



Assuring a System of Care for Iowa's Children and Youth with Special Health Care Needs

Diagnostic Hearing Evaluations Using Telehealth Technologies

Final Report

September 30, 2011

Funded by
American Recovery and Reinvestment Act (ARRA)
Iowa's IDEA Part C (Early ACCESS) Federal Funds 2009-2011



For more information about this project, contact: Rae Miller at rae-miller-1@uiowa.edu or 712-792-4500.

Services/Products/Activities:

Conduct and evaluate a pilot for performing remote ABR evaluations for children suspected of having a hearing loss, allowing audiologists to perform diagnostic ABRs remotely with the assistance of a trained professional or paraprofessional located at the remote site. Pilot will be overseen by Iowa's Early Hearing and Detection system of care audiologists Lenore Holte and Emily Andrews at the Center for Disabilities and Development in Iowa City. Remote sites will be staffed by AEA audiologists or CHSC RNs or other designated staff. Permission from Department of Education to purchase ABR will be sought since the cost will exceed \$5000.

Deliverables:

By September 30, 2010, one Area Education Agency pilot area will be established with equipment (ABR, laptop computer, earphones, communication software, and cameras) to conduct pilot using telemedicine for diagnostic ABRs. Pilot site will enter into Memorandum of Agreement with University of Iowa/Child Health Specialty Clinics, and will include plan for sustainability. By November 1, 2010, staff at pilot site will be trained to conduct telemedicine ABRs. By September 30, 2011 telemedicine diagnostic ABRs will have been conducted on at least 25 infants and toddlers. By September 30, 2011 best practice guidelines will be documented and available for statewide dissemination. Ownership of the ABR equipment after September 30, 2011 will be specified in the MOA with the AEA as agreed to by the Department of Education and CHSC. Permission from Department of Education will be obtained before purchasing ABR since amount exceeds \$5000.

Project Summary:

A pilot for performing remote Auditory Brainstem Response (ABR) evaluations for children suspected of having a hearing loss has been conducted and is currently in the process of evaluation. This service allows audiologists to perform diagnostic ABRs remotely with the assistance of a trained healthcare professional located at the remote site. The pilot project is being overseen by Iowa's Early Hearing and Detection (EHDI) system of care audiologists, Lenore Holte and Emily Andrews, at the Center for Disabilities and Development (CDD).

In November 2010, the Vivosonic ABR Integrity™ 500 System was purchased. Funds for this equipment came from ARRA (\$15,000) and the Early Hearing Detection and Intervention (EHDI) program (\$5,700). The diagnostic equipment was selected based on its ability to conduct the technical procedure without the need to sedate the infant. Permission to purchase this equipment was granted from the Department of Education – see attached letter.

In late November, Holte and Andrews were trained by the vendor on how to use this equipment. Pilot diagnostic evaluation sessions then occurred at CDD during the months of December 2010 through April 2011. During this time, approximately 6 infants and toddlers were assessed using the diagnostic ABR telehealth equipment. Although the testing occurred in the CDD building, Holte and Andrews conducted the testing in different locations. This allowed them to practice, test, and troubleshoot with the equipment before conducting the diagnostic assessments remotely. Results of this trial were very positive.

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In May 2011, Holte and Andrews launched the telehealth pilot from CDD to the Child Health Specialty Clinic (CHSC) Regional Center located in Oelwein, IA. The Oelwein CHSC Regional Center was selected as the pilot site based on several variables, including: (1) Geographic proximity to an Amish community; (2) Distance between other diagnostic ABR units; and, (3) Oelwein staff previously trained on EHDI System of Care and conducting Otoacoustic Emission (OAE) hearing rescreens.

On May 10, 2011, remote telehealth ABRs were conducted on nine-month-old twin girls who came to the Oelwein CHSC Regional Center. These babies were graduates of an extended NICU stay and thus at risk for delayed onset hearing loss. For this initial remote testing, one audiologist was onsite at the CHSC Regional Center to assist the RN and troubleshoot if necessary, and the other audiologist was at CDD with technical support on standby. The diagnostic ABR worked successfully. One twin was found to have normal hearing. The other had a mild transient conductive hearing loss.

There have not yet been any additional opportunities to conduct diagnostic ABR evaluations via telehealth in Oelwein. Although area health care providers were informed of this additional option, no referrals have been made to date. Strategies are currently underway to consider alternate placements for the telehealth ABR unit. For example, the Marshfield Clinics in Wisconsin are similar to the CHSC Regional Centers in their staffing and strategic, state-wide locations. Marshfield Clinics have been conducting telehealth diagnostic ABRs for the past 2 years. The Marshfield Clinics share the telehealth equipment and ship to individual sites based on need. Holte continues to be in discussions with representatives from Wisconsin and plans to potentially model their telehealth hearing diagnostics program in Iowa.

