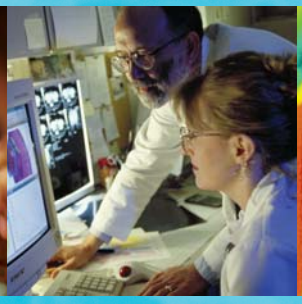
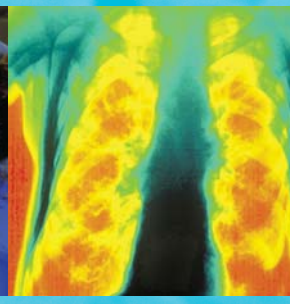
FROM PUBLIC ADVOCACY





TO RESEARCH PRIORITIES

NHLBI LISTENS AND RESPONDS

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
National Heart, Lung, and Blood Institute

FROM
PUBLIC ADVOCACY

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
National Heart, Lung, and Blood Institute

On behalf of the National Heart, Lung, and Blood Institute (NHLBI), I thank all of you who have worked so hard to make the partnership between public interest organizations (PIOs) and the NHLBI so effective. In February 2004, we held the 5th annual PIO meeting, with representatives from over 65 PIOs in attendance. The positive feedback we have received has been tremendously encouraging. The NHLBI remains committed to making this event a productive forum for PIOs to share concerns and suggestions with the Institute, so that all of us may better understand each other's needs.

These annual meetings are largely the result of the insightful efforts of Dr. Claude Lenfant who, as NHLBI Director, saw a need and an opportunity to develop a productive discourse between PIOs and the NHLBI, and who nurtured an environment of cooperation.

This booklet highlights some of the interactions between PIOs and the NHLBI and illustrates what can be accomplished when organizations work together. Limited space precludes naming all those who have worked so faithfully to make these endeavors successful, but I believe that the positive experiences described herein are truly representative of the overall commitment the NHLBI has made to reach out to the public and better serve its needs.

To PIO members, let me emphasize that we want your input — we openly invite it — and sincerely hope that the NHLBI will be the first organization you approach to express your needs and concerns regarding progress relevant to heart, lung, and blood diseases and sleep disorders. I thank you once again, and offer you my assurance that the NHLBI is always ready to listen to your needs and to respond.

Barbara Alving

Barbara Alving, M.D., MACP
Acting Director, NHLBI

I am extremely pleased with the progress we have made over the years in developing a dialogue between public interest organizations (PIOs) and the NHLBI. In 1999, the Institute made the decision to sponsor a meeting to bring together PIOs, scientific investigators, and NHLBI staff in order to determine how the Institute could better serve the needs of the community. Although we were initially concerned that such a venture might become unwieldy, we moved forward in the hope and expectation that the potential benefits far outweighed any risks. In February 2000, we held the first meeting, with representatives from over 40 PIOs in attendance. Those of us who participated came away energized with a desire to work as part of a team — patients, their advocates, researchers, and the NHLBI. The event continues to grow each year. It is my hope that the spirit of friendship, communication, and unity in purpose shared between PIOs and the NHLBI will also continue to grow.

Claude Lenfant, M.D.
Director Emeritus, NHLBI

FROM
PUBLIC ADVOCACY

TO
RESEARCH PRIORITIES

NHLBI LISTENS AND RESPONDS

WHEN THE PUBLIC SPEAKS, THE NHLBI LISTENS AND RESPONDS

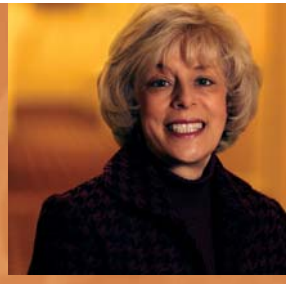
THE NHLBI SEEKS INPUT FROM PUBLIC INTEREST ORGANIZATIONS (PIOS) IN THE BELIEF THAT GREATER INTERACTION WITH PATIENT ADVOCACY GROUPS CAN HAVE A POSITIVE EFFECT ON THE CONDUCT OF RESEARCH. THE INSTITUTE BELIEVES THAT INCREASED COLLABORATION WITH PIOS WILL BENEFIT EVERYONE INVOLVED. FOR RESEARCHERS, IT PUTS A HUMAN FACE TO THE DISEASES THEY STUDY AND IMPROVES THEIR ACCESS TO PATIENTS FOR CLINICAL STUDIES. FOR PATIENTS AND THEIR ADVOCATES, IT PROVIDES FIRSTHAND KNOWLEDGE OF THE STATE OF THE SCIENCE AND WHAT IS BEING DONE TO ALLEVIATE THEIR DISEASE BURDEN. FOR THE INSTITUTE, IT HELPS IN DEVELOPING PROGRAM GOALS AND IN GETTING INFORMATION OUT TO THE PUBLIC.

THE FOLLOWING EXAMPLES PROVIDE A BRIEF HISTORY OF HOW THE NHLBI HAS WORKED WITH PIOS OVER THE YEARS TO BENEFIT PATIENTS WITH A WIDE RANGE OF DISEASES. THE LAST TWO EXAMPLES, THE STRONG HEART STUDY AND THE JACKSON HEART STUDY, DEMONSTRATE A SLIGHTLY DIFFERENT DYNAMIC — ALTHOUGH NO PIO EXISTED, THE NHLBI RECOGNIZED A MAJOR HEALTH NEED AND TOOK THE NECESSARY STEPS TO DEVELOP A PUBLIC PARTNERSHIP WITH AN AFFECTED COMMUNITY.

Lymphangioleiomyomatosis

Lymphangioleiomyomatosis (LAM) is a very rare lung disease that is characterized by the invasion of an unusual type of muscle cell into the tissue of the lungs. Over time, such cells form into bundles and grow into the walls of the airways, and into blood and lymph vessels, causing them to become obstructed. LAM affects several hundred patients, most of whom are women of childbearing age, in the United States. The only effective therapy is lung transplantation. Left untreated, LAM is always fatal.

In 1994–1995, Ms. Sue Byrnes, whose daughter was diagnosed with LAM at age twenty-two, organized a letter-writing campaign to Congress requesting a LAM patient registry and research support to study LAM. The NHLBI was asked to lead this effort. On March 29, 1995, the Institute invited several scientists to a LAM Working Group meeting in Denver, Colorado, to establish research priorities for the study of LAM. The Institute also published a fact sheet on LAM in October of that year.



The LAM Foundation applauds the NHLBI for their vision in the development of successful programs in education and research in underrepresented populations. Lymphangioleiomyomatosis, or LAM, is a rare, fatal lung disease of women. The role of the NHLBI in the remarkable scientific trajectory that LAM has enjoyed over the past five years cannot be overstated. The commitment of the NHLBI to LAM has included the establishment of a national LAM registry, a tissue and blood bank, and robust intramural and extramural research programs. Synergistic interactions between the NHLBI and the LAM Foundation have contributed to the discovery of a LAM gene, an understanding of the molecular basis of dysregulated LAM cell growth, and the elucidation of promising molecular targets for therapy. Our sincere hope is that model partnerships such as ours will inspire other patient advocacy groups to engage the NHLBI.

