

## **PROJECT NARRATIVE**

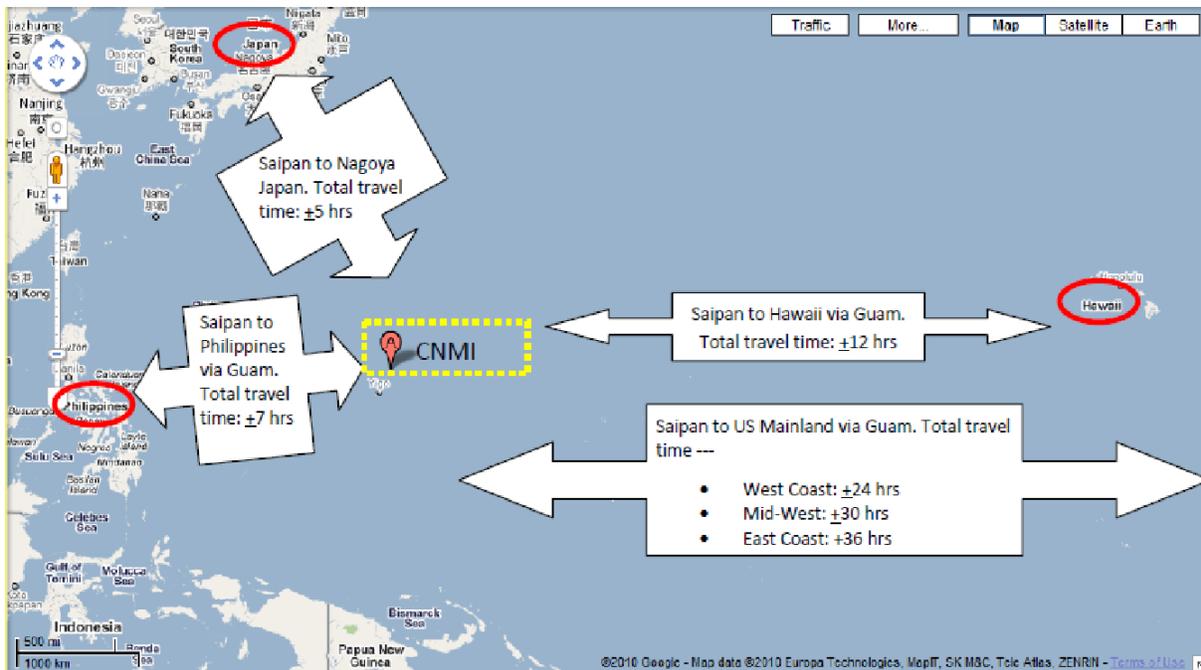
### **INTRODUCTION**

Early Hearing Detection and Intervention (EHDI) is a national initiative that supports the early identification of infants with hearing loss so that they can develop optimal communication and language skills. Congenital hearing loss affects two to three infants per 1,000 live births. Hearing loss is the most frequently occurring birth defect and the consequences of hearing loss can have long-term negative impact on a child's development. When children with permanent hearing loss are identified early, fit with appropriate amplification, and receive early intervention services from trained staff most are able to progress at age-appropriate rates (Kennedy et al., 2006; Moeller, 2000; Yoshinaga-Itano, Sedey, Coulter, & Mehl, 1998), and require few, if any, special education services. Additionally, there is a cost savings, resulting from reduced need for special education services, of at least \$400,000 per child (Groose, 2004; Mohr et al., 2000). The early identification of infants with hearing loss is an important public health objective, it has been referred to as a potential developmental emergency. Research clearly indicates that infants identified early and enrolled in an intervention program by six months of age perform better on school-related measures than children who did not receive intervention. It is critical that systems be in place to assure that infants receive both timely diagnostic and intervention services. It is also well documented that successful EHDI programs depend on families working in partnership with professionals as a well-coordinated team. It is important for families to be empowered and utilized as partners in the development of systems that are being designed to address their needs and those of their newborns and infants.

Therefore, the purpose of this project is to maintain and further develop a comprehensive and coordinated statewide EHDI system of care targeted towards ensuring that newborns and infants are receiving appropriate and timely services, including screening, evaluation, diagnosis, and early intervention. The CNMI will further focus its efforts to engage stakeholders in the state/territory EHDI system, engage, educate, and train health professionals and service providers and provide family support and engage families with children who are DHH as well adults who are DHH throughout the EHDI system.

