



CDC's
National Center on
Birth Defects and Developmental Disabilities



Connection

*Birth Defects & Developmental Disabilities
Hereditary Blood Disorders
Human Development and Disability*

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IN THE SPOTLIGHT

CDC ANNOUNCES NEW GOALS AND ORGANIZATIONAL DESIGN

In May, the Centers for Disease Control and Prevention (CDC) announced a major change in the agency's goals and operational structure. Based on a strategic development process known as the Futures Initiative, these changes reflect CDC's desire to make the agency operate more efficiently and effectively and enable it to better serve its many and varied constituents. The new goals and integrated operations will allow CDC to have a greater impact on the health of people worldwide.

In making the announcement, CDC Director Dr. Julie Gerberding stated that CDC will align its priorities and investments under two overarching health protection goals:

1. Preparedness—People in all communities will be protected from infectious, environmental, and terrorist threats.
2. Health Promotion and Prevention of Disease, Injury, and Disability—All people will achieve their optimal lifespan with the best possible quality of health in every stage of life.

The integrated organization coordinates the agency's existing operating units in four coordinating centers (see diagram *page 3*) to help the agency leverage its resources to be more nimble in responding to public health threats and emerging issues, as well as chronic health conditions.

The new coordinating centers and their directors are:

Coordinating Center for Infectious Diseases—Includes the National Center for Infectious Diseases; the National Immunization Program; and the National Center for STD, TB, and HIV Prevention. Dr. Mitchell Cohen will lead this coordinating center.

Coordinating Center for Health Promotion—Includes the National Center for Chronic Disease Prevention and Health Promotion, the National Center on Birth Defects and Developmental Disabilities, and the Office of Genomics and Disease Prevention. Dr. Donna Stroup will lead this coordinating center.

Coordinating Center for Environmental Health, Injury Prevention, and Occupational Health—Includes the National Center for Environmental Health, the Agency for Toxic Substances and Disease Registry, the National Center for Injury Prevention and Control, and the National Institute for Occupational Safety and Health. Dr. Henry Falk will lead this coordinating center.

Coordinating Center for Health Information and Services—Includes the National Center for Health Statistics, a new National Center for Health Marketing, and a new

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Quote for the Day

“How wonderful it is
that nobody need wait a
single moment before
starting to improve the
world.”

Anne Frank

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Director's Corner

Greetings, and welcome to the Connection for July 2004!

In the last newsletter, I told you how the National Center on Birth Defects and Developmental Disabilities (NCBDDD) has been involved in strategic planning efforts for many months now. First, let me give my most sincere thanks to everyone who has contributed to this effort—both our own staff and our external partners. I know how difficult it is to take time away from your busy schedules to sit through strategic planning meetings and interviews. It is a testament to your dedication and hard work that we have succeeded in coming so far—and can now confidently face the future.

During this process, we have analyzed how we can better serve the public, build stronger relationships with our partners, and harmoniously align our center's vision with that of the Centers for Disease Control and Prevention (CDC). CDC has been creating its vision for the 21st century through the Futures Initiative. We at NCBDDD realized that we had a unique opportunity to develop and align our own strategies for working within the framework being established by the Futures Initiative.

We have scrutinized every aspect of NCBDDD's organization from top to bottom, trying to find more effective internal procedures and methods for communicating and promoting our research. We have developed internally focused goals, objectives, and initiatives that will allow us to operate more efficiently. In addition, we have worked diligently to develop a framework within which we can engage our partners in meaningful ways.

From the beginning, we knew that involving our partners was critical to the success of our strategic planning. Initially, we collaborated with the NCBDDD External Partners Working Group to survey you, our partners. We listened to your comments, opinions, and suggestions for improvement. Your ongoing assistance has been, and will continue to be, crucial in developing a plan that meets our mutual needs, and the needs of the populations we all serve.

The framework we have created for your participation centers around the development of five broad areas that revolve around the lifespan and healthy living. By organizing around these five center focus areas, we can enhance our influence on public health, and better serve our partners and the public.

The NCBDDD focus areas are:

Promote Healthy Birth Outcomes—This area focuses on primary prevention of adverse congenital and developmental outcomes with origins in the preconception, prenatal, and perinatal periods. It also includes research and surveillance into the causes and risk factors associated with these outcomes.



