

Illinois Department of Public Health
Genetic and Metabolic Diseases Advisory Committee
Minutes – September 18, 2008 Meeting
Hilton Garden Inn – Springfield, IL

Members Present:

Barbara Burton, M.D., Children's Memorial Hospital, Committee Chair
Sheila Chalmers-Currin, Parent
Joel Charrow, M.D., Children's Memorial Hospital
Jim Critchfield, President PKU Organization of Illinois
Rich Dineen, M.S., University of Illinois at Chicago
Karen Litwack, L.C.S.W., Chicago Center for Jewish Genetic Disorders
Susanna McColley, M.D., Children's Memorial Hospital
Kay Saving, M.D., O.S.F. St. Francis Children's Hospital
Michael Schneider, M.D., Southern Illinois School of Medicine
Darrel Waggoner, M.D., University of Chicago

Guests:

John Ralston, M.D., Memorial Medical Center, Committee Nominee
Lainie Friedman Ross, M.D., Ph.D., University of Chicago, Committee Nominee

Other Attendees:

Tess Rhodes, R.N., B.S.N., UIC, Division of Specialized Care for Children
David Jinks, Ph.D, IDPH Newborn Screening Laboratory Director
Tom Johnson, Division of Laboratories Chief
Tom Schafer, IDPH Office of Health Promotion Deputy Director
Mike Petros, M.P.H., IDPH Newborn Screening Laboratory Operations Manager
Claudia Nash, M.S., Genetics/Newborn Screening Administrator
Karen Burget, R.N., M.P.A, IDPH Genetics/Newborn Screening
Luna Okada, M.S., IDPH Genetics/Newborn Screening
Nikki Woolverton, M.P.H., IDPH Genetics/Newborn Screening
Barbara DeLuka, R.N., M.P.H., IDPH Genetics/Newborn Screening
Deborah Smith, IDPH Genetics/Newborn Screening
Ruth Jones, IDPH Genetics/Newborn Screening
Debbie Box, IDPH Genetics/Newborn Screening
Kathy Kelly, B.S., Genetics/Newborn Screening
Marti Williams, Genetics/Newborn Screening
Marie Nagle, Genetics/Newborn Screening

The meeting was called to order at 10:05 AM. Following introductions, the minutes of the April 10, 2008 meeting were approved.

Report by the Chair

Dr. Barbara Burton provided an overview and update on the Secretary's Advisory Committee (SAC) on Heritable Disorders in Newborns and Children, on which she serves as a representative of the Society of Inherited Metabolic Disorders. The SAC has a lengthy, multi-tiered review protocol for selecting disorders to recommend for inclusion in state public health newborn screening test panels. Five metabolic conditions, including severe combined immune deficiency (SCID) and the lysosomal storage diseases (LSD), Pompe, Krabbe, Fabry, and Niemann-Pick, have been nominated for review. Fabry and Niemann-Pick were removed from the nomination process at this time, following the initial subcommittee review. Krabbe will advance to an external review which includes extensive literature review, discussion with parent-patient groups, evaluation of the disease history, and review of current research including diagnostic and treatment options. SCID and Pompe are in the external review stage, and recommendations for advancement to Secretary's Advisory Committee for final evaluation and subsequent addition of these disorders to the recommended panel is anticipated.

IDPH Report

Dr. David Jinks presented a summary of confirmed NBS disorders from July 2002 through August 2008. Over 1.14 million specimens were tested during this period, and over 1,700 infants were diagnosed with some type of disorder. Dr. Jinks noted these diagnosed cases included disorders with various genetic mutations, polymorphisms and phenotypes. The incidence of diagnosed disorders identified is around one in every 650 specimens. The laboratory does report elevated glycine levels when detected as secondary targets through tandem mass spectrometry. Elevated glycine is associated with severe infantile onset non-ketotic hyperglycinemia, and one confirmed case of NKH was reported in 2007.