### **NEEDS ASSESSMENT**

The Commonwealth of the Northern Mariana Islands (CNMI) is a U.S. Commonwealth formed in 1978, formerly of the United Nation's Trust Territory of the Pacific region of Micronesia within Oceania. The CNMI is comprised of 14 islands with a total land area of 176.5 square miles spread out over 264,000 square miles of the Pacific Ocean, approximately 3,700 miles west of Hawaii, 1,300 miles from Japan, and 125 miles north of Guam. The CNMI's population lives primarily on three islands; Saipan, the largest and most populated island, is 12.5 miles long and 5.5 miles wide. The other two populated islands are Tinian and Rota, which lie between Saipan and Guam. The northernmost islands are very sparsely inhabited with few year-round inhabitants and no infrastructure services.



The CNMI Commonwealth Healthcare Corporation (CHCC) is responsible for health services in the CNMI. The next closest tertiary medical care centers are of great distance away by plane. The Commonwealth Healthcare Corporation (CHCC) is the only birthing hospital in the CNMI and is located on Saipan. The CNMI Early Hearing Detection and Intervention (EHDI) program is administered through the Division of Public Health Services / Maternal Child Health Bureau. The EHDI program was implemented in July 2001 with the goal to improve the health and quality of life of children with hearing loss and their families. This program has proven to be a successful collaboration between the Division of Public Health and the Public School System and Public School System.

Prior to the implementation of the EHDI project in the CNMI toddlers were being screened and diagnosed for hearing loss at 2 ½ years old and therefore the early childhood system saw the significant need for infants to be screened early for hearing loss. Knowing the public school system already had a well-established intervention program that partnered Division of Public Health Services it was logical and made practical sense to assure infants were screened early, diagnosed and linked with early intervention services. Therefore, the CNMI EHDI Program today continues to be consistent with the national initiatives and in alignment with the Early Hearing Detection and Intervention Act of 2017 including goals to:

- Engage all EHDI system stakeholders to improve developmental outcomes of children who are DHH;
- Provide a coordinated infrastructure to:
  - Ensure that newborns are screened by 1 month of age, diagnosed by 3 months of age, and enrolled in EI by 6 months of age
  - Reduce loss to follow-up/loss to documentation.
- Strengthen capacity to provide family support and engage families with children who are DHH and adults who are DHH throughout the EHDI system;
- Engage, educate, and train health professionals and service providers in the EHDI system about the 1-3-6 recommendations; the benefits of a family-

centered medical home and the importance of communicating accurate, comprehensive, up-to-date, evidence-based information to families to facilitate the decision-making process; and

- Facilitate improved coordination of care and services for children who are DHH and for families through the development of mechanisms for formal communication, training, referrals, and/or data sharing between the EHDI Program and Individuals with Disabilities Education Act (IDEA) Program for Infants and Toddlers with Disabilities (Part C) Program.

The target population for the program will be all newborn infants born in the CNMI. According to the 2010 U.S. Census, the total population in CNMI is 53,883, with approximately 90% living in Saipan. Both CNMI and U.S. governments categorize the population into three segments: local, other Micronesians, and foreign contract workers. Local residents are primarily Chamorro with a smaller group of Carolinians. Chamorro and Carolinian are considered the two ethnic groups indigenous to the CNMI. Micronesians include other ethnic groups, such as Palauan and Chuukese. The U.S. “Compacts of Free Association” permit the free movement of people between the freely associated states, flag territories, Hawaii and the mainland U.S. These “Compact” islands include the Republic of Palau; the Republic of the Marshall Islands; and the islands comprising the Federated States of Micronesia, Kosrae, Chuuk, Pohnpei, and Yap. Foreign contract workers from Asia (primarily Chinese and Filipino) comprise over half of the CNMI’s population. These contract laborers work in CNMI’s private and public sector in difficult-to-fill positions. While the CNMI originally maintained control over its own labor and immigration regulation and enforcement, recent federal legislation has mandated a normalization of labor and immigration. Normalization of the CNMI immigration system, which began in June 2009, is expected to significantly decrease the number of foreign workers in the CNMI. The population is very diverse and according to the 2010 CNMI Demographic Profile Summary File, Census of Population and Housing there are more residents of Asian descent than Pacific Islanders. Table 1 illustrates the population by ethnicity.

