Session Overview and Goals
Emily Winn-Deen, Ph.D.

DR. WILLARD: Good morning, everyone. We need to start on time just in case Reed is at home watching us on the Web. Good morning, Reed, and good morning everyone. Welcome back.

The first order of important business, of course, since we like to look after everyone's stomach, is to remind the members and the ex officios that if you would like to order lunch, you should do so at the table out there next to the registration desk no later than 9 o'clock, and then, as yesterday, your lunches will be delivered here.

Let me also acknowledge and welcome Jody Brown, who is here from the Health Sciences Policy Division of Health Canada. We're delighted to have you with us. Hope you learn something, and I hope we, in turn, will have a chance to learn from your activities north of the border as well. So welcome.

Let me point out to the committee, you have in front of you the clean copy of the final recommendations that we voted and approved unanimously yesterday on coverage and reimbursement of genetic tests and services. This is simply for your information so you have a clean copy to take home and look over.

We have another full day ahead of us. Today we'll be hearing a number of perspectives on the current state of the field of pharmacogenomics and the important policy issues that we identified as a committee when we went through our prioritization process a couple of years ago. The entire day will be devoted to policy issues.

We have a number of outside speakers that have been put together by Emily Winn-Deen and her Task Force on Pharmacogenomics and, of course, our indomitable staff. Bio sketches for today's speakers are found in your table folders, and at this point I'm going to turn it over to Emily Winn-Deen, who will lead the discussion today and will begin by giving us an overview of the task force's work in this area and the goals that they've identified for us today.

Emily?

DR. WINN-DEEN: Thanks, Hunt.

We're going to start today with an overview of the work that led to having this session on pharmacogenomics. Pharmacogenomics was identified as one of the four issues warranting in-depth study during our priority session last year, and since then it's been increasingly apparent that this field has the potential to have a large impact on health and health care and needs to be considered carefully.

Pharmacogenomic testing may offer more individualized approach to medicine through the identification of genetic variants or biomarkers that help to target the appropriate pharmaceutical interventions to individuals based on their molecular nature, their disease, and their individual genetic variation. The field of pharmacogenomics will allow further integration and transfer of the human genome data from the Human Genome Project into the practice of medicine.

There's been a lot of data on the number of deaths that occur. The latest figure is about 100,000 deaths per year that occur due to adverse drug reaction, and there is the hope that pharmacogenomics will also play a role in reducing the number of deaths.

During our priority-setting discussions within the task force, we focused on physicians' need for relevant and practical advice on the application of pharmacogenomic data in the clinical setting. I'd like to acknowledge the task force and all the members who contributed, both the folks within the SACGHS committee as well as our ex officios: Kevin Fitzgerald, Chris Hook, Julio Licinio, Deb Leonard, Ed McCabe, and Hunt Willard, and ex officios Susan Feetham, Steve Gutman, Alan Guttmacher, and Joe Hackett.

When the task force first began to develop a framework to guide the work of the committee, we identified four areas to begin a review of the field. We wanted to try to put everybody on the committee on sort of a level playing field and get everyone oriented, and that's I think the goal of today's session. The four areas that we decided we would focus on is state of the field of pharmacogenomics today, where are we with translational efforts in pharmacogenomics, what are the ethical, legal and social issues that this branch of genetics might raise, and what is the role of government agencies, keeping in mind our charter as an advisor to HHS.

The key translational issues that were identified included regulatory issues, funding of pharmacogenomic research and translational research, the potential to create new orphan drugs or diseases through patient differentiation via genetics. We wanted to include the perspective from different sectors of both the community as well as the industries that are affected by this, and to try and find some cooperative approaches in the spirit of public/private partnerships that might help move this field forward.

In addition, pharmacogenomics may pose some unique ELSI issues, and we wanted to make sure that we did not overlook some of these, and we're most concerned about not having any exacerbation of health care disparities or access issues.

Finally, we wanted to make sure that we did a good overview of what's going on already within HHS, and hopefully today's discussion will give us an idea of where we are today, as well as where we'd like to be in terms of any gaps that we identify.

Prior to this session, we sent out a request to the various HHS agencies and asked them two questions. The first was what does your agency see as the most important policy issues, concerns or voids in the field of pharmacogenomics; and then from your particular agency's standpoint, what are the specific questions that our committee could address for each policy issue?

The issues identified by the agencies included the following: applying pharmacogenomics knowledge in the drug development process; assessing clinical validity, analytical validity and clinical utility; and integration of pharmacogenomics into clinical and public health practice. The full summary of the input from the agencies can be found at Tab 6 of your briefing book.

The first category was suggested by NIH, and though this will remain largely a private sector endeavor, primarily within the pharma industry, it's important for us to understand how pharmacogenomic knowledge will be used in drug development. The second category, the problem of how to develop evidence-based reviews, was highlighted by four agencies: CDC, CMS, HRSA, and NIH. Under integration, the need to educate providers and consumers, as well as privacy and promoting wide access to clinical trials and new tests were noted by CDC, FDA, HRSA, and NIH.

