is talk to you

about WellPoint, which covers one in nine Americans. WellPoint is, by membership, the largest health benefits company in the country, covering 35 million Americans. I want to talk to you about how we set policy today and then what we are doing to lead into the future.

Basically, with the Medical Policy and Technology Assessment Group, we take lots of input, including input from medical specialty societies, literature, Hayes' Technology Compendium, NICE, and wherever the information is, and we essentially consolidate that information. We work with many academic medical centers and medical specialty societies. We survey changing practice patterns and FDA decisions, and then we makes decisions on what we are going to cover and whether we find these treatments medically necessary.

Now, even within this complex structure we have subcommittees of leading hematologists, oncologists, or behavioral health experts.

What is most important is that once we make this decision, this is a time frame that can be literally days to weeks, depending on new therapy. In fact, for new preventive services it is days. For new therapies,

like after an ASCO meeting when a cancer therapy is determined to be of benefit, it is weeks, if not days.

What we do, though, is emphasize the concept of transparency. All of this information is put forward in a compendium. It is all heavily referenced, and it is on our website, available to all to look at, to review, and, if there is additional information, to be critical of and get back to us.

What Joanne said is so important. I won't repeat what she said, but we are not only looking for the analytic and diagnostic validity of a test. That is certainly a first step, but, is it clinically valid; in genetic testing, does the test reliably link the genetic variation to a relevant clinical attribute; then, what is the clinical utility; is there an incremental health benefit compared to the current care; what happens if the test wasn't performed.

When we use these criteria, we make certain decisions. I will just share with you briefly some of those decisions that we have made in the area of genetic testing. We certainly cover BRCA-1 and -2. You can see all genetic testing for cancer susceptibility is covered.

We cover pre-implantation genetic diagnostic testing. We cover gene expression profiling for ONCO Type DX, but not yet Mammoprint, which is a different profile. We cover K-RAS testing to look at anti-EGFR therapy.

Here is what we don't cover. We do not cover biochemical markers or testing for the diagnosis of Alzheimer's because we do not believe, and you know, that it is not yet proven to reliably confirm a diagnosis or screen asymptomatic patients with or without family history. You can see the others that we do not cover.

The reason we don't do this is not just for financial risk and reward. Certainly, we have to contain cost, but we actually go into this without cost as our primary factor. It is what represents the best quality medicine and the best evidence-based care. We are looking for how to better diagnose and manage risk in populations, to better diagnose prenatal disease.

The potential risks are that false negatives may result in failure to seek necessary care. That was a very real concern for us on a lot of the testing for breast cancer. False positives lead to a Damocles,

perhaps, in how people can deal with that.

Then we have the issue, ultimately, of cost. As we look to the future, what are companies like WellPoint, Aetna, and others of our peer companies doing? We are doing many things to try to learn the answers to better define in some cases observational studies on what works in health care.

We have a company called Health Corps. It is a health outcomes research company. What we do is we partner with health plans but, importantly, we form strong collaborative research relationships with academic medical centers. We have about 110 research projects underway in breast cancer care, for example, in asthma and rheumatoid arthritis, and in coronary syndromes, to see what drugs and devices work.

We even are building a research network. We are part of the Indiana CTSI, but beyond that, we work with academic centers and large organized physician groups to actually use that physician and academic community to explore what can work in health care. It is not only to do the observational studies, and in some cases RCTs, but really to then have these organizations

be willing to adopt the necessary care changes so we don't have the 17 years, as Rob shared, from new knowledge to its introduction in care but we have rapid dissemination of information.

We talked about electronic health records. We are working on creating an integrated health record. Here is an example of not just taking imaging information or laboratory information or claims information but now genetic information, along with drugs and medical records, and creating an integrated record, as we have done in Ohio. That same record, with decision support, is available to doctors, hospitals, members, patients, employers, and emergency rooms. It has shown better outcomes of care and improvement in care.

Here is an example of what this might look like in a very personalized way. Actually, you see the care and the drugs. You would see more about genetic information. Then there are these clinical alerts, where there are gaps in care. We are informing the member, the patient, and his or her physician what can be done better, whether it is to save costs or whether it is discovering a therapy not being effectively monitored.

The last point I want to make is that we want to build partnerships. Barry so well articulated that we all have to work together to advance knowledge. An example of this is, we are working with the FDA and others on a safety sentinel system; once a device or a drug is available, what is its real clinical use.

By looking at this, we would have identified Vioxx about three months after its FDA release. We looked at Avandia, as an example. We had 40,000 individuals who had had myocardial infarction who were taking Avandia and didn't find an increased risk. This is, again, an example that observational studies done well can make a huge difference.

To truly recognize the value of genetic technologies from a health plan perspective, from ultimately all of our best interests, they have to be proven and improve health outcomes. The way to get there is to continuously evaluate new technologies to determine what works through both outcomes research and comparative effectiveness research, to make sure we disseminate that clinical knowledge into clinical action, and then, finally, to make sure that not only do we disseminate it

but we close the gaps in care at the point of care. Thank you.

MS. ASPINALL: Thank you. Joanne, you are still on the phone?

DR. ARMSTRONG: Yes.

MS. ASPINALL: Let's take a couple of questions now. We will get to our last panel, take a break, and then bring everyone up together. So, questions? Mike.

Question-and-Answer Session

DR. AMOS: Thanks for both your presentations. The thing that I would like to emphasize is the fact that in order to prove the clinical utility of this you have to make sure that the assay systems are working properly and that the measurement technologies that you are using are actually giving the answer that you think you are getting. In many cases, that doesn't happen.

I can't remember where it was, but about a year ago or so I saw a paper where there was a study on a clinic in Maine where they were getting 30 percent false positive and false negative results for HER-2 testing. It was crazy.

Without the kind of standards and things like

that that are required to ensure that you have some confidence in the measurement, your clinical assessment and clinical utility assessment could be wrong.

DR. NUSSBAUM: Mike, what you say is absolutely true. All of this starts with scientific precision and accuracy of the measurement. The more that we rely on tests to guide therapies for very, very critical illnesses, like breast cancer and therapies that are very costly and make a difference in life or death, we absolutely need that rigor behind the clinical performance of the tests.

MS. ASPINALL: Paul.

DR. BILLINGS: Joanne, it is Paul Billings. I'm sorry you are not here. I actually have two detailed questions. One is, for benefits -- and I'm thinking primarily of molecular diagnostics, for instance, that require prior authorization for payment -- how do you assure that the people doing the prior authorization understand the technologies, given that some of these are fairly complicated and difficult for the experts to really understand, much less other folks? Then I have a second question.

DR. ARMSTRONG: I think that is a great question. When you look at all the challenges to what we frame as consumer and clinician preparedness to understand and effectively use genetics, I include staff of health plans as part of those clinicians doing that. Clearly, the same lack of knowledge gets replicated inside health plans as well.

For Aetna, we have a small number of these technologies that are on precertification lists or other types of lists that require preauthorization. For Aetna, they are actually handled by a very small, limited staff of people who have been extensively trained. For the technologies in question, we actually do work with the manufacturer to make sure that we each have a clear understanding of what information is being required in this preauthorization system.

DR. BILLINGS: To change gears slightly, Aetna was an early adopter of BRCA-1 testing, which could be argued as an expensive medical test and also one that, at least Myriad would argue, is value-priced. Why did Aetna adopt that test earlier, arguably, than other payers?

DR. ARMSTRONG: I think that, from an evidence

point of view, it met the standards of coverage. At the time, and that dates back 10 years ago, we were very actively engaged in the theory of genetics and their utility.

One thing that I will comment about is that we have been watching that. It has been on a precertification list for about 10 years. In the early days of use of BRCA, about 5 percent of the requests did not meet medical appropriateness criteria. Those criteria early on were the ACMG criteria. Now we use NCCN criteria because they are more refined, I would say.

Over the years, the rate of non-appropriate use of that test has increased to the neighborhood of somewhere between 20 and 25 percent. That directly correlates with the mass public education, direct-to-consumer campaigns, et cetera. In fact, when we watch as direct-to-consumer campaigns take place in various geographies, we see the rate of non-medically appropriate testing requests spike up as well.

It highlights the issue of direct-to-consumer advertising in this area and underscores or amplifies the need to make sure the physicians understand what they are

ordering.

MS. ASPINALL: Other questions now?

[No response.]

MS. ASPINALL: With that, thank you, Sam and Joanne. Let's move to the next panel. We will take a break and then bring everyone up.

I'm going to warn the speakers now. We are going to give you a challenge about what do we actually need to do, either as this committee or more broadly as HHS, to actually change some of the things that we are talking about for the future.

As we are getting ready, our last panel is the perspective from employer-based insurance plans. This is something that many would say has actually been a quiet but very critical trend. Employers are not waiting for payers, public or private, to change health care. They are taking it into their own hands.

We are lucky today to have two key leaders in this field. Michael Critelli is the just recently retired chairman and CEO of Pitney Bowes. Michael has been a true leader and innovator in health care, including very aggressively lowering the health care-

related increases at Pitney Bowes. He is also chair of the CEO Health Transformation Community and is playing an active role.

Our second speaker in this area is Richard Luetkemeyer. I will give you his bio in between. Let me start with Michael, talking about Pitney Bowes.

Perspective of Employer-Based Health Insurance Plans

Michael Critelli, J.D.

[PowerPoint presentation.]

DR. CRITELLI: Thank you, Mara. I'm going to skip over some slides here and go right to the problem that we had to deal with when I took over responsibility for health care in 1990. We had 14 percent increases per year, poor employee satisfaction, and very poor health. My boss, the CEO, said, you have to fix all three problems.

What became clear to me was that we needed to approach it very differently from traditional health insurance plan designs. We had a four-pronged strategy, but before I get to that I want to make two preliminary comments.

First of all, I'm a strong believer in the

employer health care system because when we think about value, the employer or the union are the only players, other than the patient, who have an aligned interest in reducing cost and improving health; the only players.

Our interests as an employer go beyond reduced health care costs. They include, among other things, reduced absenteeism, improved productivity, and reduced presenteeism. We get a lot of benefits that you as clinicians, or CMS, do not get from improving the health of our employees.

The second point I would make is that there are four payment and coverage systems in this country. There is the public system, the private insurance system, and the mandated system in states. If you think of an insurance company, they really have to deal with two things. One is their own ideas, which Sam and Joanne eloquently talked about -- and both companies are partners of Pitney Bowes -- but there are also 50 state insurance mandates that, as Sam used an example, are often based on very bad medicine and are not revisited like the other three systems.

The beauty of the employer-based system is that

we can draw upon the expertise of all of the other systems to try to design value-based health care.

So, what do we do? We have four strategies. Strategy No. 1 is primary prevention: nutrition; exercise; lifestyle changes; immunization; and infectious disease prevention and containment. We provide food in many of our facilities. We stack the deck in favor of healthier foods both in terms of pricing, presentation, information, and merchandising.

