INTRODUCTION

The Kansas Newborn Hearing Screening Program (SoundBeginnings-Early Hearing Detection and Intervention – SB-EHDI) is an essential public health service provided by the Kansas Department of Health & Environment (KDHE) to families with newborn infants in collaboration with hospitals, doctors, audiologists, and early intervention networks. Per Kansas legislative efforts, Kansas began screening for the early detection of hearing loss in newborn infants in July 1999. K.S.A. 65-1,157a mandates that every child born in the state of Kansas shall be given a screening examination for the detection of hearing loss within five days of birth, unless a different time period is medically indicated. This legislation also ensure the establishment of: standards for screening equipment; screening protocols; standards for professional qualifications and training; and required reporting guide the SB-EDHI program.

The goals and objectives of the program are consistent with the Early Hearing Detection and Intervention (EHDI) programs and the 2007 Joint Committee on Infant Hearing (JCIH) Position Statement. The primary goal is to improve the quality of life with children with hearing loss and their families by reducing the number of infants who are lost to follow-up to newborn hearing screening, ensuring audiologic evaluations and referral to early intervention services. Approximately 42,000 infants are born in Kansas each year. Based on the national frequency of early hearing loss, it is to be expected that between 84 and 126 infants are born with some degree of hearing loss in Kansas each year. Since the enactment of the Kansas SB-EHDI program, an average of 88 infants each year are identified through this legislation.

Critical to the success of the SB-EHDI program is the data linkages with birthing facilities. Per K.A.R. 28-4-605, facilities are required to report screening results within seven days of the screening. SB-EHDI receives these results through a web-based birth certificate system, VRVweb. This system, administered through the Kansas Office of Vital Statistics, was developed to support birthing facilities to provide on-line birth certificate transmission including newborn screening data. Daily data linkage updates export hearing screening and vital demographic data from the VRVweb and import it into SB-EHDI's AURIS newborn hearing screening data management system. Eighty-nine percent (89%) of the birthing facilities are on the VRVweb birth certificate system that account for 99% of births. All other outpatient screens and rescreens are faxed to SB-EHDI for manual entry into the database.

SB-EHDI provides tracking and surveillance of infants from hospital screening to the infant's primary care physician, to the audiologist, and to the agencies that provide early intervention, ensuring that infants complete the hearing screening process and into early intervention if diagnosed with hearing loss. SB-EHDI is supported in their efforts by their Advisory Committee and key stakeholders: State Part C Early Intervention Specialists; Deaf Educators; Early Childhood Teachers of the Deaf and Hard of Hearing; Kansas Special Education Services; Newborn Metabolic/Genetics Screening; Children and Youth with Special Health Care Needs; Kansas Commission of the Deaf and Hard of Hearing; Kansas School for the Deaf; Kansas Deaf/Blind Project; Speech Language Pathologists; Kansas Medicaid; Pediatric Audiologists; Birthing Hospitals; Midwives; Parents of Deaf and Hard of Hearing Children; and Pediatricians.

Since 2010, the SB-EHDI program, has provided a web-based portal, SB Web-EHDI, that allows Universal Newborn Hearing Screening (UNHS) birthing facility coordinators and local audiologists to access the Kansas database to enter screen and diagnostic evaluation results in the efforts to: a) decrease duplication of records and Loss to Follow-up; b) improve follow-up with and by families of children in the EHDI process; c) and support collaborative work with other agencies.

It is important to recognize that newborn hearing screening is only one component of a comprehensive approach to the management of childhood hearing loss. The process also requires follow-up diagnostic services, counseling, intervention programs, and parental educational programs. This comprehensive process must be administered by a multidisciplinary team consisting of individuals such as audiologists, physicians, educators, speech/language pathologists, nurses, and parents.

Current priorities of the SB-EHDI program include: 1) hearing screening complete for all infants no later than one (1) month of age; 2) diagnostic evaluation is conducted no later than three (3) months of age, if the infant failed the hearing screening; and 3) early intervention services are provided no later than six (6) months of age for infants diagnosed with hearing loss. These priorities are consistent with the 2007 JCIH position statement guidelines

Early and consistent screening, particularly for hearing loss, and enrollment in early intervention services once infants have been diagnosed with hearing loss is critical in achieving normal language development. Recent research has concluded that children born with a hearing loss who are identified and given appropriate intervention before 6 months of age demonstrated significantly better speech and reading

comprehension than children identified after 6 months of age. (Yoshinaga-Itano & Apuzzo, 1998; Yoshinaga-Itano et al., 1998)

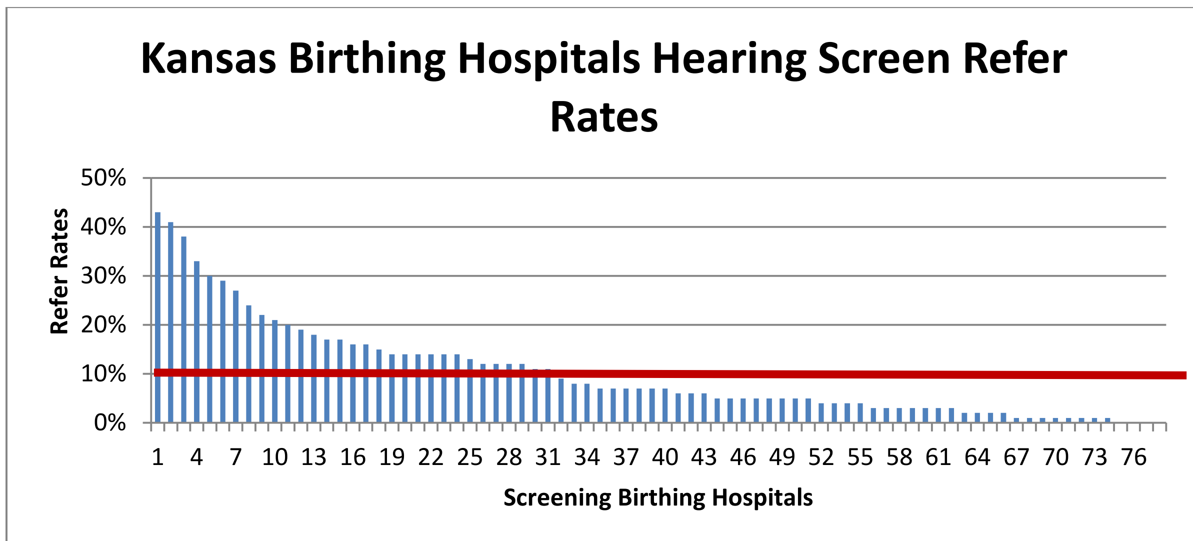
Further focus through this funding opportunity are on the efforts to improve loss to documentation/loss of follow-up by utilizing quality improvement methods to achieve measurable improvement in the numbers of infants who receive appropriate and timely diagnosis and intervention and increase Out of Hospital Birth (OHB) hearing screens.

NEEDS ASSESSMENT

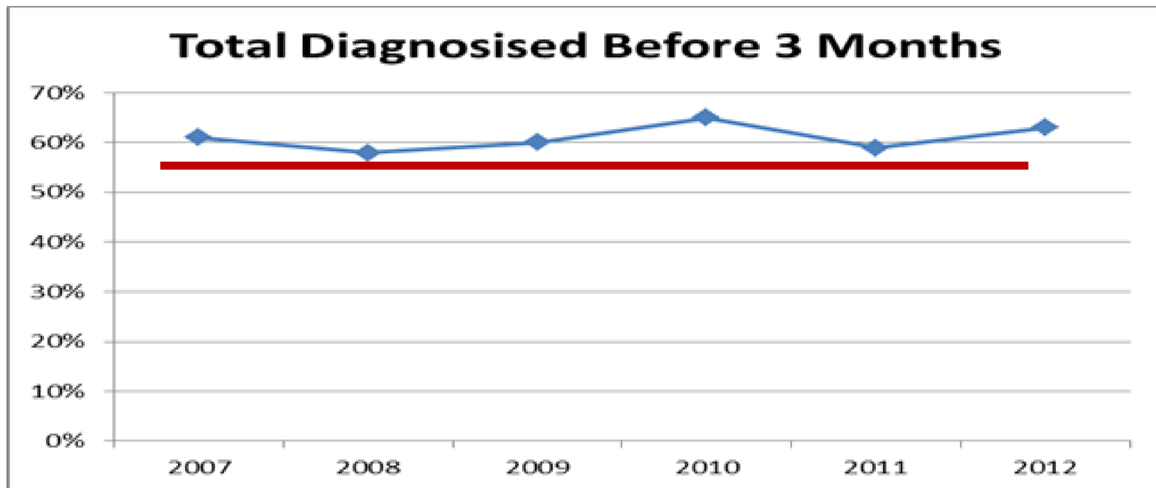
In 2012, there were 41,176 live births. SB-EHDI has accomplished and maintained the national goal of screening infants by one month of age as indicated in the Principles and Guidelines for Early Hearing Detection and Intervention from the Joint Committee on Infant Hearing (JCIH), 2007. Kansas screened 99% (40643 of 41176) of all newborns for hearing loss prior to birthing facility discharge. Thirty-nine percent (31 of 78) of KS birthing facilities had an initial hearing screening refer rate (number of children refer/number of children screened) greater than 10%. Kansas hospital screening refer rates for 2012 range from 0% to 42%. The expectation of the state hearing screening program is that birthing facilities will have less than a 4% initial refer rate. Of the 78 birthing facilities in KS, 48 use Otoacoustic Emission (OAE) Hearing Screen, 18 perform Automated Auditory Brainstem Response (AABR) and 12 use a two--step OAE/ABR approach. Of the 48 facilities using OAE screening, 43 have less than 300 births annually.

