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Project Title: MONTANA'S UNIVERSAL NEWBORN HEARING SCREENING AND INTERVENTION (UNHSI) PROGRAM: REDUCING LOSS TO FOLLOW-UP (LTFU) FOR SCREENING AND ASSESSMENT

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Accomplishments:

Year two of Montana's UNHSI grant was a year of continued evaluation, change and growth. Partnerships continued with birthing facilities, pediatric and Hearing Conservation Program (HCP) audiologists, Montana School for the Deaf and the Blind (MSDB), and the UNHSI stakeholders group. The Project Director and MSDB Consulting Audiologist worked closely with the Affordable Care Act (ACA) home visiting program to provide on-site hearing screening training to home visitors in all four county health departments in Montana currently contracted to provide home visiting services using the Parents as Teachers home visiting model.

A second pilot project was implemented in a more rural health department in year two of the UNHSI grant. The health department, which serves a large Native American population, is providing free hearing screenings to WIC patients and out of hospital births, and providing follow-up on referrals for babies who do not return to the hospital for repeat screenings. All screening results are reported to the UNHSI program.

Increased work with the Data Coordinator has allowed the UNHSI program to spend more time evaluating screening data from birth facilities and providing timely feedback on missing data and other data quality issues. Quarterly "Report Cards" were developed and implemented to provide detailed feedback to all birthing facility staff on data quality and rates of screening, referral, and follow-up screening. The report cards document trends so screening staff can see their improvement and compare their performance to statewide performance. Birthing facility response to the report card has been very positive.

During CY 2012 the number of pediatric audiologists increased from five to nine. Two new audiologists were hired to existing audiology practices. The new pediatric audiologist in the eastern region of the state began providing diagnostic services in 2012 after receiving ABR equipment purchased with Year 1 UNHSI funding. In early 2012 conversations began with an audiologist in the northwest region of the state about providing diagnostic services. Working closely with the Montana American Association of Pediatricians (AAP) Hearing Champion, the necessary protocol was established at the local hospital to perform sedated diagnostic ABR testing as needed. The audiologist is now designated as a “pediatric audiologist”. The audiologist already had ABR equipment in his practice so UNHSI funding for equipment was not needed. Based on the analysis of current LTFU data, the decision was made to provide diagnostic equipment to an audiologist in the Helena area. An audiologist has been chosen and upon verification that the correct protocols are in place, funding will be provided to purchase ABR equipment. By the end of Year 2 of the UNHSI grant, there will be 10 practicing pediatric audiologists in Montana—doubling the number practicing at the time the UNHSI grant application was made in 2010.

Development in the Children’s Health Referral Information System (CHRIS) data system and subsequent use of the system by pediatric audiologists has increased the UNHSI program’s ability to identify infants diagnosed with hearing loss in a timely manner and ensure that appropriate referrals are made. An electronic referral process was developed so audiologists can complete referrals electronically at the same time they report evaluation results in CHRIS.

In September 2012, the UNHSI program began working on the Improving Hearing Screening and Intervention Systems (IHSIS) learning collaborative project through the National Initiative for Children’s Healthcare Quality (NICHQ). The project required the development of a core team for Montana which includes the Project Director, Data Coordinator, the MSDB Consulting Audiologist, and a parent. The parent’s key role in the IHSIS project has been valuable in increasing the UNHSI program’s cognizance of challenges families in Montana face—especially in regards to a parent to parent support network. In partnership with MSDB, we have begun to develop a system in Montana to support parent involvement as mentors.

Barriers:

Loss to follow-up on infants who do not pass initial screenings is a continuing challenge in Montana. The UNHSI program continues to address this issue by increasing the number of audiologists who can perform complete diagnostic evaluations in regions with no readily available access to these services. Also, the Project Director and the MSDB Consulting Audiologist are exploring options to provide information to primary care physicians on the importance of 1-3-6 guidelines and what the follow-up protocol is. To ensure the focus of this work is useful, a survey of Montana physicians will be completed in February.

Under-reporting of screenings and evaluations performed by audiologists continues to be a challenge for the Montana UNHSI Program. Development in the CHRIS system has increased our ability to monitor diagnostic evaluations that are reported. In April 2012, a fax-back form was developed for primary care physicians. The form is faxed to the physician of record for all babies who do not pass inpatient and outpatient screenings. Along with notification of the referral results, the form also requests information on the referral made by the physician for follow-up. The Project Director monitors whether the results from reported appointment with the audiologist are reported. If no evaluation is reported, the Project Director contacts the audiologist for further information.