Ensure Optimal Child Development and Well-Being Through Early Identification and Intervention—This area includes both primary and secondary prevention of adverse physical, social, emotional, and developmental outcomes in children from birth until preadolescence.

Prevent Secondary Conditions and Promote Health of Adolescents and Adults—This area includes the prevention of secondary conditions that occur disproportionately in adolescents and adults with disabilities and chronic conditions. It also includes health promotion for these populations.

Address Health Disparities—This area concentrates on research and intervention in promoting health equity across the lifespan regardless of disability status, race, ethnicity, socioeconomic status, sex, or age. Topics include the study of differential incidence, treatment access, and survival rates among special populations, including infants with birth defects or genetic conditions, children with developmental disabilities, people with bleeding disorders, and people with physical and mental disabilities.

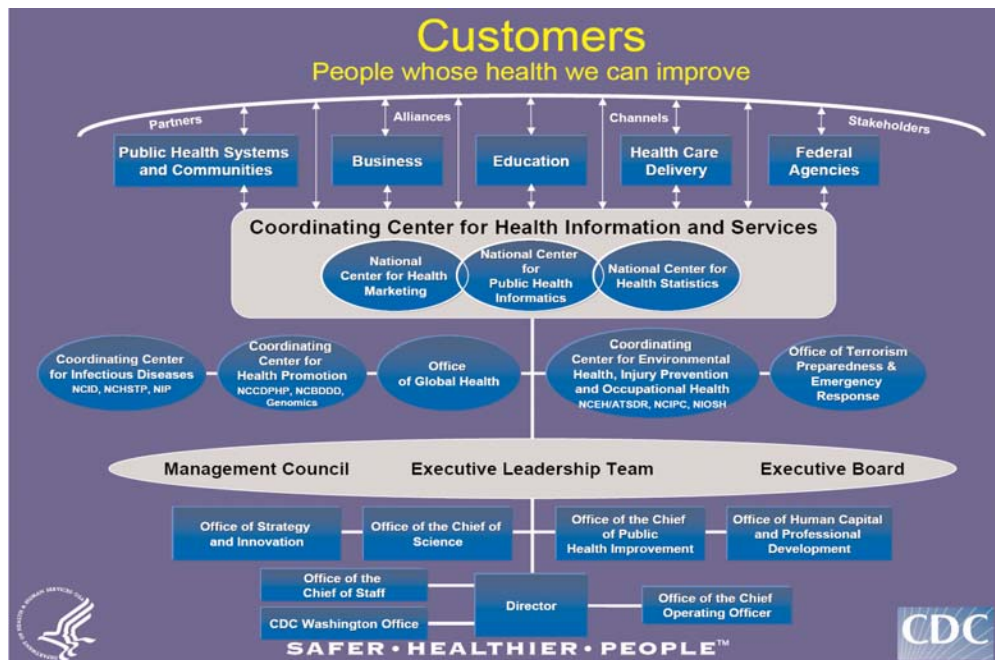
Ensure a Healthy Environment and Appropriate Emergency Response—This area addresses the effects of the environment on health outcomes and includes research into the impact of disasters or terrorist attacks on birth outcomes and people of all ages living with a disability or chronic condition. This area also promotes the inclusion of such populations in state-based emergency response planning efforts.

We are now bringing together work groups related to these center focus areas that will contribute to the research and health marketing agenda development for the center. We need input from both NCBDDD staff and our partners to help us develop and prioritize our science and programs so that we can better serve our customers—the public. You are all invited to a special meeting at our conference on Tuesday evening, July 27, at which we will discuss our new center focus areas. And, in the months ahead, we will be soliciting your opinions and suggestions as we expand and refine our strategic plan.

We are very excited about our future. We realize that the American public is our number one customer, and we need to find ways to better communicate our research findings and prevention messages. We want to build on our programs and strong partnerships. Together we can help to ensure a healthier future for all of us.

A handwritten signature in black ink that reads "José F. Cordero". The signature is written in a cursive, flowing style.

José F. Cordero, MD, MPH
Assistant Surgeon General
Director, National Center on Birth Defects
and Developmental Disabilities



National Center for Public Health Informatics. Dr. James Marks will lead this coordinating center.

