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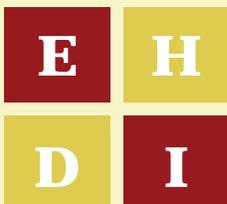
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## Deaf and Hard of Hearing Children's Educational Bill of Rights

Iowa Hands and Voices, the Iowa Association of the Deaf, and Deaf Services Commission of Iowa have been working together to seek passage of a Deaf and Hard of Hearing Children's Educational Bill of Rights in Iowa. It is hoped that a bill will be introduced this year.

A Deaf and Hard of Hearing Children's Educational Bill of Rights is a specific state law that recognizes the unique communication and language needs of deaf and hard of hearing children. State legislation would clearly spell out the basic purpose of the Individuals with Disabilities Education Act (IDEA) that students are to have access to full communication in the educational setting so they can learn and thrive. Further, state legislation would ensure that the intent of the IDEA is implemented more consistently across Iowa's schools. The spirit of the Deaf Children's Bill of Rights is validated by the IDEA's "special considerations for students who are deaf or hard of hearing" and other federal laws

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## Advisory Update

The next meeting of the Iowa Early Hearing Detection and Intervention Committee is:

**April 7, 2011**

**10 a.m. - 3 p.m., DMACC, Ankeny Campus, Bldg. 7 (Maple Room)**

April 7, 2011						
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10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Contact Tammy O'Hollearn for special accommodations at least 48 hours in advance of the meeting

**Past meeting agendas, minutes and a list of committee members are available online! Visit [www.idph.state.ia.us/iaehdi](http://www.idph.state.ia.us/iaehdi).**

# Deaf and Hard of Hearing Children's Educational Bill of Rights

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including the No Child Left Behind Act. This doesn't make it a redundant law, but clearly illustrates the concept of federal law to be acted on at the local level.

For general questions, contact Suzy Mannella at (515) 598-7327 or e-mail [Suzy.Mannella@iowa.gov](mailto:Suzy.Mannella@iowa.gov). If you have specific questions about passage, please contact Isaiah McGee at (515) 242-6171 or e-mail [Isaiah.McGee@iowa.gov](mailto:Isaiah.McGee@iowa.gov).



## Child Health Specialty Clinics Regional Centers Offer Hearing Screens

Child Health Specialty Clinics (CHSC) EHDI program recently obtained OAE screeners for two of their Regional Centers. Beginning March 1, 2011, the Fort Dodge and Oelwein CHSC Regional Centers will begin accepting referrals from the EHDI System of Care for hearing screens. The hearing screens will be free and available to infants who did not receive their initial birth screen or who Did Not Pass their birth screen. CHSC will serve as another resource for families in those areas beyond the hospital and Area Education Agencies.

After this initial pilot program in Fort Dodge and Oelwein is assessed, CHSC EHDI will evaluate spreading the program to other CHSC Regional Centers across the state to provide greater accessibility for hearing screens.

To learn more about the CHSC Regional Center Clinics and OAE hearing screens, please contact Peggy Swails at [peggy-swails@uiowa.edu](mailto:peggy-swails@uiowa.edu) or Vicki Hunting at [vicki-hunting@uiowa.edu](mailto:vicki-hunting@uiowa.edu).

To make referrals to the Fort Dodge or Oelwein CHSC Regional Centers, please contact:

### **Fort Dodge**

Amy Pedersen, RN  
Child Health Specialty Clinics  
Physicians Office Building West  
804 Kenyon Road, Suite L  
Fort Dodge, Iowa 50501-4901  
(515) 955-8326 phone  
(515) 574-5544 fax  
[amelia-pedersen@uiowa.edu](mailto:amelia-pedersen@uiowa.edu)

