

**TWENTY-SECOND ANNUAL REPORT OF THE
DIABETES MELLITUS INTERAGENCY COORDINATING
COMMITTEE**

FISCAL YEAR 1995

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Chairman

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INTRODUCTION

In accordance with Section 429 of the Public Health Act, the Diabetes Mellitus Interagency Coordinating Committee (DMICC) prepares an annual summary report of its activities as well as other Federal research activities in the field of diabetes. It is submitted to the Secretary, Department of Health and Human Services, and the Director of the National Institutes of Health. This is the annual report of the DMICC for Fiscal Year (FY) 1995.

LEGISLATIVE MANDATE

The DMICC was authorized by Public Law 93-354 and established in fall 1974; subsequent legislation modified some of the charges to the Committee. The legislative authority of the Committee is presented in Appendix A. The charge to the DMICC is to coordinate the research activities of the National Institutes of Health and other Federal agencies relating to diabetes mellitus and its complications and to contribute to the adequacy and technical soundness of these activities by providing a forum for communication and exchange of information.

The Committee includes representatives from Federal agencies whose programs are relevant to diabetes mellitus and its complications. The chairman, designated by the Director, National Institutes of Health, is the Director, Division of Diabetes, Endocrinology, and Metabolic Diseases, National Institute of Diabetes and Digestive and Kidney Diseases. In FY 1995, the DMICC membership included representatives of 20 Federal organizations and a liaison representative with the American Diabetes Association (ADA). A roster of Committee members is included as Appendix B.

ACTIVITIES OF THE DMICC

The DMICC facilitates cooperation, communication, and collaboration among agencies that conduct or support diabetes-related activities. These activities may range from support for biomedical research to direct provision of health care services. The DMICC provides both a forum for initiating interactions and a mechanism for tracking their progress. The DMICC collects fiscal data to document diabetes-related expenditures from each agency. A summary of these expenditures for FY 1995 is presented in Appendix C.

In FY 1995, the DMICC focused its efforts in two specific areas. First, the Committee held several meetings to begin to develop an approach for establishing the National Diabetes Education Program (NDEP) by translating the results of the Diabetes Complications and Control Trial (DCCT) to both the lay public and health professionals. The release of the DCCT results provides a focused message for diabetes patients to control their blood glucose levels. Second, the DMICC cosponsored with the National Diabetes Information Clearinghouse (NDIC) a conference on *Diabetes in Native Americans: The Eastern Tribes*, held in November 1994. The conference addressed issues such as metabolic factors influencing diabetes in Native Americans, the influence of American Indian culture in diabetes, and attitudes and beliefs of Native American patients with diabetes.

The DMICC intends to continue formulating plans for the NDEP as well as to pursue projects that focus on bringing together in-depth information from the diverse programs represented by the member organizations; to be the catalyst for the initiation of projects; and to guide the progress of projects involving several agencies.

ACTIVITIES OF MEMBER ORGANIZATIONS

The DMICC is pleased to present the following summary of diabetes-related activities reported by organizations represented on the Committee.

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)

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National Institute on Aging (NIA)

The mission of the NIA is to conduct and support biomedical, social, and behavioral research, training, health information dissemination, and other programs related to the aging process and the diseases and other special problems and needs of the aged.

Diabetes-related research is one of many areas supported by the NIA.

Highlights of recent support:

- The NIA supported research in mechanisms involved in the development of glucose intolerance/insulin resistance during normative aging, including the role of the insulin-responsive glucose transport protein GLUT-4, the importance of exercise and diet in reversing aging processes, the role of dietary restriction on glucoregulation, and the importance of an interplay between insulin resistance, aging, and salt-sensitivity in contributing to high blood pressure in the elderly.
- Research was supported on the importance of advanced-glycosylation end products (AGEs) in normative aging and in the development of vascular disease (e.g., atherosclerosis), including the importance of renal function in AGE-related vascular pathologies.