Sue Byrnes, Executive Director
The LAM Foundation

On July 26, 1995, the NHLBI Director and staff met with Ms. Byrnes and Mr. Francis Byrnes, the parents who started the LAM Foundation, and Dr. Frank McCormack, the Foundation's Scientific Director, to discuss the need for research on the disease. The NHLBI responded by issuing a Program Announcement (PA) titled "Cellular and Molecular Mechanisms of Lymphangioleiomyomatosis" (PA-96-011) in 1996. It also held a LAM workshop in June 1997; funded an extramural LAM registry in July 1997; funded the first extramural LAM research grant in April 1999; cosponsored a LAM symposium at Columbia University in November 1999; and cosponsored the annual LAM Foundation/NHLBI Research Conferences in Cincinnati, Ohio, 2001–2003.

Ms. Byrnes, Executive Director of the LAM Foundation, has been a member of the National Heart, Lung, and Blood Advisory Council during 2000–2004. She has also assisted the NHLBI Pulmonary-Critical Care Medicine Branch in recruiting patients for its LAM protocols, which were initiated in 1995 and currently follow the largest cohort of patients with LAM. Dr. Joel Moss, Chief of the Pulmonary-Critical Care Medicine Branch, is the lead investigator for the LAM protocols and is a member of the LAM Foundation Scientific Board.

Primary Pulmonary Hypertension

Primary pulmonary hypertension is a rare lung disorder in which blood pressure in the pulmonary artery rises far above normal levels for no apparent reason. In 1981, the NHLBI established the first patient registry for pulmonary hypertension. As early as 1988, the NHLBI's Dr. Carol Vreim began corresponding with Ms. Teresa Knazik, a pulmonary hypertension patient from Florida who was instrumental in founding the Pulmonary Hypertension Association (PHA). That organization published its first newsletter, Pathlight, in 1990. Dr. Vreim was a member of the PHA Scientific Advisory Board from 1992 to 2002 and is now the NHLBI liaison to PHA. Over the years Dr. Vreim has contributed articles to the newsletter related to NIH activities. Dr. Vreim also has corresponded with founders of other pulmonary hypertension organizations, such as The Foundation for Pulmonary Hypertension, Inc. (Florida), Primary Pulmonary Hypertension Research Foundation (California), and PPH Cure Association (Maryland). Only the first of these three is extant.

The NHLBI has played a major role in the development of the Pulmonary Hypertension Association (PHA) particularly in the area of research. The first PHA Young Researchers Grants were made in 2000. Soon thereafter the Association had several meetings with the Director of NHLBI and the Deputy Director of the Lung Division that eventually resulted in a jointly funded endeavor...a Mentored Clinical Research Grant (K08) or a Mentored Patient Oriented Grant (K23). The grant is funded for five years. By 2008 NHLBI/PHA will have five such grants in progress. NHLBI-funded grants have impacted pulmonary hypertension greatly; it was through NHLBI grants that a gene causing the disease was discovered. The NHLBI made it possible for PHA to become actively involved in funding quality research. Interaction with and encouragement by the NHLBI moved along efforts of PHA to be able to fund research. Our membership is very pleased with and excited by this opportunity. I urge PIOs to become aware of the guidance and support the NHLBI offers. Get to know the director of the NHLBI division under which your disease/disorder falls. Invite him/her to your conference or area meeting. From our experience we can tell you they are most willing to help your group.

Judy Simpson, Board Member Emeritus
Pulmonary Hypertension Association, Inc.

The NHLBI published an information booklet on primary pulmonary hypertension in 1992 and a revised version in 1996. The NHLBI also held several workshops related to pulmonary hypertension, including "Mechanisms of Proliferative and Obliterative Vascular Diseases," held in September 1997 and cosponsored by the Foundation for Pulmonary Hypertension, the PPH Cure Foundation, and Lung Rx Inc.; "Primary Pulmonary Hypertension," held in May 1999; and "Translational Research in Primary Pulmonary Hypertension," held in March 2003.

In July 1999, and again in May 2001, Institute staff and representatives from the PHA met with Congressman Kevin Brady of Texas. Over the years, the Institute's Director and staff have met with PHA representatives numerous times. The close relationship between the Institute and the PHA is also reflected in the service of Ms. Judy Simpson, former President of PHA, on the National Heart, Lung, and Blood Advisory Council from 1996 to 2000.

To advance the research efforts being made in pulmonary hypertension, the NHLBI and the PHA signed a Memorandum of Understanding for joint sponsorship of a research training program supported by the Mentored Clinical Scientist Development Award (K08) in February 2001. In addition, the Institute released PA-97-022, "Cellular and Molecular Mechanisms of Primary Pulmonary Hypertension," in January 1997 and again in January 2000.

Sarcoidosis

Sarcoidosis is an inflammatory disease that can affect almost any body organ, but most often starts in the lungs or lymph nodes. It can appear suddenly and then disappear, or develop gradually and then produce symptoms that come and go, sometimes for a lifetime. As sarcoidosis progresses, small lumps (granulomas) develop in affected tissues. In most cases, they clear up, either with or without treatment, but in the few cases where the granulomas do not heal and stabilize, the tissues tend to remain inflamed and become scarred (fibrotic). Patients usually experience symptoms of coughing and labored breathing and, occasionally, chest pain or tightness.

The Sarcoidosis Research Institute has enjoyed an extremely positive relationship with the National Heart, Lung, and Blood Institute. The NHLBI is a strong supporter of education and has accepted our invitations to speak at numerous national SRI sponsored Sarcoidosis Patient Conferences. The speakers have provided extraordinary insight to the patients in the current and future NHLBI Sarcoidosis Programs. The NHLBI has been incredibly helpful in providing access to sarcoidosis publications. Sarcoidosis is an extremely complex disease, and the NHLBI sarcoidosis publications are invaluable in educating sarcoidosis patients and their families. NHLBI-sponsored research in the area of sarcoidosis gives sarcoidosis patients a sense of hope. Patients suffer beyond words, and it is a terrific feeling to know that efforts are being made to uncover the mysteries of this cruel disease. I would encourage PIOs to develop a strategic plan for the operation of their organization. As that plan is being implemented, it might be helpful to explore opportunities to collaborate with the NHLBI.

Paula Yette Polite, President
Sarcoidosis Research Institute

In response to Congressional interest, the NHLBI sponsored "A Case Control Etiology Study of Sarcoidosis" from 1994 to 2002. In August 2002, the NHLBI held the workshop "Future Directions in Sarcoidosis Research" to identify new research areas that will promote better understanding of the etiology and pathogenesis of the disease, improve patient management, and develop novel therapeutic interventions. Several individuals with sarcoidosis and representatives of sarcoidosis patient organizations participated in the meeting.

