DIABETES MELLITUS INTERAGENCY COORDINATING COMMITTEE (DMICC)
THE DIABETES PREVENTION PROGRAM (DPP) AND TRANSLATION

March 11, 2002
Conference Room D, Natcher Building
NIH Campus, Bethesda, MD

SUMMARY MINUTES

Dr. Spiegel opened the March 11, 2002 meeting of the DMICC for the purpose of discussing the critical issue of translating the results of the Diabetes Prevention Program (DPP). He stated that Data from the Centers for Disease Control and Prevention (CDC) shows that the incidence of type 2 diabetes is growing at an epidemic rate in the United States and worldwide. Dr. Spiegel indicated that findings of the DPP have received extensive coverage and interest since Dr. David Nathan, DPP Study Group Chair first presented them to the DMICC on August 8, 2001. Immediately after the August 8th DMICC meeting, Secretary Tommy G. Thompson of the U.S. Department of Health and Human Services (DHHS) held a press conference to publicly announce the results and declare his commitment to disseminating them. The DPP primary results were published in the February 7, 2002, issue of the *New England Journal of Medicine.*

Dr. Spiegel reminded the group of the statement of Dr. Claude Lenfant, Director of the National Heart, Lung and Blood Institute, who said, "It's great to have a paper in the *New England Journal* [but] if it sits on the shelf, we will have accomplished nothing." Dr. Spiegel asked that the group address the translation problem cohesively and that they apply their scientific, critical thinking to recommend pragmatic, effective ways to move forward and translate the reality of these prevention findings.

To prepare for developing a framework for action, the group first heard from representatives of the public sector. Dr. Nathan presented an overview of the DPP trial and its results. The potential role of the National Diabetes Education Program was given by Drs. Charles Clark and David Marrero. Dr. Richard Kahn then expressed the American Diabetes Association's concerns about the challenges of translating the results into effective action. Ms. Kathy Berkowitz spoke of the interest of the American Association of Diabetes Educators in DPP. Mr. Ned Calogne discussed translation issues at the State level and Dr. Joseph Selby described the managed care perspective. The presentations are summarized here. Copies of their slides can be found at http://www.niddk.nih.gov/federal/dmicc/meetings.htm.

DPP primary results: An overview of the DPP primary results presented by Dr. David Nathan demonstrated that type 2 diabetes could be prevented or delayed in a group of participants at high risk for developing type 2 diabetes by reason of their having impaired glucose tolerance and that there are approximately 10 million individuals in the US at comparable high risk. The DPP demonstrated that modest lifestyle changes or the use of metformin can help stem the growing diabetes epidemic of more than 800,000 news cases of type 2 diabetes a year. Dr. Nathan emphasized that, although the U.S. population is projected to increase only slightly, the risk of developing diabetes is projected to increase 100 percent over the next 50 years. Thus, diabetes and its complications will create an enormous healthcare and financial burden for our Nation.

The DPP, along with Finnish and Chinese studies, has shown that managing impaired glucose tolerance (IGT) can slow or prevent progression to diabetes in those at high-risk and even reverse the IGT. Since

most diabetics are not diagnosed until 4 to 7 years after developing the disease, at which time early complications such as cardiovascular disease have already started, screening for IGT and intervening early can produce significant human and financial cost savings. Results are still being analyzed, but early indications are that managing IGT has prevention benefits for cardiovascular events and atherosclerosis.

The DPP selected participants from the upper half of a group considered to be at risk for developing Type 2 diabetes. Since people are not normally identified as having IGT, the DPP screened for patients who were overweight and had a family history of diabetes. Eligible study candidates had both a 2-hour oral glucose tolerance test (OGTT) glucose level of 140 to 199 mg/dL and a fasting glucose level of 95 to 125 mg/dL. Forty-five percent were from minority groups and 20 percent were age 60 or older, both groups who are disproportionately affected by diabetes. Eligible participants at the 27 clinical centers were randomized to either intensive lifestyle; metformin, 850 mg BID; or to placebo.

Dr. Nathan made the distinction that the lifestyle intervention was a supportive, comprehensive, and intensive program with moderate exercise and weight loss goals. The goal of the lifestyle intervention group was loss of 7 percent of body weight (10 to 15 pounds), restriction of daily dietary fat to 25 percent and caloric intake to 1200-1800 calories, and 150 minutes per week of physical activity, such as brisk walking. Participation and retention were both excellent. At the end of the study, with 93 percent of participants completing the study, and 93 percent of participants completing all study outcome visits. Dr. Nathan said that these retention and participation figures reflect the motivation and dedication of the study volunteers and the skill of the centers and the DPP staff members.

Because of the strong positive results achieved by May 2001 and the recommendations of the Study Data Monitoring Board the NIDDK ended the study one year early. The study findings demonstrated that lifestyle intervention reduced the risk of developing diabetes by 58 percent and metformin reduced the conversion to diabetes risk by 31 percent for an average of 2.8 years of exposure.

Dr. Nathan said that to have a public health impact the target at risk audience must be identified and their cooperation must be obtained in order for translation of the study results to the at risk population. Whether public health results similar to those of the DPP can be obtained will depend a great deal on the public health message developed and channels used for communication.

Dr. Nathan pointed out that important questions need to be resolved about the cost-effectiveness of the DPP interventions, how the results will translate to the larger population group at high-risk, and how to accomplish the translation. The DPP Research Group is conducting analyses and preparing for a 5-year followup study with the cohort of DPP participants to determine the clinical consequences and benefits of DPP interventions over time.

The National Diabetes Education Program Role in DPP Translation. Dr. Charles Clark and Dr. David Marrero reported on a proposed multi-faceted, three-phase NDEP campaign with specific target audiences, objectives, messages, and plans of action. A tentative slogan for the diabetes prevention campaign is "Small Steps. Big Payoff." The program targets three separate audiences—health care providers and allied professionals, people at risk for type 2 diabetes and other stakeholders, and health care purchasers, payers, and the media. With the help of CDC, NDEP will conduct focus groups with each audience to test and refine the effectiveness of the campaign strategies and messages.

Following an initial 3-month provider phase, the campaign will target the at-risk population similar to the volunteers in the DPP. Diabetes tends to run in families and disproportionately affects racial/ethnic minority groups. The campaign will therefore target at-risk group's family and friends, those who have diabetes and their supporters, and the community at large. Dr. Marrero emphasized that communicating

the DPP results requires less a medical model as much as a community health model. Changing the behavior of the ten million high risk people similar to those in the DPP is a community effort. The message will be, modest changes make a big difference. Individuals will be encouraged to see their doctors and be tested. Options will include lifestyle modification—eat better and get moving—and/or medication. Channels of communication will include local and culture-based media outlets, food editors and shows, celebrities, and community and faith-based groups. Messages will stress that diabetes prevention is not only for adults at risk; it applies to children and young people who are developing patterns that lead to increased risk.

Drs. Clark and Marrero pointed out that NDEP began with the goal of changing the treatment of diabetes today and ultimately trying to prevent diabetes. The "ultimately" came quicker than expected. Now the goal is not only to change the way diabetes itself is treated, but also the way pre-diabetes is treated as a health risk.

American Diabetes Association (ADA) Perspective. Dr. Richard Kahn, Chief Scientific and Medical Officer, ADA, stated that ADA took the lead many years ago to screen people for diabetes. Now, he said, perhaps we are going to screen people for pre-diabetes. Dr. Kahn presented the following issues that his organization considers crucial to creating a framework for action to translate the DPP results:

- Achieving results similar to the DPP will be difficult. There is no provision in today's health care systems to pay for the type and extent of the intervention done in the clinical trial. If we identify people and tell them they are at risk, then we must offer them specific, focused, doable interventions. This must be more than "lose weight and exercise." This public awareness message has been around for a decade and has not been very successful. We need a lifestyle intervention similar to DPP that is less expensive than DPP's. Or are there other, more cost-effective strategies that would produce the same results? Can the results be maintained?
- The means for identifying the target audience must be decided. Will the OGTT or fasting glucose test (FGT) be used? They are not interchangeable. What happens when the scientific community changes the values defining pre-diabetes and diabetes? Or is there another algorithm that can be used for which a scientific basis does not yet exist.
- The term for the condition that defines the at-risk population must be carefully selected. Is IGT or IFG, whichever is chosen, a pre-disease condition or a disease? Is it early stage diabetes or pre-diabetes? There are very few diseases we treat, and receive reimbursement for treating, in the pre-disease stage. What do we tell people they have? Deciding what to call the state is important for the message, the testing, the reimbursement, and the intervention.

