Early Hearing Detection and Intervention Program - Mississippi

FY 2020 New and Competing Continuation Grant

Project Title: Early Hearing Detection and Intervention Program - Mississippi
Applicant Organization Name: MSDH Early Hearing Detection & Intervention Program
Address: 570 East Woodrow Wilson, P.O. Box 1700, Jackson, MS 39215-1700
Project Director Name: Stacy Callender
Contact Phone Numbers: 601-576-7427 (Voice), 601-576-7540 (Fax)
E-Mail Address: Stacy.Callender@msdh.ms.gov
Web Site Address: http://msdh.ms.gov/msdhsite/_static/41,0,174.html
Grant program funds requested: $940,000 (plus $10,000 for Needs Assessment)

PROJECT NARRATIVE

Table of Contents

PROJECT NARRATIVE

Introduction

The purpose of the *Early Hearing Detection and Intervention Program: Mississippi* project is to engage stakeholders, providers, families, and early childhood partners in improving the comprehensive and coordinated statewide Early Hearing Detection and Intervention (EHDI) system in Mississippi. The goal of EHDI is to ensure newborns, infants, and young children receive appropriate and timely services, including screening, evaluation, diagnosis, and early intervention (EI), to improve the developmental outcomes of children who are deaf/hard of hearing (DHH). This project of the EHDI Program in Mississippi (EHDI-MS) under the Mississippi Department of Health (MSDH) includes efforts to (1) engage stakeholders within the EHDI-MS system to improve developmental outcomes for children who are DHH, (2) engage and train professionals, (3) engage and support families of children who are DHH, and (4) engage and coordinate with state and national partners to strengthen the EHDI-MS infrastructure and capacity. In addition, EHDI-MS proposes to conduct a one-year targeted needs assessment on the educational needs of health care professionals and service providers who interact at the time of diagnosis. Successful completion of this project will result in at least 95% of infants receiving a hearing screening by one month of age, 67% of referred infants receiving confirmation of hearing status by three months of age, and 58% of infants with confirmed hearing loss being enrolled in early intervention service by six months of age. In addition, 20% more families will be enrolled in family-to-family support services by six months of age and 10% more families will be enrolled in DHH adult-to-family support services by nine months of age. Finally, 10% more health care and service providers will be trained on key aspects of the EHDI Program.

Needs Assessment

Early Hearing Detection and Intervention Program in Mississippi

The Early Hearing Detection and Intervention Program in Mississippi (EHDI-MS) was established in 1997 by Mississippi Code 41-90[1]. The Mississippi State Department of Health (MSDH) EHDI-MS collaborates statewide with birthing hospitals, midwives, audiologists, otolaryngologists, primary care providers, and early interventionists to ensure infants with hearing loss are identified by one month of age, diagnosed by three months of age, and enrolled in early intervention services by six months of age. The EHDI-MS also track infants who are at risk for late onset or progressive hearing loss providing follow-up reminders for repeat screening.

The EHDI-MS State office is staffed with a State Coordinator, Hearing Follow-up Coordinators (HFC), Data Manager, administrative support, and contractual Outreach/Training Coordinators (OTC). The EHDI State Coordinator oversees the program, including obtaining and managing grants to fund the program, directing the HFCs, Data Manager, administrative staff, and OTCs, and writing policies and procedures with input from stakeholders. The HFCs receive and enter screening and evaluation results, with clerical support into the EHDI Information System (EHDI-IS), contact families to ensure they have a medical home and receive ongoing follow-up, and make referrals to early intervention services for infants and toddlers with confirmed hearing loss. The Data Manager assists with cleaning and analyzing data in the EHDI-IS to assist with performance reports, program evaluation, and quality improvement efforts. The OTCs conduct outreach with

[1] https://law.justia.com/codes/mississippi/2018/title-41/chapter-90/

health care and early intervention providers to ensure they are familiar with the EHDI-MS Program requirements, goals, and practices and provide formal training and technical assistance to health care and early intervention professionals on collecting and reporting early hearing results, providing family-focused services, and implementing evidence-based practices to improve outcomes for infants and toddlers who are deaf and hard of hearing (DHH) and their families. See *Attachment 2: Staffing Plan and Job Descriptions for Key Personnel*, *Attachment 3: Biographical Sketches of Key Personnel*, and *Attachment 5: Project Organizational Chart* for more information.

The EHDI-MS Program has an Advisory Committee (EHDI-AC) established by Mississippi Code 41-90-7 and comprised of diverse stakeholders who advise and assist the EHDI-MS in setting policy, carrying out activities, and evaluating the program. The EHDI-AC members are appointed by the State Health Officer for three years, with a third rotating off each year. The members include family members of children who are DHH, adults who are DHH, hearing screening and diagnostic professionals, primary health care providers, early interventionists, educators, and representatives of other maternal and child health programs that collaborate with EHDI-MS. At least 25% of the members of the EHDI-AC are adults who are DHH and/or family members of children who are DHH. The EHDI-AC meets quarterly and provides an opportunity during each meeting for public comments about any relevant topic or concern. The EHDI-AC has two standing subcommittees which focus on professional development and family engagement. Annually, the EHDI-AC reports to the State Interagency Coordinating Council (SICC) for early intervention to provide recommendations on the identification of infants and toddlers who are DHH and linking them and their families with early intervention services. See *Attachment 6: Progress Report* for more information about the expansion of the EHDI-AC between 2017-2019.

The broader stakeholders in the EHDI-MS system include birthing hospitals, midwives, audiologists, otolaryngologists, primary care providers, early interventionists, families of children ages birth to 36 months of age who are DHH, adults who are DHH, and other advocates. Mississippi has 42 birthing hospitals[2] where most babies in the state are born[3]. There are also a dozen midwife practices[4] in the state with additional practices in border states which currently assist with less than 1% of births in the state. Additional health care stakeholders in EHDI-MS include the 13 audiological practices serving pediatric populations, 85 active otolaryngologists, and 345 active Pediatricians.[5] Infants and toddlers with hearing loss receive services through the Mississippi First Steps Early Intervention Program (MSFSEIP)[6] from three main providers: The Children's Center for Communication and Development, providing early oral intervention, Magnolia Speech School Home Visiting Program, supporting auditory/oral communication, or the SKI*HI Early Intervention Program at the Mississippi School for the Deaf supporting total communication. Additional stakeholders include representatives of the Mississippi Chapter of the American Academy of Pediatrics, the Mississippi Office of the Deaf and Hard of Hearing, Mississippi School for the Deaf, and other MSDH child and adolescent health programs.

[2] Defined as a hospital with 100 or more births recorded each year.
[3] Mississippi does not have free-standing birth centers, so birthing hospitals account for more than 98% of births in the state.
[4] The Mississippi Friends of Midwives maintains a directory of midwife providers in the state online at http://www.msfriendsofmidwives.org/directory.html.
[5] Association of American Medical Colleges (AAMC) 2017 State Physician Workforce Data Report: Mississippi Physician Workforce Profile located online at: https://www.aamc.org/system/files/2019-08/mississippi2017.pdf
[6] Children with any degree or type of hearing loss are eligible for services through the MSFSEIP.

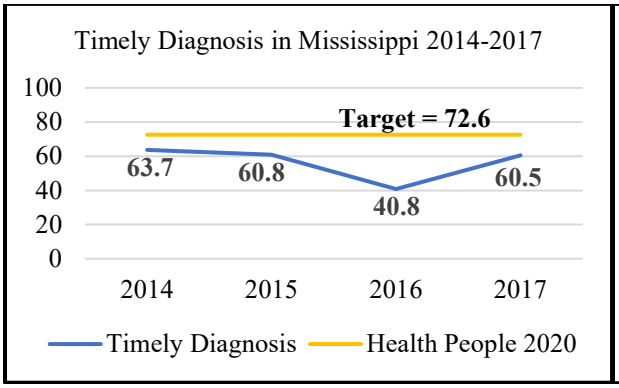
Performance on the 1-3-6 National EHDI Recommendations

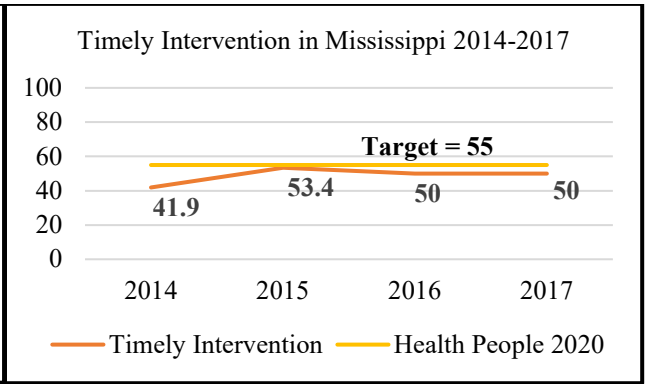
In 2017, 37,370 babies were born Mississippi. State statute (MS Code 41-90) requires birthing hospitals to conduct universal newborn hearing screening (UNHS) prior to discharge and to report these results to the EHDI-MS. Of these births, 36,085 (96.6%), were reported as having received a hearing screening by one month of age. The remaining infants were either screened after one month (N=702), screened at an unknown time (N=85), or not screened (N=498). Of the infants not screened, the majority were reported as not screened due to infant mortality (N=168), failure to obtain screening following a homebirth (N=115), or for an unknown reason (N=178).

Of the infants screened, 603 referred on their final screening. MS Code 41-90 also requires diagnostic providers to report results to the EHDI-MS. Of these who referred on their final screen, 365 (60.5%) received confirmation of hearing status by three months of age. An additional 102 received confirmation of hearing status after three months of age; four more received confirmation at an unknown age. Of the infants who referred, only 471 had diagnostic results reported. The majority without a confirmed hearing status reported to EHDI-MS were awaiting diagnosis (N=34), had been contacted but their family was unresponsive (N=34), or had been lost to follow-up or documentation (N=32).

Of the infants with their hearing status reported to EHDI-MS, 54 were confirmed with permanent hearing loss. Of these, all were referred to the Mississippi First Steps Early Intervention Program; however, only 27 (50%) were enrolled in EI services before six months of age. An additional five infants enrolled in EI services after six months of age. Of the 22 families who did not enroll in EI services, the majority declined services (N=10), and the rest were lost to follow-up (N=6), were contacted but unresponsive (N=2), died (N=2), or moved out of state (N=2).

The EHDI-MS Program has focused on meeting these Joint Committee on Infant Hearing (JCIH) recommended benchmarks for hearing screenings, diagnostic evaluations, and early intervention enrollment. For more than six years, Mississippi has met the recommended benchmark of more than 95% for timely newborn hearing screenings; however, EHDI-MS has not met the benchmarks for timely confirmation nor timely enrollment in early intervention. Over the past five years, timely confirmation declined from nearly 64% in 2014 falling dramatically to nearly 41% in 2016 before rebounding to nearly 61% in 2017. In the same time, gains in timely enrollment in EI services from nearly 42% in 2014 to over 53% in 2015 have subsequently slumped to 50% in both 2016 and 2017. These rates continue to fall short of the Healthy People 2020 objectives.