Office of Global Health—Dr. Stephen Blount will lead this office.

Office of Terrorism Preparedness and Emergency Response—Mr. Charles Schable will lead this office.

Dr. Gerberding also announced the following:

Dr. Stephen Thacker will head the newly formed Human Capital Management Office to oversee professional development, recruitment, training, and workforce development at CDC.

Dr. Dixie Snider is the Chief Officer for Science and will primarily be responsible for overseeing the agency's Office of Extramural Research. Dr. Robert Spengler will serve as Director, Office of Public Health Research.

Dr. Ed Thompson is the Chief of Public Health Improvement and will be responsible for ensuring the public health system is strengthened and that CDC provides leadership in building and supporting the nation's public health infrastructure.

Ms. Kathy Cahill will head the newly created Office of Strategy and Innovation and will be responsible for overseeing goals management and analysis.

Mr. William Gimson remains the Chief Operating Officer responsible for overseeing all management and business operations activities at CDC.

Mr. Robert Delaney remains Chief of Staff responsible for managing the Office of the Director.

In her introduction of these changes for CDC, Dr. Gerberding stated, "For more than half a century this extraordinary agency with the greatest workforce in the world has accomplished so much for the health of people here and around the world. However, today's world—characterized by tremendous

globalization, connectivity, and speed—poses entirely new challenges. The steps we are taking through this initiative will better position us to meet these challenges head on. Our aim is to help ensure that all people are protected in safe and health communities so they can achieve their full life expectancy."

(Reprinted in part from the official CDC Press Release, May 13, 2004)

INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY, AND HEALTH

For more than 100 years, the *International Classification of Diseases* (ICD) has provided the foundation for health care and medical diagnosis around the world. In 2001, the World Health Organization (WHO), which is the conservator for this venerable system, approved a second addition to its family of classifications. This new text, the *International Classification of Functioning, Disability, and Health* (ICF), identifies consequences of health conditions, including birth defects and developmental disabilities. The ICF expands the opportunity to provide a systematic framework for describing functioning, moving beyond diagnoses addressed by the ICD. In 2002, WHO formed a task force to ensure that the ICF would have utility for children and youth. The Centers for Disease Control and Prevention (CDC), through the National Center on Birth Defects and Developmental Disabilities (NCBDDD), stepped up and funded the project, recognizing that the ICF can provide a conceptual and practical foundation for science, program, and policy development among children with birth defects and developmental disabilities. In addition, the ICF can be used for children in the general population to describe levels of functioning.

The ICF Child-Youth Adaptation Task Force includes individuals from four countries and is led by Dr. Rune Simeonsson from the University of North Carolina at Chapel Hill. The task force has been responsible for the development and field testing

of a version of the ICF adapted for children and youth (ICF-CY). The draft version of the ICF-CY maintains the structure of the ICF with content modified to document health, functioning, disability, and environmental factors from infancy through adolescence. All ICF codes applicable for children were retained with needed entries added, such as behavior organization; sensory exploration; preverbal communication; motor coordination; symbolic and social play; and home, school, and community environments. A related activity was the development of questionnaires for four age groups—infancy (birth through 2 years of age), early childhood (3 through 6 years of age), middle childhood (7 through 12 years of age), and adolescence (13 through 18 years of age)—to be used in assessing child functioning across domains of the ICF-CY.

The draft version of the ICF-CY and related assessment materials are posted on the WHO website for field trials during spring and summer 2004 (<http://www3.who.int/icf/icftemplate.cfm>). These materials will be evaluated from two perspectives: validation of content by expert review and applicability for clinical use. Parents, professionals, and other stakeholders will be surveyed on the coverage and applicability of the ICF-CY for administrative, clinical, and research settings. The ICF-CY will also be evaluated clinically using the four age-group questionnaires to code limitations of function, activities, participation, and environmental factors in children with chronic conditions and disabilities.