It was also announced that ADA and NIDDK will publish a position statement on diabetes prevention in the April 2002 edition of *Diabetes Care. (Diabetes Care, Vol. 25: 742, 2002)*.

American Association of Diabetes Educators (AADE). Ms. Kathy Berkowitz, President, AADE, assured DMICC that her group of some 10,000 nurses, dieticians, pharmacists, and other health care disciplines are experienced, qualified, and committed to a team approach to translate the DPP results. Most of AADE's members have been involved with diabetes for 10 or more years. Currently the country's 12,000 Certified Diabetes Educators must serve some 16 million persons with diabetes. To assist in the translation effort, many more educators will be needed to reach the 10 to 20 million persons at risk.

AADE expects the DPP to widen the scope of the diabetes educator's role, increase the demand for services, and enhance the value of the diabetes educator. AADE is in the process of developing a position

statement on diabetes prevention and the impact of DPP on the diabetes educator's role. AADE has planned a multi-organizational Lay Health Worker Summit for April to reach community health workers. This effort is designed to identify those who are already delivering some diabetes education and reach consensus on a role for them in reaching more people with diabetes and those at risk for diabetes. DPP will be a prominent subject at their August 2002 annual meeting. The association will include some form of prevention education and the interventions in their practice standards, such as distributing the "Am I at Risk" pamphlet. They are planning to develop web-based, continuing education programs and articles in their publications.

Ms. Berkowitz noted that AADE will be developing both patient education materials and professional's toolkits to help their members understand, apply, and disseminate the DPP information. They also will be working with CDC's training program for community health workers.

Translation at the State Level. Dr. Ned Calogne, prior to becoming Chief Medical Officer and State Epidemiologist for the Colorado Department of Public Health and Environment, was Chief of Preventive Medicine for Kaiser Permanente and worked closely with the DPP principal investigator at the Denver center. Dr. Calogne pointed out that States do not receive much State funding for public health efforts. Funding for much of what they do comes from other sources, such as Federal grants from CDC, prevention block grants, tobacco settlements, local and national foundation grants, and non-public health community partners. State funds only allow for limited training, production of materials, and information dissemination. Another challenge to any role for States in translating DPP research is that most public health takes place at the local level. Matching State needs with Federal goals can be difficult, but trying to match local needs and State goals is often more difficult. Translating programs down into local health departments—which have their own issues, their own strategies for funding, their own county commissioners, their own local politics—is a huge issue.

Dr. Calogne identified three areas for translation of the DPP findings: (1) screening and definition of the glycemia problem, (2) behavior change; and (3) chemoprophylaxis.

There are no public health funds currently available for screening for impaired glucose tolerance. The State would need to influence supportive policies for screening through its community partners, including health systems, insurers, community health services, Medicare, and Medicaid. To translate DPP, Dr. Calogne said States would need assistance and cooperative efforts from DMICC member agencies. Funding through grants and cooperative agreements is a familiar and comfortable mechanism for States. Integration with existing programs, such as the cardiovascular, diabetes, and weight management programs, would ease the oversight and administrative burden.

Dr. Calogne described several things that have worked in public health. One was the use of tobacco money to fund a quit-line and the collaboration with Kaiser Permanente to provide smoking cessation pharmaceutical aids to quit-line participants. Although the effectiveness of the intervention is still unknown, it is an example of a collaborative effort to create awareness and facilitate an intervention. Use of the Internet as active deliverer of an intervention might be a low-cost possibility that could be applied on a broad basis.

Dr. Calogne asked rhetorically what the role of the public health service should be? Should it be primarily to raise awareness? Or to provide direct care?

Managed Care Perspective. Dr. Joseph Selby, Director of the Division of Research, Kaiser Permanente, is overseeing the triad study in diabetes management in a managed care setting. Although he was speaking about Kaiser's reactions to DPP, he pointed out that other organizations were also very

interested in DPP. One is the American Association of Health Plans (AAHP), the national organization representing the vast majority of health plans in D.C. AAHP coordinates a CDC-funded research program and sponsors a number of chronic illness initiatives relevant to translating the DPP. Working with NIH, it is actively engaged in promoting clinical trial participation for HMO-enrolled members in its health plans. Another organization is the HMO Research Network, a 6-year-old research center association of 14 large health plans covering 20 to 30 million people. Currently, the HMO Research Network is receiving more than $30 million in NIH, CDC, and Agency for Healthcare Research and Quality (AHRQ) research funds. This is an active, population-based research effort and group that will very likely participate in translation of the DPP.

Kaiser Permanente's Care Management Institute (CMI) responded very quickly to announcement of the DPP results. CMI was already working in the areas of overweight and diabetes. The Institute supports the development of evidenced-based population disease management across the nine separately incorporated regions of the Kaiser Permanente program. Nationally, Kaiser has 8.2 million members, 90,000 employees, and 11,000 physicians. CMI identifies affected populations; identifies and disseminates best practices; supports clinicians and specialized staff; provides feedback; and measures, reports, demonstrates, and, hopefully, improves outcomes.

Dr. Selby stated that diabetes is the paradigmatic chronic illness, the classic disease management disease, the care for which must be solved and resolved if we are ever to manage health care costs. Kaiser has been aware of the tremendous impact of diabetes on its membership for years. In 1994, Kaiser was spending $3,300 additional dollars per member per year on care for its diabetic members in the Northern California region alone. About half of this was spent on acute and chronic complications. In monitoring the incidence of chronic illnesses, using the same criteria from 1996 to 2000, Kaiser has found no change in the prevalence of congestive heart failure, no change in the prevalence of coronary artery disease, but a 33 percent increase in the prevalence of diabetes over just the past 5 years.

Shortly after the August press release on DPP, CMI convened a meeting in Portland of clinicians, other providers, and health educators interested in obesity and diabetes. They developed short- and long-term themes on strategies for preventing obesity including (1) development of partnerships with schools, employers, government agencies, and academic researchers; (2) establishing collaborations with other health plans on coverage and incentive issues, such as employer-based incentive programs around weight management; and (3) establishing a national advisory group on overweight and obesity.

The Kaiser Permanente Clinical Network managed and supported by CMI will risk stratify the overweight population, including the subgroups with decreased HDL, hypertension, IGT, and gestational diabetes, to direct intensive efforts toward those at high risk. Dr. Selby said it is doubtful that Kaiser Permanente will push now to identify the IGT population per se.

Kaiser's strategies for ongoing improvement include the clinical network to rapidly disseminate new findings as they are published or as Kaiser becomes aware of them. CMI intends to see research conducted on translation within its membership and its research centers funded by internal Requests for Applications (RFAs). Kaiser also hopes to partner with Federal and State-level demonstration projects.

Presentation of Risk Assessment Concept

Discussions during the morning presentations centered on which risk assessment measurement should be used (IGT or IFG), which test should be used (OGTT or FGT), or whether there is another profile or test that could be used for risk assessment. It was suggested that a possible risk assessment model based on BMI and other factors might provide enough of a profile to justify lifestyle intervention for a subset of the population and further screening for another subset thought to be at higher risk. Before the group recessed for lunch Dr. Allen Spiegel offered the following risk assessment concept that could be used for the afternoon discussions. He suggested that this tool could be Internet-based.

A potential at-risk group would be identified based on a weight and family history profile. The total group would then be stratified into low, middle, and high subgroups according to each person's risk assessment profile. Parameters would need to be defined for this stratification, and guidelines would be needed for each subgroup. For those placed in the low-risk subgroup, the guideline might be that there is no problem. For the middle subgroup, although it is arguable, some form of lifestyle counseling might be needed, such as the doctor simply advising them to lose weight and exercise. These persons would not be tested or receive medication.

In Dr. Spiegel's concept, persons in the high-risk subgroup would be screened for glucose tolerance. If the test indicated the person was in the normal range, then a retest would be done at some interval (e.g. 3 years?) If the test showed the person was diabetic, then treatment would be necessary. If the test indicated the person was pre-diabetic according to the criteria established, then intervention would be required, either lifestyle or medication.

The ADA/NIDDK position statement on the result of recent prevention studies including the DPP recommends lifestyle intervention be tried first. What the lifestyle intervention would be and how it would be provided would have to be determined. There is a continuum in glucose intolerance to a point where diabetes is present. There may also be a continuum where exercise and diet are no longer effective enough to prevent diabetes without the assistance of medication.