Target Population Needs and Barriers to Timely Diagnostic Follow-up and Services

In 2017, EHDI-MS lead regional stakeholder meetings to examine the barriers to meeting the JCIH recommendations. During these meetings, stakeholders completed a self-assessment using the JICH recommendations and identified, within and across regions, the following barriers to timely diagnostic services: (a) the lack of consistent care and follow-up due to a lack of primary care providers, especially those implementing accessible, patient-centered, comprehensive, and coordinated care, (b) the lack of access to diagnostic providers due to shortages in trained pediatric audiologists, and (c) multiple sociocultural factors that prevented families from accessing the diagnostic services their children need.

First, Mississippi has the worst physician to patient ratio in the country at only 186.1 physicians per 100,000 patients.[7] Mississippi has approximately three million residents[8]; however, according to the MSDH FY2018 State Health Plan[9], Mississippi has only 5,744 active medical doctors and 407 osteopaths licensed by the Board of Medical Licensure. Approximately 41% of the state's active medical doctors are primary care physicians, including 754 family practitioners, 75 general practitioners, and 475 pediatricians. Twenty of the 82 counties in Mississippi has three or fewer active primary care providers, with four counties having none. Over 60% of the licensed primary care providers in Mississippi are located in just five urban areas, including the northwest county just south of Memphis, TN (N=117), the northeast county containing Tupelo (N=120), the tri-county area around the capitol city of Jackson (N=807), the southeast county around Hattiesburg (N=158), and the three counties along the southern coast (N=248), leaving large areas of the state with a lack of vital healthcare providers. This has resulted in significant parts of the State being identified according to the Health Resources and Services Administration's (HRSA) Office of Shortage Designation as Geographic Health Professional Shortage Area (HPSA) or High Needs Geographic HPSAs.[10] Mississippi has a total of 117 primary care HPSA designations, with 78 of these designations being single county designations, impacting 1,746,844 residents.[11] See *Attachment 7: Additional Tables, Charts, & Graphs* for more information.

Second, Mississippi has an inadequate supply of pediatric audiologists to meet the current demand. Despite having 185 licensed audiologists in good standing, Mississippi has only 33 who participate in the EHDI-MS system serving infants and toddlers. Because of the lengthy evaluation time and expensive equipment required coupled with low reimbursement rates for pediatric services, most audiologists in the state serve primarily adult populations. Few have sufficient training and experience to specialize in serving infants and toddlers; there are no providers in the state to have earned the American Board of Audiology Pediatric Audiology Specialty Certification.

Recent turnover among pediatric audiologists has only intensified this deficit. Since 2017, the state has seen a reduction in the number of audiologists serving pediatric populations, due to retirements, relocations, and restricted hours of service. Those entering the profession are not able to replace the numbers leaving the profession or the state. In 2014, EHDI-MS received reports

[7] Association of American Medical Colleges. (2017). *The 2017 State Physician Workforce Data Report*. Washington, DC: Author. Available online at: store.aamc.org/2017-state-physician-workforce-data-report.html
[8] Located online at: http://www.census.gov/
[9] Located online at: https://msdh.ms.gov/msdhsite/_static/resources/7749.pdf
[10] Located online at: https://data.hrsa.gov/tools/shortage-area/hpsa-find
[11] Located online at: https://www.kff.org/other/state-indicator/primary-care-health-professional-shortage-areas-hpsas/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

from 23 audiology clinics. By 2019, the number of audiology clinics serving pediatric populations has dwindled to 13. As a result, the wait times for appointments have increased, with reported times between four to six weeks to as much as three to four months, often exceeding the JCIH recommendations for timely identification. Of these 13 clinics, nine (69%) evaluate less than five infants or toddlers per month. Four clinics account for 93.7% of all reported infant/toddler evaluations conducted in the state – one located in the northern region, one located in the central region, and two located in the southern region of the state, exacerbating transportation challenges.

Even in areas where health care providers are abundant, accessibility to care is compromised by multiple sociocultural factors impacting Mississippi's families' ability to respond, including poverty, lack of insurance, lack of reliable transportation, and other barriers. Mississippi's residents have some of the lowest levels of educational attainment and income and the highest rates of poverty in the country, all key indicators for health outcomes. These economic and educational challenges contribute to high levels of unemployment and underemployment for many Mississippians. The 2018 American Community Survey reported Mississippians continue to have the lowest median household income in the nation ($42,009) with estimates that 22% of the population lives in poverty.[12] Economic hardship particularly affects children as noted by the Annie E. Casey Foundation 2018 Kids Count with the highest rates in the nation of children in Mississippi living in poverty (28%) and extreme poverty (14%).[13] Despite recent gains in education, the state is tied for 44th in rankings of adults with less than a high school education (13%) and the second and sixth *lowest* levels of adults with Bachelor's degrees (15%) and graduate degrees (9%), respectively.

Further, Mississippians are more likely to lack affordable health insurance coverage than residents of other states. Due to the lack of insurance, many families forgo the expense of preventative services – relenting only when health demands are acute – and often rely on emergency rooms for their primary care services. According to the Kaiser Foundation, Mississippi is ranked sixth highest for uninsured individuals (14.3%) among other states that decided not to implement the Affordable Care Act (ACA) Medicaid expansion provisions. Mississippi has made considerable progress in reducing the number of uninsured children to meet or exceed national averages; however, 5% of children under 18 years of age remain uninsured despite more than 90% of these children being eligible for Medicaid or Children's Health Insurance Program (CHIP).[14]

Finally, transportation continues to be reported by families as a major barrier to accessing care. Analysis of diagnostic appointment data for babies born in 2019 indicate 33% of diagnostic appointments reported to EHDI-MS are classified as missed, 24% reported as "no shows" and 9% reported as cancelled or rescheduled. Missed appointments lead to missed timelines, increased loss to follow-up rates, and exacerbate the shortage of personnel, as appointment slots are wasted. Internal surveys of families who missed appointments identified transportation (e.g., distance to provider, lack of reliable transportation, no public transportation, or inadequate financial resources, such as to purchase gas) as impacting at least one in three respondents. Additional sociocultural factors identified include insurance issues (e.g., high cost of insurance, too complicated to obtain insurance, or failure to maintain eligibility), life or work demands (e.g., chaotic life demands, could

[12] Located online at: https://factfinder.census.gov
[13] Located online at: https://datacenter.kidscount.org/data#USA/2
[14] Located online at: https://www.kff.org/state-category/health-coverage-uninsured/?state

not schedule time off and/or working multiple jobs, or lack of care for their remaining children or other dependents), and cultural beliefs (e.g., a lack of trust in governmental services or reluctance to accept financial assistance). All of these factors continue to negatively impact timely follow-up.

Target Population Needs and Barriers to Timely and Comprehensive EI Services

During the regional stakeholder meetings, participants also identified, within and across regions, barriers to timely and comprehensive EI services: (a) the lack of timely enrollment in EI, (b) the lack of access to Service Coordinators who were aware of the unique challenges faced by infants and toddlers with hearing loss and to the full range of assistive technologies and communication modalities, and (c) the lack of family access to family-to-family support, Deaf Role Models, and accessible, accurate, culturally competent, comprehensive, up-to-date, and evidence-based information that would allow them to make important decisions for early intervention with their children in a timely manner.

As described above, approximately half of all infants and toddlers identified with hearing loss have failed to receive timely enrollment in EI services. The greatest barrier is the lack of timely identification of hearing loss (see above). Of the 54 infants born in 2017 who were identified with permanent hearing loss, 20 (37%) were identified after six months of age and only five of these families chose to enroll in Part C EI services. Though some families would not be eligible for EI services as they moved or their child died, far too many who were eligible were lost to follow-up, unresponsive, or declined services. Based on reports from Service Coordinators, families refused services because they were confused about their child's hearing status and the implications for their development, wanted to delay services until they completed medical interventions or decided upon communication modalities, or were emotionally overwhelmed by the diagnosis and were not ready to acknowledge the need for services.

In 2017, Service Coordinators in the MSFSEIP had not consistently participated in ongoing training on hearing loss, the EHDI system, or appropriate, evidence-based services to meet the unique needs of infants and toddlers with hearing loss and their families. Since then, the MSFSEIP has adopted knowledge and skills competencies outlined in the JCIH Supplemental Statement,[15] and MSFSEIP Service Coordinators have participated in intensive and ongoing training on hearing loss, early intervention services for children who are DHH, and strategies for communicating with families of children with hearing loss. EI personnel have participated in bootcamps, the annual EHDI-MS Conference, workshops, and Regional EHDI Learning Communities. However, families still lack access to the full range of assistive technologies and communication modalities due to shortages in early intervention specialists trained in all communication modalities and insufficient access to language models. Specifically, Mississippi has no early intervention providers proficient in Cued Speech. Families also have difficulty accessing hearing aids, cochlear implants, and other technologies. See *Attachment 6: Progress Report* for more information about the Service Coordinator training between 2017-2019.

In 2017, stakeholders identified a need to provide families more accessible, accurate, culturally competent, comprehensive, up-to-date, and evidence-based information as well as access to Parent

[15] Joint Committee on Infant Hearing. (2013). *Supplement to the JCIH 2007 position statement: Principles and guidelines for early intervention after confirmation that a child is Deaf or Hard of Hearing*. Pediatrics, 131(4), e1324-e1349. Found online: https://pediatrics.aappublications.org/content/131/4/e1324

and Deaf Guides which would support them in making important early intervention decisions for their children. Family surveys were conducted to determine their needs for informational and emotional supports. Results indicated families had little understanding of the EHDI system, medical and educational intervention options available for them, and resources for helping their children learn. The EHDI-MS partnered with the Mississippi Chapter of Hands & Voices (MSH&V) to redesign its website, create Regional EHDI Learning Communities, encourage family participation at the Annual EHDI-MS Conference, and establish a *Guide By Your Side* (GBYS) program. See *Attachment 6: Progress Report* for more information about family informational and emotional supports offered between 2017-2019.

To support family access to information, family members with the MSH&V provided recommendations for website revisions in 2017, which were finally implemented after multiple delays in 2019.[16] These webpages are capable of being translated from English into Spanish or Vietnamese, two of the most frequent languages spoken in the State. Families were also encouraged to participate in the Regional EHDI Learning Communities and attend the Annual EHDI-MS Conferences to promote shared learning about the JCIH recommendations, the EHDI-MS system, and best practices in screening, diagnostic evaluation, and early intervention. Additionally, EHDI-MS revised all of the follow-up letters, by simplifying the language to reduce the literacy level required and to provide targeted information about follow-up. Families now have access to timely, meaningful information related to screening, diagnostic evaluation, primary care, and EI resources, as well as training resources for families to support spoken language development or to learn American Sign Language (ASL). Despite the availability, the EHDI-MS has not yet determined that families are indeed accessing these resources nor that the resources are effective in increasing the knowledge and confidence of parents to make meaningful decisions for their children.

