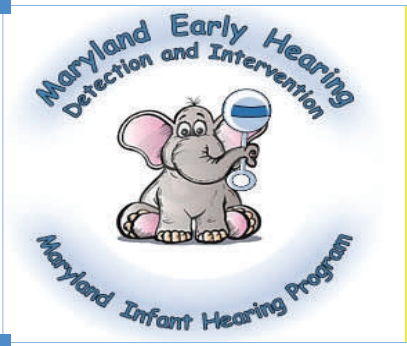
INFANT HEARING PROGRAM
Maryland Department of Health and Mental Hygiene
Family Health Administration
Office for Genetics and Children with Special Health Care Needs
201 West Preston Street, Room 423 A, Baltimore, MD 21201
Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John M. Colmers, Secretary



Infant Hearing News May 2010

MD EHDI

MARYLAND HOSPITAL PERFORMANCE

Maryland has always been a front-runner in newborn hearing screening and to keep pace with the demands of the program, the Maryland Early Hearing Detection and Intervention Program integrated an online data management system in the summer of 2008. The hearing screening staff at all the State's maternity hospitals were trained and entering hearing screening results on all their newborns into the OZ Systems eSP data base by August 31, 2008.

Having all the newborns' hearing information in one data base has improved our ability to track infants who don't pass or who miss their hearing screen. This allows us to ensure appropriate and timely follow up, and improve continuity of care. Additionally, by having a powerful, searchable data base we are now able to better analyze the program, identify strengths and weaknesses, make appropriate changes, and measure outcomes.

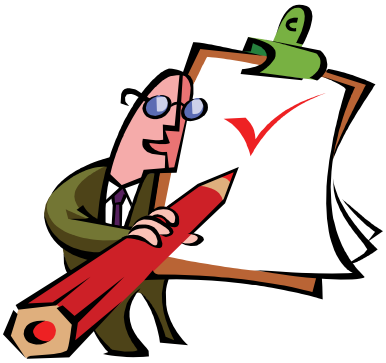
We needed to be able to measure how hospitals were performing, and for the first time, the Infant Hearing Program was able to provide the hospitals with monthly reports. These reports were designed to provide hospitals with information about their screening rates and how well they were meeting the

Inside this issue:

Maryland Hospital Performance	2
In the News: Seeing the Brain Hear	3
In the News: (cont) Temporary Hearing Deprivation can lead to	4
EHDI 2010 National Conference	5
Announcements	6
For our eSP System users	7
Infant Hearing Program - Resources and contact information	8

MARYLAND HOSPITAL PERFORMANCE (cont)

mandated compliance standards. Each month, every hospital is given individual and cumulative grades on these five compliance indicators:



1. percent of newborns screened,
2. percent of newborns who pass their hearing screen,
3. percent of NICU babies without hearing screens after 30 days,
4. percent of records with primary contact information, and
5. percent of babies with assigned medical homes

2009 was MD EHDI's first full year of electronic record keeping, and in such a short period of time, Maryland's birth hospitals have done an outstanding job of integrating this completely new system into their practice. In review of the annual compliance report, one hospital deserves particular notice for its distinguished performance for 2009. ***Shady Grove Adventist Hospital***, located in Montgomery County, is one of the State's largest birthing centers and their hearing screening program has been recognized for its annual *distinguished* compliance rating.

Additionally, 14 hospitals are recognized for meeting the standards of compliance for 2009:

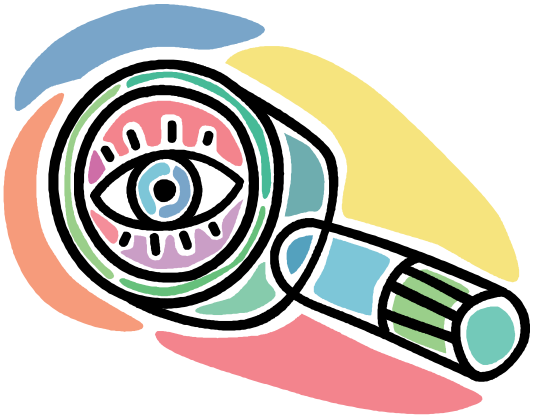
Calvert Memorial Hospital
Carroll Hospital Center
Chester River Hospital Center
Franklin Square Hospital
Frederick Memorial Hospital
Garrett County Memorial Hospital
Johns Hopkins Hospital
Maryland General Hospital
Mercy Medical Center
Peninsula Regional Medical Center
St. Mary's Hospital
Union Hospital
Upper Chesapeake Medical Center
Washington Adventist Hospital

Congratulations to all of you on your excellent work and your commitment to the MD EHDI program!

Overall statistics for last year show that 98.6% of babies born in Maryland received a hearing screening, and 97.7% of those babies had their hearing screened before being discharged. The numbers tell the story. Maryland hospitals are to be commended for all they do for MD EHDI and for Maryland newborns and their families. Early hearing identification and intervention all starts with the hospital providers. Thank you for getting us started on the right track!