We have health care facilities, redesigned work spaces, and infectious disease control. We have been smoke-free since 1990. We also provide services right at the clinics in the buildings, and we have a pharmacy right in the building.

Now, what are we learning from clinical care close to the work site? Convenient access improves people's use of the health care system. Obviously, there is a lot of benefit of continuity of care and increased adherence to treatment plans. We have done some studies through MedState. Our employees who use our clinics are more likely to stay on chronic disease medication programs.

We do value-based health care. We have done it for a number of years. We try to work on both patient and provider behaviors to drive the right behaviors. This is the point I was making earlier about the notion that we can actually, on a continuous, real-time basis, draw upon best evidence to change plans.

We not only look at effectiveness, we also look at behavioral responses. One of the things we did some years ago was to actually take our preventive disease or chronic disease medications down to zero cost to drive adherence. We found when we increased copays we actually lost money over time because people ended up in emergency rooms and hospitals.

So, what were the results of this. For the clinics, we saved a net $2.30 for every $1 spent. We have reduced disability and sick days. We saw an average cost of care decrease for diabetes and asthma. We also saw reduced hospitalizations.

Our total overall savings were about $40 million when you looked across all programs: medical, disability, and workers' compensation. This does not include presenteeism and absenteeism savings, which are

probably significantly more but are not easy to measure.

We are now recognizing, as our fourth strategy, the need to implement health information technology. I'm the chairman of an initiative called DOSSIA, which is a personal, patient-controlled portable lifelong electronic health record.

We also, at Pitney Bowes, aggregate all of our population-level data from all of our sources through MedStat to get insights on our self-insured health plan.

DOSSIA is different from an EHR in that, as you can see, a good chunk of what DOSSIA is all about is patient self-management. What I really like and what I would turn your attention to is the lower left-hand corner, the personal data sources. As we move forward, we do not expect to be able to compete with, nor would we want to compete with, some of the great EHR systems out there. What we are really focused on is supplementing EHRs with patient self-management.

In addition to having nine companies in our consortium, we also are a member of the Continua Alliance to try to figure out better ways to get interoperability between medical devices that capture data and the

personal health record.

Finally, just to give you some thoughts on the potential role of genetics and genomics, with value-based health care plan design, we will want to use tools to determine what we cover or offer for what populations at what reimbursement rates.

Let me just talk briefly about another dimension of our health plan. We not only get into questions of do we cover or not cover something, but do we have any processes other than diagnostic tests. For behavioral health, we use our EAP providers as, in a sense, incentives or screens. We have up to eight free visits, at our option, for someone wanting to enter the behavioral health system.

Now, they can go out of network and go straight into a behavioral health system, but we would reimburse at 70 percent for that. If they go through the eight-free-visit model, we reimburse it 90 percent. If I were to give you data on behavioral health costs, those are growing at the low single-digit rates. We are also capturing more people who have conditions like clinical depression and are able to identify comorbidities with

other conditions like diabetes and cardiovascular disease, which improves the ability to manage those conditions.

I do believe that over time we will want to use the tools that you all are talking about and developing to improve our ability to deliver value-based health care plan design. I believe very, very strongly that health care reform needs to encourage people close to the work place to be better not only buyers of health care but, more importantly, better drivers of creating a culture of health where people spend their waking hours.

I believe that we have had an 18-year controlled experiment, in some ways. We have had phenomenal results. I would like to see some of what we have been able to do be scalable to a bigger program. Thanks very much.

MS. ASPINALL: Thank you. Our last speaker is Richard Luetkemeyer. Richard comes to us as assistant medical director at Caterpillar, another leader in the field of employers that are taking dramatic actions to really take things into their own hands.

Richard is interesting because he most recently

was actually in medical practice as an internal medicine specialist. He comes to Caterpillar from many years at the University of Illinois, practicing and working in the medical school both on the clinical level and educating the next generation of physicians. With that, Richard.

Presentation by Richard Luetkemeyer, M.D.

[PowerPoint presentation.]

DR. LUETKEMEYER: The question that was addressed to me was how do we at Caterpillar, being self-insured, make decisions about coverage and non-coverage. What I would like to do is just take you through a couple of decisions we made to give you a flavor of what influences us when we come to the decision to cover or not.

The first thing is, who is Caterpillar. We are a Fortune 500 company. Our employment at the end of last year was 110,000. Fifty percent of our sales and 50 percent of our employees are outside the U.S.

We are self-insured. We cover 150,000 lives, or so. We have a legacy. We have the same union that the auto workers have. Our annual spend is $650 million a year. Our average employee age is 41. We have a

turnover rate of somewhere around 5- to 10 percent. Typically, when someone joins Caterpillar they are here for life and they are here for the life of their retirement.

That is the first thing that frames our health care strategy. It is taking the continuum of health model and saying if we are going to have these people and we are going to be responsible for their costs their whole life, what can we do to maintain health, to promote health, to prevent disease, and then to see that evidence-based medicine is practiced at the acute level and at the chronic level and at the end-of-life decisions.

The strategy actually started in the '30s, when the executive office was given a wellness and health exam. Today, that same exam that is given to the executive office is offered to every employee on a regular basis.

In 1992, Caterpillar said its health care costs would drive it out of the country to manufacture if they didn't do something to control cost. They had up to that point been paying all their claims. They went to a true

purchaser. They set up a network of preferred hospitals and a network of preferred physicians.

In 1995, as part of the demand strategy, the executive office approved a health promotion program. That program basically was started saying that we had to have the ability to get 90 percent of our employees, spouses, and retirees to participate twice a year on HRAs, health risk assessments. That is about what we have been getting, about a 90 percent participation rate. That is because we have built in incentive of premium reduction that was aimed at the 90 percent level.

A pharmacy collaboration was started between our hospital, the University of Illinois in Peoria, and the Caterpillar Benefits Plan Design in Corporate Medical. We added phenotypic hemochromatosis screening to our wellness exam back in '99 because our population is basically of northern European descent.

Dr. Nussbaum mentioned the area of breast cancer. In roughly 2000 or 2001, we identified a problem. Our insurance basically did not cover investigational procedures, and just about every academic center in the world was doing high-dose chemotherapy and

bone marrow transplants. So we created a special program outside of the typical benefit program, and we called it Group Insurance Plan A.

The requirement for this is we would cover high-dose chemotherapy and stem cell rescue or bone marrow transplant if the employee or a dependent would enter the National Cancer Institute studies. At that point in time, there was no question in transplant centers that this was beneficial. Obviously, the National Cancer Institute had lots of trouble recruiting people. As an employer, we felt we needed to know the answers to should we cover it or not, and why not participate in that program.

The results of that program actually proved that fads don't just exist in Hollywood, and no one is doing the high-dose chemo with transplants at this time.

In 2002, our health risk assessment, that twice-a-year thing that we get 90 percent participation in, we combined with addiction counseling free and clear. We added preventive services for nicotine replacement and Bupropione if you entered into this program. It was a telephonic program across the United States. We only

took people, though, who we staged through our health risk assessment who were in the preparation stage.

We limited it to our smokers. Our production worker smoking rate at that time was 25 percent, our salaried rate was 15 percent, and our management rate was about 10 percent.

One survey they did was, "Are you currently a smoker?" and if they answered yes, we staged them according to Prochaska's model. If they were in the preparation stage, we would then pay for the free and clear program with whatever medicines were necessary.

The quit rate five years down the road of the people who entered the program is 38 percent. People who were in a preparation stage who did not enter the program, their quit rate at five years is 5 percent.

We added zero-dollar coverage to medicines that we thought were essential for chronic care of diabetes, antidiabetic medications, antihypertensives, and antilipidemics. Last year we started worksite health coaching programs so we could interact with our employees at the work site on lifestyle changes, again using motivational interviewing not just to make them aware of

what they need to do but to motivate the person to change.

This is an example of our continuing care model for colon cancer. Our goal is to reduce the incidence of colon cancer. On the far left you see the stratification. This is where I think genetics could help us. Right now in our HRA we ask about a family history, and in our second HRA, if the answer is yes, I have a first-degree relative, we actually then dig into a detailed family history.

We have added a total of 100 percent coverage for colon cancer screening at age 50. We have a program looking at people under the age of 50 who have at least one first-degree relative with colon cancer. We don't pay our bills anymore. We use United Healthcare. Since there is no screening colonoscopy CPT, it is hard to pay for that at 100 percent. We want to pay for that, and we need help on that.

You can see the second part of this is that we are not ignoring the quality of the colonoscopy. Our goal is to get people at average risk and high risk. I should mention 1,200 of our employees or their dependents

under the age of 50 have first-degree relatives who should be starting their colon cancer screening at age 40. We give them that information. We haven't had the ability to take away the barrier of cost to that at this point.

The second thing we have done with our network of hospitals and colonoscopists is developed, through the Duke Evidence-Based Practice Center, what are the elements that you would be measuring if you were going to measure a program's quality of colonoscopy. We have eight elements that the colonoscopists agreed to.

Our goal is to get the people to have a colonoscopy and then, once they get the colonoscopy, are they having a quality colonoscopy; is it complete; are they giving the information to the pathologist that is necessary; are they documenting withdrawal times and things like that.

The third example I want to give you is our drug example. You can see this is 2006 data. The antilipidemics was our highest drug cost. CIC stands for calculated ingredient cost. That is the dispensing fee. It is what the employee pays and it is what

Caterpillars. It is a societal look at the drugs.

Seventy percent of that was in statins. Prior to that, before we had step therapy and preauthorizations for the PPIs, the ulcer drugs were number one. You can see on the slide what we did with the ulcer drugs.

With the statins, looking at the far left corner of the slide there, if your goal was to lower the baseline LDL level 35 percent, any of the basic statins on the market would have that LDL-lowering effect. The areas in green are the generics. The areas in blue are the brands with therapeutically equivalent LDL-lowering generic availability. The reds are the brands for which there are no generic therapeutic equivalents available.

With that we said, if the goal is to reach the NCEP, National Cholesterol Education Program, goal of 100 and you need 35 percent reduction, why would we want to pay for a brand when you can get exactly the same result with a generic.

In 2007, we created the statin generic zero dollar copay. At that time, 35 percent of our population was on cholesterogenetics. The blue line there on the slide is those on brands with generic therapeutic

equivalents. Our goal was to lower the blue line, increase the green line, and not affect the red line. The red lines were those brands without generic equivalents.

You can see at the very end of the slide, as part of our control phase, at a year we were gaining ground but it wasn't rapid enough. Therefore, we then put step therapy in place. We sent letters to the employees and to the physicians noting that in August we were going to make the change. You can see by August 80 percent of the people were on generic statins.

This is the key part that really showed me the value of zero dollar copays. The red lines compare the generic adherence in 2006 versus 2007. The blue lines are the brands. These are new starts nine months out. You can see basically in 2006 they were all roughly at 69 or 70 percent, generic or brands. When we added the zero dollar copay, adherence went up to 82 percent at nine months.