Barbara DeLuka provided hand-outs on follow-up and quality assurance activities. Collection of the initial specimen is recommended at 24-48 hours of age for all newborns, including those admitted to the NICU, and it is now recommended that NICU babies receive a second screen at around 14 days of age or prior to discharge. This routine second screen has helped resolve some of the borderline abnormal screens associated with prematurity, low birth weight and other medical conditions. Dr. Ross stated that the Clinical Laboratories Standards Institute (CLSI) is developing additional guidelines for newborn screening in the NICU. IDPH continues to offer courier services to all birthing hospitals for prompt shipping of specimens to the lab, and over 77% of specimens now arrive within three days of collection with over 98% arriving within five days or less. The quality of specimens remains very good, with 99.7% satisfactory for testing.

Claudia Nash pointed out the 2007 process data handouts and there was discussion about late diagnosed cases, and cases diagnosed following initial borderline abnormal

screens. Copies of the 2007 process data will be distributed to all IDPH designated newborn screening consultants for their review.

Mike Petros and Claudia provided information on the first few months of cystic fibrosis screening, and provided handouts. Screening began in March and there have been 22 cases of CF diagnosed. Although most of these cases were diagnosed following detection of two CFTR mutations on the newborn screen, several cases were identified in which only one CFTR mutation was detected. There was also one case in which two CFTR mutations were detected on the screen while subsequent diagnostic DNA testing confirmed the presence of one mutation. The group consensus was that these findings confirm the necessity of diagnostic testing for all positive CF newborn screens, with acknowledgement that any testing, even diagnostic DNA testing, may have some limitations. Claudia informed the group that an audio conference call is planned for the CF specialists later this fall to review and further discuss CF screening issues.

Nikki Woolverton reported on the SIDS/Infant Mortality Program and provided a handout which reports 2006 data provided by the IDPH Center for Health Statistics. A session on safe sleep will be presented at the annual conference of the Illinois Academy of Physician Assistants in October, and a session on infant bereavement photography will be held at Rush Copley Hospital, Aurora later this fall. There was discussion about cause of death classifications, including accidental suffocation, overlaying, undetermined and SIDS. Dr. Ralston discussed the need for thorough death scene investigation for accurate death classification, and mentioned increases in the number of "undetermined" deaths when a thorough scene investigation cannot be conducted. He noted that undetermined deaths raise a red flag in Division of Children and Family Services case files. In some cases, the death is classified as undetermined because direct communication with the family and the opportunity for death scene investigation is difficult. Following the coroner's notification about a possible SIDS death, the IDPH coordinator contacts a local public health nurse, and requests a visit to the family to inform parents of community support services. IDPH also sends letters of condolence to families and provides information about bereavement resources.

Karen Burget reported on the IDPH genetic grants provided to university based genetic and pediatric hematology centers, and to local health departments for family health history screening, case finding, and newborn screening follow-up. Administration of the family health history questionnaire and genetics grantee quarterly reporting can now be performed on-line using Cornerstone, a Department of Human Services data system, which eliminates the need for paper reporting. IDPH Genetic grantees include 18 genetic centers, with addition funding for CF genetic counseling at 14 centers, and 12 pediatric hematology centers. Grants to local health departments provide coverage of genetic services in 90 Illinois counties. The annual genetics conference for nurses will be held March 17-20, 2009 at the Oak Brook Hills Marriott.

Luna Okada provided a copy of the Illinois State Genetic Services Plan Summary document and discussed the activities of the Illinois Genomic Team. The team, comprised of representatives of the IDPH Chronic Diseases and Genetics staff, has met to discuss a possible chronic disease conference for health care providers. The second year of funding for five grantees implementing specific projects described in the State Genetics Plan began July 2008. Staff are also working on a Genomics page for the IDPH Web site, and partnering with the IDPH Office of Women's Health and the Office of Health Promotion Cardiovascular Disease Program to present information on the genetics of hypertension at the upcoming IDPH Women's Health Conference in November.

Dr. Ross reported on the State Genetics Plan implementation grant related to ethical, legal, and social issues (ELSI), which is conducting a study titled "Parental Understanding of Newborn Screening with a Focus on Cystic Fibrosis and Sickle Cell Disease". This group is assessing parental understanding of newborn screening by surveys administered to new parents at the University of Chicago Hospital, Friends Family Clinic and at Children's Memorial CF Center. Early findings include poor levels of understanding among the parents and some gaps in the knowledge base of some physicians regarding newborn screening. Interviews with parents whose infants received sweat testing for CF show as many as 50% still had some misconceptions following genetic counseling sessions.