Goals and Objectives: (progress summarized in the table below)

<i>GOAL: The goal of the Montana Universal Newborn Hearing Screening program is to ensure that all babies born in Montana receive hearing screening by one month of age, needed audiological diagnosis by three months of age, and to assure appropriate intervention prior to six months of age, by addressing the continuum of LTFU issues.</i>		
Objective 1: By December 31, 2012, increase the statewide percent of Montana-born babies completing newborn hearing screenings by one month of age to 98% for calendar year 2012.		
2-1.1	The Project Director will communicate with stakeholders quarterly to review LTFU statistics. With stakeholder input, select NICHQ strategies to pilot in Montana, and assess the impact of the strategies on local refer rates and LTFU.	Ongoing. Communication with stakeholders continues on a regular basis. Along with training developed in Year 1 and data system enhancements, a fax-back form and protocol was developed in Year 2 for primary care physicians to inform them of their patients who do not pass newborn screenings and collect referral information to improve our ability to follow-up on these babies.
2-1.2	The Data Coordinator will continue monthly data quality assurance functions. Feedback will be provided to reporting partners regarding accuracy and completeness of the data reported, including those babies with birth certificates but no screening data. Reinforce complete and accurate reporting of non-hospital births to identify babies born at home who receive screening at their local hospital or Hearing Conservation Program (HCP) audiologist's offices and to track	Ongoing. Monthly quality assurance of screening data is ongoing and concerns are addressed with birthing facility staff to obtain correct and complete screening data in a timely manner. The Project Director periodically checks data for "trends" indicating the need for improvement in data collection and reporting. Email communication to birthing facilities, audiologists, and midwives addresses these issues and provide advice on improved data collection and reporting protocols.

	outcomes of babies transferred from the original birth facility to one of four NICU facilities in Montana.	
2-1.3	The Project Director will ensure that birthing facilities in Montana can consistently improve the accuracy of newborn hearing screening by providing new or approved replacement screening equipment where necessary and providing on-site staff training on use of equipment. A training protocol focusing on implementation of appropriate NICHQ follow-up strategies will be used at each of those sites. Timeline: Ongoing activity through March 31, 2013.	Complete. The Project Director reviewed screening equipment information for all birthing facilities in Montana. Two birth facilities will receive new equipment by the end of this grant year. Training on use of the equipment and documentation will be provided along with the new equipment as needed.
2-1.4	The Project Director will work to identify hearing screening resources for non-hospital births, including those that occur in more remote areas of the state where percentage of LTFU is highest by enlisting the involvement of primary care providers, public health home visitors, Early Head Start programs with home visiting, and/or family support providers in those regions to educate and encourage parents, to assist with transportation to appointments, and to find resources to pay for screening and assessments. The UNHSI Program will also collaborate with the ACA Maternal, Infant and Early Childhood Home Visiting Program initiative.	Ongoing. Team training was provided to staff from four county health department who are providing ACA home visiting services in Montana. These program are in the process of implementing the Parents at Teachers home visiting model—which includes hearing screenings upon enrollment and then yearly thereafter. The Project Director also has begun conversations with the Early Head Start Program manager about OAE protocols and collecting OAE hearing screening data on children enrolled in Early Head Start. The Data Coordinator has begun data collection in an effort to begin discussion again with the DPHHS legal department regarding the option of midwives providing hearing screenings.
2-1.5	Working with the MCH Data Coordinator and MCH epidemiologists, the Project Director will analyze outcome of LTFU pilot project and explore expansion to additional sites if data analysis indicates.	Complete. Another pilot project in a more rural county health department which provides home visiting services to the Native American population in that region was implemented in Year 2. Equipment and onsite training was provided.
Objective 2: By December 31, 2012 increase to 98% the cases born in calendar year 2012 who receive needed audiological evaluations by three months of age.		
2-2.1	The Project Director will assure all audiologists who are performing	Complete. After evaluation of the data system in place the first year, it was