Hospital refer rates higher than the national goals are barriers to the follow-up and tracking for SB-EHDI, hospital, audiologic and early intervention personnel and

have been contributing factors in families not returning for the outpatient rescreen. In 2010, the *Parental Lost to Follow-Up Survey* was conducted to those families who did not complete the hearing screening process. Accuracy of the hearing screens, transportation back to the hospital, and doctor/nurse communication on the importance to return for a rescreen were felt to be key factors in the hospitals loss to follow-up rate.

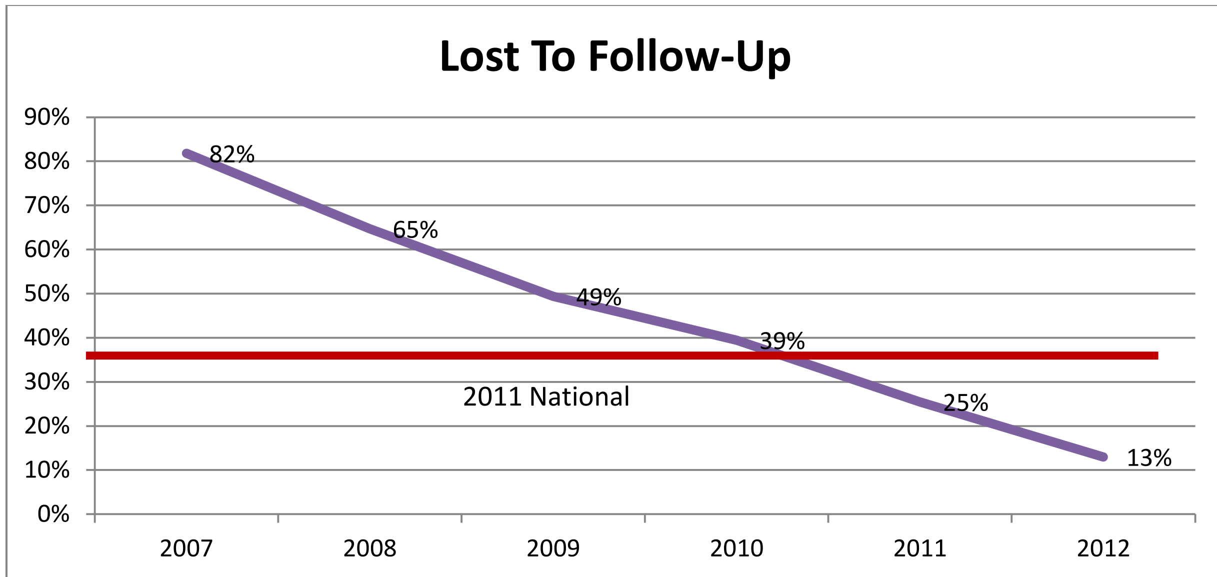


Of the 40,643 infants screened for hearing loss, 351 or 0.9% were referred for further screening or audiologic evaluation. The trend is showing a decrease in the number of infants referred for diagnostic evaluations. Kansas' refer rate for diagnostic evaluations has decreased from 1.8% to 0.9% from 2011 to 2012. Of the 351 infants that were referred for diagnostic evaluation, 68% (240/351) received a diagnostic evaluation and 63% (150/240) of those that received the diagnostic evaluation did so before 3 months of age. Infants who were admitted to the Neonatal Intensive Care Unit (NICU) did play a critical component to this percent.



Of the 351 infants that were referred for rescreening or audiologic evaluation, 160 had normal hearing and 93 were diagnosed with hearing loss. Of those infants with no diagnosis: eight were awaiting diagnosis at time of this report, four had passed away, three were adopted out of state, 10 parents had declined further testing, 27 had moved out of jurisdiction, and 46 infants' parents have been unresponsive or SB-EHDI was unable to contact. Of the families who were unresponsive or unable to contact, it was identified through the hospital birth records that 80% of the mothers were on public insurance at the time of delivery. Other contributing factors affecting hearing screening follow-up reported by the families to the Data Manager were; abusive relationships, transportation, incarceration, and the child or a sibling had other medical or health issues that were felt to be more critical than hearing.

The 2012 Loss to Follow-Up/Loss to Documentation (LFU/LTD) rate for Diagnosis for the state of Kansas is 13% (46 total with no diagnosis/351 total who did not pass the birth screen). This is a drastic decrease from previous years. Since 2007 Kansas has decreased their LFU/LTD rate 69% (82% to 13%).



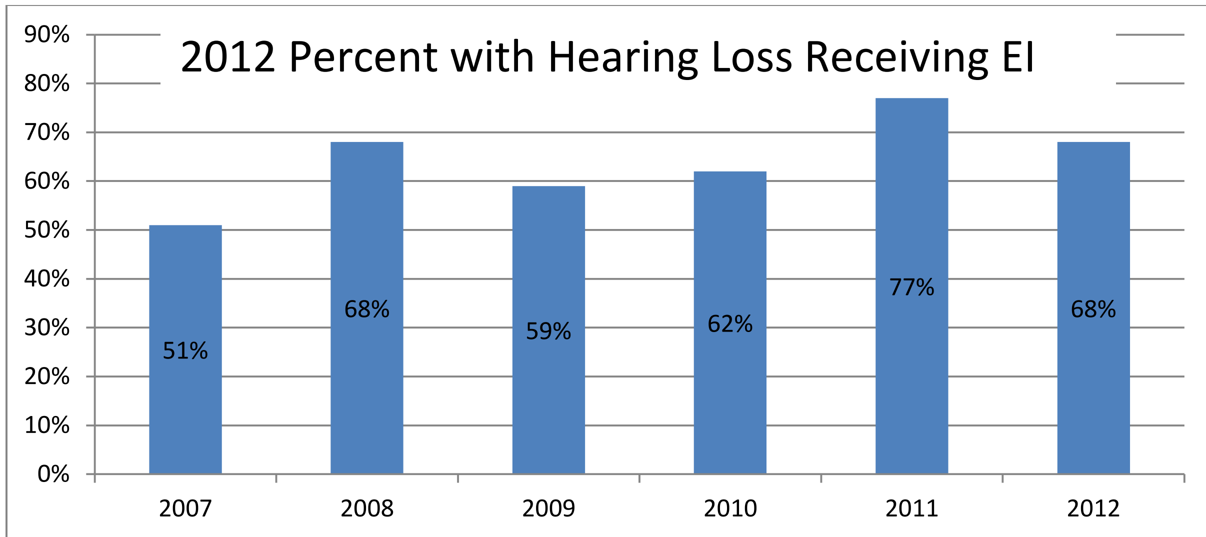
Kansas is a profoundly rural state, with one-third of the population living in two-thirds of its land mass. Of the 105 counties in KS, 85% (89/105) are considered rural with less than 40 persons per square mile and one-third of counties represent an enduring frontier with less than 6 persons per square mile, mostly concentrated in the western part of the state. Kansas suffers from a shortage of pediatric audiologists who are knowledgeable in performing appropriate testing. Additionally, the provider does not appear to always be aware of how critical their role is in facilitating the testing and documenting and/or communicating the results. The state has only eight (8) pediatric audiology facilities, which are located in only three cities; Kansas City, Wichita, and Topeka. This leaves the western part of the state underserved for diagnostic audiological evaluations.