The ICF-CY and related field trial materials will be accessed by clinics, schools, and other settings providing services for children in countries in all WHO regional sectors. Specific studies of the ICF-CY in several countries, including Italy, Sweden and the United States, will complement general field trial data. International, as well as U.S.-specific, data will be summarized to describe the sensitivity and comprehensiveness of the ICF-CY to code individual difference profiles as a function of age and health condition. Validation of the ICF-CY and the parallel questionnaires in the field trials can provide a universal language and classification of childhood disability in public health surveillance and prevention. It can also promote the creation of measurement tools to advance parallel prevention and intervention activities in allied health disciplines, early intervention, and special education.

METROPOLITAN ATLANTA CONGENITAL DEFECTS PROGRAM (MACDP)

Since 1967, the Centers for Disease Control and Prevention (CDC) has conducted the Metropolitan Atlanta Congenital Defects Program (MACDP), a population-based surveillance system of birth defects in metropolitan Atlanta. MACDP was created in the aftermath of the thalidomide tragedy in the 1960s when babies exposed in utero to the drug were born with birth defects that were later determined to have been caused by the exposure. Initially, the program was founded as a collaboration among CDC, Emory University, and the Georgia Mental Health Institute, but is currently under the

auspices of the Division of Birth Defects and Developmental Disabilities at the National Center on Birth Defects and Developmental Disabilities. Throughout the years, the program's objectives have remained essentially the same:

- To monitor, regularly and systematically, births of infants with birth defects for changes in incidence or other unusual patterns suggestive of environmental influences.
- To develop and maintain a case registry for use in epidemiologic and genetic studies.
- To quantify the morbidity and mortality associated with birth defects.
- To provide data for education and health policy decisions leading to prevention.

The program monitors all major birth defects within five central counties of metropolitan Atlanta, an area that has approximately 50,000 births annually. MACDP was originally designed to monitor infants and fetuses of at least 20 weeks gestation. However, as time has passed, the ability to diagnose birth defects prenatally has grown dramatically. Therefore, in 1994, MACDP expanded its case definition to include pregnancies terminated prior to 20 weeks gestation. Inclusion of these fetuses as part of the surveillance population has enhanced the ability of MACDP to accurately monitor changes in the prevalence of birth defects in metropolitan Atlanta.

For over 35 years, MACDP has been collecting, analyzing, and interpreting birth defects surveillance data. These data have been used for a variety of epidemiologic studies, including studies of trends in hypospadias, heart defects, and neural tube defects. MACDP has also served as a data source for studies of clusters of birth defects and for epidemiologic studies of possible risk factors for birth defects, including potential Agent Orange exposure among Vietnam war veterans, maternal use of multivitamins, maternal diabetes, smoking, alcohol use, and maternal use of prescription medications. MACDP data have also been used to evaluate prognostic factors for disability and survival among children with birth defects.

MACDP has served as the model for many state-based birth defects programs and as a resource for the development of uniform methods and approaches. It also has served as a training ground for a number of professionals active in birth defects epidemiology, including CDC Epidemic Intelligence Service officers, visiting scientists, fellows, preventive medicine residents, and medical and public health students. This training serves to build professional capacity in birth defects epidemiology in state health departments, federal agencies, universities, and private industry.

In the years to come, MACDP will continue to monitor the prevalence of birth defects in metropolitan Atlanta. Current projects that represent an expansion of MACDP surveillance capabilities and tools are (1) development of an electronic database that will allow for more efficient integration of data collec-

tion, review, and report preparation; (2) development of software for statistical analysis and plotting of temporal trends; (3) linkage of MACDP data with data from the Metropolitan Atlanta Developmental Disabilities Surveillance Program (MADDSP) to allow further evaluations of the prevalence of developmental disabilities among children with birth defects; (4) geocoding of MACDP data to allow evaluation of regional variations in prevalence and mortality of birth defects; and (5) linkage of MACDP data with environmental data to facilitate environmental health tracking efforts.

NEWBORN SCREENING FOR CYSTIC FIBROSIS

On November 20 and 21, 2003, the National Center on Birth Defects and Developmental Disabilities (NCBDDD) and the Cystic Fibrosis Foundation cosponsored an expert workshop on newborn screening for cystic fibrosis in Atlanta, Georgia. More than 50 invited experts gave presentations on interpreting scientific evidence and assessing screening program performance, and participated in subsequent discussions. The presentation slides, audiotapes of the presentations, and written presentation summaries are now available on the NCBDDD website at <http://www.cdc.gov/ncbddd/cf/meeting.htm>. The Cystic Fibrosis Foundation is sponsoring a supplement to the *Journal of Pediatrics* that will consist of selected papers originally presented at the November workshop; the supplement is scheduled for publication in fall 2004. A writing group has prepared a synthesis of the workshop discussions of benefits and risk of harm from newborn screening for cystic fibrosis, as well as recommendations to states for publication as an *MMWR Reports and Recommendations*, with expected publication also in fall 2004.