Everything we do is to make sure that we are not causing harm, so we track the consequences of any drug change. I will just rapidly go through these.

In rhabdomyalgia you can see the trend is down. This is not saying that the change has made this. This is really a notice to us that we did something and something has changed adversely, so look more deeply into it.

These are claims data. Myalgia myositis went down. This is an elevated liver function test. Actually, when we trend 2006 before the change, that trend was upward. In 2007 it is downward.

This is hospitalized early for MIs, but again, the trend at least is not giving us any warning that we should reexamine our decision.

If we get better adherence, this is the cost savings to Caterpillar Enterprises in yellow, the member savings because of zero dollar copay, and then the CIC cost, or the calculated ingredient cost. This is by month. You can see that at the time we went to step therapy for generics in August of 2008 the savings to Caterpillar Enterprise was close to $1 million.

This is a quote from a JAMA article. "Pharmacy benefit design represents an important public health tool for improving patient treatment and adherence." I think

plan design, not just pharmacy plan design, represents a public health tool.

I want to end with this. This is Caterpillar's U.S. medical cost in 2002. Its goal was to keep its rate of rise to general CPI. The red line there is the general CPI. This was done by Towers Perrin. Towers Perrin's estimate of if we did nothing was the blue line. That is a 7 percent increase per year, which you know sometimes is higher than that. Actually, the black line is what Caterpillar's costs are, with increased employees, increased adherence, adding 100 percent coverage for U.S. Preventive Service Task Force Grade A recommendations, and zero dollar copays.

I would like to end there. Thank you.

MS. ASPINALL: Thank you. Richard, if you can stay up there with Michael? We will get some questions on this. Then we will break, and then come back with everyone as an interactive panel. Marc.

Question-and-Answer Session

DR. WILLIAMS: I asked this question yesterday to the EEOC and Office for Civil Rights representatives. I know that this is somewhat speculative since we are

still in the rules process and neither of you have any systems that are currently using genetics or genomics to actually make some of the decisions that you have talked about.

But, given all that, with GINA Title I affecting insurers, Title II affecting employers, but with self-insured employers seeming to be caught in both of those pods, could you talk a little bit about your perceptions of how GINA is going to impact some of your desires to move some of this personalized medicine into your disease management and other health programs?

DR. LUETKEMEYER: I will start with that and stay on the colon cancer theme. Right now we are using family history and we are using average risk at age 50 or so. Even the average-risk person is only at 6 percent risk, so lots of other people are undergoing an invasive procedure. We have decreased our costs for the colonoscopy. We have a global fee rate for the screening colonoscopy at $1,000. If we could target and use Prochaska's model on our HRA to find the people who really are at higher risk, it would make a big difference.

I brought up the breast cancer study because I do think that an employer like us would be willing to refer our patients who are under the age of 50 to see if genetic testing does change the adherence to following the guidelines and does it really lead to better outcomes than just family history.

I see lots of areas where on our HRA we are using self-reported family history. In my mind, the question is would genetic testing tell us who to concentrate on. We still use it on our pharmacy side for herceptin receptor positives, and with colon cancer we use it now for the biologics.

DR. CRITELLI: I would only add one comment, which is that I think the personal health record, preferably used with the up-front consent on the part of the people that have the record, is going to be an extremely critical tool, particularly if we can get more self-managed, self-entered, and self-tracked data into the system. I think over time we can develop richer data sets, but we need to figure out how to aggregate it and have the freedom to aggregate it into population-level data.

One of the scary things in the House version of the stimulus package is it would have crippled aggregation of population-level data. Fortunately, the Senate language, which was somewhat better, prevailed. It is something we are going to have to use very judiciously.

DR. WISE: I want to get more at the issue. Do you think that there are provisions in GINA that are going to essentially firewall some of that genetic and genomic information that you would like to use, either through traditional electronic health records or even through a personal health record, so that you would be prohibited from using that information to make important decisions?

DR. LUETKEMEYER: With our hemochromatosis screening, that question came up with the testing for the HFE gene on people who had high transferons and high ferritin levels, phenotypic iron overload. Our lawyers would not let us do genetic testing, so we developed a letter to the employees saying you ought to go talk to your doctor about this.

What you are talking about is, in that letter

we did educate the physicians of the meaning of testing in this person. Many of them had ferritin levels above 1,000, and they were all asymptomatic.

So again, unless we get some protection, our lawyers will not let us do genetic testing as an employer because of fears that it will get out into the public through the HR departments. Even though we keep everything in corporate medical, that is not a big enough firewall for our lawyers.

DR. CRITELLI: We have an alternative which we are looking at, which is to what degree can, say, outsourced providers have more freedom of action. If I look at our clinics, we split down the middle. Four are operated by company employees and four are operated by outsourcers. I think is going to drive us more to an outsourcing model.

I think it is a workable model because there are other benefits to the outsourcing model, at least in the states in which we have clinics. They have more freedom to treat dependents and retirees than the in-house people do.

MS. ASPINALL: Kevin.

DR. FITZGERALD: Thank you both for the presentations. What you are doing is fascinating. Just following up on this informed consent issue that you mentioned, using as a specific example your Special Group Insurance Plan A when you were talking about those who had breast cancer, my understanding is you incentivized them to go into an NCI clinical trial. What was the alternative they didn't want to go that way? Some people might come up with a concern of coercion or something.

DR. LUETKEMEYER: No coverage.

DR. FITZGERALD: No coverage?

DR. LUETKEMEYER: Right. It was investigational. The evidence at that time, if you read it closely, was unproven. So we did not cover it. In order to cover it, we created a special program outside of it that said in order to get to the answer you had to participate in a study. If you didn't want to participate in a study, it was not covered.

DR. TEUTSCH: They get breast cancer coverage but they don't get access to that service. Is that correct?

DR. LUETKEMEYER: Correct. They got the

chemotherapy with the transplants.

MS. ASPINALL: It sounded like there was no coverage. What you are saying is the baseline was coverage.

DR. LUETKEMEYER: Thank you.

MS. ASPINALL: We didn't want to leave any wrong questions asked.

DR. CRITELLI: Obviously, I have retired from Pitney Bowes, and I'm not sure in what direction they are going. I operated on the principle of never fully taking away choice but nudging people through different rates of reimbursement depending on whether they went through an informed consent system versus whether they didn't. So we stack the deck.

On the specific example of the breast cancer, we did have an ethics committee that looked at that because we knew it was life or death whether we paid for it. That was a unique situation.

For example, with bariatric surgery, we said, we will cover the surgery but you have to go through another process first. If you go through the other process, you get a much higher rate of reimbursement.

Anything that is on the margin, we try to have a predecision process and stack it by higher rates of reimbursement.

MS. ASPINALL: Super. With that, let me pass it over to Steve for the announcement and timing at lunch. We will come back right afterwards.

DR. TEUTSCH: Right. That was a terrific group of speakers. Many thanks to all of you. Hopefully you can stay with us because we want to continue the discussion with you if you are able to stay afterwards.

Since I know we always lose people towards the end, could I ask that we come back at 1:00? Like yesterday, those of you who ordered box lunches will find them outside. Those of you who didn't, the cafeteria is just down the hall.

MS. ASPINALL: Is it fair to say we will try to end early?

DR. TEUTSCH: We will aim to end a few minutes early.

[Lunch recess taken at 12:08 p.m.]

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AFTERNOON SESSION

[Reconvened at 1:00 p.m.]

Committee Discussion with Roundtable Participants

DR. TEUTSCH: If we could reconvene before we begin losing some people. If we could have all of our presenters join us up here at the table, that would be great. I'm sure we are going to want to pick your brains further and get your thoughts as we get into the discussion of this important issue.

Mara, back to you.

[PowerPoint presentation.]

MS. ASPINALL: We are going to be asking the panelists some questions. We had a great discussion this morning, and I thank each of the panelists for some fascinating conversations.

I have set out some pieces to talk about what the future is. I will call the panelists now. We will ask you to talk about what needs to be done in the future. What are the areas this group should take on to really help achieve the clarity that you are asking for in the future?

So, what is next? I have five different

categories. We talked about this, both today and in our committee meetings. For drugs and pharmaceutical companies this is what I have heard. We can debate this. More targeted drugs with smaller targeted markets, more effective drugs with fewer side effects; will that increase the cost per drug. Several people in the industry are saying it. At the same time, will it increase compliance? I'm going to ask you to tell me what you think. Is this the future that you see?

When you look at oncology in particular, and several people used this as an example of the future, it is pretty compelling. Ten percent of drugs were targeted in 2001 and maybe 60 percent targeted in 2010. Is it all about genetics? No, but probably 80 percent of those are targeted on a gene basis. That doesn't mean an inherited basis.

Physicians are overwhelmed. We heard that today. We heard that yesterday by the volume of data. They need more tools. They need more education on genetics and genomics. Right now, fully 17 percent of medical schools have no formal education on genetics and genomics in their four-year education.

They need more treatment guidelines. Will this bring them increased liability as we look to the future?

Next, employers. We hear they are taking a long-term view of employees' health. There is a growing use of self-insurance plans and aggressive use of wellness plans. Will we see this trend of self-insurance continue?

Laboratories. Intense data acquisition and storage requirements. Personalized medicine and genomics is all about data. It is not about the wet lab anymore.

Reimbursement challenges, as Bruce spoke about, with new technologies. I think it’s fair to say we have heard this time and time again: Increased focus and scrutiny from all parts of the health care community, in the diagnostic world and in the lab world. What does that mean for the future, and what actions do we need to take?

Payers. We have heard this a few times. They are demanding evidence-based medicine. How do we get it to them? Payment may be contingent on drug effectiveness. We spoke about NICE and what they are doing in Velcade. It is a money-back guarantee. If the

drug works, they get paid. If it doesn't work, they don't get paid.

BlueCross has talked for many years about funding their own database on patient outcomes, not having PhRMA or diagnostic companies do it. In the same way, they say, we have our own data; we are going to get our outcomes. And then, demanding tests but needing to prove the relevance to the patient and physician.

Lastly, a group that is not represented on our panel, except for all of us as individuals, is patients. One thing that I will ask about is, how do consumer-directed health plans really impact us in this area. Patients are more educated but more stressed. There is increased decision-making, whether it is copays or no copays. They need to get more involved than they were in the past.

Improved compliance as personalized treatments grow, potentially. Maybe most importantly, when we talk about predispositional testing and otherwise, they are living with the potential of the disease, not the disease itself.

As you look at health care spending going

forward, in current practice -- and I think this is borne out in much of the work that we have heard -- relatively little is spent early, and much more as we get older and we get sicker. Is this the potential of genetics, genomics, and personalized medicine, a very different trend? Is this the investment in diagnostics and prevention genomics, and do we get a benefit in quality of life and financial savings?

If this is the future, (A) Is this the future we want? Is this the future we want to get to? (B) How do we get there, how do we actually do what all of you have asked?