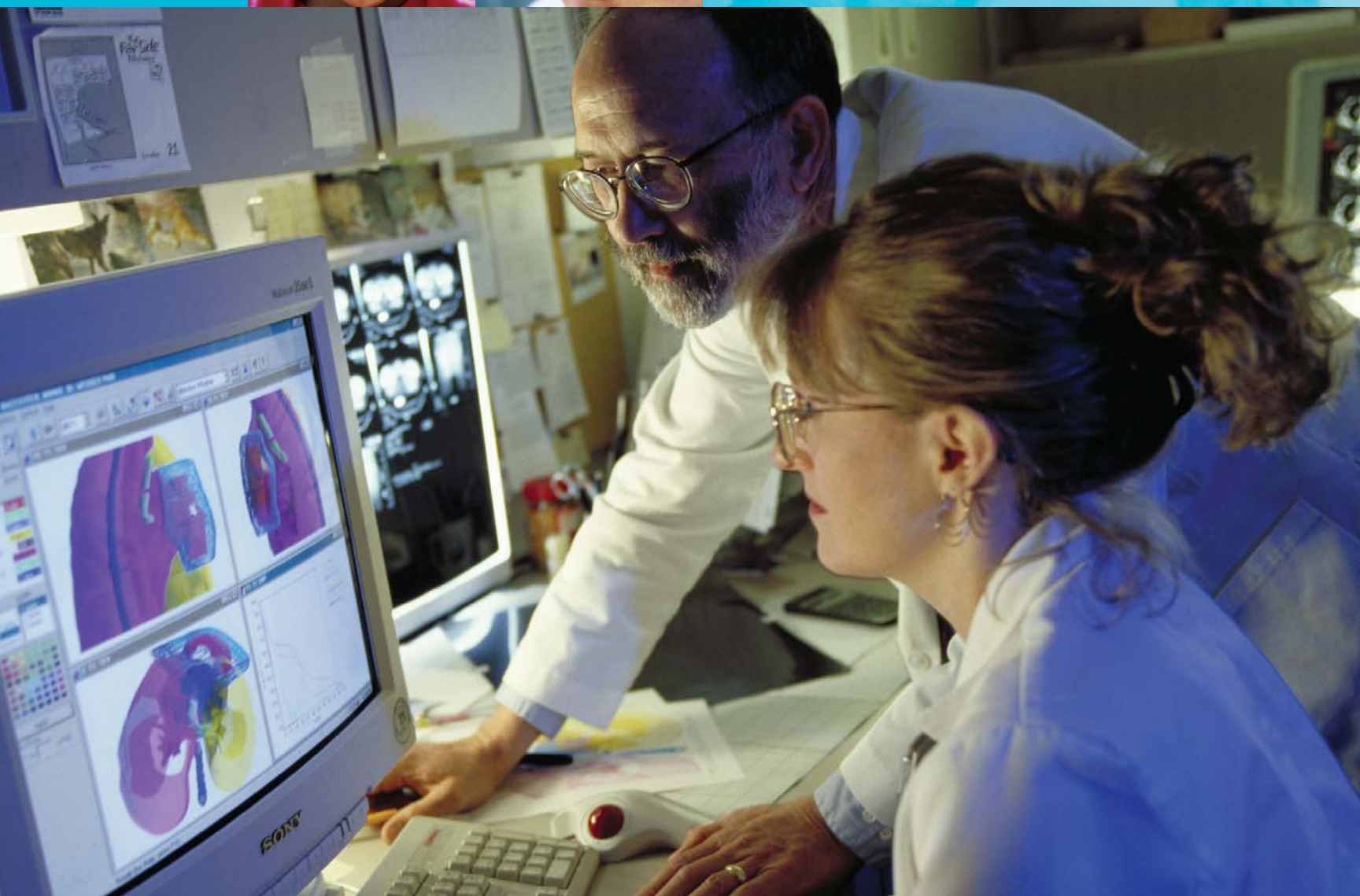
NHLBI staff have also participated in several patient meetings organized by the Sarcoidosis Research Institute (SRI) over the years 1995 to 2001. Ms. Paula Polite of SRI served as a member of the National Heart, Lung, and Blood Advisory Council for 2 years (1999–2001). Dr. James Kiley, Director of the NHLBI Division of Lung Diseases, met with Ms. Polite and pulmonary investigators at the 2001 meeting of the American Thoracic Society, and discussed the need to stimulate new research ideas and projects in sarcoidosis. Institute staff continue to meet with the sarcoidosis patient groups, and Dr. Kiley made a presentation at their annual meeting in October 2003.

NHLBI intramural staff are conducting studies to develop new therapies for pulmonary sarcoidosis, and have met with patient support groups and local physicians to discuss and promote awareness of NHLBI intramural protocols and therapeutic options.

In 2004, the NHLBI funded the Request For Applications (RFA) "Granulomatous Lung Inflammation in Sarcoidosis" (RFA-HL-04-009). This program was designed to initiate a broad research effort to support studies on the mechanisms leading to nontuberculous granulomatous inflammation in the lungs pertaining to sarcoidosis and to encourage investigators who are new to sarcoidosis research to develop projects in this area.

Cystic Fibrosis

Cystic fibrosis (CF) is a chronic, progressive, and frequently fatal genetic (inherited) disease of the body's mucous glands. CF primarily affects the respiratory and digestive systems. The sweat glands and the reproductive system are also usually involved. On average, individuals with CF have a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lifespan of approximately 30 years. The Institute works closely with the Cystic Fibrosis Foundation (CFF) to provide strong support for basic and clinical science research in the area of pulmonary manifestations of CF. In the late 1980s, the CFF and the NHLBI developed the CFF/NIH Funding Award program, an activity that is intended to complement NIH granting mechanisms. When meritorious CF grant applications submitted to the NIH cannot be funded, the NHLBI informs prospective applicants of this program. Investigators may send their application to the CFF for funding consideration. This joint program has served as a bridge to enable investigators to generate additional preliminary data and thereby strengthen subsequent applications for NIH funding. The NHLBI has also cosponsored a number of workshops and initiatives with the CFF to address important areas of research in CF. These interactions continue to be an integral part of a partnership between the NIH and the CFF to improve the quality of life for CF patients. In March 1987, the Institute and the CFF cosponsored the workshop "Human Cystic Fibrosis Cell Immortalization." This led to an RFA titled "Immortalized Cells for Cystic Fibrosis Research" (RFA-NIH-88-HL-3-L).

The 1989 discovery of the gene causing CF fostered many research opportunities. Much of the CF research supported by the NIH from the time of the discovery through the mid-1990s stemmed from productive interactions of the CFF with the NHLBI and Congress, resulting in a number of initiatives. These included "Animal/Cellular Models for the Studies of Cystic Fibrosis" (NIH-91-HL-09-L) to develop new animal and cellular models of CF and new treatment strategies; programs of specialized research centers in CF (NIH-88-DK-07, HL-92-02-L, HL-96-014, and HL-02-013) to foster multidisciplinary basic and clinical research; and "Gene Therapy Approaches for Cystic Fibrosis and Other Heart, Lung, and Blood Diseases" (HL-93-08-L), which focused on overcoming barriers to gene therapy for CF. The CFF supported pilot/feasibility components of the gene therapy programs related to CF.