DMICC Agency Actions and Perspectives

The plans and viewpoints of several of the DMICC agencies were presented by their representatives: Dr. Judith Fradkin, NIDDK; Dr. Daniel Stryer, Agency for Healthcare Research and Quality (AHRQ); Dr. Steve Phurrough, Centers for Medicare & Medicaid Services (CMS, formerly HCFA); Dr. David Stevens, Health Resources and Services Administration (HRSA); Dr. Kelly Acton, Indian Health Service (IHS); Dr. Leonard Pogach, U.S. Department of Veterans Affairs (VA); Dr. Frank Vinicor, CDC; and Dr. Jean Flagg-Newton, National Center for Minority Health and Health Disparities (NCMHD). The panel's presentations are summarized here.

NIDDK. Dr. Judith Fradkin, Director, Division of Diabetes, Endocrinology ,and Metabolism, NIDDK, stated that NIDDK is working with the ADA, CDC, and NDEP to translate the DPP results. There also are opportunities for collaboration among the DMICC members. One major NIDDK focus of translational research is R18s for demonstration-and evaluation-projects. These programs test clinical trial results with specific populations in the community setting.

The current R18 program announcement is focused on developing cost-effective strategies for improving treatment of patients with diabetes. NIDDK plans to reissue that R18 with several other components of the NIH and CDC and ADA. The re-issued version will continue the focus on improving care for people with diabetes, but it will now stress many of the research goals identified in the ADA/NIDDK position paper appearing in the April issue of *Diabetes Care.* The program announcement will incorporate many of the issues discussed at this meeting. Applications will be accepted three times a year following the

standard ROI recept date schedule. A special study section will be convened by the NIDDK review branch and meet three times annually.

Another NIDDK new initiative focuses on prevention of type 2 diabetes in children. NIDDK has been working with CDC to define the extent of impaired glucose tolerance and of type 2 diabetes in children. Given the anecdotal evidence and now the DPP science-based evidence for adults, the Institute felt it important to investigate methods for prevention of type 2 in children. Rather than the medical model used in DPP, this will be a public health-focused initiative. It will target school-based interventions that stress increased physical activity and dietary education. The outcome to be measured will be some form of metabolic outcome, such as reaching a glycemic threshold, rather than actual development of diabetes. Sites have been selected, and the first steering committee meeting has been held.

A third effort is benchmarking what we are achieving in translation through CDC's NHANES, the mechanism by which we know what is happening in the Nation and how well we are succeeding or failing in terms of reducing risk or treating persons with diabetes. NIDDK has long provided data collection support of NHANES. Following NHANES III, NIDDK stopped supporting glucose tolerance tests and supported fasting blood glucose measures, based on ADA's changed recommendations for diagnosis. Now NIDDK would like to hear from the community if that decision should be reviewed and oral glucose tolerance tests now be used for NHANES to monitor the prevalence of impaired glucose functioning.

AHRQ. Dr. Daniel Stryer, Medical Officer and Internist, Center for Outcomes and Effectiveness Research, Agency for Healthcare Research and Quality, explained that AHRQ is the Federal Government's organizational home for research on the delivery of health care. Quoting Andrew Balas, a researcher at the University of Missouri, Dr. Stryer said, "It takes 17 years to turn 14 percent of original research to the benefit of patient care." Dr. Stryer listed the following DPP-related activities as part of AHRQ's discretionary programs:

- The U.S. Preventive Services Task Force, an independent panel of experts that reviews the evidence of effectiveness and develops recommendations for preventive practices, reviewed the DPP and recommended diet and exercise changes, but not screening.
- AHRQ's Put Prevention Into Practice (PPIP) develops tools and resources for clinicians, office staff, and patients. They will be creating diet and exercise materials to incorporate the DPP message.
- The Office of Health Care Information will add DPP to its present prevention activities portfolio.

Dr. Stryer also mentioned his agency would welcome any submissions to a new RFA being issued in partnership with the VA for AHRQ's Translating Research Into Practice (TRIP) portfolio. Another TRIP RFA in partnership with HRSA will be coming out shortly to assess the Disparities Collaboratives, of which diabetes has been one, to find ways to improve their effectiveness and efficiency. There are also plans for a collaborative focused on diabetes prevention.

Information gained from the work of AHRQ's Excellence Centers to Eliminate Ethnic/Racial Disparities (EXCEED) should help implement the DPP message. Nine centers across the country are focused on understanding why disparities exist and identifying strategies to reduce or eliminate them. The University of Colorado center is looking at Native American health. Other programs are focused on risk communication and cultural competence. Other AHRQ community-based participatory research activities should also help in DPP translation by building on the strengths of these groups.

In closing, Dr. Stryer told the group of the sad loss the previous day of AHRQ's Director, Dr. John Eisenberg, with whom many of those present had worked over the years.

HRSA. Dr. David Stevens, Director of the Clinical Management and Professional Development Branch, Health Resources and Services Administration, presented a brochure and video, "Changing Practice, Changing Lives," to each DMICC member. Dr. Stevens stressed that HRSA realized that to get better results in diabetes, major system changes were needed. HRSA provides approximately 26 percent of the funding for community-controlled health centers offering comprehensive primary care to underserved, high risk populations. Eighty percent are low income, more than 66 percent are below the Federal poverty level, and 40 percent are uninsured. A major goal is to reduce health disparities.

HRSA has identified four main areas in changing clinical care practices that Dr. Stevens stressed were very, very important. First is leadership. Second is a documented model of care and a model for improvement and learning. Third is infrastructure, and fourth is strategic partnerships.

After the report of the DPP results, HRSA and CDC thought this provided a great opportunity for their health centers. They plan to set up an expert panel to develop concepts and evaluation measures for translating DPP recommendations into preventive care for the underserved, based on their diabetes primary care model. The centers' program will include weight reduction, exercise, and/or metformin. HRSA hopes to have a pilot established by the third quarter of 2002. The 9- to 12-month pilot will target their enrolled patients and other persons in their communities.

With their current resources plus other resources from CDC and a partnership with AHRQ, HRSA plans to integrate the DPP initiatives into a prevention collaborative currently being designed. If additional resources become available, they will develop a free-standing DPP prevention group, taking into account the complexities inherent in this effort. Either model—stand-alone or integrated—will be started by the latter part of 2002.

CMS. Dr. Steve Phurrough, Director of the Division of Medical and Surgical Services, Coverage and Analysis Group, Centers for Medicare & Medicaid Services, explained that one of his group's responsibilities is to recommend items for CMS coverage to the Secretary of DHHS. Diabetes issues have been prominent in their discussions the past couple of years and several new benefits have been added. When it comes to DPP translation, Dr. Phurrough had to say that there was not much CMS planned to do on this front. CMS buys health care for its 39 million beneficiaries, 34 million of whom are over age 65, based on what Congress tells CMS to purchase. Congress's specific requirements and specific limitations are basically limited to what is reasonable and necessary for the diagnosis and treatment of disease. Unless Congress directs CMS to provide a benefit over and above diagnosis and treatment of disease, it is not covered. Prevention, including screening, is a large category that generally is not paid for.

Currently DPP screening and interventions do not fit into a CMS benefit category. There does exist the potential for defining the risk state as a disease. Also, DPP may not be primary prevention, but rather secondary prevention for obesity, which is not currently a CMS disease. Secretary Thompson and former Surgeon General Dr. David Satcher rather took issue with that this past year, and there is discussion now at CMS on whether obesity is a disease. If obesity becomes defined as a disease, then there will be a whole host of new coverage decisions to define treatment and diagnoses associated with obesity. If this should happen, then treatment may fall in line with what DPP is recommending. The problem, obviously, in defining obesity as a disease is that the treatment of obesity in the Medicare population would cut physicians' income by 20 to 25 percent across the board to cover all the treatments that fall into the realm of treating obesity. Therefore, it is unlikely this will happen in the near future.

IHS. Dr. Kelly Acton, Director of the Indian Health Service National Diabetes Program, stated that IHS has a unique government-to-government relationship with American Indian and Alaska Native (AI/AN)

Tribes. This puts constraints on the way IHS may do business with people. They may not dictate what will be done. The Tribes have considerable input about and control over their own health care.