Karen Litwack reported on the Chicago Center for Jewish Genetic Disorders educational activities including "DNA Day", which was April 25, 2008. These activities were done in conjunction with the University of Illinois at Chicago Midwest Latino Center, and the event, which promotes family health history awareness, will be repeated in 2009. The Center is also promoting a film depicting a personal story centered around predictive genetic testing issues that will be shown in the Chicago area, and is to be broadcasted by Public Broadcasting Stations on October 1.

Claudia indicated Northwestern staff had been contacted by a representative of the American Medical Association. The AMA is interested in surveying physician members on genetics knowledge, and their preferred methods for receiving this information, and would like to partner with the State Genetics Plan grantee working on professional education.

IDPH Update

Tom Schafer indicated that while IDPH has been spared some of the more severe budget cuts suffered by other State agencies, that the Illinois House debate continues over 500,000 that may be swept from the Metabolic Screening Fund. The metabolic treatment fund is a dedicated fund collected from the newborn screening fee for each specimen. The proposed sweep is included in Senate Bill 790, House Amendment 2.

The Committee was reassured that there would not be cuts to current funding for the Newborn Screening Program, the Newborn Screening Laboratory, or for provision of formulas, regardless of any fund sweeps, however, it is possible that LSD implementation could be delayed if funds for equipment, laboratory renovations and hiring and training of personnel are removed from this fund.

Funding resources for this expansion are dependent upon screening fee increases, which are implemented through the Administrative Rule process. Claudia indicated the LSD Rule changes were recently discussed at an ad hoc subcommittee conference call. Past analysis indicated the current fee of \$59 would need to be increased by at least \$11, however this does not include provisions for DNA analysis testing that may be necessary to reduce the false positives and clarify risk for infantile onset type Krabbe, which requires stem cell transplant within the first month of life. The Illinois fee is below the fees assessed by other states providing fewer services. A fee increase will be necessary prior to LSD testing start-up.

Dr. Burton reported that the LSD Subcommittee advised IDPH representatives the Rule should include requirements for specialists designated for follow-up services and treatment of infants suspect for LSD. Follow-up services for Pompe, Fabry, Gaucher and Niemann-Pick disorders should require designated specialists (clinical biochemical geneticists or clinical geneticists) to demonstrate extensive experience in the diagnosis and treatment of patients with LSD and the capacity to provide enzyme replacement infusion therapies. Follow-up services for Krabbe should require designated specialists (clinical biochemical geneticists or clinical geneticists) to have to have a team in place which includes a pediatric neurologist or neurologists and a stem cell transplant team able to perform transplantation on site. Currently Children's Memorial Hospital and the University of Chicago would be the sites in Illinois that meet these criteria. Dr. Jinks and Claudia are finalizing the Rule language, and the expected time-line for adoption of new Rules is six to twelve months. IDPH Legal Services preliminary review of the proposed Rule is expected around the first week of October, followed by State Board of Health review in January 2009, and if approved, filing with the Secretary of the Joint Committee on Administrative Rules (JCAR) possibly in early 2009.

Dr. Burton lead discussion concerning the need for IDPH not to rely solely on funds from the metabolic screening fee increase for implementation of LSD screening, which is targeted to begin December 2010. Although there was no appropriation to develop LSD testing in fiscal year 2009; the Chief of Division of Laboratories will request additional funding options from the Department. Dr. Burton asked for a motion from the Committee to write a letter to the IDPH Director seeking implementation of LSD screening according to the original time line. This was seconded by Jim Critchfield, and no members disapproved. It was expressed that Illinois is in the national forefront regarding LSD screening, and delays in implementation could lead to a negative outcome and missed opportunity. Tom Schafer asked that the Committee continue to

provide advice in developing the LSD Administrative Rule changes, and asked members for support in responding to questions that may arise during the public comment period following posting of the proposed LSD Rules. Dr. Burton also expressed the need for a best practice model for follow-up of LSD positive screens, similar to the model developed for CF screening. She stated that Dr. McColley had done an excellent job in working with other CF specialists, follow-up and laboratory staff to establish follow-up protocols and assist in coordinated implementation of CF screening.