- The Institute supported research on the importance of insulin as a physiologic regulator of human adrenal dehydroepiandrosterone metabolism as a possible mechanism for the atherogenicity of hyperinsulinemia during aging.

Future plans:

- NIA will encourage investigator-initiated research focused on diabetes and aging.
- The NIA will provide supplemental support to the NIDDK-sponsored "Diabetes Prevention Program (DPP)."

National Institute of Allergy and Infectious Diseases (NIAID)

The goal of research supported by the National Institute of Allergy and Infectious Diseases (NIAID) in the area of autoimmune diseases, including insulin-dependent diabetes mellitus, is to promote the application of information gained through basic research in the biomedical sciences to the clinical investigation of the autoimmune disease. The objectives are 1) to improve the understanding of the mechanisms that cause the disease and 2) to design new and more effective preventive, diagnostic, and therapeutic measures.

Recent Activities

- In collaboration with NIDDK and NICHD, NIAID is funding the multi-center clinical trial Diabetes Prevention Trial-1 (DPT-1).
- NIAID served as the lead Institute sponsor of a scientific meeting on "Gender and Autoimmunity" held on the NIH campus on September 28-29, 1995. The meeting was co-sponsored by NIAMS, NIDDK, NINDS, and the ORWH, NIH.

- NIAID sponsored a workshop on “The Role of Infectious Agents in the Development of Autoimmune and Immune-Mediated Diseases” on February 23-24, 1995. Insulin- dependent diabetes mellitus has been associated with various pathogens, and discussion of IDDM was a part of the workshop.
- NIAID recently funded grants received in response to an RFA for research into the basic mechanisms of human immunotherapy trials. Several utilized patients enrolled in the DPT-1. The NIDDK, NIAMS, and the ORWH joined NIAID in supporting this initiative.
- NIAID issued an RFA for Interdisciplinary Programs in Autoimmunity to support basic, molecular, immunologic, and genetic research into the pathogenesis of autoimmune disease. The Juvenile Diabetes Foundation International and the NIDDK are co-sponsors of this initiative.
- In collaboration with NIDDK and JDFI, NIAID funded several new diabetes interdisciplinary research programs.
- NIAID supports contracts for isolation and characterization of MHC-bound self-peptides in autoimmune disease. Several of these contracts contain specific components related to IDDM.

Future Activities:

- NIAID intends to fund the most meritorious applicants from the Interdisciplinary Programs in Autoimmunity RFA.

National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

NIAMS has nothing to report.

National Institute of Child Health and Human Development (NICHD)

The NICHD funds research on prevention of insulin-dependent and non-insulin-dependent diabetes mellitus as well as research on behavioral aspects of diabetes mellitus. Much of the NICHD's diabetes research program focuses on gestational and neonatal aspects of diabetes mellitus. The Institute supports one program project grant and two Perinatal Emphasis Research Centers devoted to studying diabetes mellitus in pregnancy.

- Prediction of IDDM: The NICHD remains in the forefront of research on the etiology and prevention of IDDM, focusing on the identification of antigens, antibodies, and major histocompatibility loci on human chromosome 6 that are linked to the pathogenesis of IDDM. A major research accomplishment was the establishment of IDDM as an autoimmune disorder with a strong genetic component. The NICHD is currently funding the largest, most comprehensive study ever undertaken of the natural history of IDDM. Recent results of this study indicate that first-degree relatives of index cases of IDDM are at high risk of becoming diabetic, especially if they share the same HLA Class II alleles.
- Diabetes Prevention Trial (DPT-1): Improved ability to identify persons at high risk for IDDM led to the initiation of a large multicenter clinical trial aimed at preventing the disease. The clinical trial is designed to delay or prevent the onset of clinical diabetes in a group of first-degree relatives found by immunological

testing to be at high risk. This project will improve disease predictability and clarify the pathological processes that underlie IDDM.