SCIENCE AMBASSADOR PROGRAM



The Science Ambassador Program at the Centers for Disease Control and Prevention's National Center on Birth Defects and Developmental Disabilities (NCBDDD) is gearing up for its second year. We at NCBDDD began this program because of our interest in having public health issues taught in the science classroom and our desire to introduce students to what public health is and to understand its many facets early in their education. Our hope was that, by demonstrating the scientific basis of public health, we might help students to better appreciate how science can be applied to everyday circumstances to promote good health not only in individuals, but in entire populations. As implemented, the program gives students the opportunity to explore a variety of options for careers in science, including public health. Thus, students will be better informed about opportunities and options for career choices.

We recognized that, while we at NCBDDD have the scientific expertise about public health topics, teachers have the educational background to create effective lesson plans and classroom activities. The Science Ambassador Program features an intensive workshop in which NCBDDD scientists work with top middle and high school science teachers to educate them about different scientific public health issues. The workshop features experts from the Georgia Department of Education's Georgia Learning Connections (GLC) to facilitate the development of relevant lesson plans on the topics in the workshop. Lesson plans developed through the Science Ambassador Program must meet National Science Education Standards, ensuring that teachers across the nation can use them in their classrooms. Following the workshop and development efforts, lesson plans are evaluated by scientists at CDC for scientific accuracy and by the GLC for educational accuracy. Once each lesson plan has been approved, it is published on the GLC website. Teachers are also asked to implement at least two lesson plans in their classrooms. This gives teachers and students the opportunity to provide feedback about the effectiveness of the lesson plans. Nine lesson plans were developed for the 2003 program year. Topics for those lesson plans ranged from fetal alcohol syndrome to epidemiology.

Evaluations of the 2003 Science Ambassador Program and lesson plan implementation process have been very positive. Teachers have reported that they learned a great deal about public health and, as a result of the program, had new ways to talk about science and its public health application in their classrooms. NCBDDD researchers were able to observe several of the lesson plans being implemented and reported that students were excited to learn about different public health issues and the lessons sparked lively conversations. Those lesson plans helped science come alive for students. Science was no longer something in a book, but was something that happened in the real world. Overall, NCBDDD lecturers felt this was a positive experience and enjoyed working with teachers and educating them about public health.

The 2004 Science Ambassador Program is already underway, with eight new teachers selected to participate. This year the program has been expanded to include states other than Georgia and has teachers from North Dakota, New York, and Illinois participating. The 2004 program has undergone some revisions based on feedback from the 2003 program and will feature an extended workshop, more lesson plan development time, greater breadth of topics from NCBDDD, and a lesson plan development process that will be completed before the school year begins.

Developed lesson plans are available to all teachers through the GLC website :

<http://www.glc.k12.ga.us/gei/NCBDDD/homepg.htm>

Click on Aligned Lesson Plans and NCBDDD's website (www.cdc.gov/ncbddd, click on Science Ambassador Program). We encourage you to share this information to ensure that teachers around the United States can benefit from lesson plans developed through the Science Ambassador Program.

2003 ARTHUR S. FLEMMING AWARD

In a ceremony in Washington, D.C., on June 7, 2004, Peggy Honein received the 2003 Arthur S. Flemming Award (Science category). Peggy, an epidemiologist with the National Center on Birth Defects and Developmental Disabilities' (NCBDDD) Division of Birth Defects and Developmental Disabilities, was recognized for her outstanding contributions to understanding the causes of birth defects, evaluating birth defects prevention activities, and assessing health risks in children with birth defects. Peggy's contributions have made significant contributions to the health of children not only in the United States, but around the world.