In the news

Seeing the Brain Hear



Neurobiologists at the University of Maryland have discovered information about how the brain processes sound that challenges previous understandings of the auditory cortex, which had suggested an organization based on precise neuronal maps. Patrick Kanold, Assistant Professor of Biology; Shihab Shamma, Professor of Electrical and Computer Engineering; and Sharba Bandyopadhyay, Post-Doctoral Associate, have found that there are much more complex patterns of neuronal activity.

By using different dyes, the researchers were able to look at the activity of all the neurons in a large region of the auditory cortex simultaneously. They then measured differences in how the neurons receive sound information (the inputs), and how they process that sound (the outputs). It was previously assumed that neighboring neurons receiving the same inputs would also produce the same outputs, but Kanold's research found something very different. "Neighboring neurons do their own thing by creating different outputs," Kanold explains.

Dr. Kanold, who is an expert in neuroplasticity, the brain's ability to reorganize neural pathways, believes that there is a tremendous advantage in this apparent disorder. "Each individual neuron is getting inputs from a wide range of frequencies, and by selecting which frequencies they are strongly responding to, they might be very easily able to shift their function," he says.

The study also suggests that there is very little redundancy in the function of cells in the auditory cortex, which differs notably from the visual cortex, in which neighboring neurons perform the same function as one another. This could be because our acoustic environment, such as the speech we hear, changes much faster than our visual environment, so we have to constantly adapt to new situations.

The researchers have published their findings in the January 31 online edition of *Nature Neuroscience*. *http://www.nature.com/neuro/journal/v13/n3/full/nn.2490.html.*

Did you know?

Babies with typical hearing begin learning to listen in the last 20 weeks of gestation.

Vouloumanos & Werker, 2007

In the news (cont)

Temporary Hearing Deprivation Can Lead to 'Lazy Ear'

Dr. Daniel Polley, Massachusetts Eye and Ear Infirmary, and Dr. Maria Popescu, Vanderbilt University, have published a study showing why short-term hearing deprivation during childhood can lead to persistent hearing deficits, even after hearing is restored to normal. The researchers blocked the hearing in one ear in infant, juvenile, and adult rats, then looked at how auditory brain areas were impacted by the temporary hearing loss. They found that the temporary hearing loss in one ear caused distorted auditory patterning in the brain, weakened the deprived ear's representation, and strengthened the open ear's representation. This effect was more pronounced when the hearing deprivation began in infancy than in later life.

The research suggests that there are critical periods in development of the auditory cortex which can lead to auditory processing deficits if the brain does not receive appropriate stimulation at just the right time. The researchers, calling this condition "amblyaudio," point to its similarity to amblyopia (also known as lazy eye) which occurs when balanced visual signals are not transmitted from each eye to the brain during a critical period for visual cortex development. As with visual training for amblyopia patients, the authors believe that aural rehabilitation would be effective in helping patients overcome the auditory processing deficits incurred by this type of hearing loss.

For more information, the full text of this study can be found at *http://www.sciencedaily.com/releases/2010/03/100310134148.htm*

Did you know?

Before they are born, babies can already discriminate consonant types and "content" (e.g., nouns or verbs) as compared to "function" words (e.g "and," "of," "with," or articles)

Vouloumanos & Werker, 2007

EHDI National

The 9th Annual Early Hearing Detection and Intervention Conference was held March 1-2, 2010 at the InterContinental Chicago O'Hare Hotel in Chicago, IL. Conference participants included representatives from federal, state, and local programs, as well as academic professionals and families of children with hearing loss.

Topical sessions were held over two days and included sessions on issues related to: the Medical Home, Regulatory Concerns, Reducing Lost to Follow-up, Meshing with Department of Education Programs, Improving Outcomes, Supporting Parents and Families, Improving Access to Services, among other topics.

In addition to these presentations, conference attendees met as state groups to discuss individual state EDHI priorities, and to develop an action plan to meet those needs. In addition to the Infant Hearing Program staff, Maryland's state meeting was attended by representatives from the Maryland Association of the Deaf, Maryland birth hospitals, and the Maryland Family Support and Resource Center. The meetings were also attended by an Audiology graduate student at Vanderbilt University and by a US Navy Audiologist.

This group identified the following goals: to investigate development of a deaf mentor program for families; to find a pediatrician to serve as the Maryland Chapter Champion. (This is a physician who would assume responsibility for leading and responding to healthcare provider concerns regarding newborn hearing screening in the state); to promote collaboration between the Maryland Department of Education and the Maryland Infant Hearing Program in order to ensure that infants with hearing loss are enrolled in and receiving intervention services at the earliest possible opportunity; and to promote greater attendance at the annual Infant Hearing Stakeholders meeting (see notice on page 6).

If you would like to be involved in any of the planning or implementation of these action items, please contact the Infant Hearing Program at 410-767-5803.