Finally, despite the tragic loss of the MSH&V Chapter President in 2017, a GBYS program was implemented with three Parent Guides and three Deaf Guides. In its first year, the program provided contact to hundreds of families of children who referred on hearing screenings and regular follow-up with families of children who were identified with hearing loss. However, after two years, the MSH&V Chapter along with the GBYS Program began to suffer losses of membership, Parent and Deaf Guides, and Board members. Eventually in June 2019, the MSH&V Chapter was dissolved due to failure to maintain fidelity to the chapter and program requirements. Currently families do not have access to family-to-family and/or DHH adult-to-family support.

Mississippi Demographics and Disparities

Mississippi has approximately three million residents with non-Hispanic whites (59%) comprising the largest demographic group. Of the remaining population, non-Hispanic blacks comprise the largest demographic (36%), which has resulted in Mississippi having the highest proportion of African Americans of any state in the nation. Other racial and/or ethnic minorities are more underrepresented compared to national averages, with Hispanics, regardless of race, accounting for 3%, Asians accounting for less than 1%, and Native Americans, Native Hawaiians, or Pacific Islanders accounting for less than one half of 1% of the State's population. The remaining population are classified as other races or multiracial.[17]

[16] EHDI-MS website located online at: https://msdh.ms.gov/EHDI
[17] Demographic information from http://www.census.gov/.

Mississippi also has fewer residents who are non-English speaking or English Language Learners (ELL) as a proportion of the population compared to national averages. Approximately 96.1% of residents speak English exclusively. Of the 3.9% of residents who speak a language other than English, Spanish (2.41%) is spoken most frequently. Other languages spoken in the state include Vietnamese, Chinese (Mandarin), French, Arabic, and Choctaw. [18]

However, due to generationally shifting demographics, the racial, ethnic, and linguistic breakdown for Mississippi's children increasingly differs from that of adults. Children of color account for one of every two children in Mississippi, including non-Hispanic blacks (42%), Hispanics (5%), and all other races or multiple races (4%).[19] Language minorities also account for 4.1% of 5-17 year-olds compared to only 1.7% of residents over 65 years.[20] Given the changing demographics, outreach efforts to culturally and linguistically diverse populations are needed as health care providers have been inconsistent in their efforts. For example, the provision of interpreters for languages spoken other than English are not common, except at public facilities. Further, even the resources provided by public facilities may be insufficient, as most depend upon phone-based interpreters and not all print materials are translated into common languages spoken in the State, limiting the ability for some families to equally participate in their child's health and education.

Race and ethnicity are known to impact the prenatal and perinatal health of infants. Mississippi has the highest rate of infant mortality in the nation (9.1 per 1,000 live births) with a two-to-one disparity in infant mortality between racial and ethnic minorities and whites. According to the MSDH 2018 Infant Mortality Report:

> *In 2017, the black infant mortality rate increased from 11.4 deaths per 1,000 live births to 11.9 and the white infant mortality rate declined from 6.7 to 6.2…. Racial differences in the infant mortality [rate] are strongly influenced by the differences in preterm birth rates between black and white infants, with 16% of black babies being born before 37 weeks compared to 11.3% of white infants…. Multiple social and medical factors drive these differences including poverty, education, access to medical care and maternal mental and physical health…. Infants born preterm are at an increased risk of breathing complications, infections, and brain injury.*

Birth complications, infections, and brain injuries may lead to congenital hearing loss or increase the risk for late onset hearing loss.

To determine if gender, race, or ethnicity presented additional barriers to timely hearing screenings, evaluations, and early intervention, the EHDI-MS staff reviewed the demographic data contained in the EHDI-IS. This review revealed gender and racial disparities in access to hearing screenings and diagnostic evaluations, though not on the timeliness of access. This is consistent with historical data showing an increased incidence of hearing loss in males and racial minorities. No gender or racial disparities were noted in enrollment in early intervention or the timeliness of enrollment. Disparities among ethnic or language minorities were hard to determine due to the small proportion of these individuals in the overall population and the limited numbers of infants

[18] Demographic information from http://www.census.gov/.
[19] 2019 Mississippi KIDS COUNT Fact Book. Located online at: https://kidscount.ssrc.msstate.edu/wp-content/uploads/2019/02/2019.MS_.KC-Factbook_web.pdf
[20] Demographic information from http://www.census.gov/

identified with hearing loss each year; however, given the lack of resources and materials targeting ethnic and language minority populations, they are likely to have encountered considerable difficulty in accessing health and educational resources adequately and timely.

Another key disparity among the target population is geography. Mississippi is overwhelmingly rural. Only three cities have populations over 50,000, with most of the state's population living in rural areas (51.2%).[21] As alluded to above, families in these rural areas often do not have sufficient resources, professional support, or providers readily accessible. Many families fail to keep follow-up appointments with primary and specialized health care providers due to the distance. In addition, racial and ethnic minorities face these challenges in higher proportions due to their concentrations in geographic areas with limited resources. See *Attachment 7: Additional Tables, Charts, & Graphs* for more information on population density.

Barriers to Be Addressed in This Project

Considering the recognized barriers for children with hearing loss to be identified and enrolled in early intervention in a timely manner and the provision of informational and emotional supports needed by families, this project will address the need for: (a) ongoing communication and increased coordination of care with primary and specialized health care and early intervention providers, (b) the provision of professional development to ensure a sufficient supply of pediatric diagnostic and early intervention professionals, (c) ongoing communication to provide accessible, accurate, culturally competent, comprehensive, up-to-date, and evidence-based information to diverse families and increased engagement with the EHDI-MS system, (d) the expansion of early intervention services to ensure access to the full range of assistive technologies and communication modalities, and (e) the provision of family-to-family and DHH adult-to-family support to families of infants and toddlers identified with hearing loss. Further, quality improvement teams, involving diverse stakeholders, including the EHDI-AC members, will work on removing barriers to coordination as well as addressing the multiple sociocultural factors that prevent families from accessing the diagnostic and early intervention services their children need. Much of this work will build upon the current efforts to educate professionals, engage and support families, and integrate the EHDI-MS system into the larger early childhood context.

Methodology

The following section outlines the proposed activities to address the needs outlined in the previous section and achieve the goals set out.

Stakeholder Engagement in the State EHDI System

Goal 1: By March 2024, EHDI-MS will promote engagement of and coordination with stakeholders to maintain and expand the EHDI-MS system to ensure at least 95% of infants receive a hearing screening by one month of age, at least 67% (i.e., 10% over HSFS 2017 baseline) of infants receive confirmation of hearing status by three months of age, and 58% (i.e., 15% over HSFS 2017 baseline) of infants are enrolled in early intervention service by six months of age.

[21] http://www.mississippi-demographics.com/cities_by_population

Objective 1.1: *By March 2024, EHDI-MS will maintain coordinated infrastructure and partnerships with health care providers to improve performance on the 1-3-6 recommendations and reduce loss to follow-up/documentation (LTF/D).*

The EHDI-MS has infrastructure and partnerships with health care providers to coordinate follow-up activities for infants and toddlers. The EHDI-MS maintains an integrated data system to document all screening and diagnostic appointments, results, and referrals, including those to early intervention. The EHDI-IS also allows the HFCs to track follow-up activities and record case notes for each child born in the state.

First, birth hospitals conduct inpatient and optionally outpatient hearing screenings and report these results or missed screenings to the EHDI-MS using the *Hospital Newborn Hearing Screening Log* (Form 1100) for all live births and, if needed, an individual *Hearing Screening Report* (Form 288) for children needing follow-up, including results for any infant who referred on a final inpatient or outpatient hearing screening, who has risk factors for late onset hearing loss, or who missed a hearing screening for any reason. The Hearing Follow-up Coordinators (HFC) sends letters to the family and their primary care provider based on reports submitted from the birthing or transfer hospital, following-up with hospital personnel if any additional information is needed. The hospital personnel are expected to arrange for a diagnostic evaluation before the family is discharged from the hospital. The HFCs may also assist in arranging appointments if needed.

Next, the audiologists and/or ENTs conduct diagnostic and/or medical evaluations to determine the child's hearing status and reports these results to the EHDI-MS using the *Hearing Diagnostic Report* (Form 53) for all children whether the evaluation was completed, inconclusive, or missed. Once the child has a confirmed hearing status, no additional reports are required unless the degree or type of hearing loss is updated. The HFCs again send letters to the family and their primary care provider based on the reports submitted from the diagnostic providers, following-up with the providers if any additional information is needed. In addition, the HFCs complete the referrals to the Mississippi First Steps Early Intervention Program (MSFSEIP) based on recommendations and reports of hearing status from the diagnostic providers.

Objective 1.2: *By March 2024, EHDI-MS and stakeholders will develop and implement plans to enhance the EHDI-MS.*

EHDI-MS will also engage stakeholders to develop and implement plans to enhance the EHDI-MS system by (a) expanding the infrastructure to conduct, document, and follow-up on hearing screenings for children up to age 3 to improve identification of infants and toddlers with late onset hearing loss; (b) improving communication with health care professionals, service providers, and families; (c) addressing diversity and inclusion in the EHDI system; and (d) planning for program sustainability after the period of federal funding ends. For each plan, EHDI-MS will consult with national and state partners, identify key stakeholders and convene a workgroup to identify critical issues, develop strategies to address the issues and draft a plan with steps to implement the strategies and metrics to measure progress. Each plan will be shared with a larger stakeholder group including the EHDI Advisory Committee (EHDI-AC) to solicit feedback. Once a final draft of the plan is developed and approved, the steps will be implemented with a schedule to review progress every six months and/or to revise any activities as needed.

To plan for expanding the infrastructure to conduct, document, and follow-up on hearing screenings for children up to age 3 to improve identification of infants and toddlers with late onset hearing loss, the EHDI-MS will consult with potential partners who would conduct, and report hearing screenings, including primary care providers and Early Head Start personnel. Immediately following a scheduled EHDI-AC meeting, the EHDI-MS and partners will convene a large workgroup of primary and specialty health care providers, service providers, early care providers, and families to identify the critical issues that will need to be addressed by the plan, including legal issues (e.g., any updates to the MS Code 41-90 to ensure ongoing screening and reporting to the EHDI-MS by diverse screening professionals; compliance with data sharing and privacy laws and regulations), technical (e.g., procedures for conducting screenings; methods for reporting, including forms; data storage in the EHDI-IS; work flow for follow-up actions), professional development (e.g., identifying target audiences and trainers; methods and materials to use for training on hearing screenings and reporting results), and compliance monitoring (e.g., procedures for ensuring all needed screenings are conducted and reported; procedures for providing report cards to hearing screeners on their performance). Based on interest and expertise, participating stakeholders will form sub-workgroups to consider all of the issues for their assigned area and develop a plan with identifying strategies and activities, assigning responsibility to implement the steps, and setting timelines for the completion of the plan. After the sub-workgroups have developed their plans, the complete workgroup will be reconvened to integrate the sections into a comprehensive plan. This plan will be shared with additional stakeholders, including the EHDI-AC, professional organizations, licensing bodies, and/or administration, as appropriate, for feedback. After integrating any feedback, the final draft plan will be adopted at the next scheduled EHDI-AC meeting. Implementation of the plan will begin immediately. Every six months, updates on the implementation process will be shared with the EHDI-AC. Plan activities will be revised as needed by the workgroup stakeholders and others responsible for implementing the plan.