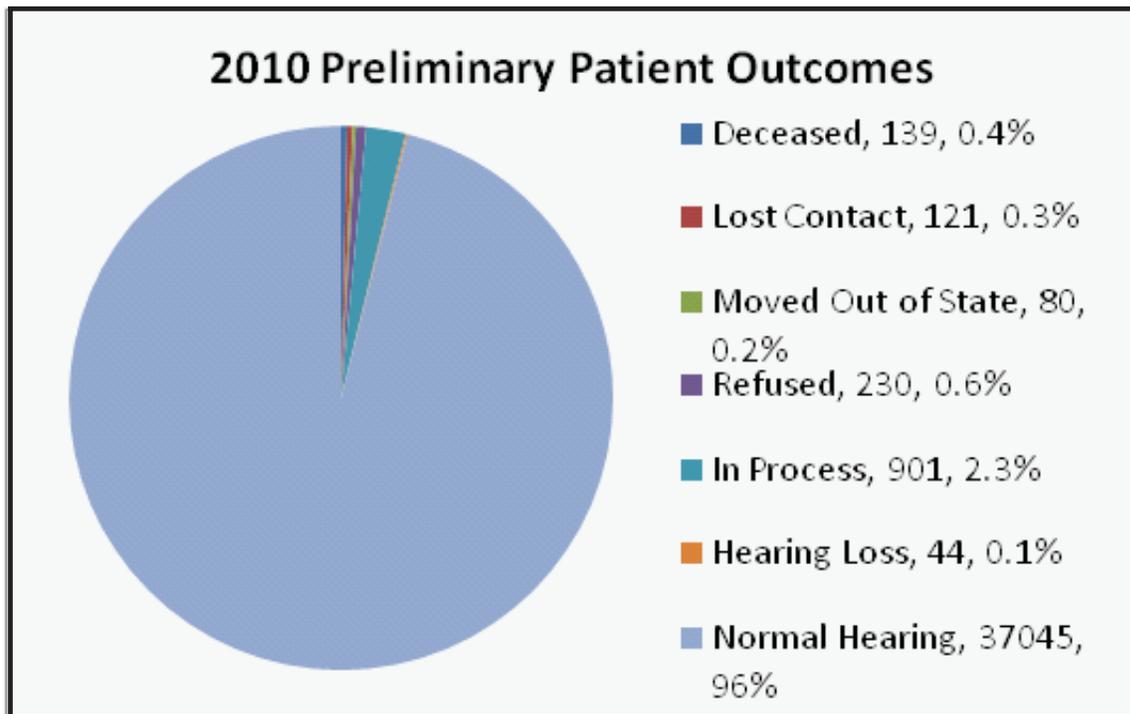
### **Oelwein**

Brenda Carradus, RN  
Child Health Specialty Clinics  
212 8<sup>th</sup> Avenue SE  
Oelwein, IA 50662  
(319) 283-4135 phone  
(319) 283-4140 fax  
[brenda-carradus@uiowa.edu](mailto:brenda-carradus@uiowa.edu)

# 2010 EHDI Program Update

This update provides a look at the preliminary 2010 EHDI data as of January 18, 2011. Since eSP™ is a live web based data system, data could change at any time. The data presented below is a point in time look at Iowa EHDI data. All data presented are based on the infants reported to the EHDI program.

In 2010, there were 38,560 infants reported to the EHDI program. Of these, 38,526 infants were born in Iowa birthing hospitals or were out-of-hospital births in Iowa. The following chart shows the patient outcomes of these infants. In 2010, 96 percent (37,045) of children were shown to have normal hearing and 0.1 percent (44) of children were diagnosed with a permanent hearing loss (sensorineural, permanent conductive, mixed, auditory neuropathy). The number of children diagnosed with a hearing loss will increase as follow up continues on children who are still in process. The number of children marked as lost contact will also continue to increase while the number of children marked as in process will decrease with additional follow up for children born towards the end of the calendar year. In addition, the number of children marked as moved out of state or refused could also change as follow up continues.

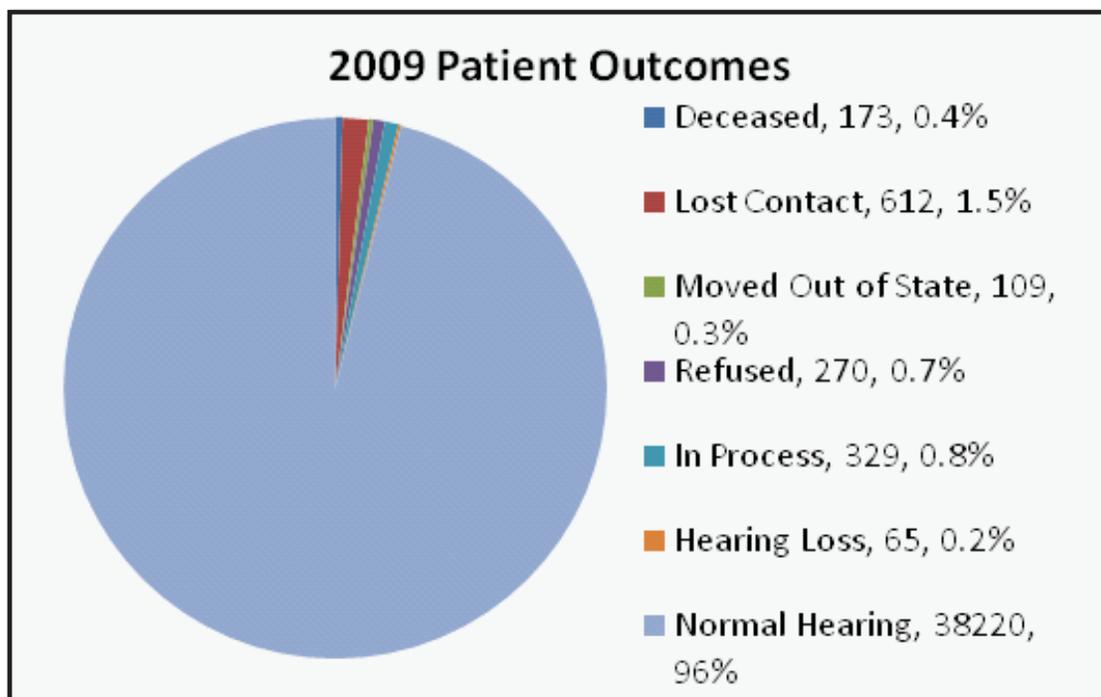


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# 2010 EHDI Program Update

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In 2009, there were 39,778 infants reported to the EHDI program. Of these, 39,671 infants were born in Iowa birthing hospitals or were out-of-hospital births in Iowa. Compared to 2009 outcomes, 2010 outcomes are similar. Ninety-six percent (38220) of children were shown to have normal hearing and 0.2 percent (65) children were diagnosed with a permanent hearing loss (sensorineural, permanent conductive, mixed, auditory neuropathy).