In the public health arena, considerations of ethnic and racial variations and the effects of diverse populations, the potential use of pharmacogenomics for screening purposes, and the need to monitor pharmacogenomics impact were identified as important issues. Again, CDC, NIH and

HRSA all contributed to these issues. Access and cost remain important concerns that will need to be considered and addressed. The need to understand the direct and indirect costs and potential for reduction of overall health care costs related to pharmacogenomics is important for us to try and understand in a little more depth. Adequate access was the focus from HRSA, while cost was highlighted by CDC, HRSA and NIH.

The feedback from the agencies largely parallels the agencies missions and will be very helpful. It was suggested that our discussion this afternoon would initially focus on an explicit statement of what we expect pharmacogenomics to do for people's health. We welcome more explicit suggestions from any of the speakers and any of the ex officios as we move forward in our discussion.

Additional issues that were identified through other outreach efforts included barriers, and these additional outreach issues that we identified were done via our task force discussion, as well as some conference calls with key individuals within the private sector. We consulted with Bill Clarke, who is the chief technology officer and chief medical officer for GE Healthcare, as well as with Mara Aspinall, who is the president of Genzyme Genetics, and her colleagues at Genzyme.

The barriers that were identified by Bill Clarke and really echoed by the folks from Genzyme included that there are really no uniform reporting standards today for pharmacogenomic assays. There needs to be an appropriate approach for evaluation of the value of pharmacogenomic testing. There are issues of robust technology and reasonable cost that need to be addressed, and whether FDA approval will be required in order for reimbursement to take place for pharmacogenomic tests.

On that same strategy, there's really a lack of clear reimbursement paths forward in terms of particularly home-brew assays, and while there is a lot of data available on the correlation of genetic variation with different drugs, there's still not the body of data required to actually give good dosing guidelines for many of these drugs. So we're still one step away from being able to translate it into clinical practice.

The other barrier was really what is the catalytic event that's going to be required to move pharmacogenomics out of academia and into standard clinical practice? What is the driver here? Is it better medicine? Is it legal liability? Really, what are the issues that are going to make this happen? Because I think we have good evidence in several arenas for things where we understand the science, and yet the science hasn't really translated into a new standard of care in the practice of medicine.

We need further clarification from the regulatory agencies on what is actually needed to drive changes in drug labeling and how that's going to be managed.

Genzyme suggested some additional strategies to promote pharmacogenomics. They felt that pharmacogenomics was a paradigm shift and that all key constituencies within the health care system need to understand its role. Part of our programming today was to try and begin to bring together all of these different types of constituencies. We recognize that due to time limitations we were not able to have every single piece of the puzzle presented to us today and that some of these things will probably have to be deferred to our next meeting, but we were trying today at least to make a start in bringing these issues forward.

The other strategy that Genzyme brought up was the need to encourage innovation with financial incentives. So what are the financial incentives that are needed in order to encourage companies, as well as physicians, to move forward in the practice of this new type of medicine?

Genzyme brought up a couple of other things that they were concerned about. They felt that there was a need to address both the home brew, the laboratory-developed tests, as well as FDA-approved tests. To my knowledge, there's only one FDA-approved test, which is the Roche AmpliChip for 2D6 and 2C19. Most of the work that's being done in this field today is with laboratory-developed tests, and we need to recognize that and find ways to address it.

The government, in their role as both a regulatory and a payer, needs to be looking at how they can put in place policies that would result in better drug efficacy and improved safety.

So the purpose of today's session is to really provide a common understanding of the fundamentals of pharmacogenomics and the state of the field today, to identify policy issues that will be critical to move this forward, and to determine if there's a specific role that this committee can play in facilitating this translation into the practice of medicine. I want to remind the committee that our goal is to advise HHS. We can't solve all the problems of the field, but I think that there are a number of agencies within HHS that are involved in this field, and we need to assess whether we feel they've got everything well in hand or whether there are some specific recommendations that we'd like to make going forward for things they could do more actively or more cooperatively among the agencies.

So with that in mind, I'd like to give you a little bit of an outline of the session today. We're very pleased to have a panel of speakers who, I have to say, are all experts in their field, and we greatly appreciate their willingness to come and share their knowledge with this committee. We're going to start with the fundamentals. What the heck is pharmacogenetics and pharmacogenomics? We're going to hear from the public health perspective, the practice of medicine perspective from both the diagnostics and the pharma side of industry. In the afternoon we'll hear from the HHS agencies about their issues, and finally we'll have a talk on the ELSI issues.

At the end of this long session, I hope you're all taking notes during the session because we're going to have a full committee discussion about really what we heard, what we would like to do as a committee moving forward, and the task force is looking for guidance from the committee on where you would like to see us move next so that we can be prepared if we need to do some specific activities in the interim between this meeting and the October meeting.