The initiative "Pathogenesis and Treatment of Cystic Fibrosis" (DK-95-006) was cosponsored by the NHLBI, the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), and the CFF. More recently, the NHLBI and the CFF proposed a cosponsored workshop that led to the RFA "Genetic Modifiers of Single-Gene Defect Diseases" (HL-01-001) to identify and characterize the modifier genes responsible for variation in clinical progression and outcome of heart, lung, and blood diseases due to single-gene defects, including CF.

Cooley's Anemia

Cooley's anemia (CA), also known as thalassemia major, is the severest form of all the beta-thalassemias. Patients with CA are unable to produce the beta chain of hemoglobin and therefore suffer from life-threatening anemia. Lifelong transfusions are required, and they in turn lead to iron overload which, if left untreated, causes permanent organ damage and failure, especially of the heart and liver.

In 1977, the Congress requested in appropriations language that a study be undertaken to assess the state of the art in CA research and treatment. The NHLBI response was to convene a panel of 10 expert consultants that met three times in 1977–1978, leading to the publication, in March 1978, of a preliminary report, "Assessment of Cooley's Anemia Research and Treatment." It addressed the state of the art in CA research, practical standards for clinical services, the prevalence of CA in the United States, CA treatment facilities, and the impact of CA on patients and their families; it also provided recommendations for future research and patient care. A full report with the same title was issued in 1979.

In 1986, the mandate from Congress was repeated, and a status report was requested. The NHLBI responded once again by convening a panel of experts to update the report on CA research and treatment; this time, a representative of the Cooley's Anemia Foundation (CAF) was included as a member of the panel. A report titled "Cooley's Anemia: Progress in Biology and Medicine" was published in October 1987.

In 1988, the CAF asked the NHLBI to cosponsor a workshop on oral chelation therapy for CA. The NHLBI convened the workshop "Status of Oral Chelation Therapy," in February 1989. Representatives from the CAF and the Thalassemia Action Group participated. A workshop summary was prepared by NHLBI staff that year.

In 1995, the CAF requested an update on research and treatment in CA. The NHLBI responded by convening a panel of experts to assess research, treatment, and future directions for CA. Two representatives of the CAF were included as members of the panel. The outcome was published as "Cooley's Anemia: Progress in Biology and Medicine–1995."

In August 1997, the NHLBI issued the RFA "Clinical Research on Cooley's Anemia." Early in 1999, the CAF made a request to NIH to support a clinical research network for CA. In March 1999, the NHLBI issued the RFA "Thalassemia (Cooley's Anemia) Clinical Research Network" (RFA-HL-99-016).

In 2003, representatives of the CAF met with the Director, NHLBI, and asked that the Institute's web documents related to CA and "Cooley's Anemia: Progress in Biology and Medicine–1995" be updated. In response, the NHLBI Office of Prevention Education and Control is working with the Institute's Division of Blood Diseases and Resources to set up a panel of experts to repeat the 1977, 1986, and 1995 efforts to generate a current consensus document on CA research and treatment. This work is expected to be completed in FY 2004.

Fanconi Anemia

Fanconi anemia (FA) is a rare inherited, recessive disorder that leads to bone marrow failure (aplastic anemia). It affects both males and females and members of all ethnic groups. Though considered primarily a blood disease, it may affect all systems of the body. Patients often develop acute myelogenous leukemia. Many do not reach adulthood, but those who do often develop head and neck, esophageal, gastrointestinal, vulvar, and anal cancers. The treatment of choice is allogeneic bone marrow transplantation.

In November 1992, the Fanconi Anemia Research Fund, Inc., and the NHLBI cosponsored the workshop "Molecular, Cellular, and Clinical Aspects of Fanconi Anemia." Three years later, in November 1995, more than 100 scientists from around the world attended the "Seventh Annual FA Scientific Symposium" at Boston Children's Hospital, a meeting cosponsored by the NHLBI.

The "Ninth Annual Fanconi Anemia Scientific Symposium," held in September 1997, was sponsored by the NHLBI, the NIH Office of Rare Diseases (ORD), and the Fanconi Anemia Research Fund, Inc.

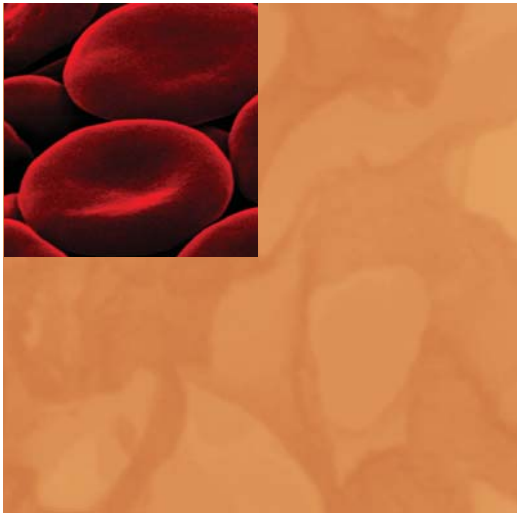
In 1999, the NHLBI funded RFA-HL-99-021, "Specialized Centers of Research in Hematopoietic Stem Cell Biology." This program was designed to reduce the

overwhelming costs of patient care, to improve treatment, and to find a definitive cure for patients with rare disorders of marrow function such as FA, Wiskott-Aldrich syndrome, and Kostmann syndrome.

In 2001, the NHLBI and the National Cancer Institute (NCI) funded RFA-HL-01-004, "Blood and Marrow Transplant Clinical Research Network." The network promotes efficient comparison of new treatment methods and management strategies of potential benefit for children and adults undergoing blood or marrow transplantation. The NHLBI also provides partial funding for a registry for FA.

Since the establishment of the Fanconi Anemia Research Fund in 1989, the Fund has benefitted enormously from the guidance and support offered by the National Heart, Lung, and Blood Institute. NHLBI staff provided guidance to our organization early on as we sought to develop a first-rate program to encourage and support research on this orphan disease. Of great benefit, the NHLBI has supported scientific symposia designed to advance research into Fanconi anemia. The Institute's caring professionals continue to be strong partners with the Fanconi Anemia Research Fund in our mutual effort to find a cure for Fanconi anemia.

Mary Ellen Eiler, Executive Director
Fanconi Anemia Research Fund



Diamond-Blackfan Anemia

Diamond-Blackfan anemia (DBA) is a rare congenital hypoplastic anemia that usually appears early in infancy. About 80 percent of cases are sporadic, but familial patterns of disease occurrence have also been observed. It is likely that DBA represents a group of disorders with different molecular or genetic etiologies that share the common hematological phenotype of pure red-cell aplasia.