To plan for improving communication with health care professionals, service providers, and families, the EHDI-MS will work with the EHDI-AC to form an ad hoc committee to develop a communication plan for engaging professionals and families. The ad hoc committee will determine critical points for targeted communication with families (e.g., prenatal visits with expecting mothers, reporting hearing screening results, and making early intervention referrals) and with professionals (e.g., new practice or newly licensed provider, targeted updates in policies and procedures, opportunities for training or leadership). The communication plan will identify the purpose of the communication, timeframes for communication, dissemination strategies, and the specific resources to be used for targeted communication, which may include selecting existing resources and/or developing new resources, as needed. The plan will also identify how to maintain and promote the EHDI-MS website, with pages targeting families, health care professionals, and early intervention service providers, to ensure it is user-friendly and the information provided is accessible, culturally-appropriate, comprehensive, up-to-date, accurate, and evidence-based. The plan will be reviewed, shared to solicit feedback, revised, adopted, implemented and revised as needed by the EHDI-AC ad hoc committee. Proposed revisions to letters, brochures, website, and other educational materials will be shared with the EHDI-MS staff and Communications Office.

To plan for addressing diversity and inclusion in the EHDI system, the EHDI-MS will consult with the MSDH Office of Health Equity to determine critical areas of inequity in Mississippi, including previously identified geographic, racial, ethnic, ability, gender, orientation, cultural, linguistic,

family structure, and socio-economic disparities. With guidance and support from national and state partners, the EHDI-MS will convene a diverse workgroup of stakeholders to conduct a system assessment reviewing guiding documents (e.g., EHDI-MS vision and mission statements, policies, procedures, communications, training materials) and planning activities to determine alignment with principles of inclusion and respect for diversity. The workgroup will review and select resources to provide guidelines and/or tools for ensuring cultural competency, inclusion, and diversity are enmeshed within all aspects of policy-making, administration, practice, and service delivery. Any identified issues or specific unmet needs will be addressed by developing and implementing a written plan to address diversity and inclusion in the EHDI-MS system. The plan will overlap with all other activities, including the expansion of screenings, communications, and partnerships. After adoption and implementation begins, the progress on implementation will be reported to the EHDI-AC along with proposed revisions every six months.

To plan for program sustainability after the period of federal funding ends, the EHDI-MS will consult with MSDH Maternal and Child Health (MCH) Programs, the EHDI-AC, and other stakeholder to identify possible alternative funding sources, including receipt of donations as allowed in MS Code 41-90. Also, the MCH systems integration workgroup will be assigned the responsibility for developing the written sustainability plan for ensuring effective strategies for key project elements are streamlined and embedded into the EHDI-MS system, through policy-making, administration, practice, and service delivery. The sustainability plan will be presented to the EHDI-AC for feedback, revision, and adoption. The plan will be implemented and reviewed at least once annually.

Objective 1.3: *By March 2024, EHDI-MS and stakeholders will develop and implement quality improvement (QI) strategies*

EHDI-MS will continue to engage stakeholders to advise and assist the program to implement all components of this project and to engage in continuous quality improvement. The EHDI-AC, established in MS Code 41-90-7, engages diverse stakeholders each quarter in reviewing program activities and plans and making recommendations on improvements to the program, objectives, and strategies. In addition, the EHDI-MS will engage regional stakeholders who participated in Learning Communities to prioritize needs and select a focus for quality improvement using Plan-Do-Study-Act (PDSA) methodology.

The EHDI-MS will continue to recruit stakeholders to serve on the EHDI-AC, including family members of children who are DHH, adults who are DHH, and representatives of family-based organizations, the MSFSEIP, home visiting programs, Title V/MCH programs, including the Children and Youth with Special Health Care Needs (CYSHCN) Program, other MSDH Offices (e.g., Health Equity, WIC), the Mississippi School for the Deaf, the Mississippi Office of the DHH, Early Head Start, Mississippi Chapter of the American Academy of Pediatrics, birthing facilities, pediatric primary and specialty care providers, and the Mississippi Division of Medicaid. Members serve three-year terms, with one-third of the membership rotating off each year. At least 25% of the EHDI-AC membership must be comprised of family members of children who are DHH and adults who are DHH. Due to the rotating membership, the EHDI-MS provides an annual orientation for new EHDI-AC members. Meetings are held each quarter, with official business conducted during the morning and committees and/or special workgroups meeting in the afternoon

to complete activities as needed. See *Attachment 6: Progress Report* for more information about the expansion of the EHDI-AC between 2017-2019 and below for information about planned activities to support parent participation on the EHDI-AC.

With technical assistance from national partners, the EHDI-MS will engage regional stakeholders who participated in Learning Communities in quality improvement using the Plan-Do-Study-Act (PDSA) methodology. In 2017, these stakeholders engaged in self-assessment to determine areas of need for the region and engaged in shared learning to understand the EHDI system and best practices for the selected topic. In 2020, these stakeholders will revisit the self-assessment to prioritize needs. Based on these assessments, the EHDI-MS will share the following list of possible topics as a focus for quality improvement, including: ability to meet the 1-3-6 recommendations; expansion of screening up to age three years; loss to follow-up/documentation; provider outreach and education; data collection; telehealth; EI referral and/or enrollment; outreach to underserved populations; late onset hearing loss; family engagement and family support; and partnerships across Title V and other early childhood programs. Stakeholders will be provided training in the general principles and practices of quality improvement and the specific procedures for implementing quality improvement using the Plan-Do-Study-Act (PDSA) methodology. After receiving training on QI methodology, QI Teams will be convened based on the topic. With ongoing support from national and state partners, these QI Teams will engage in PDSA cycles and share their results at the EHDI Annual Conference, including the stakeholders involved, goals, methods, timelines, and outcomes, to disseminate their results statewide. These results will also be reported annually to HRSA.

Provider Engagement and Training

Goal 2: By March 2024, EHDI-MS will increase the number of health professionals and service providers who are trained on key aspects of the EHDI-MS system by 10% over baseline collected in year one.

Objective 2.1: *By March 2024, EHDI-MS will train health professionals and early intervention service providers on key aspects of the EHDI-MS system.*

Building on current efforts to train health professionals and early intervention service providers on key aspects of the EHDI-MS system, the EHDI-MS will consult and collaborate with professional associations, primary and specialty care providers, early childhood programs, and the MSFSEIP Comprehensive System of Personnel Development (CSPD) to conduct outreach and provide training to health professionals and EI service coordinators and providers. With support and guidance from national and state partners, the OTCs will review and revise existing training materials and, as needed, develop new training materials on: policies, procedures, and protocols for conducting, documenting, and reporting screenings, evaluations, and early intervention; 1-3-6 recommendations and the importance of timely screening, diagnosis, referral, and enrollment into EI services; need for hearing screening up to age 3 to identify, diagnose, and enroll into EI those infants who pass a newborn screen but later develop hearing loss; benefits of a patient/family-centered medical home and family engagement in the care of a DHH child; and the importance of communicating accurate, comprehensive, up-to-date, evidence-based information to allow families to make important decisions for their children in a timely manner, including decisions

with respect to the full range of assistive hearing technologies and communication modalities, as appropriate. Training will be provided at least six times per year via webinars, workshops, modules, hospital grand rounds, presentations at professional conferences, professional newsletters, web-based content, and other communication channels, as appropriate. With support from the MSDH Communications Office, training opportunities will be promoted on the EHDI-MS website. Evaluation tools will be used with each training opportunity, as appropriate, to provide feedback to inform revision to training materials and approaches as well as to solicit additional topics for future training.

Another major strategy for educating health professionals and early intervention service providers, as well as other stakeholders, on key aspects of the EHDI-MS includes conducting an Annual EHDI-MS conference to promote shared learning, networking, and dissemination of information across the state. Each year, a conference planning committee will be convened including internal and external partners, including families, health care professionals, early intervention providers, and other stakeholders, to set a conference theme, dates, and location. The planning committee will recruit keynote speakers, solicit and select conference proposals, and apply for continuing education credit. With support from the MSDH Communications Office, the planning committee will promote the conference to ensure attendance by diverse stakeholders. During and after, the planning committee will conduct an evaluation of the conference and prepare a summary of the results. These results will be used to improve subsequent conferences and identify training topics for the remainder of the year.

Family Support and Engagement

Goal 3: By March 2024, EHDI-MS will engage 20% more families and caregivers of children who are DHH in the EHDI-MS system and increase the number of families and caregivers of infants and toddlers with confirmed hearing loss who are enrolled in family-to-family support by six months of age by 20% over baseline and DHH adult-to-family support by nine months of age by 10% over baseline collected in year one.

Objective 3.1: *By March 2024, MS will conduct state-level outreach and provide educational and networking opportunities to engage families and caregivers of infants and toddlers with confirmed hearing loss in the EHDI-MS system.*

With guidance from FL3 and NCHAM, the EHDI-MS will conduct state-level outreach and provide educational and networking opportunities to engage families and caregivers of infants and toddlers with confirmed hearing loss engaged in the EHDI-MS system. To begin efforts, EHDI-MS will consult with national (i.e., FL3 and NCHAM) and state (e.g., MSFAA) partners to identify effective strategies for conducting outreach to families, including those from diverse, underserved populations, develop training for family support contractors, and identify training for families to support their awareness of and engagement with the EHDI system. With support from local partners and community connections, the EHDI-MS will recruit and hire family members of children who are DHH and adults who are DHH to serve as FTF and DTF Coordinators to assist with implementing family engagement and support activities. These Coordinators will attend a four-day retreat to learn effective outreach and engagement strategies and how to provide family-to-family (FTF) or DHH adult-to-family (DTF) support. After the retreat, the Coordinators will

participate in monthly reflective supervision and professional development to continue building their knowledge and skills. At least six times a year, the Coordinators will conduct, co-lead, or participate in training for professionals or other families to inform them about the EHDI-MS system and/or facilitate networking opportunities to encourage them to engage with the system (e.g., serving on the EHDI-AC or QI Teams). With support from the MSDH Communications Office, these educational and networking opportunities will be promoted on the EHDI-MS website. Evaluation tools will be used with each educational and networking opportunity, as appropriate, to provide feedback to inform revision to training materials and approaches as well as to solicit additional topics for future engagement.