The EHDI program strives to meet the “1-3-6” guidelines for infants to be screened by 1 month, diagnosed by 3 months, and enrolled into early intervention by 6 months. In 2010, 97.9 percent (37316/38119) infants were screened by 1 month of age. In addition, of those children who missed or referred (did not pass) their birth screen, 51 percent (1536/3005) received their outpatient screen by 1 month of age. This compares to 2009 data, where 97.9 percent (38437/39250) of infants were screened by 1 month of age and 59 percent (1616/2753) of infants who missed or referred their birth screen received an outpatient screen by 1 month of age. These 2010 data may increase due to late entry of screen results, children born at the end of the year, etc. Compared to 2009, the 2010 data show that the same proportion of Iowa births are receiving a birth screen by 1 month of age and only slightly fewer are receiving their outpatient screen within 1 month of age. This coming year, the EHDI program will focus on increasing the timeliness of outpatient screens to try to increase this percentage. Diagnostic aging reports are

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# 2010 EHDI Program Update

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unavailable at this time. Once these are available, the 3 month goal will be calculable. We are currently working on the 2009 Early ACCESS data match to identify children enrolled in early intervention by 6 months of age. Results will be available at the April advisory committee meeting.

Overall screening rates show that 99 percent of infants were screened by hospital discharge in 2009 (38959/39250) and 2010 (37727/38119). These percentages are slightly higher than the 1 month goal percentages in 2009 and 2010 due to the number of infants in the NICU nursery who were not screened within the first month of age, but screened before hospital discharge. Outpatient screening rates for infants requiring an outpatient screen (infants who missed or referred their birth screen) show that 81 percent (2427/3005) in 2009 and 77 percent (2132/2753) in 2010 were screened. Of those who were not screened, only 491 children in 2009 and 539 in 2010 would be eligible to receive a rescreen. The remaining children were not eligible due to the following circumstances: moved out of state, died, refused, or children with atresia. The overall 2010 data are higher than the 1 month goal percentages due to the number of infants who were screened after 1 month of age. They also highlight the importance of getting infants rescreened in a timely manner which will improve our "1-3-6" outcomes.

The following table shows the refusal rates from 2007 – 2010. The increase from 2007 is most likely due to an increase in reporting, not an actual increase in the number of refusals. Since 2008, the refusal rate has stayed around 0.6 percent. A majority of refusals occur prior to the birth screen, particularly among home births with an 83 percent (186/225) birth screen refusal. Due to this, the refusal rate in 2010 should not change significantly as the EHDI program continues 2010 follow up.

2007	2008	2009	2010
<b>Refused among all babies in eSP</b>			
0.4% (185/41327)	0.6% (244/40511)	0.7% (270/39778)	0.6% (230/38560)
<b>Refused before initial screen among patient outcome of refused</b>			
81% (150/185)	96% (233/244)	96% (259/270)	98% (225/230)

A presentation with more current data will be given to the EHDI Advisory Committee at the April meeting and throughout the year. These data will also be published in future EHDI newsletters. If you have questions about these data or other EHDI data, please contact Jen Thorud, EHDI program evaluator at [jthorud@idph.state.ia.us](mailto:jthorud@idph.state.ia.us) or (515) 281-0219 or Tammy O'Hollearn, EHDI coordinator, at [toholllea@idph.state.ia.us](mailto:toholllea@idph.state.ia.us) or (515) 242-5639.

**By Jen Thorud, EHDI Program Evaluator**

# Welcome Brenda Walker & Grace Bargstadt!

Grace and Brenda are the newest EHDI advisory committee members. Grace Bargstadt recently joined the committee as the representative of the Iowa statewide group of Area Education Agency Special Education Directors. Grace currently serves as the special education director for Area Education Agency 11 (Heartland) in central Iowa. She has been employed at Heartland for the past fifteen years in various administrative positions including supervising programs and staff that serve students with hearing impairments. Grace's first job out of college was as a teacher of the deaf in a self-contained classroom for elementary aged students. She holds a bachelor's degree major in deaf education and elementary education and a master's degree in speech and language pathology. Although Grace's career has provided her with the opportunity to work in many ways to improve the learning outcomes for all students with diverse learning needs, she is passionate about doing whatever it takes to improve the learning outcomes for students who are hearing impaired and in need of an appropriate educational opportunity in our school systems.



Grace Bargstadt

Grace cherishes the time she spends with her three children and two grandsons who all live in the greater Des Moines area. She also enjoys taking classes to develop new hobbies and getting outside to golf, ride a bike, and walk along the nature trails. Travel experiences within the United States as well as international destinations have provided her with an appreciation of the similarities that exist among us as well as the value of diversity that enhances the richness of life.

Brenda Walker, MSN, RNC is a neonatal clinical nurse specialist with Iowa Health Des Moines. Her nursing education has been a journey originally graduating with her diploma in nursing from Iowa Methodist Medical Center, bachelor degree in nursing at Grandview University, and then Master of Science in nursing at Clarkson College. Most of her career in nursing practice has involved work in newborn care (neonatal intensive care and newborn care in maternity) but she did work for the area education agency for 2 years as a nurse consultant. Brenda will serve as a representative for the Iowa Hospital Association.