As a federally-funded primary health care agency, IHS takes both a public health and a clinical approach to diabetes. The program's basic components are conducting surveillance, describing the problem; providing standards of care and clinical guidelines generated from the bottom up, developing publications, and reviewing the science. A yearly diabetes care and outcomes audit looks at both process and outcomes/measures around diabetes. A new activity has been the addition of 318 new diabetes grant programs under a special $100 million diabetes program funded through 2003 for American Indians. Since IHS is not a grant-issuing agency, monitoring 318 new grants has been a real adventure. The program priorities are set by local tribal communities. The director decided this was not going to be a top-down activity. Most communities are doing combinations of different preventions and two-thirds of the programs are doing primary prevention activities. There efforts may have something significant to tell us about translating DPP activities at the local level.

Dr. Acton provided evidence that incidence and mortality from diabetes significantly disproportionately affect American Indians. Also rates in cardiovascular disease (CVD), for which diabetes is a risk factor, are decreasing the in the overall U.S. population, but increasing in the AI/AN population. Fifty-six percent of cardiac events in American Indian men are in people with diabetes, and their relative risk of CVD mortality is 2.9. Seventy-eight percent of cardiac events in AI women occur in those with diabetes, and their relative risk of mortality is 3.8.

Other data provided by an epidemiologist from CDC shows that from 1990-98, there was a 6 percent increase in prevalence rates for diabetes in children under 15-years-old, a 68 percent increase in the 15-19-year-old group, a 47 percent increase in 20-24-year-olds, and a 50 percent increase in 25-34-year olds. IHS is deeply concerned about this trend in AI/AN youth. The National Diabetes Education Program, American Indian Subgroup, is working with focus groups to ask the youth how to get a message across to them, and they have provided some very insightful comments.

Dr. Acton researched the cost of care for diabetics and found that a few years ago managed care estimated the cost of treating diabetes was about $5,000 to $9,000 per person, per year. It has probably gone up. IHS currently cares for about 90,000 people with diagnosed diabetes, so a conservative estimate is that it should cost the Federal Government about $450 million a year. Unfortunately, the agency receives only $1,578 per person, per year, so there are significant economic disparities in terms of the ability to provide adequate diabetes care.

Since IHS and its providers already have difficulty handling the current volume of patients with diagnosed diabetes, they are concerned about how they can translate the DPP results. As an underfunded agency working with a unique, primarily rural, population, IHS must be creative to translate the DPP results into something meaningful. The agency would like to enhance the current lifestyle programs in prevention. Could the non-clinical part of DPP be done by trained community mentors or lay persons? They are also talking about how to adjust their pharmacy budgets to buy metformin when the budgets cannot afford other drug therapies at this time.

Dr. Acton said the agency's short-term plans for DPP translation included a press release sent to the Indian press and published around the country in all the Indian newspapers. DPP will be featured at the National Tribal Leaders Diabetes Conference in Denver in December 2002. Focus groups have been held at four sites and interviews been done with American Indian participants of the DPP. A special edition of *Health for Native Life* focuses on DPP and features DPP celebrities within American Indian communities. These celebrities tell how they accomplished the interventions to inspire people and give a positive

message about what DPP could mean to the individual in American Indian communities.

IHS long-term plans include participating in discussions like those at the DMICC meeting to define screening criteria and resolve other issues. The agency wants to use experience being gained from the grant programs and other programs to develop lifestyle activities specific to AI/AN communities, based on best practices or promising practices. They will also be working to expand the funding base to be able to purchase pharmacy supplies and equipment, fitness equipment, and so forth.

Dr. Acton said that, personally, she feels DPP means HOPE to AI/AN communities. There is so much fatalism in the communities about diabetes. "You are just going to get it. There's nothing you can do." Hopefully, DPP can change this mindset by projecting a positive message. It can say, "This is not the same old story because now we have proof that diet and exercise work."

In the discussions on translating the research, Dr. Acton emphasized that since diabetes tends to occur within families, a method that has worked in the AI/AN communities to change behavior has been to relate it to preventing diabetes and its complications in the children.

VA. Dr. Leonard Pogach, National Program Director for Diabetes, U.S. Department of Veterans Affairs, presented the perspective of the Nation's largest integrated healthcare system. Its Chief Medical Officer is the Undersecretary for Health, who reports to the DHHS Secretary. The VA treated 3.3 million veterans in Fiscal Year 2000. The number is closer to 4 million now, approximately 15 percent of the Nation's veterans. The median age of a U.S. veteran is about 59. Thirty-eight percent were over 65 in 2000, which is a larger percentage than in the general U.S. population. Women and African-Americans tend to be younger than the white, male population, probably reflecting changes in the military over the past several decades. The health care agency uses an enrollment system with a global budget and the effect of a capitation system. In a sense, it is a giant staff model HMO for patients who are largely, but not

completely, economically challenged. Their indigent population, many of whom are minorities, is larger than that of most other health care systems.

As a corollary to DPP, Dr. Pogach cited the 4S Study reported by Hafner and Herman in 1999. In a subgroup of persons with impaired fasting glucose, simvastatin significantly reduced the number of major coronary events, revascularizations, and total and coronary mortality. The significance is the relationship of IFG and cardiovascular disease, which is the major cause of morbidity and mortality in diabetes. Dr. Pogach added that the efficacy of aggressive blood pressure and cholesterol control in preventing morbidity and mortality in an IFG population also needs further study.

According to Dr. Pogach, there are several unresolved issues for the VA in translating the DPP results to its patients. The VA is dealing with an older population, with persons who have a number of disabilities that might interfere with lifestyle interventions, and with persons who are sick to begin with. The agency provides health care for about 750,000 people with diabetes. Some 1.2 or 1.5 million people with diabetes receive care in the combined. U.S. Department of Defense/VA care systems. Dr. Pogach estimated that there are roughly 1.8 million veterans who are not being treated for diabetes.

The agency is considering opportunistic screening for impaired fasting glucose in veterans with other DPP risk factors, but is not prepared to use the OGTT yet. VA expects to find that a lot of their patients will have the DPP risk factors. Fortunately, VA already provides access to dietary and lifestyle education. They also distribute and share NDEP materials. A prime issue is how to apply the DPP intervention, which was rather intensive, to the VA patient population. Use of metformin will be a fairly convenient option. However, for those over 60 and with lower BMIs, this was not shown to be a very effective intervention. Dr. Pogach felt that it was very important to vigorously identify and treat hyperlipidemia and hypertension in this same population.

To assist with DPP translation, VA has an active health services research and development program. Dr. Pogach indicated that for an issue of this magnitude, it probably would be possible to get service-directed research to study it. Investigators can obviously put in for individual grants at any time. Another asset the VA can offer is in terms of its established performance measurement system and computerized electronic medical records. They have a metric to identify individuals who should be targeted for screening and how they should be targeted. Based on their experience, they can quickly and cost-effectively develop and validate a performance measurement and collect data on how well a care mechanism is performing. Their electronic medical records system has computerized reminders that can embed health factors, such as medical risk factors or conditions that do not have codes, and then extract that data from the system. This capability is something that the VA could provide in collaboration with its Federal partners.

CDC. Dr. Frank Vinicor, Director of Diabetes Translation, Centers for Disease Control and Prevention, spoke of primary prevention from a public health standpoint. Specific CDC prevention activities for 2002 include:

- Developing population-based methods for identifying persons at very high risk.
- Conducting formative research through focus groups on views of primary prevention in collaboration with NDEP.
- Supporting demonstration projects with the CDC-funded Diabetes Control Programs and Community Health Centers.
- Serving as purchaser/insurer of a possible TRIAD pilot project exploring managed care and primary prevention.

- Establishing an international workgroup with the Finnish group on primary prevention in diabetes.
- Collaborating with NIH programs such as the DPP extension and "Environmental Approaches to Obesity."
- Expanding economic studies of primary prevention, such as the cost implications of possibly screening for unrecognized diabetes and IFG and IGT.

Dr. Vinicor was emphatic in expressing his CDC division's role as a leader in the public health community in diabetes. He insisted that the group must stick with the DPP science and what works. The impact that the power of science from DCCT and UKPDS had on policymakers should not be underestimated. An important issue is what investment in diabetes prevention are people, who do not see themselves as direct stakeholders, going to be willing to make. Also, what investment are providers willing to make?