The Daniella Maria Arturi Foundation was instrumental in stimulating introduction by Rep. Carolyn McCarthy of The Diamond-Blackfan Anemia Act (H.R. 894).

The support the Daniella Maria Arturi Foundation received from the NHLBI has been nothing short of a miracle. Formed upon the death of our daughter, Daniella, our foundation is dedicated to finding the cure for the rare genetic bone marrow failure, Diamond–Blackfan anemia (DBA). When Daniella died, the handful of very dedicated doctors and scientists who investigated DBA endured little or no support despite the belief that the study of DBA would lead to larger answers in the field of disease research. The NHLBI's active involvement has dramatically changed this. By hosting a Diamond–Blackfan Anemia Workshop, the NHLBI not only validated the work of those already studying DBA, but also attracted substantial new interest and helped lead to the recent NHLBI Request For Applications granted to further the study of bone marrow failures. We are forever grateful for the proactive role NHLBI has taken to help us make remarkable strides in advancing our efforts to find a cure for DBA. This serves as a true testament to the effectiveness of public and private collaborations in achieving the goals we all hold so dear.

Marie Arturi, Founder
Daniella Maria Arturi Foundation

If passed, this legislation would require the NHLBI to convene a scientific workshop on DBA and develop and implement a comprehensive plan for conducting and supporting research on it; support or conduct research on the pathophysiology of DBA, the relationship between the disease and a predisposition to cancer, and better treatments (and ultimately a cure) for it; and facilitate expansion, maintenance, and use of the DBA National Registry. In May 2002, the NHLBI convened a workshop to review the state of the science and clinical care of DBA and make recommendations to the NHLBI. The Congressional Record-Senate published on January 15, 2003, included a note that the Committee on Appropriations "is pleased that NHLBI has conducted a workshop for DBA and understands that based on the findings of the workshop, NHLBI is developing a comprehensive research strategy."

In 2004, the NHLBI funded RFA-HL-04-008, "Molecular Mechanisms Underlying Diamond-Blackfan Anemia and Other Congenital Bone Marrow Failure Syndromes." This program encourages research into the genetics and basic

mechanisms of inherited bone marrow failure syndromes, including DBA, dyskeratosis congenita, severe congenital neutropenia, and others. In addition, the NHLBI is supporting R01 HL064775, "Genetic Heterogeneity and Protein Function in DBA" (Dr. Colin A. Sieff, principal investigator).

Stem cell transplantation and gene therapy are potential options for both FA and DBA. Investigators seeking to develop therapies are aided by the NHLBI Programs in Genomic Applications, Programs of Excellence in Gene Therapy, and Specialized Centers of Research in Stem Cell Biology. The Clinical Research Network in Bone Marrow Transplantation has been established to facilitate transfer of new technologies to clinical protocols. Finally, several efforts have been made to make small businesses aware of these conditions in order to widen the level of scientific expertise brought to bear on them.

Sickle Cell Disease

The National Sickle Cell Disease Program had its genesis in the advocacy of public groups who were alarmed at the high rate of mortality seen in children with sickle cell disease. In 1971, President Nixon responded to public groups by sending to Congress a National Health Strategy that included research and treatment for sickle cell disease. The National Sickle Cell Anemia Control Act (Public Law 92-294), which was passed by Congress in 1972, called for the establishment of research and training programs in the diagnosis, treatment, and control of sickle cell anemia.

In response to the Presidential initiative and a Congressional mandate, the NHLBI established, in 1972, the Comprehensive Sickle Cell Center Program. After an open competition, ten Centers were funded in 1972 and five additional Centers were funded in 1973. Subsequent Centers were funded in 1977, 1978, 1983, 1988, 1993, 1998, and 2003. Ten Comprehensive Sickle Cell Centers are currently supported. Funding was assured in 1983 when Congress passed Public Law 97-414 that directed the Secretary of Health and Human Services to provide for the development and support of not less than 10 comprehensive centers for sickle cell disease. The law was passed after testimony before Congress by public advocacy groups on behalf of the care of sickle cell disease patients.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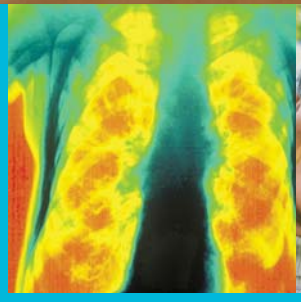


The Cooperative Study of Sickle Cell Disease (CSSCD) was initiated by the NHLBI in 1979 as a large-scale, multi-institution study in response to concerns raised by hematologists and patient groups about the lack of understanding of the clinical course of sickle cell disease. In December 1976, the National Heart, Lung, and Blood Advisory Council approved the CSSCD initiative for a clinical epidemiologic study, and two Requests for Proposals were released in January 1977.

In 2004, the NHLBI funded RFA-04-015, "Pulmonary Complications of Sickle Cell Disease," to stimulate translational research on the pulmonary complications of sickle cell disease. The RFA encourages collaborative research between investigators in hematology and pulmonary science that combines basic and clinical approaches.

Idiopathic Pulmonary Fibrosis

Idiopathic pulmonary fibrosis (IPF) is a disease of inflammation that results in scarring, or fibrosis, of the lungs. In time, this fibrosis can build up to the point where the lungs are unable to provide oxygen to the tissues of the body, and patients may suffer respiratory failure, heart failure, stroke, or lung infection. The average survival rate is 4 to 6 years after diagnosis, although those who develop IPF at a young age seem to have a longer survival. The cause of IPF is unknown, but researchers believe it may result from either an autoimmune disorder or the aftereffects of an infection, most likely a virus. In a few cases, heredity appears to play a part.

NHLBI intramural researchers have developed collaborative relationships with IPF-related public interest organizations, including the Pulmonary Fibrosis Association (PFA), the Hermansky-Pudlak Syndrome Network, and the Caring Voice Coalition. Dr. Bernadette Gochuico, an investigator in the NHLBI's Pulmonary-Critical Care Medicine Branch, has established clinical research protocols focusing on IPF and was invited to join the Board of Directors of the PFA in 1999. She has written educational articles for the PFA newsletter addressing issues related to diagnosis and provided information about her protocols to PFA. In March 2003, she was invited to become a member of the Professional Advisory Council of the Caring Voice Coalition. In May 2003, Dr. Gochuico met with the President

Hermansky-Pudlak Syndrome (HPS) is characterized by albinism, legal blindness, a bleeding disorder, and may include inflammatory bowel disease. In many cases involving particular HPS mutations, those difficulties are minor compared to the pulmonary fibrosis that causes HPS individuals to die in their 30s and 40s. To have the involvement of the NHLBI is a dream come true. Dr. Bernadette Gochuico's care and concern is a gift of hope that is a treatment in itself. The NHLBI replaces our fear and despair with their determination to find answers to difficult diseases. Beyond the miracle of our clinical research, the NHLBI has created an environment for the HPS Network to learn and grow, understand science, and realize our active part in the process. Their "open door" allows us to see possibilities from the inside, rather than dreaming in the dark.