This is where we need to go. How do we actually change the system so [that] five years from now we are not sitting here again, and again saying this is what we should do? How do we take that proactive action at a moment in which it seems as if there is tremendous openness around the country to health care reform?

With that, let me leave it open, take some questions from the group, and have a facilitated but active, interactive discussion.

Julio, do you want to start?

DR. LICINIO: Yes. I have a question. All of these models that we make in evidence-based medicine are all very nice and neat, but the way that the data are collected -- and I do some of those studies -- is in very artificial conditions. You recruit people that have that disease and you put them in a protocol where they meet very stringent inclusion criteria.

In my protocols, I have a 10 percent recruitment. I screen about 4,000 people to get 400, but the people who are sick out there are the 3,600.

For example, when I was at UCLA in the geriatric clinic there, the patients are, on average, taking 14 medications. There is no evidence-based medicine for all these combinations that we give to people, and many of these combinations have never been tested, even in animals. Nobody has even given to a mouse what we give to some of the patients.

Then we talk about evidence bases and we try to be very scientific, but the reality of clinical care is very different than this world of clinical studies and evidence bases. How do you bring this to real life and to people who have three, four, or five different

diagnoses?

My mother had breast cancer, diabetes, hypertension, and aortic stenosis and had medications for all of those. Then things are combining and acting even genetically in a way that is not what we studied. How do we take care of that?

DR. NUSSBAUM: What you speak to is the most important issue. Outside of the randomized control trial, how do we know what really works in health care and what works in real-world settings? That is why I was emphasizing the fact that those of us who have aggregated data and who have huge databases I think are really open to working with federal agencies, academic partners, and others in a collaborative way to look at those databases.

I used some of the examples on drug safety. This is after a drug is approved following its NDA and RCT. How does it really work in the real world? While there is not the purity of the RCT, we have data and we have numbers of patients.

Let's envision in our population we have just under 1 million individuals with diabetes. The way we can look at that population and how they use insulin, for

example, or what A1C correlations are, or any of the therapies for diabetes, can be applied to that setting.

It is not the nuance of the medical record, but claims data is quite accurate when you are trying to correlate with major events, be they myocardial infarction or stroke, because most hospitals do submit a claim for giving that care. When people have looked at claims-based information, while initially it was driven for financial results, they were able to work with it and develop performance measures.

In summary, I think that these massive databases, without creating new ones, can be used for studying safety, effectiveness, and outcomes.

DR. EPSTEIN: I would just like to add to Sam's point of view, which I completely agree with. I like to view the two as being complementary. For me, oftentimes in randomized trials you are looking at efficacy, not effectiveness, which means in perfect conditions with perfect compliance and perfect everything in people who have only the disease of interest, can the thing even work.

That doesn't answer the question you are

asking, which is in the sloppier world of people who have lots of problems where things don't go the way they do in the clinical trial, can they work. That is what effectiveness is about for me. I think you need both, really, to understand how things work.

I will give you one illustration I always find interesting. If you go back to the pivotal studies in lipid-lowering therapies, until the mid '90s we didn't even know if they reduced mortality. It just looked good. It made sense. Epidemiologic studies showed it. Then along came a 4.5-year randomized trial that showed yes, for people with placebo versus cholesterol you save mortality.

If you look at those papers, though, they had 92 percent persistency rate at the end of 4.5 years, meaning 92 percent of people were still on therapy at the end of 4.5 years. In our effectiveness, real-world, 60-million-life database of lipid-lowering users, 50 percent drop off in the first year. So the outcome benefits that you see in those clinical trials at the end of 4.5 years are not going to be the outcome benefits you see in the "real world" because people don't behave the way they do

in the clinical trials, as you have so rightly pointed out.

I do think you need the efficacy studies to prove that in the perfect world it would even work at all. Then you need some effectiveness studies in the world where Sam and I work to see if, in the messier world, it still helps.

DR. LUETKEMEYER: I would just like to add also, in the messy world we don't consider a complex patient like your mother and what she really needs. The whole delivery care system has to transform into processes of team care. Any one of those things you listed a good GP, good family practice doctor, or good general internist could handle. When you start combining three or four things together, they get lost because she comes in not for any of those things but because her knee hurts.

We don't have the processes in place. Hopefully, the medical home would allow this, but the medical home won't survive unless we are willing to pay for it a whole different way, going from a volume payment system to a value payment system.

DR. EPSTEIN: There is another twist to that. We usually think of efficacy being higher and real-world effectiveness being lower. It can go the opposite way. Warfarin studies are one of those. If you are going to do an IRB-approved Warfarin study, everybody is consented, they have diaries and their pill logs, they have I & R three times a week, and then genetics may not help very much.

The question is just the opposite in the real world: In Sioux City, Iowa, would Warfarin genetics be helpful.

MS. ASPINALL: I'm going to take the prerogative to have a follow-up question. As we talk about the evidence for this and Warfarin testing and other testing, have we raised a standard for diagnostics in today's world that is higher in terms of evidence necessary in trials than we have for drugs?

You can go back over old drugs that were approved a long time ago, or processes, or new surgical interventions, like a bone marrow transplant which didn't need to be approved, per se. People could begin doing it, as opposed to specifically approving individual

genetic tests.

DR. EVANS: I don't think the evidence is higher than it is for drugs, per se. I think it is approaching that level, which isn't true for a lot of other medical interventions that we talk about outside of drugs. It seems like drugs have their own very specific, very intense standards of evidence for approval in this country, and rightfully so, because of what has happened in the past with safety and what not. A lot of the rest of health care preventions do not have the same standards.

Genomic-based labs seem to be moving up into that area, where you don't have the business model to support it the way you do for the pharmaceutical industry.

MS. ASPINALL: Marc.

DR. WILLIAMS: This is an extension of Julio's question. First of all, to endorse, I think, the responses from the group, I would extend perhaps the database argument that Dr. Nussbaum brought forward.

We have talked several times during this meeting and in other contexts about integration of data.

I think that that is really a critical issue because, certainly for those of us that practice in integrated health care systems where we have access to claims data, medical data, and a lot of different data, we can then not depend on a sole data source to try and answer questions.

I think, certainly, if we look at some of the NCQA measures that are completely dependent on claims data, we know that we could probably do a better job of answering some of the questions, like appropriate use of antibiotics, if we had something to go on other than claims data, but that is what we are stuck with.

I think, as many people have called for, it is absolutely clear to me that one of the things that we need to endorse as a Secretary's advisory committee is to say integration of databases with rules to protect individuals is going to be absolutely critical to learning things.

The second point is that one of the challenges from evaluation of the evidence is that it is very difficult for some of this real-world information that is extremely important around effectiveness to actually get

into the literature. It is using a paradigm that is different from what people are used to, which is hypothesis-based clinical trials.

I know in our institution we have some extremely interesting work around Warfarin management for people that are long-term where we have used industrial process management to reduce tampering. We have increased our time in range by about 75 percent. For three years we haven't been able to get this published because it is not a randomized control trial.

We think this is important, and it is a very simple thing. Basically, you just don't change the dose if they are between 1.8 and 2.0 and 3.0 and 3.3. It would be something that you could turn on almost instantaneously.

This looks to be a problem that is going to impact all of us as we try and pick what are the most effective therapies. I'm just interested in your perspective about how we could get those types of, if you will, real-world clinical trials or real-world data around effectiveness into a venue where we could call see it.

DR. NUSSBAUM: Marc, I will be happy to start. I absolutely agree with you that much of the data that exists in observational studies often doesn't meet the rigorous criteria for publication in academic journals and even for many of our academic colleagues to be intrigued by the data.

That is why I'm very impressed that any of these CTSIs will give us a different breed of researchers that will work with different databases and perhaps can partner with those organizations -- Aetna, United, Medco -- that have databases.

I think that pendulum is swinging now, realizing that even the RCTs that have been so beautifully done through FDA trials, in some instances didn't give us even the strong answer on the safety of drugs. I would argue that the Translational Science Initiatives, the CTSIs, and the CTSAs can get us a little bit closer.

I think there are others. We heard from Mike and Richard what companies have. They have extraordinary databases. If they have longitudinal employment, there is tremendous information that is a nice hybrid. It is

not claims information, but if you have on-site care models, you have a more robust set of databases.

I was excited so much by the stimulus package because of that comparative effectiveness research and the $1 billion to CDC. Perhaps some of that money can be earmarked for new methods of analyzing these large databases, giving us confidence that the knowledge derived from them can be just as good as the knowledge derived from more traditional means.

DR. QUINN: The AHRQ has got a bible, a 200-page book called Using Registries for Outcomes Analysis, that came out a year or two ago that a lot of people have not heard of. I just heard about it a week or two ago.

MS. ASPINALL: Michael.

DR. CRITELLI: I think we have to be mindful of two things. One is that the patients are going out and seeking out their own data sources through sites like WebMD. They are connecting the dots not necessarily accurately or in a scientific way, or they get anecdotal information from friends or family. I know there is a concern about scientific rigor, but there is a vacuum that is caused by the absence of clinical trials.

I remember what happened with the bone marrow transplants. What really got that into the legislation was not science, it was advocacy. Had science come in with something less than a randomized clinical trial but reasonably valid, they probably could have short-circuited that. Because we wanted to wait for the perfect answer, the efficacy groups got there first. They got legislation passed.

By the way, one of my frustrations with the current federal health care reform debate is there is absolutely no appetite to take on legislative mandates at the state level, which are very often based on bad or nonexistent science. I think if we are going to look at this problem of evidence-based medicine, we have to think about what is the mechanism to revisit that.

It was fortunate that in the bone marrow transplant example the scientific evidence was so compelling and the results were so bad that states had to reverse themselves. In most cases it is not that simple. It is a little murkier, and bad medicine gets practiced and institutionalized because insurance is forced to cover it.

I think that we have to recognize that there is going to be a vacuum here if we wait for perfect evidence, and it will probably get filled the wrong way.

MS. ASPINALL: Michael, it seems almost too good to be true as you describe the programs that you have put in place at the employee sites and really owning that. You see the improvement. What reaction have you gotten from your employees in terms of putting this in, and how long did it take, if you can share that, to begin to get a return on investment? When you hear this multiple years later, it looks like everybody should take this up, and I'm sure it is not as easy as it appears when you look at great results 10 or 20 years down the road.

DR. LUETKEMEYER: With the colon cancer, the return on our investment will be about three to four years because we have about 250 new colon cancers per year diagnosed. Sixty percent of those have metastasized to at least the lymph nodes. They are getting chemotherapy at that point in time. It is about $50- or $60,000 a year in chemotherapy.

Last year four cancers were diagnosed in

average-risk people with behavioral changes. We are not even targeting the higher-risk individual yet. They were all basically curative at biopsy or with surgery, not needing chemotherapy.

When you attack a disease that we are late in diagnosing, the return on investment for an employer is quite good if you can cure it. Basically, 70- to 80 percent of colon cancers should be curable, or preventable.