Table 1: CNMI Population by Ethnicity

<b>Ethnicity</b>	<b>1990</b>	<b>2000</b>	<b>2010</b>
<b>Chamorro</b>	12,555	14,749	12,902
<b>Filipino</b>	14,160	18,141	19,017
<b>Carolinian</b>	2,348	2,652	2,461
<b>Chinese</b>	2,881	15,311	3,659
<b>Caucasian</b>	875	1,240	1,117
<b>Other Pacific Islands</b>	3,663	4,600	3,437
<b>Other Asians</b>	4,291	5,158	4,232
<b>Others</b>	2,572	7,370	6,832

Source: U.S. Census Bureau

Medicaid in the CNMI was first implemented in 1979 and currently covers approximately 16,000 lives. The program utilizes the Supplemental Security Income (SSI) as the resource threshold rather than the federal poverty level (FPL) as in most states. As a result, the maximum resource eligibility for the CNMI Medicaid program is slightly less than 100 percent of the FPL. Medicaid is furnished to SSI beneficiaries, and income-eligible individuals who are U.S. citizens, or “qualified aliens” defined under the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), or non-qualified aliens for treatment of emergency medical condition, or lawfully present pregnant women.

The framework for Medicaid financing in the CNMI resembles that of the fifty states: the cost of the program (up to a point) is shared between the federal government and the Territory and the federal government pays a fixed percentage of the CNMI Medicaid costs. For the CNMI, that fixed percentage is 55 percent. However, unlike the 50 states, the federal government pays a fixed percentage of the CNMI Medicaid costs within a fixed amount of federal funding. If CNMI Medicaid expenditures exceed the territory’s federal Medicaid cap, which was \$6.3 in FY 2017, the CNMI becomes responsible for 100 percent of Medicaid costs going forward. Moreover, the CNMI receives a relatively low fixed percentage, which is known as the Federal Assistance Percentage, or FMAP. The FMAP rate for the CNMI is and historically has been lower than most of the 50 states. The formula by which the FMAP is calculated for the 50 states is based on the average per capita income for each state’s relative to the national average. Thus, the poorer the state, the higher the federal share, or FMAP, is for the jurisdiction in a given year. However, due to the statutory restrictions on Medicaid financing for the Northern Mariana Islands, the FMAP provided the CNMI is not based on per capital income of residents, thus the territories’ FMAP does not reflect the financial need of the CNMI in the same ways that the 50 states’ financial needs if represented. Pre-Patient Protection Affordable Care Act, the CNMI and other territories were statutorily capped at 50 percent. In 2011, the rate increased to 55 percent FMAP and jumped again to 57.20 percent until December of 2015, and has dropped again to 55 percent FMAP. In contrast, some states receive over 80 percent FMAP. Additionally, the currently Medicaid State Plan limits the use of Children Health Insurance Program funds to the event in which the standard program funding is exhausted.

The CNMI for the past five years has had an expect birth rate of approximately 1,200 born annually. As stated earlier, the Commonwealth Healthcare Corporation is the only birthing hospital in the CNMI; therefore, the majority of babies in the CNMI are born on Saipan. Pregnant women from the outlying islands of Tinian and Rota, approximately two weeks before their due date, are flown into the island of Saipan around 37 weeks gestation to have their babies at the hospital. With that said, a couple infants each year have been delivered on Tinian and Rota at their respective community health center when travel to Saipan was not possible. The Early Hearing Detection and Intervention program was implemented as a standard care practice; therefore, all infants are screened prior to hospital discharge. The initial hearing screening is administered by one of the nurses in the well-baby or NICU nursery using AABR before hospital discharge. For every infant that refers on their initial screening a second inpatient screening is provided before the infant leaves the hospital. If results still indicate a “refer” then the results and a brochure about the importance of hearing screening follow up are shared with the parents. An appointment is also scheduled the next week requesting that they return to the hospital’s

Children Clinic for an outpatient re-screen. For the few babies that are born on Tinian or Rota screening is arranged and completed by the public school audiologist on her monthly visit to each island.