	evaluations on babies who have referred on newborn hearing screens, have HI*TRACK software.	decided to move reporting for the pediatric audiologists to the CHRIS database system. The reporting module was developed and all pediatric audiologists are now using the new system to report screening and diagnostic assessment results.
2-2.2	The Data Coordinator will review follow-up data monthly for all babies with “Refer” status.	Ongoing. The Project Director and Data Coordinator review monthly data and follow up with hospitals and audiologists as needed.
2-2.3	The MSDB Consulting Audiologist will maintain communication with all audiologists providing pediatric evaluations of infants who did not pass their newborn hearing screens.	Ongoing. The MSDB Consulting Audiologist follows up with audiologists on all infants who are diagnosed with a hearing loss or are in the process of being diagnosed.
2-2.4	The Project Director will provide audiological LTFU data to stakeholders quarterly for review and strategic planning.	Ongoing, but modified. Data from the CDC survey and other screening data is provided at the semi-annual stakeholders meetings.
2-2.5	The Data Coordinator will assess LTFU outcomes in Eastern Montana as a result of providing evaluation equipment.	Complete. According to preliminary data, there was only one baby LTFU the eastern region of the state compared with five in 2011.
2-2.6	Provide funding for ABR diagnostic equipment to an audiologist in the Northwest region of Montana to increase access to diagnostic audiology services for babies who refer on newborn hearing screenings.	After discussions with an audiologist in Kalispell, he chose to move forward with setting up protocols with the hospital to perform pediatric evaluations, and to use equipment he already has available in his practice. Therefore, diagnostic services are now available in that region. Helena was identified as another area with high LTFU and in need of pediatric audiology services. The primary audiology practice that provides services to infants has been contacted and began the process of setting up evaluation protocols with the local hospital. Once this process is complete, funding for the purchase of diagnostic ABR equipment will be provided.
Objective 3: Through March 31, 2012 expand the continuum of healthcare services and management for babies with confirmed congenital hearing loss.		
2-3.1	Using CHRIS provider and case management data, the Project Director will continue to analyze data on babies	Ongoing. New functionality within the CHRIS database was developed to provide data on whether a referral was

	with confirmed congenital hearing loss to determine whether genetic screening has been performed.	made for genetic testing by the diagnosing audiologist.
2-3.2	The Project Director will develop and implement strategies to maximize access to genetic screening for babies with confirmed congenital hearing loss and/or family history of hearing loss.	Ongoing. Funding through the Children's Special Health Services program continues to be available to assist with costs related to genetic testing for those children diagnosed with hearing loss. The Project Director has provided information on this program to all pediatric audiologists in Montana.
Objective 4: Through March 31, 2013 maintain the provision of culturally relevant educational materials for physicians and families about state and local resources and the full continuum of newborn hearing screening, evaluation, and intervention services.		
2-4.1	UNHSI Program will distribute culturally competent informational materials to include, at minimum: all birthing facilities; all audiologists; all obstetric, pediatric and family practice physicians; all local public health departments; all tribal health departments and urban centers; the Indian Health Service; and all community health centers. Stockpile materials for distribution after the completion of the final grant period.	Ongoing. Educational materials continue to be provided to all program partners. Over 17,500 brochures and newborn hearing screening forms were distributed in 2012.
2-4.2	The Project Director will provide educational outreach and information about the status of Montana's UNHSI program at a minimum of two professional state conferences per year.	Complete. The Project Director attended the Family and Community Health conference and the Montana Public Health Conference. The program manager for the bloodspot screening program represented the hearing screening program and provided information and materials at the annual Montana Chapter American Association of Pediatrics meeting.
2-4.3	MSDB will partner with the UNHSI Program to develop and distribute educational materials for parents of babies identified with hearing loss.	Ongoing. The UNHSI Program provided funding for printing MSDB brochures that provide education on developmental milestones related to hearing loss.
2-4.4	The UNHSI Program will continue to support 30-second TV spots that target the general population to increase awareness of the importance of newborn hearing screening.	Ongoing. The Newborn Hearing Screening public service announcement will be run in February and March in all six major markets in Montana.