Brenda Walker

Brenda's special interests are newborn outcomes, developmental care, and feeding. Brenda is married, has 6 children, and 8 grandchildren. In her spare time she enjoys quilting, reading, and being with her family.

# A More in Depth Look at Iowa Hearing Loss Data

About 40,000 children are born each year in Iowa. Based on research from other states, we would expect that 80 to 100 of these children are born with a permanent hearing loss. When looking at the hearing screening and diagnostic results for children overall in the statewide Iowa EHDI database (eSP), there is not yet a clear picture of how many children are diagnosed with a permanent hearing loss for any given year. For this reason, an in-depth review of the children born in Iowa in 2007, 2008 and 2009 was recently completed to identify those children who have been diagnosed with a permanent hearing loss, the age at which they were diagnosed and how quickly they received amplification. A word of caution, the data in this table reflect a snapshot in time. There have been additional children diagnosed with hearing loss who were born in 2008 and 2009 since this review took place. In some cases they are likely children with late onset hearing loss, while other late identification is due to middle ear dysfunction, untimely referrals or lack of follow through.

	2007 (n=53)	2008 (n=67)	2009 (n=56)
Average age of hearing loss identification	10.3 months	6.4 months	4.4 months
Range	0-36 months	0-26 months	0-16 months
	2007 (n=12)	2008 (n=32)	2009 (n=28)
Average age of referral to early intervention	13 months	2.4 months	5 months
Range	1-36 months	0-10 months	0-18 months
	2007 (n=18)	2008 (n=12)	2009 (n=10)
Average age of hearing aid fitting	9.3 months	4.3 months	4.6 months
Range	1-37 months	1-14 months	1-14 months

For children who were born in Iowa in 2007, 53 have been identified as having a permanent hearing loss. The average age of diagnosis was 10.3 months, with a range of 0-36 months. Only 12 records had information regarding age of referral to early intervention services, with an average age of referral at 13 months and a range of 1-36 months. 18 of the children had information regarding age of hearing aid fitting, with an average age of fitting at 9.3 months and a range of 1-37 months.

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# A More in Depth Look at Iowa Hearing Loss Data

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For the children who were born in 2008, 67 have been identified as having a permanent hearing loss. The average age of diagnosis was 6.4 months, with a range of 0-26 months. Information regarding referral to early intervention services was available for 32 children, with an average age of referral at 2.4 months with a range of 0-10 months. Hearing aid fitting age was available for 12 children with an average age of fitting at 4.3 months and a range of 1-14 months.

Of the children born in 2009, 56 have been identified with a permanent hearing loss. The average age of diagnosis was 4.4 months with a range of 0-16 months. Early intervention referral information was available for 28 of the children. The average age of referral was 5 months with a range of 0-18 months. Age of hearing aid fitting information was available for 10 of the children. The average age of fitting was 4.6 months with a range of 1-14 months.

A review of case notes was done for all children who were identified with hearing loss after six months of age in an attempt to understand why the hearing loss was not diagnosed earlier. Several reasons for late diagnoses were identified. Some children were not coming in for appointments due to scheduling issues, difficulty contacting parents and parental refusals for testing. Other children had middle ear dysfunction, which was managed by a physician before the underlying permanent hearing loss was discovered. Some children had other major health concerns, which may have delayed testing.

In addition, some children passed their newborn hearing screening but were later diagnosed with a hearing loss. Others had health concerns such as meningitis or cancer treated with chemotherapy. It is possible, although difficult to know for sure, that some of these children had a delayed onset of hearing loss.

It is clear from these data that progress has been made each year in decreasing the age of hearing loss identification, referral for early intervention services and fitting of amplification for children in Iowa. From 2007-2009, the age of hearing loss identification decreased by 5.9 months from 10.3 to 4.4 months. While improvements were also seen in the age of referral to early intervention and the age of fitting of amplification, far fewer records contained this information. In order for the data to be accurate, it is important that hearing screening, diagnostic assessment data, as well as amplification and early intervention data is reported consistently and completely for children under the age of three. There is still work to be done as we continue to work towards reducing the age of hearing loss identification but this in-depth review has shown some positive trends over the last three years. Tammy O'Hollearn, state EHDI coordinator, says she believes the data will continue to improve. She reports the EHDI team has taken steps to improve data quality and is implementing quality improvement strategies in the areas of screening (reducing refer and miss rates), timely referral and reporting, follow up, as well as healthcare provider education.

***By Amanda Carr, M.A., Audiology Student at University of Iowa***

# Evidence to Practice: Improving Care for Children with Hearing Loss

In 2008, more than 50 experts gathered for two days to review and prioritize existing newborn hearing screening, diagnosis and intervention recommendations, to identify the most effective of these recommendations, and to create a plan for incorporating evidence-based recommendations into practice.

Conclusions and recommendations from the workshop, "Accelerating Evidence Into Practice for the Benefit of Children With Early Hearing Loss," are summarized in an article of the same name in the supplement, "Improving the System of Care for Infants and Children with Early Hearing Loss" (*Pediatrics*. 2010;126:S1-S69).