Infant results are recorded and stored in the Maico AABR unit and then uploaded into the CNMI EHDI-IS. The EHDI-IS is linked with the Health and Vital Statistics Office (HVSO) data system which provides all additional demographic information and maternal data. This system is comprehensive in tracking data on all infants, their demographics, their hearing screening results, rescreen results, diagnostic testing, and referral data to early intervention. When reviewing EHDI program data with vital records birth rates, we consistently average a 97.5% screening rate by one month of age. Table 2 provides a detailed review of screening rates from 2015 -2017.

Table 2: CNMI EHDI Screening Rates

Year	Total Births	Total Screened by 1 month of age	Screen Rate
2015	1107	1073	97%
2016	1217	1186	97%
2017	1209	1188	98%

Data Source: EHDI-IS Data and Tracking Surveillance System

The CNMI has made significant progress over the years to reduce the number of infants lost to outpatient screening. Over the past year, the EHDI team implemented various small steps of change / strategies and reviewed progress through PDSA cycles. For example, the EHDI System Administrator created a user-friendly report card and distributed them on a quarterly basis to each nursery nurse. The report card graphically illustrates the cumulative screening rate for the entire unit as well as their individual screening rates. This created much awareness and built a competitive environment to improve results among the nurses in the nursery. Other quality improvement strategies utilized over the year included simply posting a reminder note about proper screening technique, conducting skills check for nurses that data review indicated high refer rates. The EHDI Follow up Coordinator continues to provide individual hands on support as needed and all of the nurses are provided an annual newborn hearing screening training to review best practices. The EHDI team also did multiple PDSA cycles in review of the data while a single nurse screened infant in a separate room to address background noise and attentiveness to the screening task. Each cycle data was reviewed and discussions were made to continue the cycle, expand or abort. After much review this strategy ended as the refer rate decreased even as the single screeners results bounced back and forth. The EHDI Team and the nurses continually revisit this aim and develop new PDSA plans and brainstorm strategies to reduce and keep the nursery refer rate low.

When the EHDI Program reviewed the screening data it was determined that the majority of infants that were not returning for follow up were primarily Chinese. The data below displays the breakdown of the number of infants born, screened, referred on the inpatient screening, rescreened as an outpatient and lost to follow up at the point of outpatient rescreening.

Table 3: Ethnicity breakdown of infants lost to follow up for outpatient rescreen in 2017

<b>Ethnicity</b>	<b>Total Birth</b>	<b>Referred</b>	<b>Referral %</b>	<b>Rescreened</b>	<b>Rescreen %</b>	<b>LTF-Rescreen %</b>
Chinese	586	127	21.90%	94	74.02%	25.98%
Chamorro	192	37	19.47%	36	97.30%	2.70%
Filipino	187	35	19.55%	35	100.00%	0.00%
Carolinian	55	10	18.52%	9	90.00%	10.00%
Chuukese	36	7	20.00%	7	100.00%	0.00%
Bangladeshi	35	3	8.57%	3	100.00%	0.00%
Korean	23	5	22.73%	4	80.00%	20.00%
Palauan	20	5	25.00%	4	80.00%	20.00%
More Than One Race	14	3	21.43%	3	100.00%	0.00%
White	11	2	22.22%	2	100.00%	0.00%
Pohnpeian	9	3	33.33%	3	100.00%	0.00%
Japanese	9	2	22.22%	2	100.00%	0.00%
Native Hawaiian	8	2	25.00%	2	100.00%	0.00%
Other Pacific Islander	6	1	16.67%	1	100.00%	0.00%
Thai	5	1	20.00%	1	100.00%	0.00%
Other Asian	4	1	25.00%	1	100.00%	0.00%

Yapese	3	0	0.00%	0		
Marshallese	2	0	0.00%	0		
Black or African American	2	0	0.00%	0		
Unknown	1	0	0.00%	0		
Kosraean	1	0	0.00%	0		
Total	1209	244	20.54%	207	84.84%	15.16%

Source: EHDI - IS Data and Tracking Surveillance System

This data illustrates one of the challenges the CNMI is currently experiencing with the number of Chinese tourist births. Expectant mothers from China travel to Saipan to give birth and once their infant receives their American passport they return to China, often within a month of birth. In 2017, 98% of the infants received a hearing screening before hospital discharge, 85% returned for the outpatient follow up screening with 15% lost to follow up. Note however that of the 15% many of these infants would be considered “lost to relocation” as they left the island and returned to China.