DR. CRITELLI: There is a range of ROIs from a few months for immunizations and avoidance of outside doctor costs from a clinic to plan design changes that avoid hospitalizations that probably take two to four years of payback. We try to figure out disease by disease what is the ROI by plan design change. I know that sometimes when we raise the copay we get immediate feedback.

[Laughter.]

DR. CRITELLI: We raised the copay on MRIs, and we saw, the next year, a reduced use of MRIs on something like chronic disease medication, where the goal is to avoid a future emergency room visit or hospitalization.

I think the payback is longer-term. So we get a mix of paybacks.

Unlike government, which has balanced budget requirements within a calendar year, we are able to look beyond the calendar year. That gives us an advantage over public plans.

DR. TEUTSCH: We have been talking about the health care system. Mara has pointed out that a lot of the thoughts about genomics have been about how that can relate to prevention and personalized care, but that is really about delivering care at an individual level. We haven't really talked about the fact that 16- or 17 percent of people don't even have insurance.

There are major equity issues. The way we have been delivering a lot of population health services, as many of you manage populations, is more on an across-the-board basis, through changes in policy and more traditional public health measures.

Not that this should ever be an either/or kind of thing, but we only deliver about 3 percent of our current health dollars in the prevention sector right now. A major change in paradigm back to individual, as

opposed to population, health approaches as we move in this direction.

I wonder if you all could reflect, because I know you manage populations, about how this committee can really think about how we optimize the social benefit of all of this. It is not exactly a zero sum gain. It is not coming out of the same pocket, but we are still likely to see increasing money devoted to health care as opposed to some of the population services and the underlying determinants.

DR. NUSSBAUM: One of the things that is being debated in health care today, if they are particularly to cover the 46 million uninsured, are basically a basic benefit package. Many of us who develop products believe that preventive services should be first dollar covered.

I think, Mara, you asked about consumer-directed health plans. For us at WellPoint, those are our fastest-growing health plans. These are plans where you actually can have your own savings account. Beyond having your savings account, then you have shared accountability for spending. After a certain amount it becomes a coinsurance model, so more of an insurance

model.

What is critical about those accounts is the benefit design encourages preventive services. The first dollar preventive services don't come out of your savings account, they are paid for by the health plan. That is a good policy. In fact, when we looked at our products, we saw an increase in preventive services that went beyond that 3 percent. That is more developed preventive services, and I think that is what we have to do.

When you look at the Rand work from several years ago and the more recent work in children, we should make sure that preventive services are delivered 100 percent of the time. It is just not acceptable when you have 40- or 50 percent. That should be part of pay for value in any of the government or private sector reimbursement.

To take it to the next level, what, then, are the genetic tests that are preventive services? Mara, you drew a nice curve. I would still suggest that the curve wouldn't happen that way. You would see an early blip in expenditures, and then you would have an interval, but that interval would say you are at

increased risk for these illnesses, so therefore, for you, exercise; for you, nutritional counseling; and for you, a different lifestyle can hopefully prevent that increased peak later.

If it is a lipid-lowering therapy, or if statin works, you would have comparative effectiveness research showing that it is a generic statin, and those therapies could be begun later in life.

I think you are assuming that the sum will be the same. I think the sum will be less. There may be an increased investment at the front end, but the payback will be in lifestyle.

We have talked about the genetic determinants of health, but of course there are the environmental and social determinants and all the other determinants of health. Those are the ones that we can so most profoundly affect early on in life.

DR. LUETKEMEYER: What is helpful to me at Caterpillar when we talk about preventive services is that the U.S. Preventive Service Task Force is an external body, hopefully non-biased, which comes out with Grade A and Grade B recommendations.

That is not Rick Luetkemeyer telling our executive office these are things that are proven, it is some external body that has looked at the data and made tough choices. PSA and CT colonography are still controversial with the incidental findings and all of that.

Again, I trust the judgments of the U.S. Preventive Service Task Force. What sold it at Caterpillar to the executive office was hearing about the U.S. Preventive Service Task Force over and over again. Then they bought into it and decided to cover, at 100 percent, all their Grade A recommendations. If we had something like that in genomics, that would be extremely helpful.

MS. ASPINALL: Mike, do you have a comment before you need to leave?

DR. CRITELLI: I would agree with the comments about 100 percent coverage. I would just say we go a step further and actually deliver the care and the services on site or at a place that is very convenient. I think, in addition to coverage and plan design, the on-site or near-site delivery is important.

We actually go a step further with prenatal. We not only deliver the prenatal counseling on site and cover it, we actually give people a gift afterwards. The savings and the payback for reducing the population of low-birth weight babies are so good that we are willing to pay people. We don't give them a lot of money. We give them a portable baby carrier, but it works. We get a very high percentage of people in that program. Over the years, we have significantly cut down the population of premature, low-birth weight babies.

I would go even a step further. If you want to say first dollar, I would make it on-site delivery plus a subsidy for certain kinds of services that have exceptional medical benefit.

DR. TEUTSCH: I just want to follow up on Rich's comment. I worked at the Preventive Service Task Force for many years, so that is music to my ears. The standard for making a recommendation for something that is going to be delivered to the general population is very high, so there is a high degree of assurance that it works.

This gets back to the discussion that we had

earlier. How sure do you have to be. That high bar has allowed there to be general acceptance and moving in the direction, as you said, Sam, towards no copays. Those are all good things, but that is what we are talking about here. How do we get the kind of information that would justify that sort of thing as well?

DR. EPSTEIN: I'm glad you raised that. It does actually circle back to the conversation about publications and so-called quality of methodology as well. If you dig deep into the U.S. Preventive Services Task Force criteria for an A, largely it is looking for RCTs. Things that are Bs or Cs are observational studies. Therefore, they are deemed by reviewers and medical journals as being not so good. Therefore, people who are reimbursing are thinking they are not so good.

You are setting up a system that automatically decides from the get-go what is a better study than another study. I do think if this committee could work on that question -- I don't know if it is in your purview. It is certainly controversial -- it wouldn't be bad.

Let me just throw out the idea that maybe the

criteria could be different depending upon the disease you are dealing with. If there is a genetic relationship within a disease that is a life-killer, something terrible, maybe you will accept different evidence than you would if it is something else. A lot of the criteria I have seen in these kinds of evidentiary standards apply to everything, whether we are talking about a life-saving therapy, where you take the risk and allow some other sorts of studies, versus cosmetic surgery or something different.

So there may be a way to flex the criteria according to the condition you are talking about. That is just a thought.

DR. ARMSTRONG: This is Joanne Armstrong. I would just add that AHIC and others are working on essentially creating an evidence-based medicine matrix. If you can imagine, the X-axis of the matrix would be the medical benefit that accrues. On the far left side would be negative medical benefit and, all the way to the right, substantial medical benefit. Imagine, along the Y-axis, plotting the level of certainty you have about the effectiveness from the published literature. So at

the high end of it is high certainty; near the bottom would be low certainty.

You can then map to that types of studies. The traditional USPSTF A level would be in the far upper right-hand range. Below that, you might have studies of moderate certainty of effectiveness but substantial net medical benefit. Those types of studies might be the ones that one would go to for coverage with evidence collection, no potential significant benefit but so-so certainty of the science.

It is that type of grid or matrix that would at least allow you to map the evidence that exists now, and the evidence that is being accumulated in all these different ways that we talked about to an ultimate level of certainty. I think that that is a way to go.

The challenge is to get all the various entities that use these evidence-based grids and matrices to agree that it is sufficient enough for a coverage position. Without that, then you will get this invariable variation in what is covered and what is not, and different requirements for evidence. I do think that that is the way to go.

MS. ASPINALL: Sam, did you have a comment?

DR. NUSSBAUM: It seems to me that we can look at legacy issues in health care whose effectiveness have been debated, like arthroscopic knee surgery or back surgery. We know that there is a lot of science that is unproven except within a framework of certain medical professions.

The question, then, that we could ask ourselves is, as we are emerging with new science, new biology, and a new set of diagnostic and clinical tests, don't we want to build a very different framework here. As opposed to everything we have done in the past, we have to reverse legacy issues and try to say there is no better science than genetics. It is going to be a science that we are going to base on clinical science. I think that that would be one way of going forward.

When we have new dollars being devoted to not just comparative effectiveness but effectiveness or outcomes research, we say this will be a field that should emerge along that dimension. That can be a recommendation.

Now, where the funding for it comes in, you

have early-phase companies as opposed to large PhRMA. That is a much more problematic area, but let's not find ourselves, five years from now, in the very same set of issues that much of medicine is today, where 40 percent of what we do is not shown to have proven benefit.

DR. WILLIAMS: I appreciate Joanne's matrix, but I think, again, we are making an a priori assumption that the best evidence is RCT evidence.

We have heard Robert and Bruce say, and certainly I'm saying, that there is evidence that is emerging in the real world that actually tells us, much better, what works and has that substantial medical benefit. I think if we continue to say we understand what the best type of evidence is, and we are always going to throw it against that matrix, we will in fact lose a tremendous amount of value about what really works.

DR. TEUTSCH: Just to be clear, having been involved with the development of that matrix, it is based on the level of certainty, not RCT evidence, and you can get there in a lot of different ways. It tries to move beyond a clear hierarchy of study design approach.

MS. ASPINALL: Don't we need some guidelines in order to do that? It is still the current standard for therapeutics and other interventions and diagnostics, even if it doesn't fit. I think we need a process in which it is acceptable to do, because at the early stage of a company or anybody's development you can't count on being able to not only prove your point but prove a new process at the same time.

And with that, Gwen?

MS. DARIEN: I'm sorry. I'm taking this a little bit out of sequence, but it keeps coming up. I wanted to go back to bone marrow transplants for women with breast cancer. I think that there were many, many things that happened. I have published a number of stories on it. I think it is absolutely true that it was a case of advocacy run amok. But that is only one part of it.

There was one advocacy group that was always against it because there was not enough evidence, and that was the National Breast Cancer Coalition. Most of the other breast cancer groups were pushing to have it done outside of clinical trials.

There were also oncologists that were true believers, and there were many, many people that were doing it. I witnessed practically a fist fight at a consensus panel at NCI among two major oncologists.

People were looking for reasons to do it. There was falsification of the data by Dr. Bezwoda in South Africa, and that was the last study that showed that it had a benefit. It was also the media. We have all gone through this with clinical trials, but the media demonize the insurance companies for not paying for those.

Was it Caterpillar that only would cover it through clinical trials?

DR. LUETKEMEYER: Yes. We had a stand-alone insurance policy different from our standard insurance policy.

MS. DARIEN: Right. That was a very courageous thing to do. That is part of the problem. Everybody went outside of a clinical trial. Patients absolutely do seek information, some of which is better, and some of which is not.

I just wanted to say that it was not just that

patients were dying to get it and were going around the system; it was the whole system that fell down on this. One of my aunts actually died of a bone marrow transplant, which she did not need to have in the very beginning of that time.