There is a very large population at risk and there is not a huge amount of money in any group to translate the DPP findings. Increasing the caseload from 16 million persons with diabetes to 10 or 20 million at risk will be a job. If one case manager in the DPP took care of 20 or 25 people, and if the lifestyle intervention could be modified so that one case manager could take care of 100 people, 50,000 case managers would be needed to handle the minimum 10 million people with impaired glucose tolerance. The country does not have 50,000 additional case managers. There certainly are not the resources to take on 200 million people in this country. Like the bank robber Willie Sutton and the researcher Doctor Baruch Blumberg, going to where the money is, where the action is, and where the most likely effect can take place is the thing to do.

Another reason for targeting a DPP-type population is that there is not science to support that these interventions are "good for everyone," that they will prevent a whole array of diseases. Dr. Vinicor cited a study done in England in which ethicists looked at the quality of the evidence needed to make a difference for persons on a spectrum from terminal to healthy. A quality value of only 20 was satisfactory to the terminally ill but a value of 80 was needed for those at risk to pay attention and 90 was required by the healthy person. This again demonstrates the importance of the DPP science and the importance of applying it accurately.

Dr. Vinicor stressed it is essential to focus on what is known and what works and build on that beginning. What works best in public health efforts is using multi-faceted approaches. He said being an active partner with others in cardiovascular disease and obesity is okay, but that is not the primary role of those whose assigned area of public health responsibility is diabetes. Their role is to focus on and lead the DPP translation effort to prevent diabetes. Finally, Dr. Vinicor said, "We need to go slowly and move fast."

NCMHD. Dr. Jean Flagg-Newton, Deputy Director of the National Center on Minority Health and Health Disparities, said that NCMHD's vision is that there will be an America in which all populations will have an equal opportunity for long, healthy, and productive lives. In its first year, the Center has spent considerable time focusing on congressionally mandated programs, completing the development of the trans-NIH strategic plan on research to address and eliminate health disparities, and working to establish its Centers of Excellence networks across the country.

The law that established the Center was very specific in terms of the activities that NCMHD would carry out. There is a two-fold focus. First, the group is to continue the collaborations that the previous Office of Research on Minority Health had established. Those collaborations are primarily with the other NIH institutes and centers (ICs). There are also partnerships with AHRQ for their EXCEED Program and the CDC Reach 2010 Programs. Secondly, NCMHD has a mandate to develop independent programs focused

on research, particularly in the areas of biomedical research, biobehavioral research, and the social sciences.

NCMHD was a partner with NIDDK in support of the DPP Program, as well as other programs related to diabetes in terms of research and capability building. It is now the Center's policy that the trans-NIH Strategic Plan on Health Disparities will guide its collaborations with the other NIH ICs. NIDDK's portion includes the DPP followup and another major initiative with a focus on racial and ethnic disparities in the incidence of diabetes and its complications. Dr. Flagg-Newton confirmed that NCHMD will certainly be working with NIDDK in these areas. NCHMD is also looking at what research needs to be initiated that is not now being done. Dr. Flagg-Newton promised that they will be looking at those areas in terms of future translation efforts. One of the areas that NCHMD might support would be research in why sustainability is a problem.

In summary, Dr. Flagg-Newton encouraged everyone to evaluate the proposed strategies for translation and guard against thinking that a one-size-fits-all translation program will yield equally successful results across all racial and ethnic groups.

Discussion Summary

Questions and lively discussions on the issues and challenges of translating the DPP findings took place after each of the presentations. The comments and recommendations centered on the following questions:

- What should the risk be named?
- Who is the target audience?
- How should the at-risk group be identified?
- How should the at-risk person be treated?
- What translation strategies are most effective?
- What are the challenges?

What Should the Risk Be Named?. Selecting the correct name for the risk that was responsive to the DPP interventions was thought to be crucial for implementing the DPP science, for reimbursement, and for the impact of the message on providers, persons at risk, payers, and policymakers. Of the many terms suggested (pre-diabetes, impaired glucose tolerance, hyperglycemia, homeostatis irregulation), pre-diabetes seemed to provide the most promise. "Treating pre-diabetes" was deemed more apt to be taken seriously than "preventing diabetes."

Who Is the Target Audience? Focusing on a high-risk population similar to that of the DPP trial was thought to have the greatest potential for success in translating the DPP results. Although "eat right and exercise" is good common sense and a message Americans have been hearing from many quarters in the past decade, it was felt that to make the DPP translation a general population appeal would dilute its impact and effectiveness. First, the current messages about behavior modification have been disappointingly ineffective. Second, the DPP results occurred with a selected high-risk group of persons who were overweight, had impaired glucose metabolism, and a family history of diabetes. Targeting a similar group from the10 to 20 million at-risk persons will be more effective than targeting the entire U.S. population or even only those who are overweight. Other target groups should be health care providers, friends and families of this high-risk group, especially racial and ethnic minorities, and persons with diabetes and their supporters. Primary targets to assist in delivering the message would be the media, community- and faith-based groups, local and State governments, and employers.

How Should the At-Risk Group Be Identified? The discussion centered on the risk assessment concepts presented before the lunch break by Dr. Spiegel and described above. For those persons considered at high risk, there is the issue as to whether they should be screened for glucose tolerance levels, and, if so, which test should be used. The OGTT tends to be the more reliable for identifying those with diabetes. On the other hand, an overnight fasting glucose test, currently being used under ADA guidelines for identifying diabetes, is less expensive. Other questions included: What parameters should be set for each of the tests? What will happen if the values identifying pre-diabetes change as they have done for both diabetes and hypertension? Is there a different test that could be used? Another issue was that it is unlikely that either test would be reimbursable for an at-risk rather than disease condition.

Some concern was expressed about categorizing the at-risk population. One problem in presenting people with categories is the tendency to think, "Well, I'm in the lower end, so that's okay for now" or "I'm a little bit in the upper part, but I'm on the lower end of the upper part." In other words, people tend to think "I'm sick or I'm healthy."

How Should the At-Risk Person Be Treated? If the person is in the IGT- or IFG-positive group, by whatever test, then he or she already has increased cardiovascular disease risk and increased risk of developing frank diabetes, but it is not inevitable. The group felt that the cholesterol paradigm was very relevant. The significance at this point is that type 2 diabetes is very difficult to treat and may, at some stage, be irreversible because of beta cell failure.

In DPP, the lifestyle modification was generally the better intervention in all groups, but it was emphasized that medication as an intervention should not be dismissed. Both the DPP younger group and those who were more obese responded equally well to metformin and lifestyle intervention. It is also important to consider people's biases re medication or behavior changes.

There was concern that prescribing the comprehensive lifestyle intervention as practiced in the DPP trial would be unrealistic, too expensive, and probably not reimbursable under our health care system. Possibilities outside the private and public health care system were suggested such as community-based programs in schools and senior centers, advocacy group sponsorship, faith-based sponsorship, employer-sponsored programs, and Federal and State-supported prevention centers. Advocacy groups, private foundations, and the fitness, exercise, and food industries might also be sources of some financial support. An example given was the smoking cessation partnerships between physicians and the heart and lung associations.

What Translation Strategies Are Most Effective? The group agreed that translating research results is always a daunting task. The greatest asset in the current case is DPP's science and impressive results. The science and its relationship to the risk can hopefully cut through the crowd of health care messages being issued today. A multi-faceted approach was deemed necessary. The messages should highlight that a very modest weight loss of only 10 to 15 pounds and walking 5 days a week can reduce one's risk by more than 50 percent. While emphasizing the benefits to be gained from modest behavior changes, the messages to health care providers should not neglect the importance of the metformin intervention.

The following are some of the group's recommendations.

- Keep the message simple and focused.
- "Brand" the lifestyle intervention; make it desirable from a health, not looks, point of view; make it feel achievable.
- Be clear that "eat well and exercise" might be a good message for everyone, but for the targeted

group it is of *extreme* importance to prevent a serious disease.
- Partner with other agencies and other organizations, especially local groups.
- Rely on the willingness of adults to change their habits to benefit and protect their children and other family members even when they are reluctant to work to benefit themselves. This has been especially true in racial/ethnic groups.
- Use media avenues specific to professional and cultural groups.
- Test messages and programs with focus groups and ask for their suggestions.
- Leverage support from celebrity spokespersons and the fitness , sports equipment, and food industries.
- Imitate the health care marketing tactics of the pharmaceutical industry but with a smaller budget.
- Develop tools for at-risk persons to help them achieve and maintain their goals. Suggestions included a simple chart to show them they need to lose less weight than they probably think they do; recipes for lower-fat, lower-calorie foods that taste great; and a pedometer to track their 2,000 steps a day.
- Develop guidelines, tools, and toolkits for providers and other health professionals to help them assess and counsel their overweight patients.
- Develop toolkits to help local groups set up and sponsor their "DPP Lite" program.
- Use the Internet. Ensure important websites are easily found through search engines.
- Work with other Federal and State agencies to provide financial assistance, such as a tax break or part of the spa fee, to help the at-risk person carry out the lifestyle intervention.
- Work with other agencies through their programs, such as the food stamp program and the school food program, to provide access to lower-calorie, lower-fat, more nutritional food.
- Work with other agencies to increase physical activity at school and the workplace.
- Work with insurers and payers, decisionmakers and policymakers to determine the benefits of prevention over the difficulties and high cost of treating diabetes and to find ways to apply these interventions to stem the diabetes epidemic.