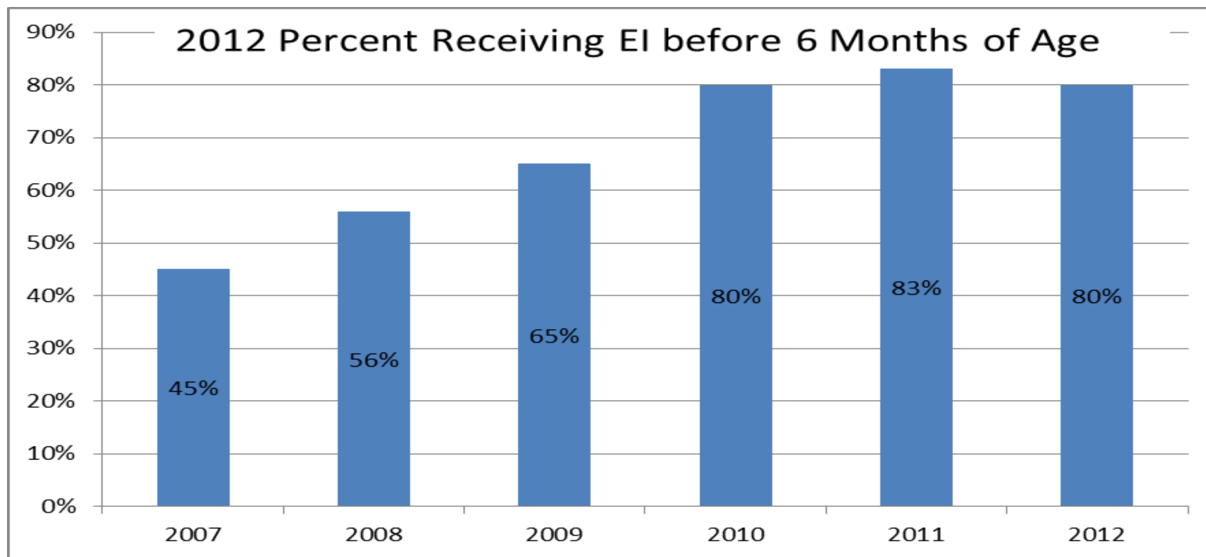
Currently there are gaps in services in many regions of the state and barriers to services due to lack of funding, professional expertise in deafness and hard of hearing, family support services, language barriers and transportation issues. Transportation

often becomes an issue for families, reducing their ability to follow up with providers in the urban areas of the state.

In the state of Kansas, all children with hearing loss or auditory neuropathy, congenital or acquired, regardless of the severity or type of hearing loss are eligible for support and services by Kansas Infant-Toddler Services (KITS). The Early Intervention (EI) support and services provided are offered whether the infant has a unilateral or bilateral loss and whether or not the child has hearing aids, cochlear implants, other assistive devices or use American Sign Language (ASL). A common barrier identified is that some children do not receive timely follow-up, delaying diagnosis, treatment and access to EI services. This greatly impacts developmental outcomes for the child.

Historically from 2007 to 2011, the prevalence of infants identified with hearing loss in the state of Kansas was 2.2 per 1,000 screened. In 2012, 93 infants were reported to SB-EHDI as having been identified with some degree of hearing loss. All of these children were eligible for EI services through KITS, but only 68% (63/93) of those identified with hearing loss received these services and of those that did, only 80% (50/63) did so before the recommended 6 months of age. Of those not reported to SB-EHDI as receiving services, one infant became deceased, six families denied services, three families were unable to be contacted and 19 were unresponsive. Of those who were unable to be contacted or were unresponsive, 16 of the 22 were diagnosed with unilateral hearing loss.



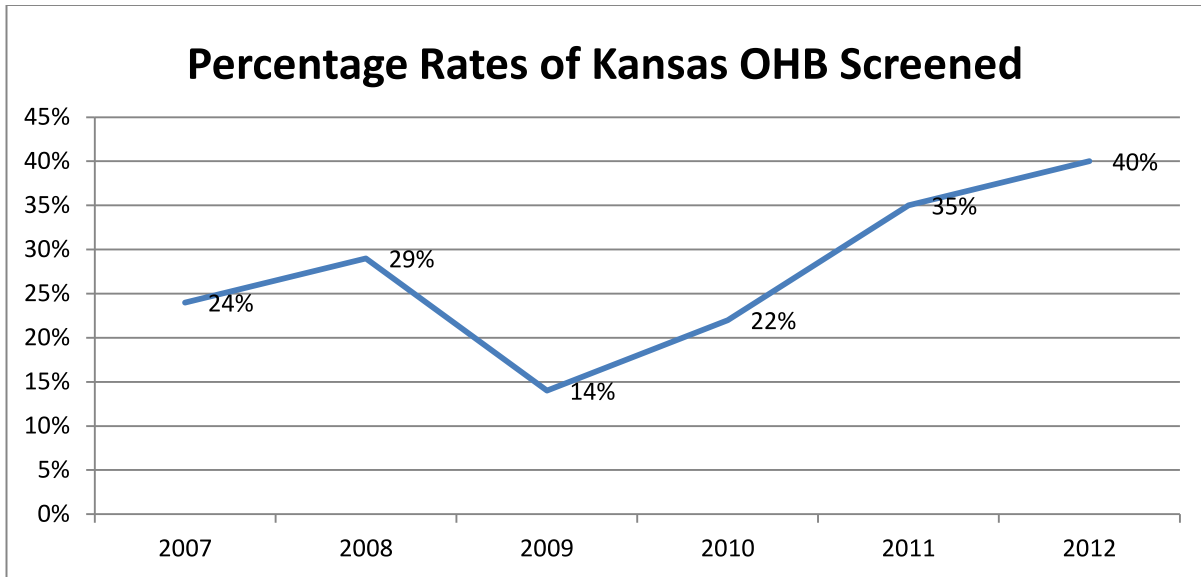


Hearing is critical for the development of speech, language, communication skills, and learning. The earlier that hearing loss occurs in a child's life, the more serious the effect on the child's development. Similarly, the earlier the hearing loss is identified and intervention begun, the more likely it is that the delays in speech and language development will be diminished. Left undetected, mild or unilateral hearing loss can result in delayed speech and language acquisition, social-emotional or behavioral problems, and lags in academic achievement. (Yoshinaga-Itano et al., 1998; Bess,

1985; Bess et al., 1988) With appropriate early intervention, children with hearing loss can be mainstreamed in regular elementary and secondary education classrooms.

Infants born at home in Kansas are less likely to receive a physiologic hearing screen after birth than those born in a birthing facility. An analysis, *Recent Trends in Out-Of-Hospital Births*, released by the American College of Nurse-Midwives' peer-reviewed journal, the Journal of Midwifery & Women's Health (JMWH) in 2013, reveals not only that women are choosing midwife-led, out-of-hospital births at an increasing rate in the United States, but also that the pace at which women are choosing this option appears to be accelerating.

In 2012, 321 Kansas infants were born outside of a birthing facility and are labeled as Out of Hospital Births (OHB) in the SB Web-EHDI AURIS database. Of the 321 homebirths, 127 (40%) received a hearing screen. Analysis of the data, as well as observations from SB-EHDI staff, show that demographic subpopulations with the greatest need for targeted outreach of infants born at home are in Northeast (Shawnee, Douglas, Johnson), Southeast (Chanute, Labette), and South Central Kansas (Sedgwick, Butler, Reno, Harvey). Certification for Midwives is not required in Kansas, which contributes to an ongoing struggle in identifying those individuals who are assisting mothers in the birth of their infants outside of a birthing facility setting. There has been an increase in the number of OHB screened for hearing loss in the past several years.



SB-EHDI regulations prohibit any infant to be denied a hearing screening based on inability to pay or in the absence of a third party payor. Currently, the Kansas Special Health Care Needs (SHCN) program, a state program based on medical and financial eligibility requirements, can provide financial support for a one-time outpatient screening and/or diagnostic evaluation. Conditions affecting hearing are medically eligible with the financial requirement of being at or under 185% of federal poverty guidelines. All authorized services include diagnosis and follow up care with an ENT/Audiology specialist who is an approved provider for SHCN. All services must be prior authorized and require annual follow up evaluations as long as medically necessary.

Kansas SB-EHDI also works with Early Head Start communities, Parents as Teachers, County Health Departments, WIC, Federally Qualified Health Centers and Home Visiting programs across the state providing Otoacoustic Emission (OAE) trainings and continuous audiological and hearing screening support to the birth to three population. These partnerships provide additional referral points and links to local communities and families for follow-up services.

SB-EHDI has made great improvements over the last six years. Since 2007, we have achieved our goal of screening by 1 month of age, with a 99% compliance in this area. Ongoing monitoring and consistent training will be necessary to ensure this benchmark remains at this level. However we have been unable to meet the remaining Centers for Disease Control and Prevention (CDC) national benchmarks: ensuring identification by 3 months of age and that all infants are receiving early intervention services before 6 months of age.

By routinely monitoring the measures for comparison and continuous quality improvement, the grant project will target the unmet needs of all infants receiving a hearing screen in the hospital and the barriers the families face in completing the hearing screening process as recommended by the 2007 JCIH Statement. Program evaluation is critical to improving effectiveness, cost efficiency, and the overall sustainability of the EHDI program. It is crucial that we enhance the capacity to strengthen relationships with other state agencies, set and implement future program priorities, provide technical assistance and to build compendium of best practices. Our true focus is to improve the quality of life of children with hearing loss and their families by increasing the number of infants who complete the hearing screening process in the appropriate amount of time and ensuring that they receive the best care and services available in Kansas.

METHODOLOGY

Kansas SB-EHDI will use Quality Improvement (QI) as an approach to reduce loss to follow-up/loss of documentation (LFU/LTD) through small tests of change,

collecting and analyzing data, and monitoring the success. QI tools will be utilized to support efficient brainstorming, sequential problem solving, planning for implementation, and data centric evaluation. Leadership at KDHE has implemented QI in all programs and activities and will be conducting training for program staff to effectively implement QI. All SB-EHDI program staff will participate in this training to support programmatic improvements and quality services for families in KS.