Donna Appell, President and Founder
Hermansky-Pudlak Syndrome Network, Inc.

and Vice President of the Caring Voice Coalition. During this meeting, NHLBI research protocols were discussed and a tour of the NIH Clinical Center was provided.

In 2004, the NHLBI sponsored RFA-HL-04-021, "Idiopathic Pulmonary Fibrosis Clinical Research Network," to establish a clinical research network of 6 to 7 clinical centers to design and perform multiple therapeutic trials for treatment of patients with newly diagnosed idiopathic pulmonary fibrosis.

Lymphedema

Lymphedema is a lymphatic circulation disorder, characterized by accumulation of lymph fluid that often results in swelling of the arms or legs. It is incurable, and today's treatments (e.g., manual drainage, bandaging) are the same primitive and cumbersome ones that were used 100 years ago. The scientific opportunities are numerous and include the potential identification of a genetic mutation and use of gene therapy to grow new lymphatic vessels.

In May 2000, Ms. Wendy Chaite, founder and president of the Lymphatic Research Foundation (LRF), first made contact with the NHLBI at a meeting titled "Conquering Lymphatic Disease: Setting the Research Agenda" that was cosponsored by the LRF. The meeting was of high scientific quality, and included national and international expertise; its proceedings were published in a monograph. The scientific community appeared dedicated to this area and enthusiastic about collaborating. Afterwards, Ms. Chaite met with the NHLBI Director and staff members to discuss the need for more support for research on lymphatic biology and lymphatic system diseases, particularly lymphedema. In response to the LRF, NHLBI intramural investigators initiated a program to explore the diagnosis of genetic forms of lymphatic disease.

Subsequently, the NHLBI issued "Pathogenesis and Treatment of Lymphedema" (PA-01-035), which remained in effect through 2003, with the additional participation of the NCI, the National Institute of Child Health and Human Development (NICHD), and the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS). The LRF, in collaboration with other patient advocacy groups, encouraged Congress to put in the FY 2002 House Appropriations Committee Report a directive for the NIH to establish a trans-NIH coordinating committee on the lymphatic system. This was done.

A followup meeting titled "The Lymphatic Continuum" was held at the NIH in May 2002. It also was organized by the LRF and was supported by an R13 grant with funds from the NHLBI, the National Center for Research Resources, the ORD, the National Institute of Allergy and Infectious Diseases, the NCI, and the NICHD. New approaches and data were presented, and later published in the *Annals of the New York Academy of Sciences* and the inaugural issue of the journal *Lymphatic Research and Biology*, launched by the LRF.

In FY 2003, Senate Report 107-216 (Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriation Bill) strongly urged the NIH to stimulate and support intramural and extramural programs for basic and translational research in lymphatic diseases. The trans-NIH coordinating committee continues to discuss new projects, review issues, and develop training to help fulfill this mandate. The committee has contributed to a Gordon Conference for 2004.

The National Heart, Lung, and Blood Institute occupies a very special place in the hearts of researchers and patients of the lymphatic disease community. After years of relative neglect, lymphatic research and diseases are finally getting the attention they deserve. Without a doubt, in partnership with the Lymphatic Research Foundation, the NHLBI has played an integral part in helping to promote and support lymphatic research. The NHLBI has been the leading force in raising awareness and stimulating action by other NIH Institutes as stakeholders in the advancement of lymphatic research — thereby acknowledging the significant role the lymphatic system plays in human health and disease.

Wendy Chaite, Esq., Founder and President
Lymphatic Research Foundation

Additionally, in 2003, the NHLBI issued RFA-HL-03-004, "Functional Heterogeneity of the Peripheral, Pulmonary, and Lymphatic Vessels." In 2004, the NHLBI cosponsored PA-04-071, "Pathogenesis and Treatment of Lymphedema and Lymphatic Diseases," to investigate the pathogenesis and new treatments for primary and secondary lymphedema.

Marfan Syndrome

Marfan syndrome is an inherited connective tissue disorder that occurs in about 1 in 10,000 Americans and is present in all racial and ethnic groups. It is characterized by cardiovascular, skeletal, and eye complications. Aortic aneurysm and dysfunction of the heart valves are the most common cardiovascular problems. Children tend to be more severely affected by the heart valve diseases, whereas aortic aneurysms are more likely to occur in adolescence and beyond. Marked clinical variability, age dependence of all of the manifestations, and a high rate (about 30 percent) of genetic mutations mean that diagnosis in mildly affected, young patients with sporadic symptoms is challenging.

The National Marfan Foundation (NMF) is a voluntary organization that disseminates information about Marfan syndrome and provides communications and a

support network for patients and their family members. The NMF also maintains a patient registry and fosters research.

In January 2002, the NIAMS in partnership with the NHLBI released the RFA (AR-02-006) "Research on Heritable Disorders of Connective Tissue" in which the NHLBI expressed interest in connective tissue diseases of the cardiovascular system, including Marfan syndrome. The NHLBI received eight grant applications addressing Marfan syndrome and awarded two grants.

In June 2002, the NHLBI convened a working group to identify research opportunities to advance understanding of the basic mechanisms and genetics of aortic diseases and valvular degeneration associated with Marfan syndrome. Publication of the working group report in a peer-reviewed journal is planned. The NHLBI, in partnership with the NMF, is considering implementing a number of the recommendations.

NHLBI is the leading NIH institute to address the life-threatening cardiovascular aspects of the Marfan syndrome. NHLBI has always been receptive to the National Marfan Foundation, a small voluntary health organization, and has provided excellent opportunities for us to provide input into NHLBI programs to address our need for more research. Through their formal workshops during the Public Interest Organization meetings and our informal communications, the NMF and the NHLBI have established a collaboration that will make resources available to researchers in the field of Marfan syndrome and help to bring national awareness of the Marfan syndrome and aortic dissection to researchers and physicians.

Josephine Grima, Ph.D., Director of Research and Legislative Affairs
National Marfan Foundation

Preeclampsia

Preeclampsia typically starts after the 20th week of pregnancy and is characterized by increased blood pressure and protein in the mother's urine. It affects the placenta, and can impair the function of the mother's kidneys, liver, and brain. When preeclampsia causes seizures, the condition is known as eclampsia, the second most common cause of maternal death in the United States. Preeclampsia is also a leading cause of fetal complications, including low birth weight, premature birth, and stillbirth. There is no proven way to prevent preeclampsia.

Preeclampsia is a leading cause of maternal and infant mortality and morbidity and the leading known cause of prematurity, yet has no known cause, no known cure, and until 1999, no organization calling it its own. The Preeclampsia Foundation was established in September 1999 by two preeclampsia survivors and their doctor to change this.