It was a system-wide failure, not just individuals or the media pushing. Caterpillar and some other people were very courageous in only covering it within the context of a clinical trial.

DR. EVANS: I just wanted to make two points. It is really nice to see such a nuanced discussion about what types of evidence are going to be used and the thresholds for evidence. I think we are all very cognizant of the fact that RCTs are not going to be able to answer everything.

We have to be very careful, of course, in our enthusiasm, especially for things genetic, to not rush to the other end of the spectrum, which is, "Gosh, this sounds so good it must be true." Medicine is riddled with examples that have hurt people because of that kind of enthusiasm.

The second thing is, I just wanted to

underscore something that is on at least two of Joanne Armstrong's slides, which I think is very, very important. At the bottom of two of her slides, she says, "Same coverage policy principles for genetic technologies as for all other technologies."

I don't think, in our enthusiasm for genetics, that we should forget that levels of evidence are levels of evidence. The game is not different because we are dealing with genetics, or simply because of the public enthusiasm for things genetic and our own enthusiasm. I don't see any difference between the standards of evidence that need to be applied in genetics and for other things. I think it is very important for our committee to remember that.

DR. QUINN: I have been thinking about that a lot. I think what is different about diagnostic tests is that if you do a therapy, like radiation for prostate, 10-year survival means you have to wait 10 years. People may look for surrogate markers, and that is a whole literature itself, but you have to wait 10 years. If you have a diagnostic test that is very tightly linked to the therapy, then repeating that 10-year trial people begin

to feel is pointless.

I think the difference is that when you know enough about the therapy, and if the logical linkage from the diagnostic test to the therapy is tight enough, that is where people have to make the adjustment and the link.

The other thing with diagnostic tests is in genetics they can be so fast. I'm sure in the 1970s people were inventing great new things in chemistry, like a great new way to put three hydroxls on a double-benzene ring. Nobody said, "We have to get this into patients right away," because you knew you had to do animal experiments and phase one, two, and three trials for six years.

With the genetic tests we say, "Oh, here, I discovered this gene and I can do it in six hours in the lab." There is no natural barrier to using it built in. We have to use judgment to make that barrier and refine it.

DR. FITZGERALD: I think that is a great example. I think it, again, kicks back to something that this committee can continue to attempt to address and digest.

It is a great discussion about evidence-based medicine, but of course, just as your example points out, what counts as evidence is going to depend upon what the goals are, who decides what the goals are, and which goals you are pursuing. That then gets back to who gets to decide which goals are going to have preeminence. Of course, that then gets back to something that we have wrestled with over the years, and that is public and stakeholder engagement. Different people have different goals, obviously, and should.

So, how does this committee go forward wrestling with this idea. Perhaps we are a little skewed, even just looking around the table, in the sense that I think everybody here, pretty much, is on board with evidence-based medicine.

Perhaps evidence-based medicine is a foundation to work against other political pressures and interests that will come into health care reform, but I guarantee you they will be there. I guarantee you those interests will be the primary goal of other people.

So, how evidence-based medicine is to be balanced against that is going to be a huge political

question that I would say will have to be addressed in healthcare reform. Those interests will not go away.

I think one thing that is important is getting those standards really straight and clear because they will be tested under fire, no doubt about it.

MS. ASPINALL: Is there a question at the end of all that?

DR. FITZGERALD: How much work do you want to do? Joe and I have a list, as we are leaving.

[Laughter.]

MS. ASPINALL: Let me take off on that comment. We have talked about study design and integration of databases. What should this committee do to make a smoother future?

We are not trying to fix the problems, per se, because these are problems that we are having in anticipation of new technologies coming forward, but we actually do have limited resources and time and need to prioritize how we go forward to help the Secretary and HHS deal with the future of genetics, health, and society.

We have gone through a major process to get a

small number of priorities, but I'm going to open it up more broadly to the group. I'm going to say pick one. Otherwise it becomes too broad. Pick one area where we could come in with guidelines or recommendations to the Secretary that would impact helping genetics move smoothly into the future, regardless of how you value them.

DR. EPSTEIN: I'm just thinking out loud with you. Perhaps the Committee could weigh in on principles that you could gain concurrence around that would facilitate the population having access to their own genetic information. I think you could outline what those principles are. They could be some of the things you heard in the discussion today.

MS. ASPINALL: Are you talking about consumers?

DR. EPSTEIN: I'm sorry. No, I just meant for the greater good, figuring out how to get access to this new technology as it is emerging. What would be the principles under which one would think about that.

One thing I heard today from James over there might be don't treat this any differently than we do a lot of other new technologies. Another might be, what is

the evidence or what are the evidentiary standards that you feel are needed. You could list out what those principles are, with a little discussion under each. You would be putting a guidepost on the highway for people who are trying to figure out how to provide access going forward.

DR. QUINN: You will have to come back to me. I didn't realize you were going in order. I'm still thinking.

MS. ASPINALL: You get a pass in the first round, but we are coming back. Sam. Joanne, we haven't forgotten about you.

DR. NUSSBAUM: I think it would be good to start with principles. We have articulated some. For example, the evidentiary bases should be comparable. I would go beyond even that. I have not looked at all of the publicly available information, but a big discussion today was coverage of these tests. Have we as an organization -- and again, I'm new to the Committee -- looked at all of the private and public payers and where there are similarities and variances in tests, for example? That might be useful to do.

The other would be, and I know that this is something that AHRQ has taken on, but does AHRQ or another agency take on producing the evidence bases, as the IOM recommended, of what works in genetic testing. You would have a roadmap of groups of people that have come together with strong scientific knowledge and who represent public policy, advocacy, and payers. Then see if you can get commonality of principle.

Joanne referenced Steve Pearson's work, and the work of our Steve and others. If we have something that is unproven but very promising -- for example, a genetic marker for breast cancer or colon cancer -- something that we think could really make so much difference because it is dealing with a very big issue, do we take that and then organize a national registry or observational study or database going forward. I think to define that path forward as a strong recommendation in these critical areas could emerge from the principles that are shaped.

DR. BILLINGS: Sam, would you then suggest that, across the models of provision that you all represent, everyone would basically have access to those

tests that had passed through the evidentiary process?

DR. NUSSBAUM: I will speak to health plans for coverage decisions, or CMS. Barry is not here with us. If the evidence is overwhelming and there is net clinical benefit, I can't envision, even under the resource constraints that we are living under, that anyone would not cover that therapy.

The public perception is that health plans are limiting care. I would say, give me an example of any major health plan, like Aetna or United, where the evidence is clear where the health plan has said no, or where the evidence is clear where CMS has just not covered it. I know we heard some examples of preventive services, but I will stick with the health plans for a minute.

I think, Paul, there would be commonality when the evidence is clear. It is when the evidence is ambiguous and uncertain that we have this.

DR. BILLINGS: In my experience in going to health plans, what constitutes adequate evidence is a debate. I also have had the experience that different plans -- maybe not Aetna, WellPoint, and United, but

other plans -- because of regional variation in culture and other things, have been slower to adopt certain standards, let's say in prenatal testing, than others. That has just been my experience.

DR. WILLIAMS: There is also the benefit issues. The purchaser from the health plan may say, we want a plan that does not cover genetic tests, we don't want to pay for genetic tests. There are issues related to that where it is not whether it is good or bad, they just don't want to pay for any of it.

DR. NUSSBAUM: You are speaking about the self-insured employers and the risk exemption. I would think, in general, a health plan's responsibility is to cover it if something is compelling and it has net health value that is linked over time. I haven't seen many of those examples. I think there are some in bariatric surgery, but that is because people felt that there were other alternatives that were not tried, like nutritional counseling and other approaches. But, you are right.

MS. ASPINALL: Richard.

DR. LUETKEMEYER: I think this committee could learn from just looking at the pharmaceutical companies

and what has happened with PhRMA drug costs. You asked earlier about high return on investment. For Caterpillar, the highest return on investment, or the quickest, is on drug cost. It is the "me too" drugs out there. It is the direct-to-consumer advertising and the free samples.

Then I read about the direct-to-consumer advertising by genetic companies. That scares the hell out of me. Your surveys show that the doctors are very uncomfortable with interpretation of this. Now we take the next step forward and say the consumer is a wise choice. To me, the Committee ought to take a stand against direct-to-consumer advertising by genetic companies until they have outcome data that everybody will support. That is my thought.

MS. ASPINALL: Thank you. They are smiling because that one is on the agenda. We haven't taken an opinion on it, but the direct-to-consumer testing in particular, and probably advertising as a piece of that, is definitely on the agenda. Joanne.

DR. ARMSTRONG: I think I would second some of what Sam said. I think that to review the evidence

framework to support coverage policy is important to try to get some uniformity across the public sector and the private plans and to really explore two questions.

One is, are the right questions being asked to support coverage decisions. Bruce raised this question of whether we really should be thinking about diagnostics differently than everything else. I don't think so, but that needs exploration. Are we asking the right questions if the technology just helps you dose a drug that is on the market anyway, for example.

I think some greater consensus is needed, if it is even possible, around what is ideal evidence versus sufficient evidence. I think that would be very productive both for the plans and the manufacturers. It is important here that we get some agreement between the private payers, government payers, et cetera, about this framework once it is developed. I think those are productive areas to do some work in.

MS. ASPINALL: Each of you, Joanne and Sam in particular, when you talk about evidence, do you mean scientific and economic?

DR. ARMSTRONG: Scientific first.

DR. NUSSBAUM: Absolutely. Scientific first and then one can look at the economic value.

DR. ARMSTRONG: Exactly.

DR. LUETKEMEYER: I would say scientific first and then outcome, so that we are not just measuring efficacy, we are measuring effectiveness. Just because you tell me something doesn't change my outcome. It is the whole package that works with me with knowledge. To me, it is the Committee's job to find out improved outcomes, and then no one is going to argue.

MS. ASPINALL: Bruce?

DR. EPSTEIN: I think that the system should be more geared to actively promoting and rewarding things that are cost-saving technologies. There are some different ways of defining cost effective, but there are some technologies that look cost effective almost no matter how you define them. That is what I'm talking about. I think the system does not do that.

We have our $2 trillion system. It is going to be 10,000 per man, woman, and child. We don't need things that add more cost to add more quality. I think there are plenty of things out there.

I was just at a conference in place of Rick Carlson, who died a few weeks ago. In addition to being a public policy expert on genomics, he had written for 30 or 40 years saying that our health care system is upside down, everything is wrong, look at what is in front of your face. His early works in the '70s are very illuminating.

We know, right now, that people spend half as much between doctors and patients in Minnesota and Oregon versus New Jersey and Texas. We know that there are groups in society -- people have done studies on Mormons, Seventh-Day Adventists, Christian Scientists, and so on -- who have half the health care costs and the same longevity. The stuff is in front of our face. We just need to encourage it to be done.

MS. ASPINALL: Marc, and then any last comments or questions.