The overall goal of this project is to increase the number of Kansas infants who complete the hearing screening, diagnostic and early interventions services in the appropriate and recommended guidelines by the 2007Joint Committee on Infant Hearing statement, reduce the number of Kansas infants who are LFU/LTD following the newborn hearing screening, and provide support to families and communities of culturally, linguistically, socio-economically and geographical diverse backgrounds.

SB-EHDI has implemented quality improvement and assurance throughout the past grant cycle and it has proven to decrease the LFU/LTD rate drastically. Other contributing factors in the reduction of the rate include: the support of the Advisory Committee and collaboration with partners such as Early Head Start, Parents As Teachers, Special Health Services, County Health Departments, WIC, Federally Qualified Health Centers and the local Home Visiting programs. SB-EHDI has documented a decrease in LFU/LTD in Spanish speaking families by collaborating with the Special Health Care Needs bi-lingual Spanish speaking staff. The SB-EHDI Advisory Committee meets quarterly to review, endorse, provide guidance and promote elements of the program. Continued collaboration with this diverse group of partners ensures and endorses the EHDI mission, goals, and objectives. In collaboration with the

Advisory Committee, SB-EDHI has identified four quality improvement strategies which will be used to collect data, make informed decisions and implement successful strategies with support of engaged stakeholders in ways that will lead to the sustainability in the EHDI program. SB-EHDI is a critical program within the Kansas Special Health Services (SHS) at KDHE. Discussion will take place regarding the sustainability of SB-EHDI once federal funding is completed. Future project plans are outlined in the Work Plan section of this application.

Aim *1: By March 31, 2015, Kansas SB-EHDI will use quality improvement methodology to reduce the percentage of Kansas birthing facilities with refer rates higher than 10% from the baseline of 39% to 34% which has a direct impact on Kansas' LFU/LTD rates.*

In Year 1 of the project, the SB-EHDI Data Manager will review birthing facility hospital reports to identify hospitals with higher than expected refer rates. The top five facilities with the highest refer rates will be invited to participate in a QI project where PDSA cycles will be standard and onsite visits will be scheduled. SB-EHDI will provide onsite training with focus on understanding the underlying factors of the screener/equipment behavior as well as contributory organizational factors. It is anticipated that through this process, we will identify changes that will strengthen quality assurance of newborn hearing screening.

SB-EHDI will monitor the monthly progress of the refer rates by using a run chart by tracking and surveillance through the SB-EHDI AURIS database. If a decrease is not reported within two months the birthing facility administrator will be notified of progress.

If rates do not improve after this, the SB-EHDI Coordinator will contact the Birthing Facility UNHS coordinator, CEO and Quality Assurance/Risk Manager regarding high refer rates and its contributing factor in families not returning for the outpatient rescreen and a letters will be sent which will indicate that the hospital is out of compliance with the state recommended initial birthing facility refer rates. A follow-up visit to the facility will be schedule to identify additional contributing factors in continued high refer rates. Additional QI tools may be utilized to support this process and refine the problem to its root cause. SB-EHDI will continue monthly monitoring of the progress.

Additional data analysis will be conducted monthly to determine if there was significant decreases in the hospital refer rates that result in improvement in the reduction of LFU/LTD. Success will be measured by the data and a survey distributed to birthing facility staff on the effectiveness of the onsite visit and training provided by SB-EHDI staff. SB-EHDI staff will provide an analysis of the birthing facility's hearing screening program, looking at interpretation, judgment and recommendations of the program through run charts. If this effort is successful, the intervention will be replicated to other hospitals with high refer rates across Grant Year 2 and 3.

Aim 2*: By March 31, 2015, Kansas SB-EHDI will use quality improvement methodology so that LFU/LTD is reduced in the percentage of Kansas newborns that do not receive rescreening and/or diagnostic audiological evaluations after failure to pass newborn hearing from a baseline of 43% to 38% by identifying partnerships and collaborating on local and state levels.* SB-EHDI is interested in continuing partnerships with local health departments and the Women Infants and

Children (WIC), Home Visiting and Special Health Care Needs programs. Additionally, it is desired to increase partnerships with Title XIX (Medicaid) and Title V (Maternal and Child Health) to reduce the number of infants who are not receiving rescreens or diagnostic evaluations before 3 months of age.

To SB-EHDI advantage, all of the above programs are housed within the Kansas Department of Health and Environment. Unfortunately, each of these programs has their own database and there is not a shared electronic medical health database across the agency. Initiatives have begun in many of these linkages to share data across programs and SB-EHDI is able to utilize this data to assist in LFU/LTD activities. However, more work is needed in this area. A large amount of families on public insurance are identified as "unresponsive or unable to contact" and have never received a diagnostic evaluation, therefore SB-EHDI is interested in identifying ways to collaborate with Title XIX and Title V data systems to collect the name of the primary care physician (PCP) and the family's most current demographic information. At this time, a PCP is provided to SB-EHDI through the electronic birth certificate. However the physician provided on the birth certificate is not always the physician the infant is receiving care from. Additionally, families tend to be move frequently and providers change rapidly.

Access to the Medicaid Management Information System (MMIS) would allow SB-EHDI staff to have the most current demographic and PCP information to contact families earlier and help in the process of getting infants identified before 3 months of age. Additionally, this may provide opportunities for SB-EHDI to connect with Medicaid case managers to assist in follow up and referral for evaluation. This would support

more collaborative coordination for the family and prevent duplicate efforts. A meeting will be scheduled with the KDHE Division of Health Care Finance to identify this opportunity and identify ways to ensure Kansas newborns' are receiving a rescreen or diagnostic evaluation and learn what the Medicaid Managed Care Organizations (MCO) can provide in the case management aspect of helping infants complete the hearing screening process.

Upon agreement with Medicaid, a QI project will be implemented. Activities within this project will be analyzed through the PDSA cycle. SB-EHDI will identify 15 infants, on public insurance, who failed the initial newborn hearing screen and need to be seen for a rescreen or diagnostic evaluation. The infant will be referenced through the MMIS database and demographic and PCP information will be compared to the information provided through the electronic birth certificate. Differences in information will be noted and followed through the MMIS database until the hearing screening process has been completed. Additional collaborative activities will be identified if this follow up process is determined to be a successful way to support a decrease in LFU/LTD rates and is adopted by all partners.

SB-EHDI has helped fund several pieces of OAE hearing screening equipment to WIC and Home Visiting programs through local health departments in areas with the highest percent of lost to follow-up over the past 2 years. Trainings and resources were provided to the identified local health departments who host WIC clinics, and the Healthy Start Home Visitor programs and many now have the equipment to screen infants in their own programs. One challenge identified through partnerships with the health departments is that these providers have no way of knowing if a child has not

completed the hearing screening process. SB-EHDI will initiate discussions with the director of the WIC program to allow SB-EHDI access to view their database and set tickles in the system of those infants who need further screenings as soon as it is indicated to the SB-EDHI staff. The largest area of LFU/LTD up is in Sedgwick County, therefore this health department will be asked to participate in a pilot project, utilizing QI methods and tracked through a PDSA cycle.

Through this project, the WIC staff will be alerted when a rescreen is needed and can screen the infant at the time of the WIC appointment or set up other arrangements for the Home Visiting program to go out into the home. The WIC staff will send results to the SB-EHDI staff via fax for manual data entry into the system. Further assistance can be provided in getting the infant to a pediatric audiologist. SB-EHDI will track infants found in the WIC database and if the WIC office performed the hearing screen. If found successful, SB-EHDI will implement into the 2nd largest loss to follow-up county. Data will be collected through the SB-EHDI AURIS database and analyzed monthly to measure success. A Memorandum of Understanding to acknowledge the partnership between SB-EHDI and the parties involved in providing the infant's information will be created.

The Special Health Care Needs (SHCN) program offers infants and their families a one-time outpatient screening and/or diagnostic evaluation, regardless of income status. Additionally, conditions affecting hearing are medically eligible for other related specialty care services with the financial requirement of being at or under 185% of federal poverty guidelines. Unfortunately, few entities and families are aware of this service. SB-EHDI will promote the SHCN program by providing information to

physicians, Early Intervention programs, Health Departments, Parents as Teachers, and Early Head Start programs. SB-EHDI will work with SHCN to collect the appropriate information to distribute and will add a link onto the SoundBeginnings website. SB-EHDI will initiate with SHCN a tracking component to track the number of requests for this service and SoundBeginnings Website will contact the IT department to collect the number of hits from our website to the SHCN link.

Aim 3: ***By March 31, 2015, Kansas SB-EHDI will use quality improvement methodology to decrease the LFU/LTD of infants identified with hearing loss receiving early intervention services before 6 months from baseline of 20% to 15%.*** SB-EHDI will distribute a survey to Diagnostic Pediatric Audiologists regarding referrals of a child newly identified with hearing loss for Part C Early Intervention (EI) Services. The survey will be designed to collect information from the Audiologists regarding their referral protocols to early intervention. SB-EHDI will look to see if there are identifiable factors which may define where the barriers or breaks might be occurring in the referral process.