Newborn hearing screening has become successful over the last decade. Currently, more than 95% of newborns are screened for hearing loss. However, diagnosis and intervention rates are lower: less than 60% of newborns who do not pass their screening have a documented diagnosis and only 77% of those diagnosed with hearing loss receive intervention services by 6 months of age.

Workshop participants used a modified Delphi process to identify the top five existing recommendations for each of the following key areas: diagnosis, treatment, parental and public awareness, and continuous quality improvement. For example, participants indicated that using outreach to ensure at-risk families seek follow-up was the top priority for the diagnosis category. In addition, ensuring infants have hearing aids within one month of diagnosis was the top priority for the treatment and intervention category; providing special resources to minority and non-English speaking parents was the top priority for the parental and public awareness category; and expanding state data management and tracking systems was the most important recommendation for continuous quality improvement.

Participants also made choices for organizing a stewardship group with public-private oversight funded and organized by the federal government as the top priority.

Participants divided into four breakout groups that corresponded with the four areas of focus for further discussion about action steps and organizations that could take responsibility for implementing recommendations.

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# Evidence to Practice: Improving Care for Children with Hearing Loss

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“More infants are being screened early for hearing loss, but the extent of essential diagnostic follow-up and treatment is variable, and there is concern that not all children are receiving the best available, evidence-based care. The outcomes of infants identified with early hearing loss and their families can be improved by efforts to accelerate evidence into practice and to continuously monitor access, quality, and outcomes of services,” concluded the authors at the end of the supplement article. To access the supplement in its entirety on the Pediatrics Web site go to:

[http://pediatrics.aappublications.org/content/vol126/Supplement\\_1/](http://pediatrics.aappublications.org/content/vol126/Supplement_1/).

In 2001 the American Academy of Pediatrics (AAP) implemented a program, Improving the Effectiveness of Newborn Hearing Screening, Diagnosis, and Intervention through the Medical Home, focused on increasing the involvement of primary care pediatricians and other child health care providers by linking follow-up services more closely to the newborn’s medical home.

The Iowa EHDI program works with primary care providers to ensure Iowa children are screened, rescreened, and receive an audiological assessment. In addition, the EHDI program follows up with primary care providers and parents of the 10% of infants identified with risk factors associated with late onset or progressive hearing loss to ensure children receive a follow up hearing screen or assessment as recommended by the Joint Committee on Infant Hearing Screening.

Iowa’s EHDI program is successfully screening 99% of newborns for early hearing loss. Of those screened, 91.6% in 2009 and 93.7% in 2010 passed. Additionally, of the newborns that missed or did not pass their initial birth screen, 70% went on to pass their outpatient screen in 2009. In 2009, 661 children were lost to follow up or documentation. Sixty-five children were diagnosed with a permanent hearing loss. Another 291 children were shown to have a conductive hearing loss; however, we cannot identify how many children had a permanent conductive loss or normal hearing because there is no evidence of the child being re-screened following medical intervention. It is imperative that children return to a pediatric audiologist for a hearing screen and/or diagnostic evaluation if a child does not pass their birth screen and requires medical intervention to treat fluid or ear infections to rule out the possibility of a permanent loss.



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# Evidence to Practice: Improving Care for Children with Hearing Loss

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For additional information about follow up efforts specific to our state, please feel free to contact:

Shannon Sullivan, M.D.  
AAP EHDI Chapter Champion  
(319) 384-7745  
[Shannon-Sullivan@uiowa.edu](mailto:Shannon-Sullivan@uiowa.edu)

Jeffrey Hoffmann, D.O.  
Iowa Academy of Family Physicians  
(563) 252-2141  
[jeffreyh@guttenbergfma.com](mailto:jeffreyh@guttenbergfma.com)

Also, be sure to visit [http://medicalhomeinfo.org/how/clinical\\_care/hearing\\_screening](http://medicalhomeinfo.org/how/clinical_care/hearing_screening) and [www.idph.state.ia.us/iaehdi/default.asp](http://www.idph.state.ia.us/iaehdi/default.asp) to access a number of resources related to newborn hearing screening and follow up.

With continued support from Iowa's primary care providers, we can reduce the number of children who become lost and increase the number of children who are identified with a hearing loss and enrolled in appropriate early intervention services in a timely manner.

## Iowa Healthy Families Line

**Health information and referral  
line services 24 hours a day,  
seven days a week.**

The Healthy Families Line can help you find information on topics such as:

- Birth control and pregnancy
- Breast and cervical cancer
- Child care
- Child and infant health
- Domestic abuse
- Maternal and prenatal care
- Sexually transmitted diseases



# Iowa Hands & Voices Spring Family Camp 2011

Once again Iowa Hands & Voices will sponsor a weekend camp for families on April 30, 2011. The camp will be held on the grounds of the Y.M.C.A. near Boone.

Families will have the option of "early bird" arrival on Friday, April 29 for a camp fire and night hike with overnight accommodations in YMCA cabins; or they may choose to show up for the "Saturday-only" full day schedule.



Participants will enjoy large and small group family-centered activities, workshops and networking time for parents, and YMCA day camp for kids.