What Are the Challenges? Marketing behavior change is a difficult task. The needed lifestyle changes will be up against society's current super-size everything and sedentary habits at work and at home. The message cannot come across as the same old/same old. It must clearly get across the seriousness of the targeted individual's ignoring the risk and not taking advantage of the interventions. Focusing the message and relying on the science are crucial to move over or around these obstacles. Implementing and funding the interventions will require support outside the health care system. People live in families, cultural groups, and communities; therefore, these groups can inhibit or facilitate behavior change. It will be necessary to raise awareness, motivate them, and rely on their resources and influence.

People are not afraid of cholesterol per se. They are afraid of heart disease. The association between the risk factors—being overweight, inactive, having impaired glucose function, family history, cultural background, and age—will have to be clearly associated with the consequences of having diabetes and heart disease.

Common perceptions are that one must lose a lot of weight to do any good, that any weight loss is very difficult to achieve, and it cannot be maintained,. Inexpensive ways to highlight that a minor weight loss is effective and to provide motivation, support and encouragement will be needed. People are already spending millions of dollars on diet books and weight loss drinks and alternative drugs, and so on, but sustaining weight loss is what is proving to be the big failure and the big challenge.

Translational research messages take time to filter down. Patience, persistence, and creativity will be needed.

Framework for Action and the Road Ahead

The attendees agreed that the Diabetes Prevention Program has provided the group with an excellent opportunity to help stem the epidemic in type 2 diabetes. Consensus was achieved on the following elements in the development of a framework for action for the road ahead:

- Choose the appropriate term, pre-diabetes, to create recognition of the risk factor.
- Focus on a high-risk population similar to that of the DPP volunteers.
- Provide risk assessment testing and interventions as inexpensively as possible.
- Develop a multi-faceted translation approach.
- Establish partnerships and collaborations, especially at the community level.

The DMICC members are taking steps to translate the DPP science-based findings. Dr. Fradkin encouraged the DMICC members and others present to build on their current collaborations and partnerships to translate the DPP research. She spoke enthusiastically about NIDDK's newly designed initiatives and planned efforts in partnership with ADA and CDC. Dr. Fradkin also pointed out that it was important to remember that impaired glucose tolerance is a significant risk factor for cardiovascular disease, not the two- to four-fold risk that diabetes is, but a 50 percent elevation, which is substantial.

Dr. Spiegel summed up the success of the day's work by noting that many entities came together to discuss the road ahead in a challenging and productive way. He stressed that the fact that diabetes is very difficult and costly to treat is a compelling reason for primary prevention. In referring to Dr. Phurrough's presentation, he pointed out that both financial and human resources are needed to respond to the opportunity and challenge of translating the DPP results to clinical practice. On the other hand, some $18 billion a year is being spent on health care for end-stage renal disease (ESRD), 45 percent of which is largely due to type 2 diabetes. As the numbers of persons with diabetes continue to grow, it can be projected that this ESRD burden will also grow.

Dr. Spiegel said that costs saved by preventing or delaying diabetes and its complications cannot be saved immediately, and it is still unknown just how effective the DPP interventions will be in the long run, but it is daunting to consider what the numbers and costs will be if we do not at least try. He agreed that further followup and analysis are needed.

Dr. Garfield adjourned the meeting at 3:20 p.m.

Attachment A

DMICC Roster and List of DMICC DPP Translation Meeting Speakers and Guests

Chairman:

Allen Spiegel, M.D.
Director
National Institute of Diabetes and Digestive and Kidney Diseases
National Institutes of Health
Building 31, Room 9A52
31 Center Drive, MSC 2560
Bethesda, MD 20892-2560
Phone: (301) 496-5877
Fax: (301) 496-9943
Email: allens@amb.niddk.gov

Agency for Healthcare Research and Quality
Daniel B. Stryer, MD
Medical Officer
Center for Outcomes and Effectiveness Research
6010 Executive Boulevard, Suite 300
Rockville, MD 20852
Phone: (301) 594-4038
Fax: (301) 594-3211
Email: dstryer@ahrq.gov

Centers for Disease Control and Prevention
Mark Eberhardt, PhD
Epidemiologist
National Center for Health Statistics
6525 Belcrest Road, Room 730
Hyattsville, MD 20782
Phone: (301) 436-5979, x142
Fax: (301) 436-8459
Email: mse1@cdc.gov

Centers for Disease Control and Prevention
Frank Vinicor, MD
Director, Division of Diabetes Translation
4770 Buford Highway, NW MSK-10
Atlanta, GA 30341
Phone: (770) 488-5001
Fax: (770) 488-5966
Email: fxv1@cdc.gov

Executive Secretary:

Sanford Garfield, Ph.D.
Senior Advisor, Biometrics and Behavioral Science
National Institute of Diabetes and Digestive and Kidney Diseases
National Institutes of Health
Two Democracy Plaza, Room 685
6707 Democracy Boulevard
Bethesda, MD 20817
Phone: (301) 594-8803
Fax: (301) 480-3503
Email: garfields@extra.niddk.nih.gov

Centers for Medicare & Medicaid Services
John P. Lanigan
Health Insurance Specialist
Office of Professional Relations
Hubert Humphrey Building
Room 435H
Washington, DC 20201
Phone: (202) 690-7418
Fax: (202) 401-7438
Email: jlanigan@hcfa.gov

Center for Scientific Review
N. Krish Krishnan, PhD
National Institutes of Health
Two Rockledge Centre
Room 6164
Bethesda, MD 20892
Phone: (301) 435-1041
Fax: (301) 480-2065
Email: krishnak@mail.nih.gov

Department of Health and Human Services
Susan J. Blumenthal, MD, MPA
U.S. Assistant Surgeon General
200 Independence Avenue, SW
Room 719H
Washington, DC 20201
Phone: 202-260-2255
Email: SBlumenthal@osophs.dhhs.gov

Department of Health and Human Services
Violet Ryo-Hwa Woo, MS, MPH
Program Analyst, Office of Minority Health
5515 Security Lane, Suite 1000
Rockville, MD 20852
Phone: 301-443-9923
Fax: 301-443-8280
Email: vwoo@osophs.dhhs.gov

Department of Health and Human Services
Joan Jacobs, MPH
Health Policy Analyst
Division of Policy and Data
Office of Public Health and Sciences
5515 Security Lane, Rockwall II
Rockville, MD 28052
Phone: (301) 443-9923
Fax: (301) 443-8280
Email: jjacobs@osophs.dhhs.gov

Food and Drug Administration
Shaio-Wei Shen, MD
Medical Officer, Division of Metabolism and Endocrine Drug Products
Parklawn Building, Room 14B-04
5600 Fishers Lane, HFD-510
Rockville, MD 20857
Phone: (301) 827-6378
Fax: (301) 443-9282
Email: shen@cder.fda.gov

Indian Health Service
Kelly Acton, MD, MPH
Director, National Diabetes Program
National Institutes of Health
Headquarters Office
5300 Homestead Road, NE
Albuquerque, NM 87110-1293
Phone: (505) 248-4182
Fax: (505) 248-4188
Email: Kelly.acton@mail.ihs.gov

Health Resources and Services Administration
David M. Stevens, MD, FAAFP
Director, Clinical Branch
Division of Community and Migrant Health
4350 East West Highway, 7th Floor
Bethesda, MD 20814
Phone: (301) 594-4323
Fax: (301) 594-4997
Email: dstevens@hrsa.gov

National Center for Complementary and Alternative Medicine
Marguerite Evans
Health Science Administrator
6707 Democracy Boulevard
Room 106
Bethesda, MD 20892-5475
Phone: (301) 402-5860
Fax: (301) 480-3621
Email: evansm@od.nih.gov