The Arthur S. Flemming Award was established by the Washington, D.C., downtown branch of the Jaycees in 1948. It is named for Dr. Arthur S. Flemming, whose career spanned six decades and encompassed work not only in the federal government, but in the private sector as well. The Arthur S. Flemming Award was established to recognize those who have performed outstanding and meritorious work for the federal government; to encourage high standards of performance in the federal government; to enhance appreciation of the U.S. form of government and the opportunities and responsibilities that it presents; and to attract outstanding people to the federal government. Recipients of this award are career federal employees who have at least 3 but no more than 15 years of government service. Twelve separate awards are given each year in three categories-administrative, applied science, and science.

NCBDDD SHEPARD AWARD WINNERS

Staff from the National Center on Birth Defects and Developmental Disabilities (NCBDDD) were among those honored at this year's Charles C. Shepard Award ceremonies. The Shepard awards are considered to be the pinnacle of scientific achievement awards given at the Centers for Disease Control and Prevention (CDC), exemplifying CDC's legacy of excellence in scientific achievement. They are presented to the authors of the most outstanding peer-reviewed research papers published by CDC scientists. The awards recognize publications in three categories-Assessment and Epidemiology, Prevention and Control, and Laboratory and Methods.

At this year's ceremony, held on June 21 at the Clifton campus, NCBDDD employees Jennita Reefhuis, Peggy Honein, Krista Biernath, Marcia Victor, Pam Costa, Owen Devine, and Coleen Boyle, along with CDC colleagues Cynthia Whitney, Shadi Chamany, Eric Mann, Daren Broker, Susan Manning, Swati Avashia, and Ann Graham, were recognized in the Assessment and Epidemiology category. Their paper, "Risk of Bacterial Meningitis in Children with Cochlear Implants", detailed an investigation of reports of bacterial meningitis among people who had gotten cochlear implants. CDC conducted the investigation in conjunction with the U.S. Food and Drug Administration and the health departments of 36 states, the District of Columbia, Chicago, and New York City. The

multistate case-control and cohort study in this investigation identified 26 cases of bacterial meningitis and a rate of meningitis in implant recipients that was more than 30 times higher than in the general population. It also identified one type of implant with a positioner that was associated with the highest risk of bacterial meningitis. The article reporting the findings was published in the *New England Journal of Medicine* in 2003.

Dr. Charles C. Shepard, for whom these awards are named, was an internationally recognized microbiologist who was chief of the Leprosy and Rickettsial Branch at CDC for more than 30 years. Dr. Shepard's career was marked by a pursuit of scientific excellence. The awards were established following his death in 1985 and the first awards were presented the following year. In addition to the publications awards, awards for lifetime achievement and outstanding scientific contributions to public health are also presented.

REEFHUIS WINS AGAIN, AND AGAIN!

Jennita Reefhuis, with the Division of Birth Defects and Developmental Disabilities here at the National Center on Birth Defects and Developmental Disabilities, was recipient of the 2004 Langmuir Prize, awarded by the Centers for Disease Control and Prevention (CDC) each year in recognition of the best paper published by an Epidemic Intelligence Service (EIS) officer or first year EIS alumnus. Jennita's paper, "Risk of Bacterial Meningitis in Children With Cochlear Implants," was published in the *New England Journal of Medicine*.

For her prize, Jennita got \$100, an engraved paperweight, her name on the Langmuir Prize plaque at CDC headquarters, and a case of beer. This tradition is connected with the John Snow Pub in London, England, and is named for the English physician who is credited with stemming an epidemic of cholera by removing the handle from the Broad Street pump. The John Snow Pub is located on or near the site where the pump stood at the time of the epidemic.

Jennita also won First Prize at the 2004 Society for Epidemiologic Research Meeting for her poster on "Fertility Treatments Associated With Neural Tube Defects, Oral Clefts, and Hypospadias: Data From the National Birth Defects Prevention Study."

Congratulations, Jennita, for winning these awards, as well as the Charles S. Shepard award. Well done!!!

HILFENHAUS AWARD

On March 9 this year, Bruce Evatt received the Hilfenhaus Award at the International Plasma Protein Conference in Brussels, Belgium. The Hilfenhaus Award honors an individual who has contributed significantly to the world of plasma products during the course of his or her career. Congratulations, Bruce!