During day camp kids are grouped with same age peers and will enjoy activities like archery, the climbing wall, pony / horseback riding, or zip-line. Children under the age of 5 will be supervised in the lodge near the parent group.

The cost for "early bird" registration is \$40 per adult and \$50 per child (ages 5-18). The cost for Saturday only registration is \$25 per adult and \$40 per child. Some funds are available for families who cannot afford the cost to attend camp.

Registration forms are available on the Iowa Hands & Voices website [www.iowahandsandvoices.org](http://www.iowahandsandvoices.org) or by contacting Susan Hagarty by e-mail [susan-hagarty@uiowa.edu](mailto:susan-hagarty@uiowa.edu).

**Registrations must be received by March 25.**

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## Infant Hearing Screening Equipment Loaner Program

**Are you having problems with your hearing screening equipment?** The Iowa EHDI program has a limited number of loaner screening OAE units available for hospitals to use while their screening equipment is being repaired.

There is no charge for borrowing the equipment.

**For information about loaner units, please contact:**

Hearing Equipment Coordinator –  
(800) 272-7713

Lenore Holte - (319) 356-1168

Emily Andrews - (319) 384-6894

Nick Salmon - (515) 576-5312

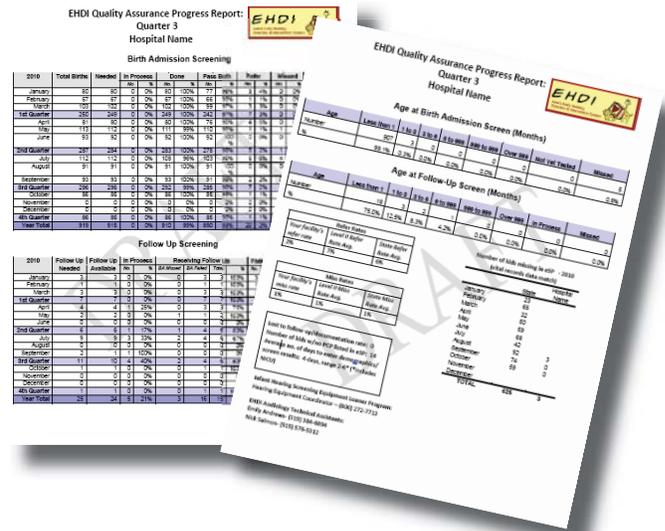
Your single point of contact to assist families in connecting with Early ACCESS and community-based services that address specialized child and family needs

1-888-IAKIDS1 or  
1-888-425-4371

[www.EarlyACCESSIowa.org](http://www.EarlyACCESSIowa.org)

# Coming Soon ...EHDI Quality Assurance Hospital Progress Reports

Unidentified hearing loss at birth can adversely affect speech and language development, social-emotional development, as well as academic achievement in children. The goal of the universal hearing screening of all newborns and infants in Iowa is early detection of hearing loss to allow children and their families the opportunity to obtain early intervention services and family support. Hospitals play a very important role in early identification because 98.9 percent of children in Iowa are born in a hospital setting.



In an effort to improve screening rates, timely reporting and decrease the number of children lost to follow up, the Iowa Department of Public Health (IDPH) EMDI program is embarking on various quality assurance initiatives. One initiative is the development and implementation of quarterly hospital progress reports. There is no plan at this time to publish these reports by hospital. Instead, it is a tool hospitals can use to improve the quality of their program which ultimately benefits children and families of Iowa.

During the summer of 2010, IDPH EMDI made a request for volunteers from Iowa hospitals to serve on a progress report work group. The work group consisted of at least one nurse representative from each hospital level; Lucinda Hollingshead-Mary Greeley, Joyce Kirchner-Fort Madison, Michelle Simmons-Mercy Des Moines, Bobbi Brocka-Ellsworth Municipal and Jenni Macke-Stewart Memorial. EMDI staff included Emily Andrews and Nick Salmon, EMDI audiology technical assistants; Tammy O'Hollearn, state EMDI coordinator and Jen Thorud, EMDI program evaluator. The work group was charged with developing a template for quarterly hospital progress reports.

The template was developed in the fall and each hospital work group member received an example report based on 2010 quarter three data for their hospital. The progress report includes the following data:

- refer and miss rates
- age at screening and re-screening
- number of children not entered into eSP
- number of children identified with a loss
- number of children "lost to follow up"
- number of records with missing primary care providers (required field by law)
- timeliness of data entry of demographics and birth screen results (required by law)

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# Coming Soon ...EHDI Quality Assurance Hospital Progress Reports

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In addition to the data outlined above, the report will include refer/miss rate state goals, as well as average rates for hospitals of the same level. This will allow hospitals to compare themselves with their peers.

Feedback from the hospital work group representatives and EHDI Advisory Committee members has been very positive. Hospital personnel felt the report would be a useful tool they can use to improve their hearing screening and follow up program - "data don't lie," as one representative said. In addition, the tool will also be helpful for the state EHDI program to target education and training to hospitals not making progress.

The first quarterly report for 2011 will be e-mailed to the EHDI contact at each hospital in April. Thank you to the work group for their assistance with this important quality assurance initiative. We look forward to hearing what other hospital EHDI contacts have to say about the new hospital progress reports!