In July of 2000, I had the good fortune to meet Dr. Claude Lenfant, at a conference on hypertension in pregnancy and from this first conversation a friendship grew. At the 2001 NHLBI Public Interest Organization (PIO) meeting, Dr. Lenfant and I spoke about how preeclampsia, a hypertensive complication of pregnancy, had no real "home" at the NIH. He then invited me to join the NIH/NHLBI Hypertension in Pregnancy Task Force meeting as the only representative of a PIO. From that meeting the NIH/NHLBI updated clinical guidelines on high blood pressure in pregnancy.

The Preeclampsia Foundation continues to have a strong and productive relationship with the NIH. We have found them to be available, open, and helpful in developing strategies for funding research, raising awareness, and supporting our community. Our strong relationship with the NIH/NHLBI is vital to the Preeclampsia Foundation and to our membership, and we anticipate that it will continue to grow.

Anne Garrett, Executive Director
Preeclampsia Foundation

In 2000, the president of the Preeclampsia Foundation of Seattle, Washington, met with the NHLBI Director at an International Society on Hypertension meeting on preeclampsia and eclampsia. The Director subsequently requested a review of NHLBI activities in this area. In 2001, the NHLBI established a Working Group on Research on Hypertension During Pregnancy, attended by the president of the Preeclampsia Foundation and researchers in the field. The Working Group's recommendation was to undertake a clinical trial of antioxidant vitamins to prevent preeclampsia. The NHLBI and the NICHD completed a Memorandum of Understanding in early 2002 for joint sponsorship of such a trial to be conducted through the NICHD's Maternal Fetal Medicine Units Network.

Women's Heart Health Education

In the summer of 2000, the founder of WomenHeart: the National Coalition for Women with Heart Disease met with the NHLBI Director to urge creation of a national effort to educate women about heart disease. Shortly after that visit, the founder of the Sister to Sister: Everyone Has a Heart Foundation also visited the Director to discuss the same issue.

In October 2000, the NHLBI convened a planning meeting for a women's heart health education strategy development workshop. Members of WomenHeart were strongly represented on the planning committee.

The 2-day workshop titled "Women's Heart Health: Developing a National Health Education Action Plan" was held in March 2001. It was the first step in developing a new health education effort for women to reduce death and disability from cardiovascular disease (CVD). The workshop brought together a group of about 60 key researchers, public health leaders, advocates for the health of women and minorities, health communicators, health care delivery experts, and others with an interest in improving women's cardiovascular health to develop a science-based blueprint for a comprehensive health education effort for patients, health professionals, and the public. Many of the workshop presenters and participants were affiliated with WomenHeart or Sister to Sister, and the chair of the workshop was the medical advisor to WomenHeart.

In February of 2000, WomenHeart met with the NHLBI's Director to discuss our concerns that not enough was being done to educate women about their heart disease risks and, further, that women are not sufficiently represented in heart-related clinical trials. Before we knew it, he had convened a planning committee for a strategy conference on women and heart disease, which was then held six months later and produced a report for the Director. He then authorized a major national "Heart Truth" public awareness campaign on women and heart disease, which was launched in September 2002. Whew! This has developed into an amazing and inspiring partnership with NHLBI staff in which we have all grown in mutual respect and expanded our comfort zones. Working together, we are dramatically increasing awareness of heart disease risk among American women. What we have learned is that to get results from our federal government, sometimes all you have to do is ask!

Nancy Loving, Executive Director
WomenHeart: the National Coalition for Women with Heart Disease

In September of 2001, a $2.3 million, 3-year contract was awarded to Ogilvy Public Relations Worldwide to develop and implement a women's heart health awareness campaign. One year later, in September 2002, The Heart Truth women's heart health awareness campaign was launched in Washington, DC. Official partners in the effort include the U.S. Department of Health and Human Services Office on Women's Health, the American Heart Association, and WomenHeart: The National Coalition for Women with Heart Disease.

In February 2003, the Red Dress component of *The Heart Truth* was launched in New York City during Mercedes Benz Fashion Week, and in Washington, DC, by the Secretary of Health and Human Services, Tommy G. Thompson, on Women's Heart Day. The Red Dress quickly became a symbol for women and heart disease awareness.

In February 2004, First Lady Laura Bush, ambassador for *The Heart Truth* campaign, hosted a White House reception during which President George W. Bush proclaimed February as "American Heart Month." Also during February, Olympus

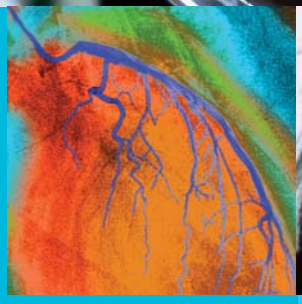
Fashion Week introduced the 2004 Red Dress collection designed exclusively for *The Heart Truth* campaign, and National Wear Red Day was held February 6 to support the Red Dress project. From March to May 2004, *The Heart Truth* Road Show, sponsored by the NHLBI and presented by Johnson & Johnson, took the Red Dress collection to shopping malls throughout the United States and provided free risk factor screening and educational materials to women to encourage them to take heart health seriously.

Peripheral Arterial Disease Education

In June 2001, the Vascular Disease Foundation (VDF) board of directors met with staff of the NHLBI. The goals of the meeting were to explore opportunities to collaborate on national public educational programs to increase awareness of the prevalence and seriousness of peripheral arterial disease (PAD), and to identify ways to improve its prevention, diagnosis, treatment, and rehabilitation.

By December of 2001, planning began for an NHLBI PAD educational strategy development workshop. Planning committee members included representatives from the VDF and the NHLBI. However, in August 2002, a "Peripheral Vascular Disease Summit" convened by the Society for Interventional Radiology was held in Leesburg, Virginia. The by-invitation-only summit, to which the NHLBI was not invited, had the same objectives as the NHLBI educational strategy development workshop that was planned for January 2003. At the summit's conclusion, VDF emerged as the umbrella organization to coordinate efforts to improve public and professional awareness of peripheral vascular disease. In light of VDF's new role, the NHLBI Director revised the objective of the Institute's workshop being planned for January 2003, to limit it to providing a forum for discussion of public education efforts, which could then be implemented by the VDF, the professional societies it represents, and other organizations.

The NHLBI "Workshop on PAD: Developing a Public Awareness Campaign" was held in Bethesda in January 2003. It included presentations by Ogilvy Public Relations Worldwide on how to develop strategies for a public awareness campaign; a facilitated talk-show format panel discussion on what patients and at-risk



individuals want to know, with real patient panel participants; and small group discussions with workshop participants on developing and implementing a public awareness campaign. In May 2003, a summary of the workshop was completed and provided to the VDF for their future planning efforts.

Strong Heart Study

The Strong Heart Study (SHS) was initiated by the NHLBI in 1988 to improve understanding of CVD and its risk factors among American Indians. The Institute realized the necessity of community involvement to ensure success of the program, so it recruited workers from the local community, added American Indians to the steering committee, added training for American Indian high school and college students through research training supplements, and partnered with the University of Colorado to provide postdoctoral training to American Indians and allow them to use SHS data for their research.