Objective 3.2: *By March 2024, EHDI-MS will provide families and caregivers of infants and toddlers with confirmed hearing loss access to family-to-family support by six months of age and DHH adult-to-family support by nine months of age.*

With guidance and support from national (i.e., FL3 and NCHAM) and state (e.g., MSFAA) partners, EHDI-MS will develop and implement FTF and DTF support services for families and caregivers of infants and toddlers with confirmed hearing loss. EHDI-MS will consult with national partners on the development and implementation of FTF and DTF support services. With that guidance, EHDI-MS will develop policies and procedures and an implementation plan for FTF and DTF support services using contractors. EHDI-MS will recruit and hire family members and DHH adults to serve as FTF and DTF Coordinators to provide support services. These Coordinators will attend a four-day retreat to learn effective outreach and engagement strategies and how to provide FTF or DTF support effectively. After the retreat, the Coordinators will participate in monthly reflective supervision and professional development to continue building their knowledge and skills. EHDI-MS and the FTF and DTF Coordinators will implement the plan according to the policies and procedures to begin delivery of emotional and informational supports to families and caregivers of infants and toddlers with confirmed hearing loss. Families who receive services and any who refuse or stop services will be asked to provide feedback about their experiences annually to evaluate the effectiveness of the FTF and DTF services. This feedback will be used to review and revise the program policies and procedures and/or implementation process, as needed. See *Attachment 2: Staffing Plan and Job Descriptions for Key Personnel* for a description of the FTF and DTF Coordinator positions.

After the establishment of FTF and DTF support services, referrals to and enrollment in these services will also be documented in the EHDI-IS to track the timeliness of services.

Engagement and Coordination with State and National Partners

Goal 4: By March 2024, EHDI-MS will increase engagement and coordination with state and national partners to strengthen the EHDI-MS infrastructure and increase the EHDI-MS capacity.

Objective 4.1: *By March 2024, EHDI-MS will integrate systems with early childhood programs and other key partners as evidenced by formal communication, training, referrals and/or data sharing to improve coordination and care services.*

For the past three years, the EHDI-MS has worked with the Title V MCH and CYSHCN programs, Newborn Screening Program, and other MSDH programs on systems integration to improve the coordination of care for the children and families served. Expanding on this work, the EHDI-MS will engage key partners in other early childhood programs to develop and implement formal communication, training, referral, and/or data sharing procedures to improve the coordination and care services. The EHDI-MS will identify key partners in other early childhood programs and convene a workgroup of these leaders and representatives. The workgroup will review national guidance on systems integration and examples of efforts in Mississippi and other states which have improved efficiency and effectiveness of care among early childhood programs. The workgroup will identify the relevant regulations, policies, procedures, and funding requirements for each participating early childhood program to determine opportunities and limitations for streamlining and coordinating efforts. The workgroup will identify the relevant focus areas for integration, including communication, training, referrals, and/or data sharing, and create sub-workgroups to consider all of the issues involved in streamlining each focus area. The sub-workgroups will develop a plan identifying all strategies and activities to be integrated with the steps required to put these practices into place, assigning responsibility to implement the steps, and setting timelines for the completion of the plan. After the sub-workgroups have developed their plans, the complete workgroup will be reconvened to integrate the sections into a comprehensive plan. This plan will be shared by the program representatives with their program personnel and administration and their stakeholders, as appropriate, for feedback. After integrating any feedback, the final draft plan will be adopted at the next scheduled EHDI-AC meeting. Implementation of the plan, including the development of any formal agreements, will begin immediately. Every six months, updates on the implementation process will be shared with the EHDI-AC. Plan activities will be revised as needed by the workgroup stakeholders and others responsible for implementing the plan.

To evaluate the reach and integration of the EHDI-MS program into the larger health and early childhood context, the EHDI-MS will conduct an annual assessment of partnerships identifying key partners who currently participate with the EHDI system and those who could potentially help address gaps in the EHDI system. The assessment will summarize shared activities and provide recommendations for expanding existing partnerships to enhance the EHDI system and developing new partnerships to address gaps and unmet needs in the EHDI system. Based on this annual assessment, the EHDI-MS will conduct outreach to relevant parties to build or expand partnerships

Objective 4.2: *By March 2024, EHDI-MS will consult with national partners to access resources, technical assistance, training, education, QI and evaluation supports to strengthen the infrastructure and capacity of EHDI-MS system.*

Throughout this project, the EHDI-MS will consult with national partners, including NCHAM and FL3, to access resources, guidance, technical assistance, training, education, QI, and evaluation supports to strengthen the infrastructure and capacity of the EHDI-MS system. Specifically, the EHDI-MS will consult with FL3 to strengthen EHDI-MS infrastructure and capacity for family engagement and support and with the NTRC to strengthen EHDI-MS infrastructure and capacity for meeting the 1-3-6 recommendations, expanding surveillance of screening to three years of age, developing and implementing improvement plans, engaging in quality improvement, engaging and educating professionals in the EHDI-MS system, etc. The EHDI-MS will also ensure the EHDI Coordinator (who serves as both the EHDI and Part C Coordinator), one HFC (alternating years),

one OTC (alternating years), and one family leader attends the Annual Early Hearing Detection and Intervention (EHDI) Meeting to engage in professional development and networking.

Work Plan

The following section lays out the integrated work by year for the proposed activities described above and outlined in *Attachment 1: Logic Model and Work Plan*.

Year One

In the first year, the EHDI-MS staff will engage in efforts to lay the foundation for future activities as well as continue ongoing efforts. Activities are scheduled as follows:

April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Ongoing Surveillance											
Maintain and Update Website											
Consult with partners on surveilling screenings up to 3 years				Convene work group	Develop a plan to expand infrastructure to conduct and document screenings for children up to 3 years						Feed back on plan
	Convene work group	Develop the communication plan						Implement the communication plan			
Consult with partners	Convene work group	Conduct a system assessment						Develop a plan to address the needs of diverse population			
Consult with partners on sustainability				Convene work group	Conduct a system assessment					Dev. sustain-ability plan	Feed back on plan
Recruit EHDI-AC	EHDI-AC Mtg	Recruit EHDI-AC	Appoint EHDI-AC	Orienta-tion; EHDI-AC Mtg			EHDI-AC Mtg			EHDI-AC Mtg; Assess partner-ships	
Consult with partners on QI				Form QI Teams	Conduct PDSA cycles					Present QI Results	
	Conf. Planning Com	Plan conference		Post conf	Request and review proposed presentations		Obtain CEUs	Prepare materials and promote conference		EHDI-MS Conf	Evaluate conf
Review/ Develop Training	Offer Training and evaluate										Review/ Develop Training
Consult with partners on family engagement and policies and procedures for family support services			Recruit FTF and DTF Coordinators				Train FTF & DTF Coords	Implement family engagement and support services with FTF & DTF Coordinators			Review / Revise plan
Consult with partners	Convene work group	Develop plan for early childhood collaboration			Feedback on plan			Finalize plan		Approve plan	Imp. plan

Year Two

In the second year, the EHDI-MS staff will continue collaborations to finalize and implement plans to improve the EHDI system. Activities are scheduled as follows:

April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Ongoing Surveillance											
Maintain and Update Website											
Feedback on screening plan		Finalize on screening plan		Adopt plan	Implement plan to expand infrastructure for screenings for children up to 3 years					Review/ Revise plan	Imp. plan
Imp. plan	Review/ Revise	Implement communication plan					Review/ Revise	Implement communication plan			
Develop diversity plan		Feedback on diversity plan			Finalize diversity plan		Adopt plan	Implement plan to address the needs of diverse population			
Feedback on sustainability plan		Finalize on sustainability plan		Adopt plan	Implement sustainability plan						
Recruit EHDI-AC	EHDI-AC Mtg	Recruit EHDI-AC	Appoint EHDI-AC	Orienta-tion; EHDI-AC Mtg			EHDI-AC Mtg			EHDI-AC Mtg; Assess partner-ships	
Consult with partners on QI, Form QI Teams, & Conduct PDSA cycles										Present QI Results	
	Conf. Planning Com	Plan conference		Post conf	Request and review proposed presentations		Obtain CEUs	Prepare materials and promote conference		EHDI-MS Conf	Evaluate conf
Review/ Develop Training	Offer training and evaluate										Review/ Develop Training
Review / Revise	Implement family engagement by providing educational and networking opportunities for families										Review / Revise
Implement family support services with FTF & DTF Coordinators									Review / Revise	Implement family support services	
Implement plan for early childhood collaboration				Review / Revise	Implement plan for early childhood collaboration					Review / Revise	Imp. plan

Year Three and Year Four

In the third and fourth year, the EHDI-MS staff will continue collaborations implementing and adjusting plans as needed to improve the EHDI system. Activities are scheduled as follows:

April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Ongoing Surveillance											
Maintain and Update Website											
Implement plan to expand infrastructure for screenings for children up to 3 years				Review/ Revise plan	Implement plan to expand infrastructure for screenings for children up to 3 years					Review/ Revise plan	Imp. plan
Imp. plan	Review/ Revise	Implement communication plan					Review/ Revise	Implement communication plan			
Imp. plan	Review/ Revise	Implement diversity plan					Review/ Revise	Implement diversity plan			
Implement sustainability plan				Review/ Revise	Implement sustainability plan						
Recruit EHDI-AC	EHDI-AC Mtg	Recruit EHDI-AC	Appoint EHDI-AC	Orienta-tion; EHDI-AC Mtg			EHDI-AC Mtg			EHDI-AC Mtg; Assess partner-ships	

<table>
<tr><td>April</td><td>May</td><td>June</td><td>July</td><td>Aug</td><td>Sept</td><td>Oct</td><td>Nov</td><td>Dec</td><td>Jan</td><td>Feb</td><td>Mar</td></tr>
<tr><td colspan="9">Consult with partners on QI, Form QI Teams, & Conduct PDSA cycles</td><td colspan="2"></td><td>Present QI Results</td><td></td></tr>
<tr><td></td><td>Conf. Planning Com</td><td colspan="2">Plan conference</td><td>Post conf</td><td colspan="2">Request and review proposed presentations</td><td>Obtain CEUs</td><td colspan="2">Prepare materials and promote conference</td><td>EHDI-MS Conf</td><td>Evaluate conf</td></tr>
<tr><td>Review/ Develop Training</td><td colspan="9">Offer training and evaluate</td><td colspan="2"></td><td>Review/ Develop Training</td></tr>
<tr><td>Review / Revise</td><td colspan="10">Implement family engagement by providing educational and networking opportunities for families</td><td>Review / Revise</td></tr>
<tr><td colspan="9">Implement family support services with FTF & DTF Coordinators</td><td>Review / Revise</td><td colspan="2">Implement family support services</td></tr>
<tr><td colspan="4">Implement plan for early childhood collaboration</td><td>Review / Revise</td><td colspan="5">Implement plan for early childhood collaboration</td><td>Review / Revise</td><td>Imp. plan</td></tr>
</table>

Resolution of Challenges

The EHDI-MS anticipates barriers in project implementation and proposes the following solutions:

Barrier: Recruitment of workgroup participants

This project requires multiple workgroups to work together to develop plans for improvement of the EHDI-MS system. One of the barriers for Mississippi has been recruiting pediatric healthcare providers due to their high patient/client caseloads and schedule constraints. Furthermore, families have often not been able to participate due to time and financial barriers.