As you can see above, the majority of infants not returning for rescreening were of Chinese ethnicity. To assure that these families understood the importance of screening and follow-up translated materials were developed and are provided to the nurses to share with them. Several years ago there was primarily one Chinese translator, then it grew to be several translators that offered a service to assist the mothers; therefore, the EHDI program met with these translators to share more about the program, discuss the importance of follow up to help assure the information could be delivered back to the families. More recently in the past year more and more Chinese mothers are coming alone without a translator and fully relying on the hospital to provide them translation services. In efforts to support the nurses cue cards were made so that they could have the mother’s read about the process of screening and the steps to be taken thereafter based on the results.

Diagnostic Evaluation

When an infant refers on an outpatient screening, Dr. Mister, the Public School System audiologist, is contacted and a diagnostic evaluation appointment would be scheduled generally within a week. Below is a review of the timeliness of the diagnostic evaluations for 2015-2017.

Year	Refer To DAE	Percent completed by 3 months of age
2015	4	4

2016	4	4
2017	6	5

Source: EHDI - IS Data and Tracking Surveillance System

Looking specifically at 2017, 5 out of 6 infants received definitive diagnosis before 3 months of age, a diagnosis rate of 83%. The one (1) infant who was referred for a diagnostic audiological evaluation, but was not completed within the recommended timeline exited the CNMI prior to receiving the evaluation. Ms. Deray, EHDI Newborn Screener and Family Support Coordinator made every effort to explain the need for follow up and they are strongly advised to seek care in their respective country.

Early Intervention Services

The early intervention program, also known locally as the Children’s Developmental Assistance Center (C\*DAC), is a collaborative effort between the Public-School System and the Division of Public Health Services. A memorandum of understanding exists between the Public School System, Early Childhood Special Education Program and the CHCC/Division of Public Health Services for early intervention services (See Attachments, 4: LOAs/MOUs). The public-school system is the lead agency and has a state plan for early intervention. They assume the role and assure that infants and toddlers age 0-3 years who are developmentally delayed, or at risk receive appropriate early intervention services as specified under Part C of the Individuals with Disabilities Education Act. Early intervention services include: care coordination, identification and assessment, occupational therapy, physical therapy, speech-language pathology, social work, psychological services, vision services and assistive technology. The early intervention services are free of charge and available on all 3 islands. All infants diagnosed with any degree of hearing loss including unilateral losses are eligible for early intervention; hearing loss is considered an established condition and upon referral the infant automatically qualifies for services. Within 45 days of the referral, the EI team and family meet to identify medical and non-medical needs. An Individualized Family Service Plan (IFSP) is developed addressing these specific needs and services are put into place. Given the established collaboration between the Division of Public Health Services / Commonwealth Healthcare Corporation and the Public-School System the referral process tends to run smoothly and almost immediately upon diagnosis. In 2017, 2 out of the 3 infants diagnosed with hearing loss received early intervention services by 6 months of age, 1 infant had relocated back to China.

Additionally, it is important to report that for all families that elect for amplification, hearing aids are commonly fit within several weeks of the diagnosis and their enrollment in EI. Funding under the Part C Early Intervention Program covers the cost of hearing aids, other assistive devices and equipment repair for families. In the efforts of collaboration the EHDI program has also partnered with the Early Intervention Program by purchasing a limited number of hearing aids to be used as a loaner bank, this allows the program to provide amplification while the personal aids are ordered by the EI program and can also be used to assure that there are no gaps in wear time when the child’s personal hearing aids are sent in for repair.