- Non-Insulin-Dependent Diabetes Primary Prevention Trial: The NICHD also emphasizes research designed to prevent or delay the onset of NIDDM by supporting two centers in a multicenter, randomized clinical trial (co-sponsored by the NIDDK and the ORMH) to evaluate the efficacy of interventions designed to delay or prevent onset of NIDDM in individuals at increased risk. These centers focus on women who have had gestational diabetes mellitus (GDM), since more than one-half of these individuals become clinically diabetic in the next 15 years.
- Diabetes in Pregnancy: Researchers are evaluating whether strict glyceimic control of diabetes prior to conception and throughout pregnancy will improve pregnancy outcome by increasing the rate of conception, decreasing the incidence of early pregnancy loss and major malformations, and decreasing the incidence of maternal and neonatal complications, compared to moderate glyceimic control. This research promises improved therapy for diabetic women, which could lead to pregnancy outcomes approaching those of the general population.
- Studies in Offspring of Diabetic Pregnancy: Childhood obesity is prevalent in children of diabetic mothers; excessive nutrient transfer from mother to fetus may lead to metabolic imprinting in utero. Obesity in children of diabetic mothers appears to be related to high maternal insulin requirements and high plasma blood glucose values during late pregnancy. These findings are striking and have implications for early intervention strategies to prevent the occurrence of metabolic abnormalities associated with insulin resistance in adulthood.

- Future Plans: The NICHD will continue to emphasize research on the prevention of IDDM, NIDDM, and GDM. Studies on basic and clinical aspects of the immunogenetics of IDDM and the immunomodulation of the immune system's attack on the pancreatic cells will be supported. Innovative therapy designed to mitigate the immune system's attack on the cell will be encouraged. At the molecular level, investigators can focus on elucidating how the antigen-presenting cells that carry only certain kinds of class II alleles interact with cell proteins in three-dimensional terms and how the antigen-presenting cells then interact with T cells of the immune system to make them actively cytotoxic. The NICHD will continue to fund program project research grants and Perinatal Emphasis Research Centers devoted to determining the causes and consequences of IDDM and NIDDM in pregnancy.

National Institute of Dental Research (NIDR)

The mission of NIDR is to support research on the causes, prevention, diagnosis and treatment of oral and craniofacial diseases and conditions, including oral complications associated with diabetes. These complications include greater prevalence and severity of periodontal diseases, increased susceptibility to oral mucosal infections, salivary gland dysfunction, and neuropathies resulting in loss or alteration of taste, smell, or mucosal sensory perception. The NIDR also supports research on the effects of oral diseases and conditions on diabetic metabolic control.

FY 95 Accomplishments

NIDR supported a variety of research projects involving diabetes.

- A study of the state of oral health in elderly and minority adults with diabetes.
- An investigation of the effects of maternal diabetes on the development of craniofacial abnormalities.
- Research to determine the effects of diabetes-induced hyperlipidemia/dyslipidemia on macrophage functions related to oral wound healing.
- Participation in studies to determine 1) the frequency of painful diabetic neuropathy and its associated health care costs and 2) the biological basis and treatment of this disorder.
- Cloning and characterization of a gene, IA-2, that may be a target for autoimmune destruction of pancreatic beta cells
- Investigation of possible treatment modalities for periodontal diseases in diabetic Pima Indians.

Future Plans

- NIDR plans to organize a conference on the impact of diabetes on oral health and how oral health components may affect the onset, prevention, and progression of diabetes in living organisms.
- The Institute will continue to entertain investigator-initiated research applications to study the oral complications of diabetes and the effects of oral diseases on diabetic stability.

National Eye Institute (NEI)

The National Eye Institute's (NEI's) mission is to conduct and support research, training, health information dissemination, and other programs concerned with blinding eye diseases, visual disorders, mechanisms of visual function, preservation of sight, and the special health problems and requirements of the blind. Diabetes is responsible for an ocular disease, diabetic retinopathy, that is the leading cause of blindness in people between the ages of 24 and 70 years. This disease is characterized by a progressive breakdown of the normal retinal vascular system.