> *Solution:* The EHDI-MS has aligned workgroup meetings with the EHDI-AC meetings, allowing for the inclusion of EHDI-AC members to participate on the workgroups without attending a second meeting day. Also, the workgroups will use a blended online and in-person meeting format to enable busy providers and family members to participate without requiring timely and costly travel. This approach has been used successfully to support attendance at EHDI-AC and Learning Community Meetings. Information on connecting to the meetings has been posted on the EHDI-MS website to ensure people can easily find the information to participate. In addition, resources have been allocated to provide families a stipend for participating in meetings to offset expenses incurred (e.g., child care).

Barrier: Inability to offer continuing education

Participation in previous trainings offered was lower than expected due to the inability to provide professionals continuing education (CE) credit.

> *Solution:* The EHDI-MS has recently recruited an Outreach/Training Coordinators authorized to provide continuing education credits under the Mississippi Speech-Language-Hearing Association (MSHA) and A.G. Bell for Listen and Spoken Language Specialists (LSLS). Also, earlier planning for the conference will allow CEs to be obtained for participants.

Barrier: Staff in new roles due to recent hires or reorganization

Most of the EHDI-MS staff have been with the program for less than two years. These staff are learning new roles and responsibilities. Also, due to reorganization, those who have been with the program for longer periods of time will have their duties revised to address the current activities.

Solution: The EHDI-MS staff will use an internal professional learning community approach supported by technical assistants to learn more about quality practices in their new roles. Also, each staff member will participate in ongoing training offered by national partners and attend the annual training at the EHDI Annual Meeting on alternating years.

Barrier: The EHDI-MS does not currently have FTF or DTF support services.
In 2017, the EHDI-MS partnered with the Mississippi Hands & Voices Chapter to implement the Guide By Your Side program; however, the program and chapter were dissolved in June 2019 after being unable to maintain program fidelity.

Solution: The EHDI-MS will seek support and guidance from the FL3 and NCHAM about best practices in establishing family support services. The EHDI-MS will also partner with a local organization to provide intensive and ongoing family advocacy professional development and reflective supervision to FTF and DTF Coordinators.

Barrier: Scheduling conflicts with collaboration partners
Activities that require collaboration with multiple partners both inside and outside of the MSDH are susceptible to delays due to scheduling conflicts that may impact timelines.

Solution: The EHDI-MS staff specifically planned activities to occur in quarterly blocks of time to avoid challenges from preventing progress. In addition, multiple methods will be used to schedule time to ensure alternate days and times are planned. Also, the use of online meeting software will cause less disruption to schedules. Finally, as most collaborative partners are also part of the EHDI-MS Advisory Committee, collaborative meetings can be held immediately before or after the Advisory Committee meeting to enable staff to schedule one block of time rather than two.

Evaluation & Technical Support Capacity

Plan for Program Performance Evaluation
The overall success of the project will be evaluated by measuring changes in the EHDI-MS system performance for the following program objectives:

Program Objectives	Baseline*	Target
By March 2024, an increase of 1% per year over baseline, or at least 95% of infants will receive a hearing screening by one month of age.	96.6%	≥95%
By March 2024, an increase of 10% over baseline, or at least 85% of referred infants will receive confirmation of hearing status by three months of age.	60.5%	66.6%
By March 2024, an increase of 15% over baseline, or at least 80% of infants with confirmed hearing loss will enroll in early intervention service by six months of age	50.0%	57.5%
By March 2024, an increase of 20% over baseline of families of infants with confirmed hearing loss will enroll in family-to-family support services by six months of age	*To be set in Year 1*	*To be determined*

By March 2024, an increase of 10% over baseline of families of infants with confirmed hearing loss will enroll in DHH adult-to-family support services by nine months of age	*To be set in Year 1*	*To be determined*
By March 2024, an increase of 10% over baseline of health care and service providers will be trained on key aspects of the EHDI Program.	*To be set in Year 1*	*To be determined*

** Baseline derived from 2017 CDC EHDI Hearing Screening and Follow-up Survey*

Project implementation and impact/outcomes will be evaluated both internally by EHDI-MS personnel and externally by engaging stakeholders, including the EHDI-AC, workgroups, and the HRSA Project Officer. To evaluate the project implementation internally, the EHDI-MS staff will meet weekly to monitor the implementation of activities, documenting the status of process measures for all activities, as available, and noting any activities completed or behind schedule. Each month, a summary of the implementation process will be recorded on a tracking tool using the timeline for implementation steps outlined in the workplan above. Each quarter, this updated tracking tool will be shared with external stakeholders, including the EHDI-AC and HRSA Project Officer, to determine if activities should be continued, adapted, or abandoned.

To evaluate the project outcomes internally, EHDI-MS personnel will also document the status of outcomes measures, running reports from the EHDI-IS as needed, to determine performance on the 1-3-6 recommendations, provision and timeliness of family support, etc. In addition, Excel spreadsheets will be used to track training participation, track QI outcomes, and summarize evaluation, pre/post-test, and survey results. Again, these results will be compiled and shared with external stakeholders quarterly, as available. Outcomes will be reviewed with external stakeholders every six/twelve months to determine if revisions are needed for project activities.

Based on the results of process and outcomes measures, activities and their steps will be designated as on/off-track to achieve timeliness and completeness of implementation and un/likely to achieve the target set for the outcome measures. Any activities determined to be off-track and/or unlikely to achieve the targeted outcome will be considered for a QI project to address any barriers noted, improve efficiency, and/or improve effectiveness.

Program Supports for Evaluation

Personnel to support evaluation efforts include:

- Stacy Callender, EHDI-MS Coordinator, will coordinate and oversee the implementation and evaluation of activities for stakeholder engagement, collaboration with state and national partners, and family engagement. She will also provide support for all remaining activities. She has training in consultation, program evaluation, data-based decision-making, statistical analyses, and data visualization. She has experience in leadership and project management in the early childhood field.
- Lakeshia Unger and Brandi Jones, HFCs, will coordinate and oversee partnerships with health care providers to document screening and diagnostic results in the EHDI-IS and to complete referrals for early intervention and family support services. They will also participate on and/or lead workgroups, sub-workgroups, and/or QI Teams, as appropriate. Both Ms. Unger and Ms. Jones have training in public health. Ms. Unger also has experience with the development and functioning of the EHDI-IS.

- Marty Chunn and Lara Monico, OTCs, will coordinate all outreach and education activities targeting professionals, including health care and early intervention service providers. They will also participate on and/or lead workgroups, sub-workgroups, and/or QI Teams, as appropriate. Both Ms. Chunn and Ms. Monico have training in speech-language pathology and deaf education. Ms. Monico also has experience in educating professionals in a higher education setting and evaluating training.
- Xiaojian Liu, Data Manager, will support data analyses for activities, as applicable. He will also participate on workgroups, sub-workgroups, and/or QI Teams, as appropriate. He has training and experience in statistical analyses, data visualization, and databases.

The EHDI-MS also has access to the following to support evaluation efforts:
- iCMS, EHDI-IS, is an integrated database containing records for all newborn screening, including bloodspot, hearing, and other point of service screenings. The system has functions for case management and documentation of follow-up activities. In addition, the system has reporting capabilities, exporting data in Excel files.
- Software for statistical analyses (e.g., SPSS and SAS) and data visualization (e.g., GIS) is available to support evaluation efforts.
- MSDH QI Advisors are available to assist with educating individuals on principles and models of QI and providing technical assistance in developing and implementing QI projects.
- Stakeholders and partners will be involved in providing feedback via surveys, evaluations, and self-assessments, collecting documents and data, and tracking implementation of activities.

Evaluation Plan of Project Implementation and Attainment of Outcomes
The following section outlines the evaluation process, responsible parties, process and outcomes measures, and data collection approaches. The results of these evaluation efforts will be reported to HRSA as part of the annual progress report, including baselines and targets.

Objective 1.1: *By March 2024, EHDI-MS will maintain coordinated infrastructure and partnerships with health care providers to improve performance on the 1-3-6 recommendations and reduce loss to follow-up/documentation (LTF/D).*

Activity 1.1.1: Establish and maintain coordinated infrastructure and partnerships with health care providers to conduct follow-up with families for referral, training, and information sharing to meet 1-3-6 recommendations and reduce LTF/D.

Evaluation Process: HFCs will document reports received and contacts made in the EHDI-IS. The Data Manager will run monthly reports to determine performance on the 1-3-6 recommendations and the number of children who are LTF/D.

Process Measures:
- Number of primary and specialist health care providers/practices reporting to EHDI-MS
- Timeliness of data reporting by health care provider[22]
- Number of families contacted by phone and mail (i.e., letters)

[22] Hospital screening logs and device downloads are to be reported by the 5th of the following month. Per MS code 41-90, individual reports of cases needing follow-up must report within 48 hours of an event triggering a report.

Outcome Measures:

- Timeliness of screening, evaluation, and referral
  - Target: ≥95% of infants are screened by one month of age
  - Target: 66.6% of referred infants have hearing status confirmed by three months of age
  - Target: 57.5% of infants who are DHH enrolled in early intervention by six months of age

Data Collection Approaches: Hospital Newborn Hearing Screening Logs (Form 1100), Device Download Data, Hearing Screening Report (Form 288), Hearing Diagnostic Report (Form 53), Child and Adolescent Health Referral Form (Form 1037), Notebook/Action Logs in the EHDI-IS

Objective 1.2: *By March 2024, EHDI-MS and stakeholders will develop and implement plans to enhance the EHDI-MS.*

Activity 1.2.1: Develop and implement a plan for expanding infrastructure to conduct hearing screenings of children up to age three to identify late onset hearing loss.

Evaluation Process: The EHDI Coordinator and sub-workgroup leaders will track development of the plans, document the completion and adoption of the plan, track the plan implementation process, and document the achievement of outcomes identified in the plan.