DR. WILLIAMS: I had another question, but what Bruce just said really triggered something for me. This was something that Jim and I were whispering about earlier.

Do we need to step up to the plate, given what

you just said, which I heartily agree with, and say, Secretary, don't invest anything in genetics and genomics. We have to fix what we already have. We are just going to add cost. We don't have anything that is going to demonstrate that we are really going to be able to save you any money in a reasonable time frame, particularly if Medicare is going to go belly-up by 2016. Disband the SACGHS, get back to basics.

[Laughter.]

DR. WILLIAMS: I recognize that if I were to pick up my stakes and go to Ethiopia, there would be no need for my services as a geneticist. There would be a lot of need, perhaps, for my services as a general pediatrician.

In some ways, we are operating in luxury on the fringe. Do we need to be that basic in terms of how we examine what it is we are really about?

DR. QUINN: I'm being misquoted.

[Laughter.]

DR. QUINN: We should encourage things, even if they are in genetics, that look like they can be cost-saving. I think there are examples of things that are.

If you have a $1,000 test that gives you more effective $30,000 chemotherapy, that is what I mean. Then, if Medicare says, we only pay $18 for that, it will never exist. That's what I meant.

MS. ASPINALL: Jim.

DR. EVANS: I agree with what Marc said.

MS. ASPINALL: About going to Ethiopia?

[Laughter.]

DR. EVANS: I agree that we have to be very careful to not oversell genetics. I think there has been a raft of papers that have come out recently looking at the utter lack of value of genetics when you add it to standard risk factors for coronary artery disease, breast cancer, or diabetes.

I think the answer to all of that is exactly what Bruce just said, which is you have to use the same criteria for genetics as for other things. If there are aspects of genetics that can improve care and reduce cost, then that is fantastic.

We have to be very careful to not oversell genetics, not only because it is the wrong thing to do but because there will be a backlash. People will say,

what happened to all of this great genetics that you promised.

LT COL WATTENDORF: I stand in from the Department of Defense, which is a health care organization, as I said this morning, with 9 million beneficiaries. In its own way, it has it similarities to yours.

One of the key areas that we are looking at in terms of picking the right prevention strategy is, it is very difficult to use USPSTF because USPSTF can only look at a few diseases over a certain period of time. It takes a long time, many, many studies, and many, many people.

If you look at prostate screening, for example, with PSAs, the litmus on it is now that there may not be a lot of evidence behind the PSA. However, if you go back into the language of the USPSTF and you have an African American with a strong family history and so forth, there may be indications of those who are at higher or lower risk. That is really not bubbling to the top of that recommendation the USPSTF.

That brings me back to what all three of you

were alluding to, which is to get that evidence. I don't think we are going to get it, obviously, with RCTs. As you stratify out the variants of these people into smaller and smaller cohorts, what we need is the clinical data with these modest genetic variants.

So, is there a way forward where we could take our federated research architecture, where we have our clinical database in DOD and our EHRs, and put that together with WellPoint's, for example. Could we match our cohorts that have had certain clinical characteristics in certain SNPs or certain genotypes with what has gone on with those in WellPoint.

Is there a way that the federal government can allow us to match those data points. Right now it is very, very difficult, with HIPAA and with what we have heard about, for us to be able to match the clinical phenotypes with the genotypes and with other organizations' data. It is almost impossible to do.

MS. ASPINALL: Michael.

DR. AMOS: I think the Committee needs to supply the Secretary with information on what exactly genetics can be used for. What is the value. In most of

the discussion today, and most of the time when we talk about genetics here, we are talking about nucleic acid testing, but it depends on how you define genetics.

Nucleic acid testing is going to provide great value in medicine, but is it going to save money in the long run. That is really unclear. It may, on a case-by-case basis.

You defined genetic testing in the task force report as any kind of test that you can run that gives you information on genetics. I would expand that a little bit. Maybe genetic testing is understanding the environment's influence on the genome. That could be of great value to medicine.

In fact, that is what I talked about in my presentation last time, trying to understand what it is that the environment does to the genome that creates chronic disease. Sam started his talk hitting the nail right on the head. We are going to be a society of aging people with chronic diseases. The biggest cost in our health care system right now is chronic diseases.

So the question really is, back to what I first said, if we are going to limit our discussion to nucleic

acid testing, DNA and RNA, what is the value proposition. If there is no value proposition, I think expanding the discussion to other ways of looking at genetics is an appropriate way to do it. That is what I would be looking for if I was Secretary of Health and Human Services.

MS. ASPINALL: Sheila.

DR. WALCOFF: Actually, I have two points on both of the points that were just made in terms of what the Department has been looking at. Some of this information has been getting up to the top, which I think is a good thing for this committee.

Under Secretary Leavitt's Personalized Healthcare Initiative, we identified four prongs that we were going to try to address. We only had 1,000 days at that point to try to make some progress on that.

One of those prongs was trying to figure out exactly, as Dan mentioned earlier, how to take all of these existing databases with this great outcome, phenotypic, and genomic information, and do what we had essentially described to the Secretary as a Google search, but one for investigators. You would obviously

have some kind of consent and privacy-based protections.

We actually did in the FY '08 budget get $15 million in seed money to start looking at how we might accomplish something like that. That didn't make it into the final budget, but I think that was a really important point.

Folks like Greg Downing and others here at the Department are already starting to think about how we can really make this information that we already have something that is more useful to move us forward beyond the traditional gold standard of randomized control trials.

To your point, NIH is doing some work on genomics and the environment. I can't remember the exact acronym for that particular work that is going on, but maybe we could get some additional information on that at the next meeting. That could be used to further our recommendations and how we might narrow our recommendations down to something that the Secretary could use.

DR. FEERO: Mara, I have two points. First is a tool that Marc might even be tempted to use in

Ethiopia. It is right in front of us and doesn't cost very much. It is family history. Frankly, we know frighteningly little about the utility of family history as a screening tool for preventive services when you really look at the literature base. I think that will be borne out in the State of the Science conference.

It would be hard to argue that that wouldn't be a good place to start if you were looking for a low-cost, potentially high-impact preventive services tool. It doesn't have anything you can sell to anybody at this point in time associated with it.

The next point is, we have a lab to study evidentiary requirements, and that is EGAPP and its process. Looking at their paper that they just published, they have had folks directly involved in that with USPSTF. Recommendations from this committee could go back to that body to begin to play around with looking at setting different thresholds, and what the effects would be of setting different evidentiary thresholds than perhaps USPSTF uses as a parallel track.

I think it would be very hard, right now, to get USPSTF to pay solid attention to genetic applications

given the current literature base. In fact, I know for a fact they wouldn't take up family history as an entity basically for that reason. That has more literature around it than many of these other, newer tests.

DR. WILLIAMS: You can decide if this is going to be an in-bounds or out-of-bounds topic, but there are two principles behind this question. One is that you charged us to think about the future. The second is, I'm trying to one-up Kevin in terms of the difficulty of the questions asked here.

Michael said something that triggered an idea. He basically said, my one wish for health care reform is that we address state mandates. The idea is that we are going to inevitably be embedded in health care reform in the next couple of years. It seems that we have to have some mechanism as a body to be able to respond to that changing environment.

The question, which I would pose more to you as moderator than to this group, is since we have a group of folks who are clearly thinking about how this is going to impact their various sectors, would it be reasonable to hear their thoughts about where they think it is going to

go and how that might impact the work that we do?

MS. ASPINALL: I think that is very much in bounds and very interesting. Actually, in preparing for this we talked a little bit about that.

I think that that is useful to the extent that folks are comfortable in talking about both where you expect it to go and where you would like it to go. I think that is inherent in talking about the future because the near-term future will probably be the biggest single determinant of where we are 10 years from now if indeed health care reform comes out the way people continue to talk about it.

Can I pose that to the group, the question being, where do you either expect or would like health care reform to go? In the context of this, the Secretary is likely to come to us to ask where we think it is likely to, or should, go vis-a-vis genetics. We don't want to open the entire gamut of health care right now.

DR. NUSSBAUM: I think there are a few themes that I will summarize that I mentioned earlier. Number one is, I think we have to be for science and for scientific achievement and advancement for science. I

think when you actually look at our nation, it is one of the areas where we continue to lead the world. I think there is both good health and good scientific research that can emerge, and we can still be a beacon for the world in science. That is number one.

Number two, though, we have a health care system that is far too expensive. It is far too expensive for a number of reasons. One of those key reasons is we use technology before it is proven. If you look at us versus OECD nations or any comparator, our health care is not in the top 10. It is in the bottom grouping, whatever grouping we look at anywhere.

We need to use services that have an impact, and that speaks for genetics, genomics, proteomics, and everything else that we are going to do that is really biologically based.

Taking it to the next level, I believe there needs to be science that drives consensus viewpoints on coverage. I think the best place to start, because it will be about dollars, is when you look at some of the companion diagnostics for these $100,000 biological therapies for cancer. That is a wonderful place to start

to test whether they will be proof points.

I think when we start looking at knowing our genome to predict illness and manage public health over time, we can all theorize and we can have hypotheses that can be tested, but those are not going to get proven for decades.

It strikes me as let's go, number one, where the best opportunity is to prove science, and number two, where the best opportunity is to provide economic review. I believe that as we do that we will learn a lot. We will learn how to use databases differently and how to use registries. That will begin to take us to more rational decisions to how we can improve health and retain affordability.

MS. ASPINALL: Other comments?

DR. QUINN: I think that the biggest bang for the buck for the Secretary is companion diagnostics for the most expensive drugs. It is not just cancer drugs. Someone could have the incentive to invest in a test. Let's say you take white blood cells from someone with severe rheumatoid arthritis and you show which one of these five $30,000 biologicals will treat that patient

best. If that could be done, that is worth a huge impact on the patient's health outcome and a lot of money.

I think there are things where genetics or molecular biology could show its bang for the buck pretty fast, but people have to be encouraged to recognize the scenario and know that they could be rewarded for investing $20 million to do that.

DR. LUETKEMEYER: I would just like to add to what Bruce just said. It not only helps the person who is going to respond, it avoids the complications in the person who is not going to respond.

MS. ASPINALL: I would add, by the way, it also buys time for sick patients, particularly with cancer, by avoiding something that doesn't work. It is not only the side effects but it gets them something that is more likely to work more quickly.

DR. EVANS: I would just point out that you are basically talking about companion tests that aren't genetic. That is fine. The problem is that pharmacogenomics, even with the poster children of Warfarin and Tamoxifen, have yet to prove their worth. It is a tough problem.

MS. ASPINALL: Other comments or questions?

[No response.]

Summation of Key Roundtable Issues and Next Steps

Mara Aspinall, M.B.A.

MS. ASPINALL: Let me try to summarize what I heard in terms of priorities and some of the perspectives. I won't go back over the future, but what I heard were three key issues both throughout the discussion now and earlier.