Newborn Screening for Severe Combined Immunodeficiency Disorders

Dr. Burton opened discussion on SCID screening indicating the current treatment, stem cell transplant, must be done soon after birth. She announced there was a meeting scheduled September 25 in Wisconsin, and that Dr. McColley will be representing Illinois, since IDPH employees are under strict out of state travel restrictions. Dr. Jinks indicated a meeting between CDC and IDPH representatives is planned for October 10 in Chicago, and that CDC is seeking states with large birth populations to participate in pilot SCID screening studies using real time polymerase chain reaction (PCR) systems to analyze samples in the IDPH lab.

Development of IDPH Protocol for Newborn Screening Expansion

Dr. Burton stated that the Newborn Screening Laboratory Subcommittee had made a recommendation that the Advisory Committee develop a protocol to consider any new disorders for addition to the screening panel. The necessity of a protocol when recommendations from the Secretary's Advisory Committee (SAC) were available was questioned. There was discussion about SAC recommendations and the future of newborn screening. Newborn screening is a state prerogative and it was recognized that state laboratories are good vehicles for pilot testing, but that an evaluation process for any pilot testing is needed prior to universal screening. After discussing the pros and cons of an evaluation process, there was no consensus among Committee members, and Dr. Charrow made a motion to return this issue to the Newborn Screening Laboratory Subcommittee for additional consideration. Dr. McColley seconded the motion. When asked if an evaluation process would benefit the Program, Claudia indicated that in the past, evaluations and endorsements of disorders for addition have benefited the IDPH in making decisions about adding new disorders. It was stated that a formal evaluation process would provide a more structured avenue for parent advocacy groups to promote screening for new disorders, and would also allow IDPH more time to prepare financing prior to implementation of any additional screening.

Subcommittee Reports

Newborn Screening Laboratory Subcommittee Dr. Jinks reported on the August 27 meeting during which there was discussion about the increase in diagnosed cases of hypothyroidism. Subcommittee member, Dr. Zeller, indicated there were theories, but no clear understanding of why the incidence has increased worldwide. The subcommittee requested guidance from IDPH Legal Services regarding the use of de-

identified residual blood samples for possible pilot testing for SCID. CDC has voiced concerns about the sensitivity of IL7 assays in screening for SCID, and may encourage a different type of pilot testing for SCID using real time PCR testing. Pilot screening for fragile X has begun at Rush University, and advocacy groups may begin to request addition of this disorder in the near future. Dr. Ross indicated that Rush University is participating in a National Institute of Child Health Development grant project for fragile X screening, using informed consent.

Dr. Burton stated that newborn screening affects the lives of families; the purpose and goal of state screening programs should be to do it right, and in a positive manner. There was discussion about the importance of recognizing the value of the screening to the infant, along with provision of follow-up services, and that not all genetic disorders were suitable to newborn screening. Laboratory staff indicated that IDPH is not opposed to testing for new disorders that will have a public health impact. As stated by Committee members, discussions about the benefits of testing are not meant to be inhibitory, but rather attempts to make certain the screenings are beneficial to newborns, and the public.

Education and Family Services Subcommittee

Rich Dineen reported that he and Gail Tanner, the Newborn Hearing Screening Administrator, presented educational sessions on the genetic causes of hearing loss at the Illinois Audiological Society, the March of Dimes Perinatal Nursing Conference, and the Chicago Department of Public Health.

New Directions Subcommittee

Dr. Saving indicated there was no report for this committee as all efforts of the group were directed toward the State Plan.

Election of Chair

Dr. Burton announced the terms of nine current Committee members are expiring, and opened the meeting for nominations for the chair. After no response from other members, Dr. Burton nominated Dr. Joel Charrow as the new chair, her motion was seconded by Sheila Chalmers-Currin, and the nomination was approved by the members. Dr. Charrow accepted the chairmanship.

Awards

Tom Schafer thanked the Committee members for their service to IDPH and for sharing their expertise with IDPH staff. Awards were presented to the retiring members present, Dr. Burton, Jim Critchfield, Rich Dineen and Dr. Saving. Awards will also be sent to retiring members not in attendance at today's meeting: Anne Kozak, Dr. Weaver, Sunetra Reddy, Shelly Cummings and Dr. Weese-Mayer. The meeting was adjourned at 1:50 PM.

Minutes prepared and submitted by Barbara DeLuka and Nikki Woolverton - 9/24/08