The CNMI EHDI has always recognized the importance and need for qualified EI service providers, who at a minimum are equipped with knowledge regarding the spectrum of communication modalities, have an understanding of hearing loss and the skills to support newly identified infants and their families. In the CNMI, early interventionists/ teachers serve all children with a wide variety of disabilities. This can be a challenge for an early intervention

teacher as they may lack expertise specific to the needs of infants that are deaf and hard of hearing. To address this concern and ensure that our EI providers are aware of the best practice and have the knowledge and skills to best support infants with hearing loss the CNMI EHDI Program has brought out experts to provide training and technical assistance. Over the years we have brought in trainers such as Nancy Rushmer, M.A., CED to provide hands on training to early intervention and related service staff in all elements of programming for infants and toddlers with hearing loss and their families; also provide training to staff working with preschool aged children with hearing loss. Teresa Caraway, to facilitate training on Listening and Spoken Language. Her course consisted of both instructional and hands on training with combined home visits with Early Intervention and Early Childhood Programs. Dr. Lauri Nelson, from Utah State University, traveled to the CNMI to share a variety of resources with both early interventionist and early childhood providers that focus on language development using the Listening and Spoken Language (LSL) approach. She met with parents and conducted evening workshops. She also presented us with the opportunity that allowed a local teacher to work towards a Deaf and Hard of Hearing Endorsement. Lastly also through this connection and in collaboration with the University of Utah we conducted a mini pilot program to provide DHH tele-coaching / tele- intervention in collaboration with a local early intervention teacher. This mentoring and the various training opportunities have been powerful in expanding the knowledge of providers and helping them build their confidence in serving newly identified infants and their families.

## **METHODOLOGY**

The goal of the CNMI EHDI Program is to ensure that children who are DHH are identified through newborn, infant, and early childhood hearing screening and receive diagnosis and appropriate early intervention to optimize language, literacy, cognitive, social, and emotional development.

By March of 2024, the CNMI EHDI Program had identified the following objectives:

- By March 31, 2024, Assure that 100% of infants receive appropriate and timely hearing screening by 1 month of age, those that refer receive a diagnostic audiological evaluation by 3 months of age, and infants diagnosed enrolled into EI by 6 months of age.
- By March 31, 2024, Increase by 10 percent, from baseline, the number of health professionals and service providers trained on key aspects of the EHDI Program.
- By March 31, 2024, Increase by 20 percent, from baseline, the number of families enrolled in family-to-family support services by no later than 6 months of age.
- By March 31, 2024, the EHDI Program will facilitate improved coordination of care and services for families and children who are deaf and hard of hearing.
- By the end of year 1, the CNMI EHDI Program will demonstrate evidence of planning and stakeholder engagement through development of a written plan. By the end of year 3, the CNMI EHDI Program will demonstrate evidence of formal communication, training, referrals and/or data sharing.
- By March 31, 2024, Increase by 10 percent, from baseline, the number of families enrolled in DHH adult-to-family support services by no later than 9 months of age.

## **Engage, Educate, Train & Coordinate Stakeholders**

One of the goals for the upcoming funding cycle is to engage all stakeholders in the state/territory EHDI system to improve developmental outcomes for children who are DHH. To

meet this goal, we will continue to maintain the infrastructure to ensure that all newborns are screened by 1 month of age, diagnosed by 3 months of age, and enrolled in Early Intervention by 6 months of age (1-3-6 recommendations); and reduce loss to follow-up/loss to documentation. Quality improvement will be incorporated throughout the 4 years to evaluate and improve EHDI services and outcomes. The CNMI EHDI Program continuously uses quality improvement throughout this past grant cycle. We have done PDSAs with our DHH families and nursery nurses. For the upcoming grant cycle, the program plans to focus its area of improvement on the 1-3-6, parent support and family engagement. Although the CNMI EHDI staff are knowledgeable with PDSA cycles, the plan is to work closely with the MCHB Quality Improvement Coordinator. This is to ensure that the PDSAs are done in a timely manner to meet the project goals and reported to HRSA annually. Given that our island has an average live birth of 1,200, our initial referral rate is still high. The initial referral rate averages about 15-20% which is higher than the national benchmark of 4%. In fact, the CNMI Program has set the initial referral rate at 10%, and the program still having trouble reaching the target goal. The other area of quality improvement we plan to focus on, is the enrollment and participation of DHH families in to the Parent to Parent support.