Process Measures:

- Roster and roles of stakeholders in the workgroup and sub-workgroups
- Sub-component plans and comprehensive plan developed
- Timeliness of plan development and implementation
- Completeness of plan development and implementation

Outcome Measures:

- Number of children >1 month who received follow-up screening
  - Target to be set by workgroup
- Number of children at risk for late onset hearing loss who receive follow-up screening
  - Target to be set by workgroup
- Number of children with late onset hearing loss identified
  - Target to be set by workgroup

Data Collection Approaches: Rosters, permanent products (plans), tracking tool (plan implementation), screening and diagnostic reports (screening and diagnostic results)

Activity 1.2.2: Develop and implement a plan to communicate with health care professionals, service providers, and families.

Evaluation Process: The EHDI Coordinator, OTCs, FTF and DTF Coordinators, and workgroup leaders will track development of the plan, document the completion and adoption of the plan, track the plan implementation process, and document the achievement of outcomes in the plan.

Process Measures:
- Roster and roles of stakeholders in the workgroup and sub-workgroups
- Sub-component plans and comprehensive plan developed
- Timeliness of plan development and implementation
- Completeness of plan development and implementation
- Number of resources developed
- Website updates

Outcome Measures:
- Number of resources distributed
  - Target to be set by workgroup
- Number of website hits
  - Target to be set by workgroup

Data Collection Approaches: Rosters, permanent products (plan, developed resources, website update requests), tracking tool (plan implementation), distribution log, website hit reports

Activity 1.2.3: Develop and implement a plan to address diversity and inclusion in the EHDI system.

Evaluation Process: The EHDI Coordinator, OTCs, FTF and DTF Coordinators, and workgroup leaders will document the system assessment results and recommendations, track development of the plan, document the completion and adoption of the plan, track the plan implementation process, and document the achievement of outcomes identified in the plan.

Process Measures:
- Roster and roles of stakeholders in the workgroup and sub-workgroups
- Comprehensive plan developed
- Timeliness of plan development and implementation
- Completeness of plan development and implementation
- Number of tools and/or guidance documents developed and distributed
- Updates to policies, practices, materials, and service delivery within the EHDI-MS system

Outcome Measures:
- System assessment results (pre-post results, periodic updates)
  - Target to be set by workgroup

Data Collection Approaches: Rosters, permanent products (recommendations, plan, tools and/or guidance documents, documents updated), tracking tool (plan implementation), assessment tool

Activity 1.2.4: Develop and implement a plan for project sustainability after the period of federal funding ends.

Evaluation Process: The EHDI Coordinator and workgroup leaders will track development of the plan, document the completion and adoption of the plan, track the plan implementation process, and document the achievement of outcomes identified in the plan.

Process Measures:
- Roster and roles of stakeholders in the workgroup
- Comprehensive plan developed
- Timeliness of plan development and implementation
- Completeness of plan development and implementation

Outcome Measures:
- Additional funding sources or in-kind donations identified
  - Target to be set by workgroup
- Amount of federal funding no longer required for project implementation
  - Target to be set by workgroup

Data Collection Approaches: Rosters, permanent products (plan, financial records/agreements), tracking tool (plan implementation)

Objective 1.3: *By March 2024, EHDI-MS and stakeholders will develop and implement quality improvement (QI) strategies*

Activity 1.3.1: Convene an EHDI Advisory Committee (EHDI-AC) to advise on programs, objectives, and strategies.

Evaluation Process: The EHDI Coordinator and EHDI-AC Chair/Vice-Chair will document the EHDI-AC membership and meetings.

Process Measures:
- Roster and roles of EHDI-AC members
- Number of orientations held
- Number of meetings held

Outcome Measures:
- Family and DHH adult membership of EHDI-AC
  - Target: ≥25% of total membership
- Engagement of EHDI-AC with EHDI-MS
  - Target: moderate to high rating of engagement

Data Collection Approaches: Rosters, permanent products (meeting records), engagement rating scale

Activity 1.3.2: With technical assistance from national partners, engage stakeholders in quality improvement using the Plan-Do-Study-Act (PDSA) methodology.

Evaluation Process: The QI Team leaders (internal and external) will document development of QI plans, track implementation, and document results.

Process Measures:
- Roster and roles of QI Team members
- Number of QI Teams/Topics
  - Target: minimum of two teams addressing two topics
- Number of QI Team presentations

Outcome Measures:
- Number of PDSA cycles completed
  - Target: each QI Team completes at least one PDSA cycle
- Additional outcome measures set by the QI Teams

Data Collection Approaches: Rosters, permanent products (presentations), PDSA tracking tools

Objective 2.1: *By March 2024, EHDI-MS will train health professionals and early intervention service providers on key aspects of the EHDI-MS system.*

Activity 2.1.1: Collaborate with professional associations, PCP/SCP, early childhood programs, and the MSFSEIP Comprehensive System of Personnel Development (CSPD) Leadership Team to conduct outreach and provide training to PCP/SCPs and EI service coordinators and providers.

Evaluation Process: The OTCs will document collaboration efforts, including meetings with partners, outreach efforts conducted, and trainings provided. The Data Manager will summarize training evaluation results, pre/post-test comparisons, and QI tool/self-assessment results.

Process Measures:
- Number of trainings developed
- Number of trainings offered

Outcome Measures:
- Number of professionals trained
  - Target: 10% increase over year one baseline
- Ratings of training quality and effectiveness
  - Target: moderate to high ratings of training quality (i.e., would recommend to others)
  - Target: moderate to high ratings of training effectiveness in increasing competency
- Provider knowledge of the EHDI-MS system, 1-3-6 recommendations, identification of late onset hearing loss, family-centered medical home, family engagement, and assistive hearing technologies and communication modalities
  - Target: positive change as measured on pre/post-tests
- Provider use of family-centered practices
  - Target: documented use as measured by provider on QI tool/self-assessment
  - Target: documented use as measured by family survey

Data Collection Approaches: Rosters, permanent products (training records), training evaluation tools, training pre/post-tests, QI tool/self-assessment of practices

Activity 2.1.2: Collaborate with diverse stakeholders to conduct Annual EHDI-MS conference.

Evaluation Process: The EHDI Coordinator, OTCs, and Conference Planning Committee will track conference planning efforts and document the conference offerings. The Data Manager will summarize conference participation and evaluation results.

Process Measures:
- Number of conference sessions offered
- Topics covered
- Number of attendees by type

Outcome Measures:
- Ratings of conference quality and effectiveness
  - Target: moderate to high ratings of conference quality (i.e., would recommend to others)
  - Target: moderate to high ratings of conference effectiveness in increasing competency
- Participant knowledge of the EHDI-MS system and topics covered
  - Target: positive change as measured on pre/post-tests

Data Collection Approaches: Rosters, permanent products (program, presentations), conference and session evaluation tools, training pre/post-tests

Objective 3.1: *By March 2024, MS will conduct state-level outreach and provide educational and networking opportunities to engage families and caregivers of infants and toddlers with confirmed hearing loss in the EHDI-MS system.*

Activity 3.1.1: With guidance from FL3 and NCHAM, conduct state-level outreach and provide educational and networking opportunities targeting families.

Evaluation Process: The EHDI Coordinator will document consultation with national partners. The FTF and DTF Coordinators will document outreach efforts conducted and educational and networking opportunities provided. The Data Manager will summarize event evaluation results and pre/post-test comparisons, and QI tool/self-assessment results.

Process Measures:
- Number of FTF and DTF Coordinators
- Number of families contacted
- Number of families participating in educational and networking opportunities

Outcome Measures:
- Number of family members engaged on EHDI-AC, workgroups, QI Teams
  - Target: 10% increase over year one baseline

- Family knowledge of the EHDI-MS system, 1-3-6 recommendations, family-centered medical home practices, evidence-based practices in identification and intervention for children with hearing loss, and assistive hearing technologies and communication modalities
  - Target: positive change as measured on pre/post-tests

Data Collection Approaches: Rosters, permanent products (educational/networking opportunity records), training evaluation tools, training pre/post-tests, notebook in the EHDI-IS, survey

Objective 3.2: *By March 2024, EHDI-MS will provide families and caregivers of infants and toddlers with confirmed hearing loss access to family-to-family support by six months of age and DHH adult-to-family support by nine months of age.*

Activity 3.2.1: With guidance and support from FL3 and NCHAM, develop and implement Family-to-Family and DHH Adult-to-Family support services for families and caregivers of infants and toddlers with confirmed hearing loss.

Evaluation Process: The EHDI Coordinator will document consultation with national partners. The EHDI Coordinator and FTF and DTF Coordinators will track development of the plan, document the completion and adoption of the plan, track the plan implementation process, and document the enrollment of families in support services and achievement of any additional outcomes identified in the plan. The Data Manager will summarize annual survey results.

Process Measures:

- Number of FTF and DTF Coordinators
- Number of families referred to FTF and DTF support services
- Number of family contacts by FTF and DTF Coordinators

Outcome Measures:

- Number of families enrolled with FTF support services by six months of age
  - Target: 20% increase over year one baseline
- Number of families enrolled with DTF support services by nine months of age
  - Target: 10% increase over year one baseline
- Percent of families of infants and toddlers with confirmed hearing loss accessing FTF support
  - Target: 20% increase over year one baseline
- Percent of families of infants and toddlers with confirmed hearing loss accessing DTF support
  - Target: 10% increase over year one baseline
- Item responses from annual survey of emotional support, informational support, family satisfaction, disaggregated by geographic location
  - Target: moderate to high ratings of quality of emotional support
  - Target: moderate to high ratings of quality of informational support
  - Target: moderate to high ratings of family satisfaction with FTF/DTF support services

Data Collection Approaches: Referrals/Notebook in the EHDI-IS, Survey

Objective 4.1: *By March 2024, EHDI-MS will integrate systems with early childhood programs and other key partners as evidenced by formal communication, training, referrals and/or data sharing to improve coordination and care services.*

Activity 4.1.1: Develop and implement a plan to increase coordination and integration with early childhood programs.

Evaluation Process: The EHDI Coordinator and sub-workgroups leaders will track development of the plan, document the completion and adoption of the plan, track the plan implementation process, and document the achievement of outcomes identified in the plan.

Process Measures:
- Roster and roles of stakeholders in the workgroup and sub-workgroups
- Sub-component plans and comprehensive plan developed
- Timeliness of plan development and implementation
- Completeness of plan development and implementation

Outcome Measures:
- Number of formal communication, referral and/or data sharing agreements developed
  - Target: one formal agreement developed
- Integrated training developed and delivered
  - Target: one integrated training developed and delivered

Data Collection Approaches: Rosters, permanent products (plans, agreements), tracking tool (plan implementation), training records

Activity 4.1.2: Conduct an annual assessment of partnerships and identify key partners who could help address gaps in the EHDI system

Evaluation Process: The EHDI Coordinator and EHDI-AC members will document assessment results and recommendations.