QI tools will be used throughout this analysis to determine the root cause of low referral rates for EI services. Recent data, from 2012 and 2013, will be collected and analyzed from the SB-EHDI AURIS database, identifying the counties throughout the state that have the lowest incidence of children with hearing loss who are receiving EI services. In a pilot QI project to identify effective interventions to support an increased referral rate, SB-EHDI will identify an early intervention network in the county with the lowest incidence and invite them to participate in the intervention. Again, this

intervention will be tracked and monitored through the PDSA cycle to provide structure and support to the process.

SB-EHDI will meet with early intervention stakeholders to discuss the networks protocols when a child is referred to better understand their process and barriers and ways in which we can help families understand the importance of early intervention. SB-EHDI will compile EI information (ie: brochures, anticipated costs, services provided, etc.) to be provided to the families and discussed by the audiologists at the time of the initial diagnosis.

SB-EHDI is also interested in looking at the amount of time form the initial referral to the family contact from the Early Intervention network. This data will be obtained and reviewed through the Part C shared database system. In the state of Kansas, Part C networks have 45 days to complete an assessment on an individual referred for services. SB-EHDI will document the amount of time from the initial referral to the IFSP date on 5 infants identified with hearing loss. If after 45 days, the infant has not been enrolled in EI services, a parent survey will be mailed out to the family with an enclosed stamped, self-addressed envelope. The survey will request information from the parents to determine if they, a) were aware of the early intervention services available, b) were they contacted by a representative from an early intervention network, and c) declined services and the reason for not enrolling their child.

SB-EHDI will analyze data from the survey and monitor the rates of infants enrolled into early intervention before 6 months of age in the county where the family receives services. A stakeholder meeting will be arranged in that community to discuss barriers to referrals and access to services. SB-EHDI will determine from the PDSA

cycles of testing, run chart and data analysis if there was an improvement in the reduction of LFU/LTD of infants receiving early intervention services before 6 months of age and/or where the breakdown is in the system. If there is an improvement in the number of children being referred and receiving early intervention services before 6 months of age then the tasks will be implemented with another network. If no improvement is identified, the process will be adjusted per the PDSA cycle.

Aim 4: ***By March 31, 2015, Kansas SB-EHDI will use quality improvement methodology to Increase the screening rate of homebirth/out-of-hospital births from the baseline of 40% to 50%.*** SB-EHDI will contact the KDHE Office of Vital Statistics to obtain a list of layperson and certified midwives in the state who have assisted in home births. The list will be separated into four regions of the state by address. Those individuals with hearing screening equipment who are providing hearing screens will be identified through the SB-EHDI AURIS database. SB-EHDI will reach out to certified midwives and identified stakeholders to collaborate a means to invite non-invested midwives and laypersons to participate in a one day newborn screening conference. This conference will be a collaborative effort between SB-EHDI and the Newborn Metabolic Screening program to share information and training around all newborn screenings in the state. The conference will be held in the region that has a highest percentage of home births with low screen rates. A meeting with invested stakeholders and partners will be scheduled to work out the logistics of the conference.

The conference will be held 6 months after the initial meeting to allow for time to analyze the screening rates for home births. Success will be measured by a survey that

will be given to the attending Midwives on the effectiveness of the conference and barriers that they may face. Data will be collected monthly through the AURIS SB-EHDI tracking and surveillance database to measure success in OHB screening rates. If an increase in screen rates occurs for the selected region then SB-EHDI will implement the Midwife Conference in another region of the state where the prevalence of home births is high and hearing screen rates are low in Grant Year 2 and 3 A QI project will provide OAE hearing screening training and support to two midwives within the identified region. The midwives will be chosen to participate in a PDSA cycle to receive the OAE equipment to support increased screening of newborn infants. SB-EHDI will schedule and provide the training and support, along with brochures for parents, provide resources, and work with the midwives to adopt protocols for screening to all newborns they assist in birthing.

SB-EHDI will meet with the selected midwives one month after training to address any concerns or complications. SB-EHDI will monitor successes and barriers to identify trends in changes in the number of out of hospitals births who receive hearing screenings. A run chart created through data analysis will be used by SB-EHDI will determine if there was a significant increase in the percentage of home birth hearing screening rates. If there are little to no changes in the rate of hearing screens, the selected midwives will be visited to discuss barriers or problems that they may be facing. Together the midwives and SB-EHDI will develop a change of action plan.

WORK PLAN

This project will be comprised of the SB-EHDI Coordinator/Audiologist, Data Manager, Data Coordinator, Data Registrar. External partners include Sound START

Coordinators and Family Consultants whose responsibilities will be to provide technical assistance to the state's newborn hearing systems and to assure interagency collaboration. Technical assistance will be provided in the areas of screening, rescreening, audiologic assessment, and early intervention. Assistance will be provided through individual on-site visits, local and statewide conferences, workshops, telephone calls, online and mail correspondence, and necessary trainings.

Technical assistance will be documented in the Auris SB Web-EHDI database for each screening, assessment, medical, early intervention provider or family record. Technical assistance efforts will be documented and maintained for all interagency collaborations.

Hospital refer rates will be calculated from the SB-EHDI AURIS database, linking data from the birth certificate system and manually entered provider reports. Reporting will be standardized to ensure continuity and compatability for use by all Coordinators to collect performance outcomes. Infant Toddler Services (ITS) database system will allow SB-EHDI the same data extraction capabilities as the early intervention networks.

SB-EHDI's goal is that all Kansas infants will have access to an effective newborn hearing screening program which includes a physiologic screening prior to hospital discharge, outpatient referral screening before one month of birth, audiologic assessment before three months of age, and amplification and early intervention before six months of age. Additionally, the focus is on linkages to a medical home and family-to-family support services for all infants with a hearing loss. Finally, the SB-EHDI program strives to ensure that all infants who do not pass the initial screening receive timely and appropriate follow-up services and OHB screening rates increase.

The goals, objectives, and activities of this work plan are focused on the a) birthing facility refer rates, b) collaboration with state and national entities in identification before three months of age, c) early intervention before six months of age, and d) increased home birth screening rates. Data tracking at the local and state level will be utilized to document change, outcomes and expected improvements will be seen. Tests of change will be modified should the results not reflect the desired outcome to reduce loss to follow-up. Once the outcome reduces loss to follow-up and documentation, plans to replicate and expand successful strategies will commence. The following work plan will be used as the framework for prioritizing the activities to meet the goals and objectives set forth in the methodology section.

See Attachment 1: Work Plan

RESOLUTION OF CHALLENGES

There are several challenges in operating the SB-EHDI program within the state of Kansas and implementing changes to the current system. First, the rural landscape of the state provides challenges to access to hearing specialists and screening mechanisms. There are 105 counties in Kansas with representation of rural, frontier and urban areas with a broad socioeconomic representation. There are 78 birthing facilities across the state that range in annual births of fewer than 10, up to thousands. By providing county health departments hearing screening equipment and training, as well as the ongoing training and data sharing with Early Intervention Networks, Early Head Start and Parents as Teacher programs, are strategies in which we feel will allow us to obtain screening results on children whose parents have difficulty with transportation

and availability to outpatient screeners who are not located within their close proximity and those that have be identified as LFU/LTD.

Second, although there is a state mandate for hearing screening including reporting, a lack of reporting of follow-up screens and audiological evaluations has remained a factor in Kansas' LFU/LTD. Our attempt to resolve this challenge has been to provide birthing facilities quarterly and annual report cards, negligence letters, ongoing trainings through hospital site visits, presentations and discussions of ways to improve their performance, access to audiologists knowledge about hearing screening and hearing screening equipment.

Third, Kansas has a large population of families on Title XIX funding, or the state Medicaid program. By establishing agreements to share data and protocols for contacting the infant's chosen Managed Care Organization when the hearing screening process is not complete to request evaluation for case management to help the family get the diagnostic evaluation needed and discussing the importance of the hearing screening in the aspect of the development of speech and language is yet another strategy that will be addressed within the grant funding.

Fourth, raising the screening rate of the homebirth population continues to be a challenge due to a significant delay in the submission of birth certificate records for these infants. Therefore, the program is unable to perform outreach within a time that simple screening is possible. Additional education needs to be provided to midwives and expectant mothers choosing home births to support their understanding of the importance of the screen. Although it is expected to take time to effect major change in attitudes and behaviors, SB-EHDI will continue to work diligently towards this goal by

informing all professionals and parents that screening is available to all births in Kansas.

It is anticipated that attempts to resolve these various challenges will lead to the reduction of Kansas' overall LFU/LTD rate. There will be a continuous focus on maintaining the national goals for EHDI as indicated on the Healthy People 2020 Plan. SB-EDHI will also work to align activities with other state and national plans such as the Healthy Kansas 2020, the KDHE Strategic Map, the Governor's Road Map, and Title V initiatives. Through partnerships, the program can increase understanding of the hearing screening process, the benefits to all service providers and health professionals touching the lives of our children, and improve the quality of life of children with hearing loss and their families.