*By Tammy O'Hollearn, Iowa EHDI Coordinator*

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## Classroom Amplification Improves District Reading Scores

In 2009-2010 the Mississippi Bend Area Education Agency began a professional development program with the purpose of improving professional practices that will in turn improve student achievement. The staff collected data throughout the school year which was presented at the end of the year in an "adult science fair", much like a poster session you see at a professional conference. The results show that by changing current practices and/or trying something new with students, we improve our professional skills and improve student test scores in reading, math and writing.

The concept of showing improvement in student achievement was daunting for some in our agency, however not for the hearing department. The audiologists knew immediately how to show growth in student test scores. It has been documented for some time now in the profession of educational audiology that classroom amplification can improve student test scores, among other things:

the use of classroom amplification

- Increases reading scores,
- Improves standardized test scores,

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# Classroom Amplification Improves District Reading Scores

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- Create a positive learning environment,
- Enhance teacher voice quality and fluency,
- Reduce stress on the teacher's voice,
- Increase class participation,
- Increase on-task behaviors, and
- Benefits students of all ages.



An audiologist from each sector of AEA 9 monitored two classrooms of the same grade level. One classroom was amplified and one was unamplified. Reading test score data were collected and compared.

The classroom amplification system consisted of a wireless teacher microphone. The microphone amplifies and transmits the speaker's voice to a receiver that evenly distributes speech throughout the room via a speaker(s); allowing all students to hear instruction clearly.

To ensure consistent use of the systems, including daily microphone usage we chose teachers who had an interest in classroom amplification and understood the benefit of its use. The teachers were in-serviced on how to use the systems and each unit was monitored throughout the school year to make sure it was working properly.

Agency loaner equipment was installed in the four classrooms. We used two LightSpeed single speaker RedCat infrared units, a 705iR single speaker, infrared system and a Lifeline four speaker FM system. A first grade classroom, a third grade classroom, and two fifth grade classrooms were included in this particular study. Fall pretest and spring post test district reading scores of amplified classrooms were compared to unamplified classrooms of the same grade. Students were also given a survey at the end of the school year to assess their satisfaction with the sound field system.

Students rated the following questions on the scale; *Not At All*, *Maybe* and *Definitely*.

1. Using the sound field system, I can hear my teacher's voice when my classmates are talking.
2. Using the sound field system, I can hear my teacher from anywhere in the classroom.
3. Using the sound field system, I can hear my teacher when she walks around the room.
4. Using the sound field system, it is easier for me to hear my teacher.
5. I would like to have the sound field system in my classroom next year.

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# Classroom Amplification Improves District Reading Scores

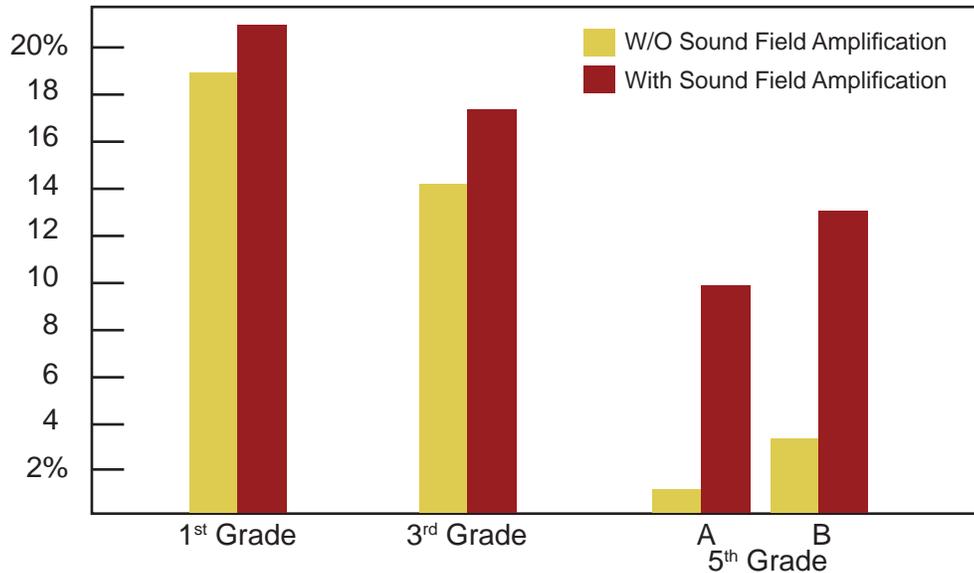
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Our findings:

There was a significant increase in post test reading scores of amplified classrooms, with the largest increase in the 5th grade classrooms.