(please see feature article on Dr. Evatt elsewhere in newsletter)

MICHAEL KUHN MEMORIAL AWARD

Sally Crudder, Acting Director, Hereditary Blood Disorders, received the Michael Kuhn Memorial Award for the Hemophilia Association of New Jersey on May 27. The award was given to Sally "in recognition of [her] deep compassion for those afflicted by hemophilia and for giving hope, encouragement, and understanding in a manner which reflects the ideals of L. Michael Kuhn, MD." Dr. Kuhn, for whom the award was named, was instrumental in developing the nationally recognized hemophilia program in New Jersey.

Congratulations to Sally on this well-deserved recognition of her hard work and humanitarian efforts!

DR. JOSÉ CORDERO HONORED

On June 16, Dr. José Cordero, Director, National Center on Birth Defects and Developmental Disabilities, was recognized by the Atlanta Braves baseball team and Exceptional Parent magazine for his 35 years of dedicated service to the early detection of birth defects and improving the quality of life for affected individuals and their families. Darrell Gibson, Regional Director for Century 21 and Chairman of the Board for Easter Seal in North Atlanta was also recognized. Under his leadership, Century 21 brokers have raised more than \$75 million for Easter Seals. The award ceremony took place at the Braves' second annual "Disability Awareness Night". The Braves worked with Exceptional Parent to provide ticket discounts to organizations dedicated to providing information, support, and research for the special needs community. Our congratulations to Dr. Cordero, and our thanks to the Braves organization and Exceptional Parent.

DR. BRUCE EVATT RETIRES



The long and illustrious career of Dr. Bruce Evatt is rich with awards, accolades, and testimonials to his many and varied contributions in the field of hereditary blood disorders. When he retired on June 30, 2004, it was with no small trepidation that those here at the Centers for Disease Control and Prevention (CDC) and in the community of fields he

touched faced the future with a sense of loss. In his nearly 40-year career, Bruce stood apart in the breadth and depth of his vision and understanding of the field of bleeding disorders and their causes.

Bruce began his career at The Johns Hopkins University in 1964 as an intern, progressing to resident, and then Fellow in Hematology. In 1968, he began a 2-year stint with the

Epidemic Intelligence Service here at CDC, returning to Johns Hopkins afterwards for another 6 years. In 1976, Bruce returned to CDC as chief of the Thrombosis and Hemostasis Branch in the Hematology Division. During the following nearly three decades, he has served as Director, Hematology Division; Director, Division of Immunologic, Oncologic, and Hematologic Diseases; Assistant Director for Hemophilia Activities and Chief, Hematologic Diseases Branch, Division of HIV/AIDS, National Center for Infectious Diseases; and Director, Division of Hereditary Blood Disorders, National Center on Birth Defects and Developmental Disabilities.

Bruce's numerous scientific accomplishments during his career had a major impact on public health not only in the United States, but around the world. During his tenure at CDC, these accomplishments helped to ensure the success of CDC's mission to promote the health of children and adults by preventing the complications of bleeding and clotting disorders.

Bruce conducted numerous investigations of potential infectious agents transmitted in blood products used to treat people with hemophilia. These investigations have resulted in significant discoveries and clarifications concerning the risk of transmission of HIV, hepatitis A virus, hepatitis B virus, hepatitis C virus, Creutzfeldt-Jakob disease, parvovirus B19, porcine parvovirus, and porcine endogenous retrovirus. The results of these studies have had a significant impact on the blood donor screening policy and regulations concerning the manufacture of blood derivatives issued by the U.S. Food and Drug Administration, clarifying or quantifying, or both, the risk to people who use these therapeutic agents.

His cumulative work on HIV and hemophilia during the 1980s set standards throughout the world for hemophilia care for providing virus-free products, improving the safety standards for blood derivatives used to treat hemophilia and other conditions, and improving regulation of blood product manufacturing practices. As a result, Bruce was recognized as a world leader in HIV and blood safety.