EVALUATION AND TECHNICAL SUPPORT CAPACITY

This project will continue to collaborate with the KDHE Office of Vital Statistics in the transmission of accurate hearing screening results and demographic information into the SB-EHDI AURIS database. This system assists to ensure timely and appropriate screening of all infants. The ongoing evaluation of grant activities will occur monthly, quarterly, and annually, depending on the activity. In order to evaluate effectiveness of these activities, process and outcome evaluations will be conducted. The process evaluation will consist of monitoring the extent to which activities are completed on time, their degree of completeness, and the quality of work performed. The outcome evaluation will consist of determining if the activities undertaken have affected the outcomes with regards to the goals stated in this proposal. Outcome measures are described below.

The project will continue to collaborate with hospitals and local audiologists to reduce refer rates by developing two-stage protocols for hospital-based screening programs with large birth rates. SB-EHDI will provide assistance to encourage hospitals to strive for a refer rate at hospital discharge of 4% or less. This will allow the staff to devote time to those infants who are less likely to pass the screening and need follow-up services. The time saved in reducing the number of infants to follow can be more effectively used to assist families for timely and appropriate services.

Collaboration with partners such as Kansas Infant Toddler Services, Kansas School for the Deaf, parent representatives, tiny-k early intervention services representatives, and the University of Kansas Deaf Education Program will have an impact on the early intervention system. Meetings are ongoing in the continued development and implementation of a statewide system for regional Sound START Coordinators to be the entry point for all families with infants who are deaf or hard of hearing. SB-EHDI will collaborate with the University of Kansas and Kansas In-Service Training Systems to provide training for the Sound START Coordinators and early intervention providers.

The Infant Toddler Services Part C Coordinator is on the SB-EHDI Advisory Committee and has served on the Early Intervention Task Force and Sound START Committee. Early intervention services are available statewide through 37 community based early intervention networks, tiny-k networks. Early intervention services in natural environments are standard of practice and audiologists, speech-language pathologists, teachers of the deaf and hard of hearing and early childhood special educators are among the service providers that are available through tiny-k networks.

This network of providers support the evaluation and development of the Individualized Family Service Plan (IFSP). This practice follows IDEA federal regulations which support the goal of diagnosis before three months of age and the initiation of early intervention services before six months of age, with parental consent.

SB-EHDI collaborates extensively with Part C and tiny-k regarding early identification and intervention efforts. Hearing Screening Certification trainings have been provided in the past to early intervention providers and have received highly satisfactory evaluations. In particular, SB-EHDI collaborates with Part C to obtain data on referrals, age of enrollment, and other early intervention outcomes. This collaboration is strong and will continue in the coming years. All tiny-k networks are required to report the same data as long as the family has provided a release of information as indicated as part of the data system. Many of the tiny-k networks have committed to obtaining releases from parents in order to share information with SB-EHDI. This will enhance a seamless system for early intervention to infants and children with deafness or hearing loss and to ensure timely and appropriate services for families.

The Special Health Care Needs (SHCN) program can access assessment services through ITS, linking with SHCN for reimbursement for the assessment. If the infant meets SHCN eligibility, family centered services provided through the child's tiny-k network, are reimbursable by SHCN. Data sharing at the State level for this population enhances collaboration and family-centered care. Infants who do not pass the hearing screening are eligible for a one-time outpatient hearing screen and/or audiologic assessment through SHCN approved providers. There is no cost to the family and providers are reimbursed for their screening or assessment. Heather Smith,

Director of SHCN contributes to the MCH Title V Block grant application and annual report, which includes reporting aggregate data for SB-EHDI. Ms. Smith is on the SoundBeginnings Advisory Committee and is committed to ensuring hearing screening in Kansas is an effective and sustainable public health initiative.

The Newborn Metabolic/Genetic Screening Program follow-up practices and protocols have been adapted by SB-EHDI. The collaborative database link with the Office of Vital Statistics has been implemented for SoundBeginnings including linking infants with death certificates prior to hearing screening follow-up at the State level. SB-EHDI and Newborn Screening continue to collaborate on ways to improve linking the medical home and follow-up services. Current efforts are being made to further integrate data from the metabolic screening and hearing screening programs into the existing SB-EHDI AURIS database through the development of modules for the metabolic/genetic screening follow up program and the birth defects registry.

The Kansas Chapter of the American Academy of Pediatrics (KAAP) has provided ongoing support to SB-EHDI with Teresa Crowe, M.D., serving as Chapter Champion and a member on the Advisory Committee. SB-EHDI has been pleased with the collaboration from this new KAAP Chapter Champion. Evaluation and technical assistance is supported through this partnership and KAAP can provide valuable state and national information and support collaboration with primary care pediatricians in the state.

Kansas Commission for the Deaf and Hard of Hearing (KCDHH), a statewide advocacy group, will continue to function in an advisory capacity for SB-EHDI. The KCDHH Executive Director serves on the SB-EHDI Advisory Committee. KCDHH

quarterly board meetings provide opportunities to share updates of SB-EHDI program activities. Currently, the KCDHH Executive Board which the SB-EHDI Audiology Coordinator serves on is continuing their support of activities with SB-EHDI and family support initiatives.

Kansas State Department of Education (KSDE) has a representative on the SB-EHDI Advisory Committee, and several educational audiologists, teachers of the deaf and hard of hearing, and school speech-language pathologists have been involved in the SB-EHDI initiatives. KSDE is collaborating with SB-EHDI on the Sound START Coordinators statewide system and in Deaf Education issues.

Part C has collaborated with Medicaid to use a special provider billing number for tiny-k allowing them to bill for early intervention services for Medicaid eligible infants and toddlers. Audiologic assessment, assistive devices, and speech language pathology are examples of services included in this arrangement. KanCare, the Kansas Medicaid program, and the Kansas Children’s Health Insurance Program (CHIP) are administered by the Division of Health Care Finance within the Kansas Department of Health. Stronger collaborations and partnerships with this program are desired, as described throughout this proposal. Activities have already begun to bridge gaps and build partnerships through the Director of Special Health Services section at KDHE, where the SB-EHDI program is organizationally located. The Kansas Health Policy Authority has a representative on the SB-EHDI Advisory Committee.

SB-EHDI collaborates with other professionals on the Advisory Committee with outstanding credentials that provide valuable consultation and assistance to the program and to the project. Sandy Keener, M.A., CCC-A, is a Pediatric Audiologist at

the University of Kansas Medical Center. She has been active in state issues related to pediatric audiology and works with children and families seen by the cochlear implant team. She was Audiologist of the Year 2006 and was on the Kansas NICHQ Learning Collaborative. Jane Schwartz, M.S., is a Teacher of the Deaf and Hard of Hearing Early Childhood Special Educator working in an urban infant-toddler program in the Wichita area. Her expertise as a service provider and her knowledge of the many and varied intervention strategies is well known statewide. She chaired the Early Intervention Task Force and has been instrumental in planning early intervention trainings with SB-EHDI throughout the state. Ms. Schwartz received the National Center on Low-Incidence Disabilities (NCLID) Excellence in Education Award.

This project will collaborate and maintain relationships with State professional organizations to provide education and information to meet the needs of their constituencies. The professional organizations routinely conduct training needs assessments of their memberships and are experienced at providing effective training to meet their needs. SB-EHDI has developed and maintained relationships with the Kansas Hospital Association (KHA) and Kansas Speech-Language-Hearing Association (KSHA). These organizations also impact the screening, assessment and early intervention programs.

ORGANIZATIONAL INFORMATION

SoundBeginnings Newborn Hearing Screening Program is committed to the national 1•3•6 guidelines supporting families in the early detection, diagnosis and timely intervention of hearing loss of infants and children in Kansas.

The project will function within the Kansas Department of Health and Environment (KDHE). Located in the Division of Health is the Bureau of Family Health (BFH), directed by Rachel Berroth, MS, which administers the following:

- Special Health Services (SHS), including the Title V Special Health Care Needs program, Newborn Metabolic/Genetic Screening, Newborn Hearing Screening, Kansas Resource Guide, and the Birth Defects Registry. The Director of Special Health Services is Heather Smith, MPH.
- Children and Families, including the Early Intervention Program for Infants and Toddlers with Disabilities (Part C), known as tiny-k in Kansas, Maternal and Child Health Unit, Family Planning, Maternal and Infant/Perinatal Services, Home Visitation Programs, and Adolescence and School Health programs. The Director of Children and Families is Sabra Shirrell.
- Nutrition and WIC Services, including the federally funded Women's, Infants, and Children nutritional support program, and state breastfeeding initiatives. The Director of Nutrition and WIC Services is Dave Thomason.
- Child Care Licensing and Regulations, including the oversight and licensure of child care facilities to ensure the safety of children in care outside of the home. The Director of Child Care Licensing is Lorrena Steelman.
- Child Placing Agency and Residential Programs, including the regulation of all Child Placing Agencies (CPA) for the foster care system as well as residential facilities for pregnant women and non-hospital birthing facilities. The Director of the CPA and Residential Program is Daric Smith, J.D.
- Policy and Administration, which includes the oversight of Bureau of Family

Health statutes, regulations, and policies. The Director of the Policy and Administration is Mary Murphy.