Next steps include: (1) Further evaluation on making the telehealth equipment mobile and available to other CHSC Regional Centers, (2) Finalizing the best practices guide for dissemination, and (3) Developing marketing strategies to better inform area healthcare providers on the availability and ability to perform hearing diagnostic telehealth equipment in their respective areas.

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STATE OF IOWA

October 27, 2010

Dr. Debra Waldron
Child Health Specialty Clinics (CHSC)
100 Hawkins Drive – Room 247-D
Iowa City, IA 52242-1011

Dear Dr. Waldron:

This letter documents the Iowa Department of Education's approval of CHSC's purchase of audiological equipment (which is more than \$5000 per unit) as a part of the American Recovery and Reinvestment Act (ARRA) Project (f) outlined in our two agencies' Memorandum of Agreement, amended April 12, 2010.

The Department of Education requires that the purchase of this equipment be documented on "Supplies" line item of your claim form. Please also note that equipment purchases have federal ARRA vendor reporting requirements that must be provided by CHSC/University of Iowa. If you need further information, please contact me.

Sincerely,

Julie M. Curry, State Coordinator
Early ACCESS (IDEA Part C)
Iowa Department of Education
400 East 14th Street
Des Moines IA 50319-0146
(515) 281-5437
Julie.Curry@iowa.gov

CC: Dr. LauraBelle Sherman-Proehl

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Quotation

Date **10/6/2010**
Quotation # **101010-020**

Prepared by: Donna-Maria Lakshman

Quotation For:	University of Iowa Hospital & Clinic Lenore Holte 148 CDD, 100 Hawkins Drive Iowa City, IA 52242 (319)356-1168	Ship To:	University of Iowa Hospital & Clinic Lenore Holte 148 CDD, 100 Hawkins Drive Iowa City, IA 52242 (319)356-1168
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SALESPERSON	P.O. NUMBER	SHIP DATE	SHIP VIA	F.O.B. POINT	TERMS
Medical Technologies			UPS	Toronto, ON	Net 30 Days

QUANTITY	CODE	DESCRIPTION	UNIT PRICE	AMOUNT
1	V500-B	ABR Integrity™ V500 System	\$ 17,900.00	\$ 17,900.00
1	IN500-R	Training	\$ 2,500.00	\$ 2,500.00
1		FREIGHT and INSURANCE	\$ 300.00	\$ 300.00

Subtotal \$ 20,700.00
Total \$ **20,700.00**

Terms and Conditions:
Prices are in U.S. Dollars, FCA (Free Carrier) Vivosonic inc., Incoterms 2000.
Proposals are valid for 60 days. 20% re-stocking fee plus customs, duties, freight and insurance applies if equipment is returned within thirty days.
Warranty One (1) year manufacturer's warranty Integrity™ and printers from date of shipment.
The recipient may be subject to import duties and taxes; we have no control over these charges and cannot predict what they may be. Customs policies vary widely; you should contact your local customs office for further information. When customs clearance procedures are required, it can cause delays beyond our original delivery estimates.

This Quotation becomes a P.O. when completed and returned to Vivosonic via email or fax.

DATE	TAX ID	SIGNATURE

Configuration Description
<p>All Integrity™ V500 Systems include: V51 VivoLink™ Wireless Interface Module Ver. 4.5 with V51-PS and V51-GS, Notebook Computer, Carrying Computer Case, Peltor ear muffs, Battery Charger, 8 NIMH AA rechargeable batteries, Integrity™ V500 User's Manual, Database Software Module, 2 Vivosonic Auditory Counseling Notepads, 10 copies Re-order Form for Disposables and Consumables .</p> <p>General-practice ABR Modules include: A51 AmpliProbe® in-situ Pre-amplifier Ver. 4.5, 1 Set ER3-A-ABR Insert Earphones, B-71 Bone Conductor, ABR Software with SCRUB™ License, Calibration CD-ROM, Starter Set of Disposables: Foam Ear Tip Set for ER3-A-ABR Insert Earphone - ER3-14A (13 mm) and ER3-14B (10 mm), PVC Ear Tips - 20 ER3-14E 4.0 mm and 20 ER3-14D 3.5 mm, 1 Abrasive Skin Prepping Gel Tube, PDI Electrode Prep Pads, Single-use Neuroline® Electrodes.</p>

At Vivosonic, we are committed to the development of the most advanced, cutting-edge diagnostic equipment and believe the Integrity™ is one of the most exciting developments in OAE's and AEP's in recent years in the world.