Highlights of Recent Activities

- Recent advances have been made in the identification and characterization of growth factors that may play a role in abnormal retinal blood vessel proliferation in diabetic retinopathy patients. Vascular endothelial growth factor (VEGF) is present in greatly increased amounts in the ocular fluid of patients with retinal neovascularization. Understanding the basic mechanism of action of VEGF may be important for developing therapeutic strategies and agents for treating and possibly preventing retinal neovascular diseases.

- Results on the 10-year incidence and progression of diabetic retinopathy obtained from the Wisconsin Epidemiologic Study of Diabetic Retinopathy indicate that patients whose diabetes was diagnosed before age 30 were at highest risk, of developing diabetic retinopathy, those diagnosed at 30 or older were at intermediate risk, and those not taking insulin were at the lowest risk. The high incidence and progression of diabetic retinopathy during the 10-year study period occurred despite advances in the treatment of insulin-dependent diabetes and suggest a continued need for public and professional education on the effectiveness of treatment in preserving vision.
- The “Diabetes in Early Pregnancy Study” examined the effects of pregnancy on diabetic retinopathy. The study found that glucose control at the beginning of the pregnancy was the most important factor associated with the progression of retinopathy during pregnancy.

Future Activities

- Conduct and support basic research to gain a greater understanding of the pathogenesis of diabetic retinopathy.
- Develop better methods of preventing, diagnosing, and treating diabetic retinopathy.
- Continue cooperative efforts with the American Diabetes Association, through the National Eye Health Education Program (NEHEP), to increase public awareness of diabetes-related eye disease.

National Institute of General Medical Sciences (NIGMS)

The NIGMS supports research and research training in the basic biomedical sciences that provide the foundation for a better understanding of fundamental life processes.

Knowledge resulting from this work contributes directly to the progress of research on specific diseases, including diabetes. In addition, the NIGMS supports a major genetic resource, the Human Genetic Mutant Cell Repository, which contains cell lines from patients with a wide variety of genetic disorders and from normal controls. Cell lines in the collection include those from individuals with various types of diabetes, including insulin-dependent diabetes mellitus and diabetes mellitus and diabetes insipidus with optic atrophy. The repository includes an extensive collection of cell lines from members of an extended pedigree with maturity-onset diabetes of the young; this collection is of value in studies designed to map and characterize the gene(s) responsible for the disorder. In 1995, the Repository provided researchers at universities throughout the U.S. with cell cultures from patients with IDMM, maturity-onset diabetes in the young, diabetes mellitus and diabetes insipidus with optic atrophy, and diabetes mellitus among the Pima Indians.

National Heart, Lung, and Blood Institute (NHLBI)

No report.

National Institute of Neurological Disorders and Stroke (NINDS)

The NINDS is responsible for the conduct and support of diabetes-related research that investigates the complications of diabetes in the peripheral and central nervous systems. Major areas of research center on the understanding and treatment of diabetic neuropathy and the role of diabetes as a risk factor for stroke.

Recent Accomplishments and Activities:

- NINDS grantees are working to understand the mechanisms by which high blood sugar levels result in nerve damage. Investigators using animal models of diabetic neuropathy have identified abnormalities of blood flow in nerves. Other studies have shown higher levels of specific proteins in nerve samples from diabetic patients both with and without polyneuropathy. Investigators are examining whether glycation (the attachment of sugar molecules to proteins) may be affecting blood protein levels.
- A long-term study of a group of people in Minnesota with diabetes has provided information on the prevalence, severity, and characteristics of neuropathy in this group.

Plans:

- Continuation of the epidemiologic study in Minnesota will further define the course of neuropathy and also examine the influence of risk factors on outcome.
- The metabolic events identified in diabetic neuropathy have provided insights into methods that may prevent or treat this disorder. Potential therapeutic agents will continue to be evaluated in animal studies.
- Scientists will continue to investigate the relationship between diabetes and stroke, including the role that high blood sugar levels may play in exacerbating neuronal damage following stroke.