Scientific and epidemiologic studies published by Bruce on the prevention of the complications of bleeding and clotting disorders and on the relationship of thrombophilia to clinical disease resulted in the American Society of Hematology working with CDC to restructure its training programs. It is envisioned that physicians who participate in these programs will incorporate prevention practices into the clinical setting, and encourage an increase in the number of young physicians who choose to practice coagulation hematology. Additionally, health care provider groups in most academic centers have incorporated the prevention services into the care being provided to people with hemophilia and have expanded these services for people with thrombophilia and thalassemia, and for women with bleeding and clotting disorders. Because of these studies, the movement toward prevention has become international in scope.

Among his many distinguished career accomplishments are:

- Discovering the hormone thrombopoietin, which regulates the level of platelet counts in the circulation.
- Contributing to studies whose results enabled investigators in the pharmaceutical industry to sequence thrombopoietin and thus generate a recombinant form of the hormone that is used to treat patients receiving chemotherapy to prevent death from bleeding secondary to thrombocytopenia.
- Identifying a blood protein, protein C, as a major risk factor for venous thrombosis and thromboembolic disease.
- Discovering the sequence of factor V Leiden, a clotting factor shown to be a major underlying defect in thrombophilia and a major cause of thromboembolic diseases, fetal loss and other reproductive difficulties, and other diverse conditions.
- Demonstrating that AIDS was being transmitted by a bloodborne agent and that transfusion recipients were at risk from contaminated blood products, which led to a new way of safety management for blood banks and manufacturers of blood products.
- Demonstrating that heat treatment of lyophilized clotting factor concentrates rapidly inactivated the HIV virus, which led to recommendations that heat-treated concentrates be used to treat patients with hemophilia. For this discovery, Bruce was recognized with the Murray Thelin Award for Distinguished Research, the U.S. Public Health Service (PHS) Award, and the PHS Commendation Medal.

In his professional life, Bruce has exemplified the finest traditions of CDC—a rigorous scientific approach, far-ranging vision, diligent leadership, and irrefutable integrity. His focus on providing science-based effective prevention strategies, and his insistence on giving the utmost consideration to the effects of any decisions on the people ultimately affected by those decisions have made him equally esteemed among both the medical and lay leadership of the bleeding disorder community. While he passes the baton on to another generation of capable and talented individuals, many of whom he trained and worked closely with, he will be sorely missed not only by those who knew him, but by people who never met him but on whose lives his research and work have had a life-altering impact.

Hail and Farewell

The Division of Birth Defects and Developmental Disabilities Welcomes—

Caroline Lagoy, Presidential Management Fellow, Birth Defects Epidemiology (BDE) Team.

Lorraine Yeung, Senior Service Fellow, BDE Team.

Lilah Besser, Computer Science Corporation contractor, Birth Defects Surveillance (BDS) Team.

Chenxing Lu, ORISE Fellow, BDS Team.

Matthew Strickland, Battelle contractor, BDS Team.

Patricia Price-Green, epidemiologist, Fetal Alcohol Syndrome (FAS) Prevention Team.

James Tsai, epidemiologist, FAS Team.

Jerry Miller, ASPH Fellow, Developmental Disabilities Surveillance and Epidemiology Team.

The Division of Hereditary Blood Disorders welcomes —

Taressa Hightower, Booze Allen Hamilton (BAH) contractor, Epidemiology and Surveillance (ES) Team.

Glenda Stone, Prevention Effectiveness Fellow, ES Team.

Yolanda Sanchez, BAH contractor, Laboratory Team.

Keisha Davenport, BAH contractor, Office of the Director.

The Office of the Director welcomes —

Elizabeth (Allyn) Moushey, returning summer student, Office of the Director.

June Adams, Acting Chief (detailed), Resource Management Office.

Hamilton Allen, Project IMHOTEP summer student, Science and Public Health (SPH) Team.

Huichao Chen, ORISE Fellow, SPH Team.

NCBDDD says goodbye to —

Cathy Gaines, FAS Team, who moved to HIV, STD, and TB Prevention.

Change of Duties —

Coleen Boyle, Acting Director, DBDDD.

Sally Crudder, Acting Director, DHBD.

Todd Mercer, Acting Deputy Director, DHBD.

Mike Soucie, Acting Associate Director for Science, DHBD.

Nicole Dowling, acting team leader, Epidemiology and Surveillance Team, DHBD.

Craig Hooper, acting team leader, Laboratory Team, DHBD.

John Crews, lead scientist, Disability and Health Team, DHDD.