Within the Special Health Service Section, SB-EHDI is under the direction of Elizabeth Abbey, M.A., CCC-A. Elizabeth supervises the Data Manager, Data Coordinator and Data Registrar. All of the above programs links with SB-EHDI in some capacity. Current BFH partners include the Maternal and Infant/Perinatal Services, Healthy Start Home Visitor Services, WIC, and Infant Toddler Services. Recent discussions have allowed opportunities to increase the collaboration between the SB-EHDI program and the Child Care Licensure and CPA and Residential Facilities sections to support education and training initiatives for these providers. Additionally, within the KDHE Bureau of Epidemiology and Public Informatics, under the direction of Charlie Hunt, State Epidemiologist Director, SB-EHDI works with the Office of Vital Statistics to gather data and link birthing and screening records.

See Attachment 5 Project Organizational Chart

Elizabeth Abbey, M.A., CCC-A is the Audiologist/Coordinator of SB-EHDI and Project Director. She is a member of the Directors of Speech and Hearing Programs in State Health and Welfare Agencies (DSHPSHWA). Ms. Abbey has worked with NCHAM on the Early Hearing Head Start Project. Ms. Abbey utilizes the technical assistance offered by NCHAM and obtains Kansas participation and Family Support initiatives. Ms. Abbey provided statewide training for hospital screeners and continues to provide training to birthing facility’s newborn hearing screening programs annually with the assistance of the Data Manager. Ms. Abbey developed the Part C Hearing

Screening Guidelines and provides Hearing screening trainings to the early intervention network screeners, Early Head Start and Parents As Teachers programs.

Mrs. Abbey represents KDHE on the Kansas Commission for the Deaf and Hard of Hearing (KCDHH). KCDHH, an advocacy group for services and programs for Kansans who are deaf and hard of hearing, was instrumental in coordinating grass roots support for the Kansas Newborn Infant Hearing Screening Act. KCDHH serves in an advisory capacity for SB-EHDI. Ms. Abbey also represents SB-EHDI on the Kansas Deaf Blind Consortium. Ms. Abbey was recently named the 2013 Kansas Audiologist of the Year.

Kansas' Newborn Screening program (NBS) for metabolic/genetic disorders requires a comprehensive approach of all components of the program (screening; follow-up through diagnosis). Aggregate data from this program are included in the MCH Title V Block Grant Annual Report. There are similarities in program implementation between NBS and SB-EHDI. Continued collaboration to consider future integration of systems is ongoing.

The Data Manager for the SoundBeginnings EHDI Program, oversees the data entry and tracking of all newborns and data management system under the supervision of Ms. Abbey including data management and follow-up of hearing screening, audiologic/medical assessment, and early intervention follow-up data; follow-up with the medical home, family and service providers. Kelly Barr, Data Manager provides all reports for local, state and national reporting with the assistance of the Program Coordinator. The Data Coordinator oversees the data collection and assists the Data Manager with follow-up of hearing screening, audiologic/medical assessment, and early

intervention follow-up data; follow-up with the medical home, family and service providers. Kobi Foster, Data Coordinator is under the supervision of Ms. Abbey. Lisa Elliott, Data Registrar provides data entry on all results that are not obtained from the birth certificate system and other information related to follow-up. Ms. Elliott also provides all administrative support to the SB-EHDI program.

The Program Coordinator and Data Manager will also be in direct proximity to other BFH Staff who are in advisory capacities to SB-EHDI, including: Ms. Rachel Berroth, Director, BFH; Heather Smith, SHS Director; and Ms. Kristi Wilson, Fiscal Analyst, BFH.

Organization Experience, Capacity and Available Resources

Kansas participated in the Maternal and Child Health Bureau grant at the Marion Downs National Center for Infant Hearing (MDNC). Through this grant, the infrastructure for an effective universal newborn hearing screening system was clearly delineated and individualized technical assistance was provided which guided Kansas in the many aspects of program implementation. The MDNC guidance emphasized a comprehensive approach to implementing a newborn hearing screening program. From this guidance an Advisory Committee and Task Forces for Newborn Hearing Screening, Audiologic and Medical Assessment/Amplification, and Early Intervention Task Forces were formed. These Infant Hearing Task Forces developed guidelines for each area, a Family Resource guide, and printed materials for hospitals on the SB-EHDI program. The Sound START Committee, which continues to develop the Sound START program and is active in providing guidance for early intervention issues in training and service

delivery.

SB-EHDI has the capability to collect and report individual level data from multiple sources. Hospitals provide individual data to the birth certificate system, which is under the direction of the Bureau of Surveillance and Epidemiology, and this data is exported into a file and then imported into the SB-EHDI AURIS database. Any individual data that requires an additional screening post discharge or that was inadvertently not entered into the birth certificate system will be provided to SB-EHDI from the hospitals and Audiologists. Physicians report results for rescreens that they have received from Audiologists or hospitals as part of a results notification form SoundBeginnings sends on their patients. Enhancements have been made to the database that allows birthing hospital newborn hearing screening coordinators and audiologists access to enter screen and diagnostic results.

Additionally, Part C will provide an essential component for data reporting by providing SB-EHDI with information on enrollment, age of enrollment and referrals for those families that provide releases. Sound START Coordinators will be able to provide data to SB-EHDI as a major responsibility is data management and reporting outcomes to appropriate statewide programs. The tests of change learned from the NICHQ Learning Collaborative will also help to reduce the lost to follow-up in Kansas.

Attachment 1: Work Plan

KEY: EC = EHDI Coordinator, **EDM** = EHDI Data Manager, **EDC** = EHDI Data Coordinator, **ER** =EHDI Data Registrar**, KDHE-E** = Kansas Department of Health and Environment Epidemiologist, **FSC** = EHDI Family Service Consultant, **EHDI-S** = Stakeholders/Advisory Committee, **EI**-Early Interventionists, **EHDI-A**= Supporting Pediatric Audiologist

Aim Statement 1

By March 31, 2015, Kansas SB-EHDI will use quality improvement methodology to reduce the percentage of Kansas birthing facilities with refer rates higher than 10% from the baseline of 39% to 34% which in return has an impact on Kansas' LFU/LTD rates.

Objective1.1 Review Birthing Facility QI report to identify the hospitals with higher than 10% refer rates

Changes / Activities (sequence as needed)	Start Date	Est. Comp Date	Staff	Process Measures	Outcome
1.1a Identify 5 hospitals with the highest refer rates	April 2014	April 2014	EDC	SB-EHDI QI Reports created through the Auris database	Decrease in the number of hospitals with a refer rate > 10%
1.1b Provide onsite training	May 2014	June 2014	EC EDM	Survey to trainees on the effectiveness of training	% of effectiveness of screener knowledge and screening abilities
1.1c Monitor monthly progress of the decrease in refer rates	July 2014	Aug 2014	EDC	Auris database Run Chart	% of Refer rates decreased

Objective1.2 Analyze/Track the hospital hearing screening refer rates

Changes / Activities (sequence as needed)	Start Date	Est. Comp Date	Staff	Process Measures	Outcome
3.4 a Analyze the data from the hospital QI reports	Sept 2014	Sept 2014	KDHE-E EC	Auris database	Decrease in refer rates in the 5 hospitals trained
3.4b Meet with stakeholders to discuss progress	Sept 2014	Sept 2014	EHDI-S EC	Run Chart	Change or implement the cycle of testing
3.4c Change or retire testing if no improvement of refer rates	Oct 2014	Oct 2014	EC	Auris database	Small change in cycle to test
3.4d If improvement of refer rates, implement into hospitals with the highest refer rates	Oct 2014	March 2015	EC EDM	Auris database	Decrease in hospital refer rates and the overall chance of LFU/LTD

Aim Statement 2

By March 31, 2015, Kansas SB-EHDI will use quality improvement methodology so that LFU/LTD is reduced in the percentage of Kansas newborns that do not receive rescreening and/or diagnostic audiological evaluations after failure to pass newborn hearing from a baseline of 43% to 38% by identifying partnerships and collaborating on local and state levels.