National Institute of Nursing Research (NINR)

The National Institute of Nursing Research (NINR) supports and conducts research and research training on the biological and behavioral processes that underlie promotion of health, amelioration of illness and its sequelae, and effective delivery of care. One purpose of this research is to understand how to promote health-sustaining behavior and to improve quality of life by relieving the effects of disease processes and slowing their progression. Nursing research focuses on how physical and psychological responses to symptoms and treatment of disease affect health in the presence of specific diseases throughout the lifespan. NINR research programs pay particular attention to vulnerable populations, such as the very young, the very old, ethnic minorities, and the economically and geographically disadvantaged. NINR's research interest in diabetes is to view it as a model chronic condition whose onset and course can be modified substantially by factors related to prevention, control, and self care. The following studies reflect grants in the Institute's portfolio related to diabetes:

- Focusing on the link between biological and behavioral factors in diabetic patients with end-stage renal disease, NINR investigators are seeking to explain changes in autonomic nervous system function that occur following kidney and pancreas-kidney transplantation and the relationship of those changes to quality of life.
- Building on work indicating that intensive management improves diabetes control, NINR is supporting investigators seeking to determine the relative effects in metabolic control among youth aged 13 to 20 years of 1) a coping skills training program implemented with intensive diabetes management 2) and intensive management only. The study uses multiple physiological, behavioral, and quality-of-life measures.
- The importance of family involvement in achieving adherence to treatment for chronic illnesses seems to vary among population groups and by factors such as

age of family members. NINR is supporting a longitudinal study to determine the differential effect of two intervention strategies targeted to community-residing Black diabetic elders, one a patient-centered education/support intervention and the other a family-centered intervention.

NINR will continue to collaborate with the National Institute of Diabetes, Digestive, and Kidney Diseases, as it has in previous initiatives, on prevention and management of diabetes in minority populations. NINR plans to continue our diabetes-related research through investigator-initiated research and through our support of the National Diabetes Education Program.

National Center for Research Resources (NCRR)

The National Center for Research Resources (NCRR) serves as a "*catalyst for discovery*" by creating, developing, and providing a broad range of technologies and resources necessary for investigators to conduct biomedical and behavioral investigations. This research support is provided in four major areas: 1) Biomedical Technology, which encompasses sophisticated technologies and shared instrumentation; 2) Comparative Medicine, which supports resources for a variety of research models, including mammalian and non-mammalian models as well as important biological materials through the Regional Primate Research Centers and Biological Models and Materials Research Program; 3) Clinical Research, including a network of General Clinical Research Centers (GCRCs) that provide shared institutional resources for multidisciplinary clinical research; and 4) Research Infrastructure, which supports research facility construction and renovation and science education grants as well as Research Centers in Minority Institutions.

Recent Activities in Diabetes Research

- **Biomedical Technology:** A collaborative study with an NCRR mass spectrometry resource at Washington University in St. Louis and an NHLBI-supported investigator demonstrated a link between imbalances in carnitine metabolism and several abnormalities associated with diabetic polyneuropathy.
- **Comparative Medicine:** Researchers successfully allotransplanted isolated pancreatic islet cells obtained from an NCRR-supported resource to diabetic patients. Other research includes a study of cerebral blood flow and metabolism in diabetic dogs and projects at the Regional Primate Research Centers exploring metabolic processes in obesity and the regulation of insulin secretion.
- **Clinical Research:** The GCRCs support numerous investigations in diabetes. Recent projects include 1) the use of insulin therapy in patients with anti-islet cell antibodies to prevent the appearance of overt diabetes; 2) the differences in glucoregulatory mechanisms and insulin metabolism between whites and African Americans; 3) the presence of islet cell antibody to predict Type I diabetes in school-age children; 4) the use of magnetic resonance spectroscopy to study glycogen metabolism in diabetic and healthy subjects; and 5) the role of amylin in the pathogenesis of carbohydrate metabolism.