Process Measures:
- Number of current partnerships identified
- Written assessment report of current partnerships
  - Target: one written assessment report

Outcome Measures:
- Number of key partners identified to help address gaps
  - Target: at least one new partner identified

Data Collection Approaches: Permanent product (assessment report, list of key partners)

Objective 4.2: *By March 2024, EHDI-MS will consult with national partners to access resources, technical assistance, training, education, QI and evaluation supports to strengthen the infrastructure and capacity of EHDI-MS system.*

Activity 4.2.1: Coordinate with national partners to access resources, technical assistance, training, education, QI and evaluation supports.

Evaluation Process: The EHDI Coordinator, HFCs, OTCs, FTF and DTF Coordinators, Data Manager, EHDI-AC members, and workgroup and QI Team leaders will document consultation with national partners and participation in national training.

Process Measures:
- Number of consultation meetings
- Number of resources accessed/used
- Number of instances of technical assistance, training, and education received

Outcome Measures:
- Number of activities supported by national partners (integration with project)
  - Target: at least 20% of project activities have documented consultation and/or guidance from national partners
- Number and type of attendees at the Annual EHDI Meeting
  - Target: two to three attendees, including one parent

Data Collection Approaches: Meeting records, resource list, training/technical assistance records, conference approval/attendance records

Potential Obstacles for Project Evaluation

Challenges: Changes to the EHDI-IS
Based on state requirements, over the next four years, a new request for proposal (RFP) must be submitted for the EHDI-IS, potentially changing the data collection and documentation system for measuring project outcomes.

> *Solution:* The EHDI-MS staff will have a two-year window with the current vendor to draft and post an RFP, identify a vendor, and work with the vendor to capture the data in the current system. In addition, it is possible that the current vendor would submit and again win a bid for this system resulting in no changes to the data system.

Challenges: Staff Turnover
Over the past few years, the EHDI-MS has experienced signification personnel turnover. Though recently fully staffed, the program remains vulnerable to losing personnel with significant, specialized knowledge needed for completing this evaluation.

> *Solution:* The EHDI-MS has implemented a team-based approach to managing work and project activities along with implementing professional learning community approaches to cross-train. These efforts ensure multiple personnel are actively engaged in all efforts reducing the impact of a potential loss of one staff member.

Challenges: Evaluation leadership is shared among internal and external personnel
Not only does this evaluation plan "engage" external partners in the evaluation process, some efforts rely on external partners as the lead for the evaluation component. This can become a challenge if the external evaluator fails to fulfill the role or does not share the information gathered with the EHDI-MS.

Solution: The EHDI-MS will ensure all external evaluation leads have an internal partner to ensure the evaluation role is completed. Further, the EHDI-MS will utilize shared cloud storage for policy, plans, and assessments (excluding all PII and PHI) document to ensure joint access to documents generated.

Organizational Information

Program Mission and Structure and Experience with the EHDI System

The MSDH has been the lead agency for the EHDI Program since its establishment in the late 1990s. The MSDH EHDI-MS has been engaged in the EHDI system continuously since that time. The MSDH's mission is to protect and advance the health, well-being, and safety of everyone in Mississippi. The MSDH serves as the lead administrative agency for the EHDI-MS Program. The EHDI-MS Program is administered under the Early Intervention Bureau with the Mississippi First Steps Early Intervention Program (MSFSEIP). The Early Intervention Bureau is administered under the Office of Child and Adolescent Health along with the Bureau of Genetic Services which oversees the Newborn Screening Program and the Mississippi Birth Defects Surveillance Program, the Mississippi Lead Poisoning Prevention and Healthy Homes Program (MSLPPHHP), the Children and Youth with Special Health Care Needs (CYSHCN) Program, and the Division of Adolescent Health. The Office of Child and Adolescent Health is housed under Health Services along with the Office of Women's Health, the WIC Office, and the Office of Health Data & Research. At the local level, the MSDH has organized Mississippi's 82 counties into three public health regions (i.e., Northern, Central, and Southern).

The EHDI-MS Program for newborns, infants, and toddlers was established by legislative mandate in 1997 (MS Code 41-90). The mission of the EHDI-MS Program is to ensure every child receives a hearing screening by one month and, if needed, a diagnostic evaluation by three months and high-quality, family-centered early intervention by six months. The EHDI-MS Program follows all infants who refer on the universal newborn hearing screening (UNHS) through follow-up diagnostic evaluations and referral to early intervention, as needed. The EHDI-MS Program also conducts surveillance on children who pass UNHS but have risk factors for late-onset hearing loss.

The EHDI-MS Program is led by a Coordinator and staffed with two Hearing Follow-up Coordinators (HFC), a Data Manager, and contractual personnel. The EHDI-MS Coordinator also serves as the Part C Coordinator for the MSFSEIP, assisting with integrating the two programs. The EHDI-MS is support by the Operations Director, Financial Coordinator, and Administrative Assistant within the Early Intervention Bureau. During the past year, the EHDI-MS Program has contracted with two Outreach and Training Coordinators (OTC) to provide training and technical assistance to health care and early intervention providers around the state. These EHDI-MS staff work to ensure coordination of the state system with 42 birthing hospitals, 13 diagnostic clinics who performed diagnostic evaluations for infants and toddlers. The EHDI-MS staff work to coordinate efforts with the Mississippi First Steps Early Intervention Program (MSFSEIP), primary and specialized healthcare providers, local early intervention providers, and other infant and toddler programs. In Mississippi, all birthing hospitals are required by state statute to provide a hearing screening for all infants shortly after birth and, if necessary, another screening before discharge. Hospitals have the option to recommend a third outpatient screening within one month of birth, if appropriate. For infants not born in a birthing hospital, parents are contacted and

encouraged to obtain a hearing screening at a local birthing hospital and/or public health department within one month of age. Infants who do not pass their final in-patient or optional outpatient hearing screening are provided a referral to a local audiology clinic by the birthing hospital or public health department staff and receive follow-up support from an HFC to ensure the completion of a diagnostic evaluation as soon as possible, but no later than three months of age. Referred infants are followed by the HFC until final results are obtained. If any type or degree of hearing loss is confirmed or if other qualifying criteria are identified, the HFC will complete a referral to the MSFSEIP as soon as possible, but no later than six months of age.

The state has three primary early intervention programs serving infants with hearing loss and their families: (a) Magnolia Speech School, (b) SKI*HI Early Intervention Program, and (c) The Children's Center for Communication & Development (CCCD). The Magnolia Speech School is a non-profit school located in the central capitol city area and offers Auditory-Oral approaches. Magnolia receives a sub-grant from the MSFSEIP to provide home-based early intervention services from Oral Language Deaf Educators statewide. The SKI*HI Early Intervention Program is housed with the Mississippi School for the Deaf, also located in the central capitol city area but offering services statewide, and is overseen by the Mississippi Department of Education. SKI*HI supports the development of oracy and signacy skills with home-based parent advisors trained on the SKI*HI Early Intervention Model. The Children's Center for Communication & Development (CCCD) is located at the University of Southern Mississippi where it provides regional supports and serves as a training program for early oral interventionists.

The EHDI-MS Program has an advisory committee (EHDI-AC) established by state statute which provides guidance and feedback from diverse stakeholders. The current membership includes three family members of children who are DHH, two adults who are DHH, and 15 professionals including birth hospital screeners, audiologists, otolaryngologists, early intervention service providers, representatives of the MS School for the Deaf (MSD), State Office of the DHH, other health programs (i.e., Newborn Screening Program, CYSHCN Program, Home Visiting Program, WIC, university trainers, and the AAP Chapter Champion.[23] In its current configuration, family members and/or adults who are D/HH comprise 25% of the membership. The EHDI-MS will ensure family members and adults who are D/HH are adequately represented on the EHDI-AC by recruiting additional family members and/or adults who are D/HH to serve on the EHDI-AC.

Scope of Current Activities and Existing Available Resources

The EHDI-MS Program has undertaken a three-year project to enhance the knowledge and skills of health care and early intervention professionals, build the EHDI system and integrate its work in the larger MCH context, and support and engage families. Current activities include:

- Redesign the EHDI-MS website to provide health care and early intervention professionals and family members access to relevant resources and to promote training opportunities;
- Provide training for early interventionists who serve infants and toddlers who are DHH to meet the personnel standards included in JCIH Supplement which were adopted by the MSFSEIP;
- Utilize MS-HIN to provide access to secure electronic communication among programs;
- Work with vendor to ensure finalization of development of iCMS database integrating newborn screening and the universal newborn hearing screening programs;

[23] The EHDI-M Advisory Committee has 13 members. Some members are both adults with hearing loss and professionals who serve infants and toddlers with hearing loss.

- Coordinate with MCH programs serving infants and toddlers to align policies and procedures;
- Expand representation on the EHDI-AC;
- Promote shared learning and problem-solving through Regional Learning Communities;
- Develop and implement a family support program; and
- Recruit families to engage in leadership roles in the EHDI system.

See *Attachment 6: Progress Report* for more information about progress on these current activities.

In addition to the infrastructure and program supports describe elsewhere, the EHDI-MS Program also has access to state and national technical assistance staff, as well as in-kind support from internal MSDH programs, MSD, and university programs serving infants and toddlers, in addition to other individuals with hearing loss. The MSFSEIP has aligned efforts with the EHDI-MS Program, such as the joint efforts to implement the MSFSEIP State Systemic Improvement Plan (SSIP) and EHDI-MS current activities related to professional development. The MSFSEIP currently receives national technical assistance on professional development activities which includes EHDI-MS personnel and stakeholders to promote an integrated personnel development system. Additional shared efforts include the adoption of evidence-based practices to support family engagement and promote language development. Also, all Maternal and Child Health (MCH) programs, including EHDI-MS, have been working on a system integration project to align with this proposal.

Capacity to Engage Families, Health Professionals, and Service Providers

The EHDI-MS has established partnerships with health professionals and service providers to follow up on screening, diagnosis, and early intervention services. EHDI-MS obtains family demographic and contact information initially from birth hospitals and updated information from health care providers, early intervention partners, and other health program partners. Access to the larger community of health care and service providers can be gained through provider lists maintained by the licensing bodies.[24]

Adherence to the Methodology, Accounting for Federal Funds, and Documenting Costs

The MSDH EHDI-MS is committed to implementing this project as specified in the methodology section. Quarterly meetings between the EHDI-MS staff and the HRSA Project Officers will serve to ensure the project stays on-track or can receive support when challenges arise. The agency provides a thorough oversight to ensure compliance with Universal Guidance regulations including Federal Cost Principles. The State of Mississippi uses MAGIC for its accounting system that tracks all expenditures and allows for multiple layers of oversight. The EHDI-MS with support from the EI Financial Coordinator will track all expenditures against the approved budget. Journal entries will be entered in MAGIC by personnel in MSDH Finance and Accounts. Payments are authorized by the Department of Finance and Administration for the State of Mississippi. The EI Financial Coordinator may use the MAGIC system to verify all expenditures.

[24] Some of the licensing bodies require the purchase of their directory.