It soon became evident that intervention to improve health, and not just observation to identify problems, was needed. The NHLBI took two steps to address this need. First, it started the Pathways intervention program to address prevention of overweight, which was found to be highly prevalent among American Indians. Second, after diabetes was determined to be the leading CVD risk factor in American Indians, the Institute started the SANDS (Stop Atherosclerosis in Native Diabetics Study) intervention program to reduce CVD among diabetics.

The Director and staff of the Institute also recognized the need for direct community feedback regarding the study components and results, so they built into the study community meetings to obtain feedback and summarize study findings; started a newsletter to describe study investigators, study findings, and new components; published summaries of scientific publications in the Indian Health Service (IHS) Provider, which serves health care delivery personnel in American Indian communities; instituted tribal summaries and tribal review of all manuscripts prior to publication; created a data book summarizing study findings and options for prevention and treatment; and presented study findings at the IHS Research Conference.

Jackson Heart Study

The NHLBI recognized the greater prevalence of CVD in African Americans and developed the Jackson Heart Study (JHS) to explore the reasons for this health disparity and uncover new approaches to reduce it. The JHS is a single-site, prospective epidemiologic investigation of CVD among African Americans from the Jackson, Mississippi, metropolitan area. The initial examination phase of the study began in the fall of 2000 and was completed in the spring of 2004.

The JHS represents an expansion of one of the study sites of the Atherosclerosis Risk in Communities (ARIC) study, which included four geographically diverse communities in the United States. The JHS is sponsored by the NHLBI and the National Center on Minority Health and Health Disparities in partnership with three local institutions: Jackson State University, Tougaloo College, and the University of Mississippi Medical Center.

The NHLBI and its partners strive to make the JHS responsive to the community in several ways. First, the JHS staff is recruited from the local community. Second, the JHS Community Monitoring Board (CMB) was created to provide information to the community about the state of the study and to receive feedback from the community regarding concerns about the study. Community volunteers are represented on the Steering Committee as well as subcommittees. Third, the investigators consult with the CMB to make sure that the informed consent materials and results letters are clear to the participants. Fourth, the JHS participates in providing CVD education to the community through a series of community meetings, public information forums, seminars, and luncheons that promote CVD awareness and prevention with emphasis on high blood pressure, cholesterol, diabetes, fitness, and nutrition; the Faith Initiative, which encompasses brief presentations given during Sunday church services; and community health fairs to educate the public on heart disease prevention, to announce future JHS events, and to disseminate awareness material such as the JHS Newsletter. Educational materials such as the NHLBI's Check Your Healthy Heart I.Q. and Heart-Healthy Home Cooking African American Style are discussed and disseminated during the health fairs.

The JHS also is responsive to the treatment needs of the community. If, after receiving clinical exam results, participants need medical care and are without insurance or an existing regular source of medical care, the JHS assists them in finding providers whose care does not depend on ability to pay.

For More Information

The NHLBI Health Information Center is a service of the National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health. The NHLBI Health Information Center provides information to health professionals, patients, and the public about the treatment, diagnosis, and prevention of heart, lung, and blood diseases and sleep disorders. For more information, contact:

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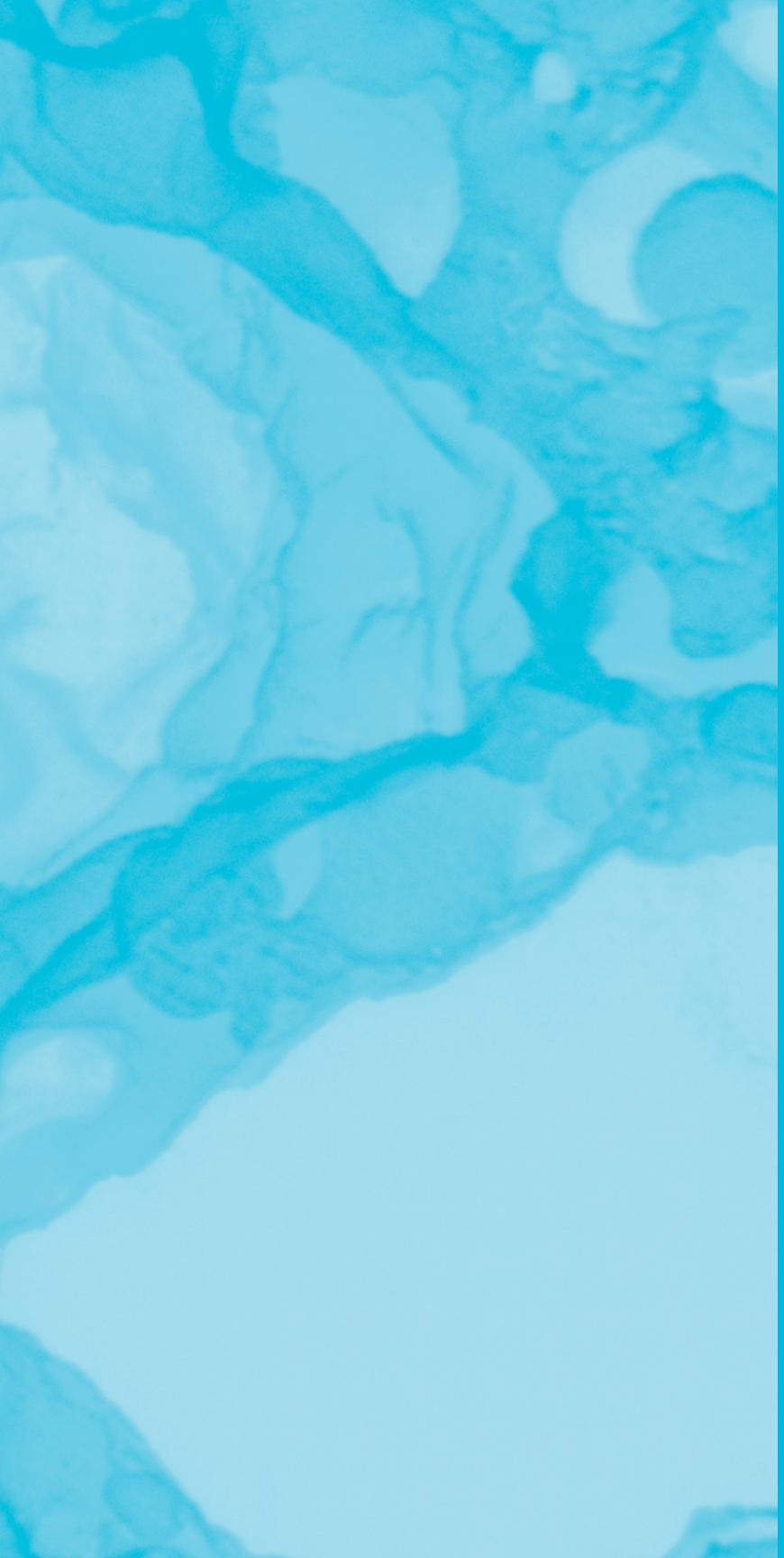

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