Future Activities

The several programs within NCRR will continue to provide an array of multi-user resources to investigators to attempt to prevent and further define the pathophysiology of diabetes as well as to provide insight into alternative therapeutic approaches to minimize or arrest the progress of this chronic disorder.

National Center for Human Genome Research (NCHGR)

No report.

Division of Research Grants (DRG)

The Metabolism Study section (MET), which is a study section within DRG, reviews a very large number of applications in the diabetes area, including both type I and type II diabetes. Dr. Krish Krishnan has been the Scientific Review Administrator of this study section since 1986. MET makes an important contribution to DMICC activity because it is entrusted with control of the quality of basic and clinical research in diabetes. In general, diabetes research encompasses biochemical, molecular biological, and physiological approaches. In basic research, animal models of diabetes, transgenics and cultured cell systems are usually utilized. Highly qualified scientists from academia, the pharmaceutical industry, and high-technology companies function as reviewers of the applications.

The MET reviews investigator-initiated grant applications (r01) and First Award (R29s) and fellowship (F32) applications. A “Summary Statement,” which is prepared after the conclusion of the review meeting, includes the scientific comments of the various reviewers and also reflects the crux of the meeting discussion. In addition, the summary addresses whether the proposed research is of high risk and high impact. Such information helps the NIDDK staff make an appropriate funding decision and to ensure that tax payers’ money is supporting deserving research initiatives. Maintaining the quality of diabetes research is critical to achieving advances in the diabetes area and will contribute to finding new therapeutic strategies in the treatment of type II diabetes and further advances in the management of type I diabetes.

Agency for Health Care Policy and Research (AHCPR)

No report.

Centers for Disease Control and Prevention (CDC)

No report.

National Center for Health Statistics (NCHS)

The National Center for Health Statistics is the Federal Government's principal vital and health statistics agency. Data are collected from vital records, through personal interviews and physical examinations, and from hospitals, nursing homes, and physician's office records. In addition, the NCHS has data on medical care utilization for persons with diabetes treated in hospitals, physician's offices, and nursing homes. Mortality data for diabetes mellitus from the national vital statistics system are based on information reported on death certificates filed in all of the States.

Recent Accomplishments and Activities:

The NCHS has continuously collected data for diabetes mellitus and other causes of death (including both underlying and multiple causes of death) and released these data in various forms, including data tapes and the annual publication Vital Statistics of the United States. The agency has published provisional diabetes mellitus mortality data in the Monthly Vital Statistics Report.

NCHS has collected data on an ongoing basis through the National Health Care Survey, which includes hospitalizations, visits to physician's offices, ambulatory surgery, and visits to emergency and outpatient departments of short-stay hospitals for diabetes and its complications. The survey also includes lengths of stay in nursing homes for persons with diabetes and related conditions.

The agency has provided analytic and statistical support for the mid-course review of the Healthy People 2000 objectives in priority area 22, Diabetes and other Chronic Disabling Conditions.

Future Activities:

NCHS will, on an ongoing basis, collect and analyze diabetes-related information in its major data collection systems.

The agency will perform analyses of data from the Third National Health and Nutrition Examination Survey (NHANES III), including updated estimates of the prevalence of diagnosed and undiagnosed diabetes in the US population based on oral glucose tolerance tests administered to a representative national sample of the population.

Food and Drug Administration (FDA)

FDA did not approve any new anti-diabetic agents in 1995. Metformin was approved in March 1994 for patients with Type II diabetes mellitus, and reports continue to confirm the added benefits of Metformin either as monotherapy or in conjunction with other anti-diabetic agents on the market. Similarly, efforts continue nationwide to enroll Type II (NIDDM) patients in clinical trials to test the “generalizability” of the DICCT study with Type I (IDDM) patients.