## % Improvement in District Reading Scores

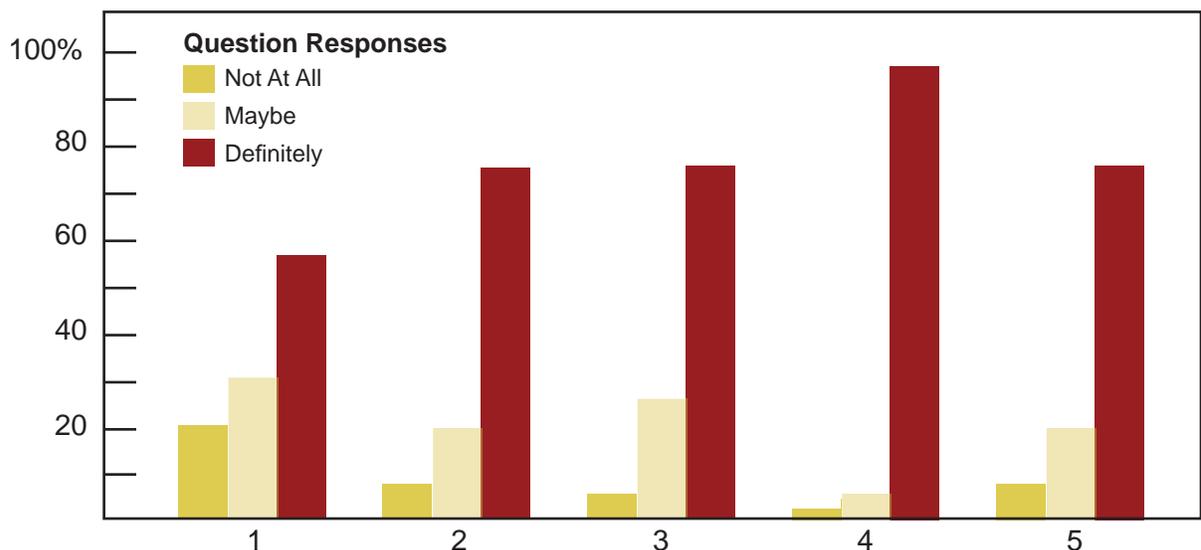
Unamplified & Amplified Classrooms



Student's surveys across all grades showed a majority of responses to be "Definitely."

## Student Survey Results

in Amplified Classrooms



# Classroom Amplification Improves District Reading Scores

*continued from page 16*

This study supports many previous studies, as well as the American National Standards Institute S12.60 Classroom Acoustics Standard, which gives recommendations for classroom design, acoustic, and amplification standards in all classrooms. Previous studies have shown that children rely on different signal-to-noise ratios than adults. A clean signal gives them a better opportunity to develop speech and to understand what is being said in class – which in turn leads to better academic performance.



Typically, when using classroom amplification systems, we install available units in the preschool through second grade classrooms first. These students tend to have the highest rate of otitis media and fluctuating hearing loss at a time when they are learning language.

In this study, the 5th grade classes showed the largest growth between pre and post test reading scores. This was a surprise. The fifth grade students in amplified classrooms showed a 10 percent gain in reading scores in one school year over those in unamplified classrooms.

We believe the following occurrences contribute to the increased need for amplification in the upper elementary classrooms:

- Classrooms are noisy
- Fifth grade has become more of a lecture or auditory setting
- Teachers no longer stand in the front of the class
- New vocabulary and concepts are presented throughout the school day across subjects
- There is very little small group instruction in the fifth grade

Based on this study's outcome, it appears that classroom amplification significantly benefits upper elementary students, as well as lower elementary students. We suggest when installing amplification systems, educational audiologists should consider amplification for all grade levels.

*continued on page 18*

# Classroom Amplification Improves District Reading Scores

*continued from page 17*

In the majority of schools, classroom amplification is a luxury. Superintendents and principals generally see amplification systems as an unnecessary expense. Unless the principal or district superintendent sees the benefit of classroom amplification, the school will not invest in the equipment. In our area, principals are seeing the benefit of classroom amplification in improved test scores. Our Title One buildings have purchased systems for all classrooms in the building through Title One grants.

This study, though nothing new overall in concept, did have some surprising results. It also showed that we, as educational audiologists can have a definite impact on student academic achievement at all grade levels.

*By Patricia Drone, Au.D., CCC-A; Dana Spooner, Au.D., CCC-A; Martha Tabor, M.S., AAA; and Stephanie Childers, Au.D., CCC-A*

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## Iowa EHDI News Goes Green!

The EHDI program will no longer print or mail hard copies of the quarterly newsletter. The newsletter will still be available through the EHDI website for download. If you would like to be added to our e-mail distribution list, please e-mail Jinifer Cox at [jcox@idph.state.ia.us](mailto:jcox@idph.state.ia.us).

# Save the Date

## Come Tailgate with AG BELL!

**Prior to the Iowa Hawkeye Spring Game**

**Tentative Date: April 16, 2011**

**From 9:00 – 12:00**

**Center for Disabilities and Development  
near Kinnick Stadium in Iowa City**



Alexander Graham Bell Association for the Deaf and Hard of Hearing

[agbell.iowa@gmail.com](mailto:agbell.iowa@gmail.com)

<http://tinyurl.com/agbellofiowa>

Mini-workshops for parents, professionals, and teenagers plus tailgate activities for children.

The event is open to any professional, individual with hearing loss or family member.

Members and non-members of AG Bell are welcome to attend.



AG Bell is pleased to offer a FREE six month trial membership for parents and families of children who are deaf or hard of hearing.

Join today at: <https://nc.agbell.org>

**More information to Follow**

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**Requests?  
Feedback?  
Comments?  
Suggestions?**

We welcome your questions, comments and suggestions about this newsletter. Please forward any feedback about Iowa EHDI News to:

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**Additional copies of Iowa EHDI News are available by contacting Tammy O'Hollearn.**