Save the date!

The Maryland Department of Health and Mental Hygiene Infant Hearing Program, The Maryland School for the Deaf, and The Maryland State Department of Education will hold a combined meeting on **July 19, 2010** at the Hearing and Speech Agency in Baltimore, MD. This meeting will cover topics related to the legal and ethical issues of service delivery to infants who are deaf or hard of hearing and issues related to the medical home.

CE credits are pending from the American Academy of Pediatrics, the American Academy of Audiology, and the American Speech-Language Hearing Association.

Hope to see you there!

Calling all Pediatricians

The Hearing Advisory Council has an opening for a Pediatrician member. This position serves by providing the viewpoint of a pediatrician to the Board and by relaying information back to the pediatric community.

If you are interested in this position, please contact
Maryann Swann, Chair, Hearing Advisory Council
maryann.swann@msd.edu.

Did you know?

By the time of birth, babies have already learned to prefer their native language, speech over non-speech sounds, their mother's voice, stories and songs heard prenatally, and content words (e.g., nouns or verbs)

Vouloumanos & Werker, 2007

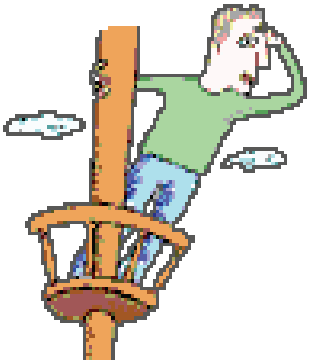
For our eSP system users

Oz systems' software engineers have been hard at work developing upgrades to the database. These changes, which will roll out over the next few months, include:

The risk factor for NICU admission will now read "NICU > than 5 days" which reflects the updated JCIH protocol.

NICU files will automatically discharge after two weeks just like Well Nursery files do. This change was enacted because of the delays in follow-up that occurred when these files were not consistently changed to outpatient status at the time of discharge.

The audiological assessment page will be streamlined to provide a more comprehensive display. It will also be much more user-friendly and will require less cumbersome data entry processes.



Many of the changes will be less obvious, but will enhance search capabilities. These changes include:

The ability to search for parents and providers by phone number and to search for parents by state of residence, and

The ability to search for different parameters by date of status change.

The biggest change will be the addition of the Early Intervention module. This is a major expansion of the system that is intended to allow the Infant Hearing Program to share data with the Maryland Department of Education. Data sharing between these entities will help to ensure that all infants identified with hearing loss are receiving appropriate intervention.

Many of the changes were made primarily to keep MD EHDI in compliance with the CDC requirements, but should also enhance your site's ability to run reports for your own internal needs. Remember, the system holds an enormous amount of information on every one of the infants seen at your site. The database is powerful and has the capability to run almost any kind of report you might need, complete with pie charts, graphs, etc. If you would like more information on how to design and run site-specific reports for your facility, please contact the Oz Systems helpdesk at 1-888-727-3366 ext 3.

Resources

We have a number of resources available to assist you on our website:

www.fhamd.org/infant hearing

Here you will find:

- Infant Hearing Newsletters – past and current editions
- Informational pamphlets and brochures – some available in Spanish
- Patient Education forms
- Level 2 and 3 screening forms
- Guidelines and Checklists
- Links to other helpful sites

The Infant Hearing Progam toll free phone number is 800-633-1316 and our toll free TTY number is 866-635-4410. The office fax number is 410-333-5047.

As always, the staff at Maryland DHMH would be happy to assist you in any way we can. We can be reached by phone:

- Linda Vaughan, Program Director 410-767-6432
- Erin Filippone, Program Audiologist 410-767-6762
- Theresa Thompson, Follow-up Coordinator 410-767-5093
- Stephanie Hood, Follow-up Coordinator 410-767-6659
- Hope Wharton, Administrative Assistant 410-767-5803

Or by mail: Infant Hearing Program
Maryland Department of Health and Mental Hygiene
201 W. Preston Street, Room 423A
Baltimore, MD 21201

This newsletter is intended to serve as a communication vehicle for all UNHS stakeholders. If you have any patient interest stories, photos, announcements, helpful hints, questions, or any information you would like to share with your Maryland colleagues, please e-mail them to Erin Filippone at *EFilippone@dhmh.state.md.us.*

WORKING TOGETHER… EARLY HEARING DETECTION AND INTERVENTION

THE KEY TO COMMUNICATION SUCCESS

The services and facilities of the Maryland Department of Health and Mental Hygiene (DHMH) are operated on a non-discriminatory basis. This policy prohibits discrimination on the basis of race, color, sex, or national origin and applies to the provisions of employment and granting of advantages, privileges, and accommodations.

The Department, in compliance with the Americans With Disabilities Act, ensures that qualified individuals with disabilities are given an opportunity to participate in and benefit from DHMH services, programs, benefits, and employment opportunities.