FDA continues to work actively with several pharmaceutical firms on nasal insulin and insulin analogs that may improve the control of hyperglycemia. Phase III studies are currently under way with the implanted programmable pump, with intraperitoneal insulin infusion resulting in 70-85% of administered insulin entering hepatic circulation, mimicking physiological in vivo insulin delivery. Other related activities include the development of anti-obesity agents. The FDA's Metabolism and Endocrine Drugs

Advisory Committee recommended approval of dexfenfluramine; by a 6 to 5 vote, the Committee concluded that dexfenfluramine's benefit to obese persons outweighed its potential risks. FDA is currently considering other additional/ pertinent data before reaching a decision.

Health Resources and Services Administration (HRSA)

The Health Resources and Services Administration manages a number of health care systems development programs, none specific to diabetes. However, all include elements of diabetes education, prevention, recognition, or treatment, as appropriate.

- The Bureau of Primary Health Care funds approximately 500 community and migrant health clinic programs, operates the National Health Service Corps and associated scholarship and loan repayment programs, and manages several health programs for special populations. All clinical programs include appropriate diabetes screening and treatment. The National Hansen's Disease Center has special expertise in management of Hansen's-related foot pathology; it has adapted its treatments to diabetes and developed the Lower Extremity Amputation Prevention (LEAP) program. This program has been incorporated into a national campaign linked to the Healthy People 2000 goal of reducing amputations by 40%. LEAP materials have been provided to the American Diabetes Association for its Foot Seminars; to all Veterans Administration medical centers, all Indian Health Service facilities, and all Community, Migrant, Rural, and Homeless Health Centers; and to large numbers of diabetes professionals and educators. Distribution of these materials has been transferred to the NIH Diabetes Outreach Program.

- The Maternal and Child Health Bureau (MCHB) administers MCH Block Grants to States to support maternal and child health programs. It also administers a program of discretionary grants for Special Projects of Regional And National Significance. MCHB is committed to appropriate care for diabetes in its maternal and child populations within existing primary care systems, with special emphasis on community systems of care. MCHB's Healthy Start Initiative, designed to reduce infant mortality by 50 percent in targeted communities, includes services addressing diabetes in mothers and in children. Services for children and youth with diabetes are included as part of Title V services systems development for all children with special health care needs. The MCH Block Grant includes attention to children with special health care needs, including diabetes care or case management. MCHB disseminates information on screening for childhood diabetes and implements programs for diabetes care. MCHB also promotes diabetes detection and care through school-based and school-linked health programs and through programs that provide primary health care to incarcerated youth.
- The Bureau of Health Professions administers several programs supporting health professions education, none specific to diabetes. However, most include diabetes education, particularly primary care practitioner training programs and continuing education programs such as those supported by Area Health Education Centers and Geriatric Education Centers.
- The Bureau of Health Resources Development supports the Organ Procurement and Transplantation Network and Scientific Registry. Among its services are support of pancreas and combined pancreas-kidney transplants; most of the 500-800 such transplants each year are for the treatment of diabetes.

Indian Health Service (IHS)

The Indian Health Services's goal is to foster collaborative strategies for primary, secondary, and tertiary prevention in all IHS/tribal/urban facilities through a network of 19 model projects and area diabetes coordinators. The IHS seeks to reach patients, providers, and community leaders with current information about all aspects of diabetes prevention.

FY 95 Highlights:

- The yearly IHS Diabetes Care Audit measured levels of glycemic control and key variables related to diabetes standards of care. Over 8,000 medical records for person with NIDDM were randomly audited to estimate the level of diabetes care for 50,000 diabetic patients receiving primary health care in IHS or tribal health facilities. Summary reports were generated immediately to be available to the facility's staff for quality improvement activities and program planning. Data from participating sites are now being combined and analyzed to determine regional and national rates.
- The "Evaluation of Services Provided by IHS Model Diabetes Program" report was published. Factors associated with improved glycemic control included medical nutrition therapy by a registered dietitian in the first year after diagnosis, an HgCA1c test performed one or more times in two years, and receiving foot care in the first year after diagnosis.
- The Diabetes Program worked with NIDDK to develop a Southwest Indian Center to participate in the NIDDK multicenter trial to prevent NIDDM; it also worked in the NHLBI Pathways feasibility study of obesity prevention in Native American children.