Objective 2.1 Identify ways to collaborate with Title XIX, Title V, WIC, on data sharing

Changes / Activities (sequence as needed)	Start Date	Est. Comp Date	Staff	Process Measures	Outcome
2.1a Schedule meetings with Title XIX, Title V, WIC	May 2014	May 2014	EC EDM EHDI-S	Examination of database demographics and provider information	Extent of the databases-contributing factor in access to demographic information
2.1b Create MOU	June 2014	June 2014	EC	MOU	Current address, phone and PCP to
2.1c Get access to shared databases	July 2014	July 2014	EC EDM	MOU	Decrease in the amount of time for DX eval

Objective 2.2 Identify 5 infants who have not received a rescreen or diagnostic evaluation by three months of age in a region with high LFU/LTD rates

Changes / Activities (sequence as needed)	Start Date	Est. Comp Date	Staff	Process Measures	Outcome
2.2a Compare demographic information in all accessible databases	July 2014	July 2014	EC EDC	Auris database Verifying information	Contact Family and PCP
2.2b Contact/Alert WIC, Home Visiting Program, MCO case managers to assist families in completing the process	Aug 2014	Aug 2014	EC	Alerts in Databases	Infants receive rescreen or DX eval before 3 months of age
2.2c Provide WIC, Home Visiting program, Case managers parental information	Aug 2014	Aug 2014	EC	Call/ Email/ Tickle in system to alert providers	Increase the likelihood of a successful diagnostic audiology visit
2.2d Provide an array of family supports statewide (transportation, SHCN eligibility)	Aug 2014	Aug 2014	EC EHDI-S	Website Enhancements and distribution of information	Providers and families aware of resources
2.2e Track/Analyze LFU rates of infants receiving rescreen or diagnostic evals before 3 months of age	Sept 2014	Oct 2014	EDC	Auris database Run Chart	Change or implement the testing
2.2f Change or retire testing	Oct	Nov	EC	Auris database	Small change in cycle to

if no improvement of refer rates	2014	2014		Run Chart	test
2.2g If improvement of refer rates, implement for all infants in that region	Oct 2014	March 2017	EC EDM	Auris database Run Chart	Decrease LFU/LTD rate of infants receiving DX evals before 3 months of age

Objective 2.3 Promote Special Health Care Needs offering infants and their families a one-time outpatient screening or diagnostic evaluation at no cost

Changes / Activities (sequence as needed)	Start Date	Est. Comp Date	Staff	Process Measures	Outcome
2.3a Schedule Meeting with SHCN program director	April 2014	May 2014	EC	Informative SHCN program description	Complete understanding of SHCN
2.3b Collect information to share	April 2014	May 2014	ER	Collection from SHCN	Parent EI packet
2.3c Send out information to Audiologists, PCP, EI, families and other entities	May 2014	June 2014	ER	Resource Packets	Increase the parent awareness of financial assistance
2.3d Add information on the SB-EHDI website	May 2014	May 2014	EC	Website enhancement	Increase the parent awareness of financial assistance

Aim Statement 3

By March 31, 2015, Kansas SB-EHDI will use quality improvement methodology to decrease the LFU/LTD of infants identified with hearing loss receiving early intervention services before 6 months from baseline of 20% to 15%.

Objective 3.1 Identify Audiologist Protocols on referring a child newly identified with hearing loss for Part C Early Intervention Services

Changes / Activities (sequence as needed)	Start Date	Est. Comp Date	Staff	Process Measures	Outcome
3.1a Develop and distribute a means to document the referral process	April 2014	June 2014	KDHE-E EC	Survey	Identify possible breaks in the system of referral to EI
3.1b Survey Audiologists to determine where the barriers or breaks might be occurring in the referral process	Aug 2014	Aug 2014	KDHE-E EHDI-S EC	Survey Monkey	Every child is automatically referred by the Audiologist upon identification

Objective 3.2 Identify the KS County that has the highest number of infants identified with hearing loss with the lowest amount receiving EI services

Changes / Activities (sequence as needed)	Start Date	Est. Comp Date	Staff	Process Measures	Outcome
3.2a Identify the KS County EI Network	May 2014	May 2014	EC	Auris database	Identify EI county that will be included in the test of change
3.2b EI protocols for receiving referrals	June 2014	July 2014	EC EHDI-S EI	Survey	Identify possible breaks in the EI referral assessment system
3.2c Analyze to determine where the barriers or breaks might be occurring in the referral/assessment process	July 2014	July 2014	KDHE-E EC EI	Survey Monkey	Understand the process when referrals are received

Objective 3.3 Track the amount of time to complete the referral process from the initial refer to the Individual Family Service Plan (IFSP) on 5 infants identified with hearing loss within this EI network through the share Part C database

Changes / Activities (sequence as needed)	Start Date	Est. Comp Date	Staff	Process Measures	Outcome
3.3 a Identify 5 infants within the network	Aug 2014	Sept 2014	EDM	Auris database	Decrease LFU/LTD into EI before 6 months of age
3.3b Track the amount of time from referral to IFSP	Aug 2014	Oct 2014	EC	Auris database	Infants receiving EI services before 6 months of age
3.3c Contact the family to provide support	Aug 2014	Mar 2017	FSC	Email/Phone	Parents receive the information/resources needed
3.3d Letter to families who do not choose EI	Nov 2014	Mar 2017	ER	Auris database	Obtain reason for decline

Objective 3.4 Analyze/track the rates of infants enrolled in EI before 6 mo of age

Changes / Activities (sequence as needed)	Start Date	Est. Comp Date	Staff	Process Measures	Outcome
3.4 a Monitor the rates of enrollment	Aug 2014	Feb 2015	EDC	Auris database	Decrease LFU/LTD into EI before 6 months of age
3.4b Meet with stakeholders to discuss progress	Mar 2015	Mar 2015	EI EC EHDI-S	Conference Call	Change or implement the testing
3.4c Change or retire cycles of testing if no improvement in LFU/LTD	Mar 2015	May 2015	EC	Auris database	Small change in cycle to test
3.4d If improvement of EI LFU/LTD rates, implement in	May 2015	Mar 2017	EC EDM	Auris database Run Chart	Decrease LFU/LTD rate of infants receiving EI

another EI network					before 6 months of age

Objective 3.5 Develop an EI packet to be distributed by the Audiologist to families

Changes / Activities (sequence as needed)	Start Date	Est. Comp Date	Staff	Process Measures	Outcome
3.5 a Meet with EI and Audiologist Stakeholders to collect information for the packet	July 2014	July 2014	EC EHDI-A EHDI-S	Auris database	EI Resources and educational materials for families
3.5b information for the families and disperse to Pediatric Audiologists	Aug 2014	March 2017	EC	Parent Packet	Parents choose EI services for their children

Aim Statement 4

By March 31, 2015, Kansas SB-EHDI will use quality improvement methodology to Increase the screening rate of homebirth/out-of-hospital births from the baseline of 40% to 50%.

Objective 4.1 Obtain names and demographic information of laypersons and certified midwives in the state of Kansas who assist in home births.

Changes / Activities (sequence as needed)	Start Date	Est. Comp Date	Staff	Process Measures	Outcome
4.1a Contact the Office of Vital Statistics to obtain names	April 2014	April 2014	EC	OVS database	Identify names of those assisting in OHB
4.1b Identify who has screening equipment	May 2014	May 2014	EC	Auris database	Areas in need of screening equipment

Objective 4.2 Partner with an established Midwife in the EHDI system to host a one day (metabolic and hearing) conference in a region with the highest out of hospital birth rates

Changes / Activities (sequence as needed)	Start Date	Est. Comp Date	Staff	Process Measures	Outcome
4.2a Identify the region with the highest OHB rate	May 2014	May 2014	EPI	Auris database	Target Region
4.2b Contact a partnering midwife in that region	June 2014	June 2014	EC	Phone	Host a conference
4.2c Work out details for the conference	July 2014	Aug 20104	EC	Conference Call	Informative, Educational, Developmental

					Emergency
4.2d Conference	Sept 2014	Sept 2014	EC EDM		Collaboration with Midwives – Increase OHB screen rates

Objective 4.4 Select two midwives within the region to receive OAE equipment.

Changes / Activities (sequence as needed)	**Start Date**	**Est. Comp Date**	**Staff**	**Process Measures**	**Outcome**
4.3a Disperse a survey during the conference to midwives	Sept 2014	Sept 2014	EC	Auris database	% of effectiveness of midwife knowledge and interest in screening
4.3b Select the midwives from responses on survey	Sept 2014	Sept 2014	EDHI-S EC	Auris database	Increase screening throughout the region
4.3c Schedule and provide OAE trainings	Oct 2014	Nov 2014	EC EDM	Onsite Trainings	Increase screening rate throughout the region
4.3d Provide resource and technical assistance as needed	Oct 2014	March 2017	EC EDM	Collaboration, Advisory Board	Strength Midwife Collaboration

Objective 4.5 Monitor the success and the increase in OHB screen rates

Changes / Activities (sequence as needed)	**Start Date**	**Est. Comp Date**	**Staff**	**Process Measures**	**Outcome**
4.4a Schedule a follow-up meeting with midwives	Dec 2014	Dec 2014	EC EDM	Indicators of progress or failure	Increase the Midwives confidence and competency in screening
4.4b Monitor the screen rates of OHB	Oct 2014	Jan 2015	EDC	Auris database Run Chart	Increase in OHB screen rates
4.4c Meet with stakeholders to discuss progress	Jan 2015	Jan 2015	EC EDM	Conference Call	Change or implement the testing
4.4d Change or retire cycles of testing if no improvement	Jan 2015	Feb 2015	EC	Auris database	Change in testing cycle
4.4e If improvement of OHB rates, implement in conference and OAE funding in another region	Feb 2015	March 2017	EC EDM	Auris database	Increase in OHB screen rates