Objective 5: Through March 31, 2013 maintain state level support to hospitals and health care providers providing obstetric services and to audiologist performing pediatric assessments for their reporting of UNHSI services to DPHHS		
2-5.1	Data Coordinator will work with NCHAM to continue to upgrade to version 4.0 of the HI*TRACK data system (with its concomitant access to the developer’s help desk for all users) to all birthing facilities providing obstetric services and to audiologists providing pediatric evaluations in Montana.	Ongoing/modified. The UNHSI program continues to provide Hi*Track and helpdesk services to all birthing hospitals in Montana. The process to upgrade to Hi*Track web has begun with the five largest hospitals to facilitate more timely reporting of screening results. All audiologists are provided with CHRIS access to report screenings and diagnostic assessment results.
2-5.2	The Project Director will provide annual feedback electronically and by letter to hospital administrators and other UNHSI system participants to publicize the “Stars Report” among each birthing facility group in five groups based on annual birth cohort. Provide feedback to audiologists performing pediatric evaluations and to other UNHSI system participants on the improvement in the number of babies receiving audiological diagnosis by three months of age. Provide feedback to healthcare providers providing obstetric services outside birthing facilities about the number of babies they deliver with completed mandatory newborn hearing screening.	Ongoing/Modified. Use of the Stars Report has been discontinued. Instead, a report will be provided to each hospital including a detailed “report card” summarizing screening rates, rate of referral, rate of completed follow up screening, and several reporting factors. Another report card will be provided to all midwives in Montana documenting their compliance rate and reporting how many of their patients received hearing screenings. These reports will be completed and distributed by March 31, 2013. Audiologists and other partners receive continued feedback on screening and assessment results reported to the UNHSI program.
2-5.3	UNHSI funding to support the travel of UNHSI Project Director and the MSDB Consulting Audiologist to national EHDI conference.	To be completed. The Project Director and MSDB Consulting Audiologist will attend the 2013 EHDI conference.
2-5.4	The Project Director will conduct five regional meetings to review screening and reporting requirements for hospitals, birthing centers and health care providers of obstetric services; conduct four on-site reviews of hospitals; meet with the Indian Health Service, two participating reservation hospitals and one non-participating hospital.	Modified/complete. The plan to conduct regional meetings was discontinued. Instead, nine on-site visits to birthing facilities, including one reservation hospital and another which serves a large Native American population, were completed. The Project Director also visited six midwives to discuss their responsibilities regarding reporting and providing program materials.
Objective 6: By July 31, 2012, expand the reporting and management capacity of the UNHSI		

<p>program through support and enhancement of the CHRIS system for use by the statewide program to assist with LTFU tracking, tracking interventions and outcomes for children with diagnosed hearing loss and newborns and children identified as at risk for delayed onset or progressive hearing loss.</p>		
2-6.1	<p>UNHSI funding to provide fiscal support for CHRIS application for user support, training, and maintenance for MSDB staff providing intervention services and follow-up of newborns identified with hearing loss.</p>	<p>Completed. Training was developed and provided for MSDB outreach and administrative staff on ad hock reporting for quality assurance of MSDB data. Minor development in CHRIS enabled MSDB to receive electronic referrals directly from audiologists when they enter evaluation results in CHRIS.</p>
<p>Objective 7: By March 31, 2013 evaluate the effectiveness and efficiency of Montana’s UNHSI system through (a) analysis of HI*TRACK to determine the status of the refer rate for each of the birthing facilities, including those in which a NICHQ strategy has been implemented; (b) evaluate the timeliness of audiologic assessments of infants who did not pass their newborn screening; and (c) evaluate the timeliness of implementation of intervention between assessment and the beginning of the implementation through reports from the CHRIS software.</p>		
2-7.1	<p>On a monthly basis, the Project Director will review the reports of screening and assessment data reports from HI*TRACK to identify birthing facilities with high levels of babies needing screening and babies whose referral for audiological evaluations have not been followed by HI*TRACK data entry. The Data Coordinator will contact birthing facilities and/or audiologists to assist with identifying data and technical assistance needs.</p>	<p>Ongoing. The Data Coordinator reviews all monthly screening data submissions and feedback is provided regarding missing data and errors in reporting. Audiologists’ assessment data is monitored continuously by the Project Director. Screening staff in all birthing hospitals are now provided with quarterly report cards on screening rates, refer rates, and missing data elements. We have seen marked improvement in screening data quality since the report cards were implemented.</p>
2-7.2	<p>On a monthly basis, the MSDB Consulting Audiologist will examine CHRIS data to review the reporting of intervention services. By generating reports of children referred to MSDB by status and by various intervention criteria, the MSDB Consulting Audiologist will be able to ascertain whether adequate follow-up is occurring, as well as any children who are LTFU.</p>	<p>Ongoing. The MSDB Consulting Audiologist uses CHRIS to track and complete referrals on children diagnosed with hearing loss. Cases are then assigned to statewide outreach consultants for intervention. Outreach consultants document intervention services provided to children with hearing loss in CHRIS.</p>
2-7.3	<p>The Project Director will summarize data on universality of screening; refer rates, and occurrence of LTFU status for calendar year 2012 babies by April 30,</p>	<p>To be completed. The Project Director is in the process of collecting the final 2012 hearing screening data in Hi*Track. The data is imported into</p>