- The IHS participated in the nationwide distribution of over 17,000 patient and health provider diabetes education materials. Diabetes nutrition education print materials for Native Americans were developed, extensively field tested, and distributed nationwide.

Veterans Health Administration (VHA)

Diabetes affects 15-20% of VHA inpatients; about 14% of veterans receiving ambulatory care receive oral hypoglycemic agents or insulin. The VHA recognizes that complications such as amputation, visual loss, and end-stage renal disease can be largely prevented and/or forestalled by a multidisciplinary health care team approach in combination with patient-centered self- management. The VHA's mission relative to diabetes and health reform is to decrease the prevalence of adverse health outcomes in veterans with diabetes by ensuring that every patient has access to prevention and treatment programs that meet national standards of care.

FY 95 Accomplishments and Activities:

- Patient Education: MultiVISN Continuous Quality Improvement Program for Diabetes Patient Education and Treatment: Eleven VA medical centers have achieved ADA recognition in FY 1996, for a total of 14 in 46 medical centers and outpatient clinics in the Northeast (region I). Overall, the VA has 20 ADA-recognized programs, significantly more than in HMO medical centers and other Federal agencies. The program was extended through FY 96.
- Foot Care: (i) National Prevention Amputation Care and Treatment Program (Rehabilitation Medicine and Prosthetics and Sensory Aids Services) training program for about 60 medical centers (April 1995): Our goal was to have medical

centers form disciplinary care teams that would address foot care for all patients at risk, beginning with prevention and identification through post-amputation care. Pending funding, remaining programs are scheduled to receive training in 1996. A total of 140/171 VA medical centers are expected to develop teams. (ii) The VA was a lead agency, in collaboration with the National Diabetes Outreach Program and other Federal agencies, in establishing a National Foot Care Awareness Program. Pending funding, a nationwide VA teleconference on the role of primary care providers in foot screening and care is planned. (iii) A computerized data base for foot risk stratification patients with diabetes underwent pilot testing (validation) at nine VA medical centers (10/95-12/95).

- Quality Assurance: (i) Monitors for Diabetic Ketoacidosis (External Peer Review Process ongoing); (ii) Monitors for outpatient management of diabetes (External Peer Review Program initiated 2/95); (iii) Development of a quality indicator of care for annual use of glycosylated hemoglobin levels (national reporting); (iv) Standardization of glycosylated hemoglobin reporting (VA National Center for Cost Containment; VANCLAS; Diabetes Advisory Field Group; Laboratory and Medical Services); (v) Diabetes Costing Project: 120,000+ patients identified as receiving oral hypoglycemic agents or insulin will have diabetes-related pharmacy costs, resource utilization, and laboratory usage evaluated (VA National Center for Cost Containment, VACO Pharmacy Service, Diabetes Advisory Field Group).

FY 96 Initiatives:

- Juvenile Diabetes Foundation/VA Research Partnership: \$3 million annually for 5 years to fund Diabetes Research Centers.

- Develop Diabetes Advisory Field Group position statements on self-blood-glucose Monitoring and use of hemoglobin A1C for glycemic control.
- Standardize glycosylated hemoglobin levels (VA National Center for Laboratory Accuracy and Standardization).
- Pilot testing of computerized encounter forms.
- Formal report: Prevalence-based cost analysis of diabetes in the VA (National Center for Cost Containment).

Appendix A

DMICC Legislative Authority

Appendix B

Roster of DMICC Members

Diabetes Mellitus Interagency Coordinating Committee

MEMBERSHIP ROSTER

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