One is the role of direct-to-consumer information, whether that be advertising, tests, or otherwise. That is something that we as a Committee have taken on.

There are two other pieces to be clear about, and I think the first one would be evidence-based. I think there was broad agreement on the need for evidence-based medicine. It is very easy to say focus on the science, but what I heard, just to articulate it, similar to what we have talked about before, is that there is a need to put together a clear roadmap on how to achieve that for different aspects and different products and

services.

This committee is not going to say what that evidence is but is going to call for the need for a clear roadmap for diagnostics, procedures, or drugs, and that that is there with transparency. I think that is what I have heard everyone saying. If there is a roadmap there, people developing products and services can then use it and various entities can then refer to it to say, have you checked off the check marks on the roadmap.

Number three is the low-hanging fruit issue. It is a little less clear to me how the Committee can work on this one, where I think the roadmap piece is very clear. How can we encourage the use of systems, products, or services that currently exist to improve the health of Americans or, very importantly, lower the cost of health care. I'm less sure as to how we as a Committee can encourage the use of that, but that is what I see you all saying that there is a need to be able to do. We need to use the resources that we have today as a society more effectively. Marc.

DR. WILLIAMS: There is a fourth one that I heard, and that relates to the database data-sharing

issue. As we talked about yesterday, we can work with the other Secretary's advisory committees, including the new one on health information technology, to get behind the effort as a generic strategy. The specific strategy is that if you really look at issues relating to collection of genetic and genomic data, we have severe deficiencies in terms of our ability to collect that data in a coded and computable fashion at the present time.

That is an area where I think this committee could definitely weigh in and say if we are really going to realize some of these benefits, then we have to be able to put this data into databases such that it is computable, meaning we can run decision support and rules and other things against it. We don't have the ability to do that today.

MS. ASPINALL: Again, the Committee's role, to try to be specific about it, would be to outline a process and maybe key people that would have to be part of that to make this a priority for HHS going forward.

DR. WILLIAMS: For the genetic coding piece specifically. Basically, we should add on to the group that is saying we need to have the ability to share data

of any type.

MS. ASPINALL: That was another theme that I think actually came out of the last two meetings and has really moved, at least in the few years since I have been on the Committee.

Genetic exceptionalism really is my last slide this morning. This is a means to an end and is important. It needs to be included but not necessarily completely separate from other information.

DR. WILLIAMS: It is now exceptional because it can't be coded and computed. That is the difference.

[Laughter.]

MS. ASPINALL: So, get it to the new normal.

We have four. Do I have at least general nods that those are the right four? Are there any disagreements or shouts? Do you want to throw things? Did we forget anything?

Then the principles. I included that in the evidence-based, but why don't we separate that, as Rob said, as a separate piece. What are the principles that underpin the evidence-based piece.

DR. TEUTSCH: In the access to genetics, which

evidence is a key component. Barbara.

DR. McGRATH: Could someone explain the difference between what EGAPP does versus the evidence base? How would this be different than what that group is doing?

DR. ROCHE: I'm sorry to even take the time of the Committee, but what we are looking at at CMS is the convergence. EGAPP methods and the ones that Steve will tell us about in a few seconds very eloquently, are actually forming the basis for where we see the evidence that we are going to use for coverage determinations in the future for screening and diagnostic uses.

In a sense, your question is are they converging. I think the answer is yes. We think they will. We don't think that they are perfect yet, but we look forward to them converging.

MS. ASPINALL: I think the EGAPP is actually working on what the standards are. We are talking about how to get there, but I would imagine we wouldn't get specific enough to say this number of patients in a trial, et cetera. They would actually have the literal standards.

DR. TEUTSCH: Let me see if I can take a crack at this. I sit on these groups frequently and they are all trying to do slightly different things, which is the challenge. Part of it is to get to some reasonable harmonization.

EGAPP has specifically looked at how to review evidence for the use of genomic tests, everything from prevention on through prediction, prognosis, and pharmacogenomics, with the idea of making recommendations for what the clinical evidence is of net benefit. That is one important use, primarily for providers and patients.

It is informative for coverage decisions and other kinds of things, but there are lots of different decision-makers out there who have somewhat different standards and have different informational needs.

What Joanne was describing that AHIC has been doing is essentially built off the same set of frameworks as the U.S. Preventive Services Task Force and others, but the idea was to provide a roadmap primarily for coverage decisions which should use information from EGAPP.

It was also designed to provide information for innovators to tell them, what is the roadmap; what are the benchmarks you have to hit along the way if you are likely to be successful. There has been a lot of input within AHIC. Certainly, Aetna and WellPoint have been critical to those processes.

Different groups are using slightly different things. I think we need to talk a little bit about how these different things converge, the different uses, and so forth.

EGAPP is your slightly purist U.S. Preventive Service Task Force, an idealistic version of what we would like to see, but I think many people would say that that bar may be too high for others. I say that having been a party to that.

MS. ASPINALL: So if that is where they are, then we're in the real world, because there is genetics, health, and society. It is not just academic in doing that.

With that, I think we have isolated five key areas that will help inform the future task force more broadly as we move forward, and with the new secretary

coming in, we will get some additional clarity from Steve as to our priorities going forward.

Thank you. It was a really terrific day and a wonderful panel. I very much enjoyed your presentations. Thank you.

[Applause.]

Concluding Remarks

Steven Teutsch, M.D., M.P.H.

[PowerPoint presentation.]

DR. TEUTSCH: Great. Well, first, thank you. This was a fascinating and rich discussion. I really appreciate everybody's careful consideration of these knotty issues. Again, thanks to everybody for a terrific discussion.

I did want to recap a little bit of what we have done. Of course, we had reports from the agencies about what they are doing, their current activities, and some of the issues related to the Recovery Act. We certainly heard an in-depth presentation from CMS, which was particularly helpful.

Some of the topics that we heard about, I sense people will want to revisit at a subsequent meeting,

particularly some of the issues about the implementation of GINA. It will be one of the things that we will want to come back to.

We then heard about the consumer-initiated genomic services. We decided to form a task force to look at all the recommendations that we currently have that are germane and put together a summary of those so that we can take that forward, and to look at some of the other issues that were raised in the course of our discussion so that we can see which of those we want to move forward on.

Some of those are here on the slide. We talked about how does personal utility fit in with the concept of clinical and public utility, particularly as it relates to these consumer-initiated tests. We talked about some of the translational issues to get them into care. How are we going to take care of the funding of the information, which ties into what we have talked about consistently here about evidentiary standards and getting the information about what really works.

We talked about equity issues for the use of these technologies and then how to monitor and evaluate

them. We will have a chance to sort through those issues and decide how we should move forward. At the next meeting we will at least have the synthesized recommendations from the past and some thoughts about what we need to do further.

I think we had an exciting discussion about informed consent, privacy, and discrimination, particularly how that relates to new paradigms for research. We talked about reviewing with the agencies what they are currently doing and their plans and coordinating, as we just discussed, with the other advisory committees to see if there is a need for some collaboration among us, or to see who is carrying what part of this forward. It may indeed be one of the new advisory committees that is just being formed.

One of the key issues I think we have to grapple with, and we touched on it, is the relationship between the clinical data and how we get that data into research where you are not going to be involved directly in interventional studies. That is the kind of thing Sam was talking about, are there some things that we should be doing to inform that discussion.

We heard from Barbara on education and training. They will be completing the surveys, but it was delightful to see that we had some data already. They will begin writing the report, and we will get another update at the next meeting and aim to get a draft report out later in the summer so that we can get it out for public comment after our October meeting. The goal is to have a final report in mid 2010.

We did have a pretty broad-ranging discussion concerning the future of the health care system. We talked a lot about DTC information. I think what we came to is that [what] we want to talk about are the principles that need to be in place if we are going to have access to these technologies, which includes getting a clear sense of how we are going to go from where we are now to a real evidence-based roadmap; what are the evidentiary standards; what needs to be done; and whether we can actually begin to identify some specific areas which are prime for doing that.

We heard that there may be some specific things that this committee should try and foster. We can actually begin to look at whether some of these

technologies can lower the cost of health care and what may be incentives or disincentives to actually developing and implementing them.

Finally, the last thing on here is outlining the process to make data sharing a priority. That is back to, how do we use this information to better understand the real-world effectiveness to that we know what the real value of all of these things is.

We have had a pretty rich discussion. Then we come to the meeting in June. I think these are the topics that we will touch on. I would be interested in your thoughts on these since we haven't really discussed them systematically.

One is the implementation of GINA. It is not so much the implications of GINA, which it has plenty of. GINA is here, and we are interested in the implementation of it.

We want to continue the discussion on the future of the health care system, probably looking at patient and provider perspectives as well as possibly some from industry.

The Patents Report, as you know, is out for

comment. Copies were placed on the table here this afternoon, for those of you who haven't had a chance to see the version that went out. We will be having the public comments back in May. We won't have them fully digested, but we will probably get a preview in June.

MS. ASPINALL: Is it available now?

DR. TEUTSCH: That is available online.

MS. ASPINALL: It is available for people to see so they can start the public comments now?

DR. TEUTSCH: Absolutely. It's available online. I think it has been sent out on the listserv. It is out there, and comments are due by May 15th. So we will have a brief period of time to see who is responding and the kinds of comments, but we probably won't have the kind of detailed analysis that will be in the 400 pages that Jim is going to be going over.

Then, consideration of what we talked about earlier, the report from the Consumer-Initiated Genomics Task Force on the recommendations we want to send forward, as well as how we should proceed. Mara.

MS. ASPINALL: Two things. One is, on the future of health care systems, to be able to add somebody

from industry. Then, maybe someone from HHS, and I'm not quite sure who, could give us an update as to health care reform at the time.

DR. TEUTSCH: Hopefully, we will have the secretary in place and we will begin to have the kind of discussion at the next meeting that we really hoped for here. It looked like it was premature, so we will want to revisit that. We will have to see how that goes as we go along.

We have the progress report, which hopefully will find a receptive audience, and we'll be interested in hearing their priorities so we can shape our work.

Let me ask a specific question. Any comments on the agenda for June? Are there other things that people feel should be on that agenda? We'll see about squeezing everything in.

[No response.]

DR. TEUTSCH: Any other final thoughts?

[No response.]

DR. TEUTSCH: Let me take this opportunity to thank the staff, that always does an incredible job of making this a reality.

[Applause.]

DR. TEUTSCH: Sarah, Abbe, and all their folks make all of this possible, as those of us who work with them know.

Thanks to all of you who are active participants in this process. I think it has been a productive meeting. Thanks to everyone, and safe travels.

[Whereupon, at 2:31 p.m., the meeting was adjourned.]

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CERTIFICATION

This is to certify that the attached proceedings

BEFORE THE: **18th Meeting of the Secretary's Advisory Committee on Genetics, Health, and Society (SACGHS)**

HELD: **March 12-13, 2009**

were convened as herein appears, and that this is the official transcript thereof for the file of the Department or Commission.

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