	2013, using preliminary birth certificate information from the Office of Vital Statistics in the department. These preliminary summary data will be finalized when birth certificate data are finalized for calendar year 2012.	CHRIS and matched with birth certificate records and evaluation records from audiologists. Results will be available for reporting purposes when 2012 birth certificate data is finalized for calendar year 2012
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Significant Program Changes:

There have been no significant program changes in Year 2 of the UNHSI grant cycle. There have been no staff changes to the Montana UNHSI program. The Hi*Track and CHRIS data systems continue to be used by the UNHSI program, with upgrades made to both databases during Year 2 as previously mentioned.

Plans for the Upcoming Year:

GOAL: *The goal of the Montana Universal Newborn Hearing Screening program is to ensure that all babies born in Montana receive hearing screening by one month of age, needed audiological diagnosis by three months of age, and to assure appropriate intervention prior to six months of age, by addressing the continuum of LTFU issues.*

Objective 1: By December 31, 2013, increase the statewide percent of Montana-born babies completing newborn hearing screenings by one month of age to 98% for calendar year 2013.

No significant changes are planned for this objective. The UNHSI program will continue to review screening data and provide feedback to birthing facilities and audiologists. Updated screening equipment will be provided to birthing facilities and possibly midwife birthing centers if department approval is granted in order to increase the number of babies who are born outside hospitals who get screened. Partnerships with the ACA Home Visiting Program will continue by providing training on hearing screening to home visitors. Screenings reported by existing pilot projects will be monitored for impact on LTFU.

Objective 2: By December 31, 2013 increase to 98% the cases born in calendar year 2013 who receive needed audiological evaluations by three months of age.

Audiologists will continue to have access to the CHRIS database to report diagnostic evaluation results. Funding will be provided to an audiologist practicing in one region of the state with a high LTFU rate for the purchase of diagnostic equipment. All other activities will be completed as planned.

Objective 3: Through March 31, 2014 expand the continuum of healthcare services and management for babies with confirmed congenital hearing loss and babies at risk for delayed and/or progressive hearing loss.

Activities will continue as planned, and the Project Director will continue to work with the Genetics Program staff to increase reporting of genetic testing

Objective 4: Through March 31, 2014 maintain the provision of culturally relevant educational materials for physicians and families about state and local resources and the full continuum of newborn hearing screening, assessment, and intervention services.

No changes are anticipated for this objective's activity plan. Educational materials will be developed and distributed and the Project Director will continue to attend relevant conferences to provide educational outreach.

Objective 5: Through March 31, 2014 maintain state level support to hospitals and health care providers providing obstetric services and to audiologist performing pediatric assessments for their reporting of UNHSI services to DPHHS.

Hi*Track will continue to be provided for birthing facilities to report screening results. The Stars Report has been replaced with a yearly individual hospital performance report as previously discussed. Two program staff will attend the annual EHDI meeting. Rather than regional meetings, the Project Director and quality assurance specialist will conduct onsite visits as were done in Year 2.

Objective 6: By July 31, 2013, expand the reporting and management capacity of the UNHSI program through support and enhancement of the CHRIS system for use by the statewide program to assist with LTFU tracking, tracking interventions and outcomes for children with diagnosed hearing loss and newborns and children identified as at risk for delayed onset or progressive hearing loss.

The UNHSI program will continue to support CHRIS enhancements and maintenance to improve the program ability to track children at risk for LTFU and monitor intervention and outcomes for children with hearing loss.

Objective 7: By March 31, 2014 evaluate the effectiveness and efficiency of Montana's UNHSI system through (a) analysis of HI*TRACK to determine the status of the refer rate for each of the birthing facilities, including those in which a NICHQ strategy has been implemented; (b) evaluate the timeliness of audiologic assessments of infants who did not pass their newborn screening; and (c) evaluate the timeliness of implementation of intervention between assessment and the beginning of the implementation through reports from the CHRIS software.

All planned activities will be continued. The Project Director will conduct data reviews to identify birthing facilities with high refer rates and address these issues by providing training and other program assistance as needed. The Data Coordinator will continue to provide technical data support. The MSDB Consulting Audiologist will receive all referrals electronically through CHRIS and maintain contact with audiologists and MSDB outreach staff.