National Center for Research Resources
Richard Knazek, MD
Medical Officer
National Institutes of Health
6705 Rockledge Drive
Rockledge 1, Room 6128
Bethesda, MD 20892
Phone: (301) 435-0790
Fax: (301) 480-3661
Email: richardk@ncrr.nih.gov

National Center on Minority Health and Health Disparities
Jean L. Flagg-Newton, MD
Deputy Director
National Institutes of Health
2 Democracy Plaza
6707 Democracy Boulevard, Suite 800
Betheda, MD 20892
Phone: (301) 402-1366
Fax: (301) 402-7040
Email: flaggnej@od.nih.gov

National Eye Institute
Peter Dudley, PhD
Director, Retinal Diseases Program
National Institutes of Health
6120 Executive Boulevard, Suite 350
Rockville, MD 20892
Phone: (301) 496-0484
Fax: (301) 402-0528
Email: pad@nei.nih.gov

National, Heart, Lung and Blood Institute
Peter J. Savage, MD
Acting Director, Division of Epidemiology and Clinical Applications
National Institutes of Health
Rockledge 2, Room 8104
Bethesda, MD 20817
Phone: (301) 435-0421
Fax: (301) 480-1864
Email: savagep@nhlbi.nih.gov

National Human Genome Research Institute
Kate Berg, MD, MPH
Deputy Scientific Director
National Institutes of Health
31 Center Drive, MSC 2152
Bethesda, MD 20892-2152
Phone: (301) 594-2481
Fax: (301) 402-2040
Email: kab@helix.nih.gov

National Human Genome Research Institute
Elke Jordan, PhD
Deputy Director
National Institutes of Health
31 Center Drive, MSC 2152
Bethesda, MD 20892-2152
Phone: (301) 496-0844
Fax: (301) 402-0837
Email: elkej@mail.nih.gov

National Institute on Alcohol Abuse and Alcoholism
Vishnudutt Purohit, PhD
National Institutes of Health
6000 Executive Boulevard, Suite 402
Bethesda, MD 20892
Phone : (301) 443-2689
Fax : (301) 594-0673
Email : vpurohit@willco.niaaa.nih.gov

National Institute of Allergy and Infectious Diseases
Elaine Collier, MD
Centers Program Director
Division of Allergy, Immunology, and Transplantation
National Institutes of Health
Soar Building, Room 4a20
9000 Rockville Pike
Bethesda, MD 20892-7640
Phone: (301) 496-7104
Fax: (301) 402-2571
Email: ecollier@niaid.nih.gov

National Institute of Arthritis and Musculoskeletal & Skin Diseases
Julia Freeman, PhD
Chief, Autoimmunity Section
National Institutes of Health
Building 45, Room 5AS-19F
45 Center Drive, MSC 6500
Bethesda, MD 20892-6500
Phone: (301) 594-5052
Fax: (301) 480-4543
Email: freemanj@ep.niams.nih.gov

National Institute of Biomedical Imaging and Bioengineering
Joan Harmon, PhD
Senior Advisor for Program and Acting Director, Division of Bioengineering
National Institutes of Health
Building 31, Room 1B37, MSC 2077
Bethesda, MD 20892-2077
Phone: (301) 451-6772
Fax: (301) 480-4515
Email: harmonj@nibib.nih.gov

National Institute of Child Health and Human Development
Gilman D. Grave, MD
Chief, Endocrinology, Nutrition and Growth Branch
National Institutes of Health
9000 Rockville Pike
Bethesda, MD 20890
Phone: (301) 496-5593
Fax: (301) 480-9791
Email: gg37v@nih.gov

National Institute of Dental and Craniofacial Research
Patricia S. Bryant
Director, Behavior, Health Promotion and Environment Program
National Institutes of Health
Building 45, Room 4AN-24, MSC 6402
Bethesda, MD 20892-6402
Phone: (301) 594-2095
Fax: (301) 480-8318
Email: bryantp@de45.nidr.nih.gov

National Institute of Diabetes and Digestive and Kidney Diseases
Judith E. Fradkin, M.D.
Director
Division of Diabetes, Endocrinology, and Metabolic Diseases
National Institutes of Health
Building 31, Room 9A27
31 Center Drive MSC 2560
Bethesda, Maryland 20892-2560
Phone: (301) 496-7348
FAX: (301) 480-6792
E-mail: jf58s@nih.gov

National Institute of Environmental Health Sciences
Perry Blackshear, MD, Dphil
Director, Office of Clinical Programs
National Institutes of Health
PO Box 12233
NIEHS, MD A2-05
RTP, NC 27709
Phone: (919) 541-4899
Fax: (919) 541-4571
Email: black009@niehs.nih.gov

National Institute of General Medical Sciences
Richard Anderson, MD, PhD
Program Director, Division of Genetics and Developmental Biology
National Institutes of Health
45 Center Drive, MSC 6200, Room 2AS-25
Bethesda, MD 20892-6200
Phone: (301) 594-0943
Fax: (301) 480-2228
Email: andersor@nigms.nih.gov

National Institute of Mental Health
Peter Muehrer, PhD
Chief, Health and Behavioral Science Research Branch
Division of Mental Disorders, Behavioral Research and AIDS
National Institutes of Health
6001 Executive Boulevard, Room 6189
MSC 9615
Bethesda, MD 20892-9615
Phone: (301) 443-4708
Fax: (301) 480-4415
Email: pmuehrer@mail.nih.gov

National Institute of Neurological Disorders and Stroke
Paul L. Nichols, PhD
Program Director, Systems and Cognitive Neuroscience Program
National Institutes of Health
6001 Executive Boulevard, Room 2118
Rockville, MD 20892
Phone: (301) 496-9964
Fax: (301) 402-2060
Email: pn13w@nih.gov

National Institute of Nursing Research
Nell Armstrong, PhD, RN
Program Director
National Institutes of Health
Building 45, Room 3AN-12
45 Center Drive, MSC 6300
Bethesda, MD 20892-6300
Phone: (301) 594-5973
Fax: (301) 480-8260
Email: nell_Armstrong@nih.gov

National Institute on Aging
Chhanda Dutta, PhD
Chief, Musculoskeletal Section and Nutrition, Metabolism, Gastroenterology Section
Geriatrics Program
National Institutes on Health
7201 Wisconsin Avenue, Suite 3E327
Bethesda, MD 20893
Phone: (301) 435-3048
Fax: (301) 402-1784
Email: cd23z@nih.gov

National Institute on Drug Abuse
Jag H. Khalsa, PhD
Pharmacologist Health Administrator
Center on AIDS and other Medical
Consequence of Drug Abuse (CAMCODA)
6001 Executive Boulevard
Room 5098, MSC 9593
Bethesda, MD 20892-5953
Phone: (301) 443-1801
Fax: (301) 443-4100
Email: jk98p@nih.gov

National Library of Medicine
Elliot R. Siegel, PhD
Associate Director of Health Information
Program Development
National Institutes of Health
8600 Rockville Pike
Bethesda, MD 20817
Phone: (301) 496-8834
Fax: (301) 496-4450
Email: siegel@nlm.nih.gov

Office of the Director
Nancy E. Miller, PhD
Senior Science Policy Analyst
National Institutes of Health
Building 1, Room 218
Bethesda, MD 20892
Phone: (301) 594-7742
Fax: (301) 402-0280
Email: nm68k@nih.gov

Veterans Health Administration
Leonard M. Pogach, MD, MBA
East Orange Veterans Affairs Medical Center
385 Tremont Avenue
East Orange, NJ 07018
Phone: (973) 676-1000, ext. 1693
Fax: (973) 395-7092
Email: Leonard.pogach@med.va.gov

Speakers

Kelly Acton, MD, MPH
Director, National Diabetes Program
Indian Health Service
5300 Homestead Road, North East
Albuquerque, NM 87110-1293
Tel: (505) 248-4182
Fax: (505) 248-4188
Kelly.Acton@mail.ihs.gov

Kathy J. Berkowitz, RN, CS, FNP, CDE
President
Grady Health System, Diabetes Unit
American Association of Diabetes Educators
69 Butler Street South East
Atlanta, GA 30303
Tel: (404) 616-3722
Fax: (404) 616-3717
kberkow@emory.edu

Charles Clark, MD
Professor of Medicine
Indiana University School of Medicine
6055 Sunset Lane
Indianapolis, IN 46228
Tel: (317) 554-0139
Fax: (317) 554-0092
chclark@iupui.edu

Ned Calonge, MD, MPH
Chief Medical Officer, Colorado Department of Public Health and the Environment
4300 Cherry Creek Drive South
Denver, CO 80246
Tel: (303) 692-2622
Fax: (303) 691-7702
ned.calonge@state.co.us

Jean L. Flagg-Newton, MD
Deputy Director
National Center on Minority Health and Health Disparities
National Institutes of Health
2 Democracy Plaza
6707 Democracy Boulevard, Suite 800
Betheda, MD 20892
Tel: (301) 402-1366
Fax: (301) 402-7040
flaggnej@od.nih.gov

Judith Fradkin, PhD
Director, Division of Diabetes, Endocrinology, and Metabolic Diseases
National Institute of Diabetes and Digestive and Kidney Diseases, NIH
Two Democracy Plaza, Room 689
6707 Democracy Boulevard
Bethesda, MD 20892
Tel: (301) 594-8814
Fax: (301) 480-3503
fradkinj@ep.niddk.nih.gov

Richard Kahn, PhD
Scientific Chief Medical Officer
American Diabetes Association
1701 North Beauregard St
Alexandria, VA 22311
Tel: (703) 549-1500 ext 2065
Fax: (703) 836-7439
rkahn@diabetes.org

David Marrero, PhD
Indiana University Diabetes Training and Research Center
250 University Boulevard, Room 122
Indianapolis, IN 46202
Tel: (317) 278-0905
Fax: (317) 278-0911
dgmarrer@iupui.edu

David M. Nathan, MD
Study Chairman & Principal Investigator
Diabetes Prevention Program
55 Fruit Street
Boston, MA 02114
Tel: (617) 726-2875 or (617) 726-2066
Fax: (617) 726-6781
dnathan@partners.org

Steve E. Phurrough, MD, MPA
Director, Division of Medical and Surgical Services
Coverage and Analysis Group
7500 Security Boulevard
Baltimore, MD 21244
Tel: (410) 786-2281
Fax: (410) 786-9286
Sphurrough@cms.hhs.gov

Leonard M. Pogach, MD, MBA
National Program Director Diabetes
Chief, Endocrinology VA New Jersey Health Care System
Medical Service (111)
Diabetes Veterans Health Administration
VA Medical Center
385 Tremont Avenue
East Orange, NJ 07018
Tel: (973) 676-1000 ext.1693
Fax: (973) 395-7092
leonard.pogach@med.va.gov

Joseph V. Selby, MD
Kaiser Permanente
3505 Broadway
Oakland, CA 94611-5714
Tel: (510) 450-2106
Fax: (510) 450-2073
jvs@dor.kaiser.org

Allen M. Spiegel, MD
Director
National Institute of Diabetes and Digestive and Kidney Diseases
National Institutes of Health
Building 31
31 Center Drive, Room 9A52
Bethesda, MD 20892
Tel: (301) 496-5877
Fax: (301) 402-2125
spiegela@extra.niddk.nih.gov

David M. Stevens, MD, FAAFP
Director, Clinical Branch
Division of Community and Migrant Health
Health Resources and Services Administration
4350 East West Highway, 7th Floor
Bethesda, MD 20814
Tel: (301) 594-4323
Fax: (301) 594-4997
dstevens@hrsa.gov

Daniel B. Stryer, MD
Medical Officer
Center for Outcomes and Effectiveness Research
Agency for Healthcare Research and Quality
6010 Executive Boulevard, Suite 300
Rockville, MD 20852
Tel: (301) 594-4038
Fax: (301) 594-3211
dstryer@ahrq.gov

Frank Vinicor, MD, MPH.
Director
Division of Diabetes Translation (K-10)
Centers for Disease Control and Prevention
4770 Buford Highway
Atlanta, GA 30341-3717
Tel: (770) 488-5000
Fax: (770) 488-5966
fxv1@CDC.GOV

Invited Guests

Beena Akolkar,
National Institute of Diabetes and Digestive and Kidney Diseases
National Institutes of Health
Two Democracy Plaza, Room 681
6707 Democracy Boulevard
Bethesda, MD 20892
Tel: (301) 594-8812
Fax: (301) 480-3503
ba92i@nih.gov

Joan Chamberlain
Science Writer
National Institute of Diabetes and Digestive and Kidney Diseases
National Institutes of Health
31 Center Drive
Building 31, Room 9A04
Bethesda, MD 20892
Fax: (301) 496-7422
Tel: (301) 435-8112
chamberlainj@extra.niddk.nih.gov

Emily Chew, M.D.
National Eye Institute
National Institutes of Health
Building 31, Room 6A52
31 Center Drive
Bethesda, MD 20892
Tel: (301) 496-6583
Fax: (301) 496-2297
eyc@nei.nih.gov

Michelle A. Cissell, Ph.D
AAAS/NIH Science Policy Fellow
Office of Scientific Program and Policy Analysis
National Institute of Diabetes and Digestive and Kidney Diseases
National Institutes of Health
9000 Rockville Pike
Building 31, Room 9A05
Bethesda, MD 20892-2560
Tel: (301) 496-6623
Fax: (301) 480-6741
CissellM@extra.niddk.nih.gov

Joanne Gallivan
Director
National Diabetes Education Program
National Institutes of Health
Building 31, Room 9A04
31 Center Drive
Bethesda, MD 20892
Tel: (301) 496-6110
Fax: (301) 496-7422
joanne_gallivan@nih.gov

Rachel Greenberg
Hager Sharp
RGreenbe@hagersharp.com

Robert D. Hammond, Ph.D
Director, Division of Extramural Activities
National Institute of Diabetes and Digestive and Kidney Diseases. NIH
Two Democracy Plaza, Room 715
6707 Democracy Boulevard
Bethesda, MD 20892-5456
Tel: (301) 594-8834
Fax: (301) 480-4125
hammondr@extra.niddk.nih.gov

Mary Beth Kester
National Institute of Diabetes and Digestive and Kidney Diseases
National Institutes of Health
31 Center Drive
Building 31, Room 9A05
Bethesda, MD 20892
Tel: (301) 496-6623
Fax: (301) 480-6741
kesterm@extra.niddk.nih.gov

Natalie Kurinij, Ph.D
Program Director
Collaborative Clinical Research, Division of Extramural Research
National Eye Institute
National Institutes of Health
Executive Plaza South, Room 350
6120 Executive Boulevard
Rockville, MD 20852
Tel: (301) 496-5983
Fax: (301) 402-0528
kurinij@nei.nih.gov

Saul Malozowski,
Division of Diabetes, Endocrinology and
Metabolic Diseases
National Institute of Diabetes and Digestive
and Kidney Diseases
National Institutes of Health
Two Democracy Plaza, Room 679
6707 Democracy Boulevard
Bethesda, MD 20892
Tel: (301) 435-3503
Fax: (301) 480-3503
MalozowskiS@extra.niddk.nih.gov

Philip Smith,
National Institute of Diabetes and Digestive
and Kidney Diseases
National Institutes of Health
Two Democracy Plaza, Room 693
6707 Democracy Boulevard
Bethesda, MD 20892
Tel: (301) 594-8816
Fax: (301) 480-3503
smithp@extra.niddk.nih.gov

Mehrdad Tondravi, Ph.D
Program Director
National Institute of Diabetes and Digestive
and Kidney Diseases
National Institutes of Health
Two Democracy Plaza, Room 603
6707 Democracy Boulevard
Bethesda, MD 20892
Tel: (301) 451-9871
Fax: (301) 480-3503
TondraviM@extra.niddk.nih.gov

Elizabeth Warren-Boulton,
Hager Sharp
Elizab@aol.com

Dorothy West
Division of Diabetes, Endocrinology, and
Metabolic Diseases
National Institute of Diabetes and Digestive
and Kidney Diseases
National Institutes of Health
Two Democracy Plaza, Room 687
6707 Democracy Boulevard
Bethesda, MD 20892
Tel: (301) 594-8820
Fax: (301) 480-3503
westd@extra.niddk.nih.gov

Dorothy West
Division of Diabetes, Endocrinology, and
Metabolic Diseases
National Institute of Diabetes and Digestive
and Kidney Diseases
National Institutes of Health
Two Democracy Plaza, Room 687
6707 Democracy Boulevard
Bethesda, MD 20892
Tel: (301) 594-8820
Fax: (301) 480-3503
westd@extra.niddk.nih.gov