Data measurements and tracking logs will be used to measure small tests of change. The CNMI EHDI Program developed and distributed an annual EHDI report in 2017 and has a report drafted for 2018. It is the intent of the CNMI EHDI Program to continue to compile data and develop an EHDI annual report to inform and share data with community partners and stakeholders.

The CNMI EHDI Program will continue to focus on maintaining an active EHDI Advisory with represents from throughout our community. The CNMI EHDI Advisory includes the following participants:

- Parents of children who are DHH and/or adult DHH community members
- Representative from Maternal Child Health (MCH)
- Representative from the Family 2 Family Health Information Center
- Representative from Public School System Early Intervention Program
- A pediatrician / EHDI Chapter Champion
- An Audiologist
- Representative from the Home Visiting Programs
- Representative from the Women, Infant & Children (WIC) Program
- Representative from the Public School System Early Head Start / Head Start

The CNMI EHDI program will assure a minimum of 25 percent of the advisory consists of parents of children who are DHH and / or adults are DHH. The purpose of the advisory will be to continue to promote cooperation in the development of a coordinated, interagency system of services for DHH children and families, to review program goals, objectives and give input to the EHDI Program throughout the period of the project. We have asked our partners commitment to:

- Promote communication and information sharing among agencies, providers and families regarding the services and responsibilities of each participating agency to better serve young children and families.

- Promote collaboration among early childhood programs to facilitate a smooth transition for children, families and providers.
- Promote resource sharing and collaborative opportunities that address early childhood development.
- Provide joint planning and sharing of training and service resources.
- Foster the coordination of collaborative child find efforts to identify young children eligible for services provided by participating agencies

By the end of year 1, and revised annually, the CNMI EHDI Program will assess and evaluate current partnerships and identify any additional partners who could help address gaps in the EHDI system.

In this past grant cycle the CNMI EHDI Program established a learning community consisting of our Chapter Champion, Dr. Letitcia Borja, the audiologist, a parent of a child who is Deaf and Hard of Hearing plus, EHDI Systems Administrator and the Newborn Screener and Family Support Coordinator. The learning community meet throughout the past three years and discussed the general overview of the EHDI process, JCIH recommendations, the medical home concept and ideas centered around a Shared Plan of Care (SPoC). To evaluate the knowledge of the pediatric community the Learning Community decided it would be best to get a baseline of the knowledge they do know; therefore, the team developed a physician survey that was disseminated to all medical providers within the CNMI that serve infants and toddlers. Of the 19 surveys sent out ten providers responded: 5 pediatricians, 2 family practice doctors, 1 nurse practitioner and 2 physician assistants. The survey asked basic information related to JCIH recommendations, hearing loss, timely screening, diagnosis, referral, enrollment into EI services, questions about amplification, communication modalities and the importance of the patient/family-centered medical home. Results were collected, analyzed and then thoroughly discussed with the Learning Community. Based on the findings the team then gathered and reviewed various resources to address weaknesses and stress specific talking points. Materials were printed on card stock, laminated and put on a binder ring with the hopes that the providers would hang it in their office and keep it in arms reach. Knowing that hearing loss is a low incidence disability the plan to continue to send out articles and tools that can be added over time. The most recent tool that was sent out is the "Just in Time - Resources to Support Families of Children Who Are Deaf or Hard of Hearing" tool was published by the National Center for Hearing Assessment and Management (NCHAM) and NCHAM's Family Advisory Committee. The purpose of this tool was perfect for our needs as it was developed to provide a resource for those who come in contact with families of children who are DHH as well as to provide some important information on family to family support.

This past grant cycle we were also fortunate to send our chapter champion, Dr. Borja to attend the 2018 CMV Public Health and Policy Conference in Burlington, Vermont last September 23-25, 2018. This was the first time Dr. Borja attended a conference regarding CMV. She was able to learn and gain more knowledge about CMV. She was also pleased to see that the conference was centered around families who have a child who is DHH. Utilizing the information that she gained Dr. Borja was also able to do a small presentation at our EHDI Advisory meeting and has discussed how CMV screening needs to be incorporated into the physicians standard of care.

In this next grant cycle we plan to work with and further evaluate our healthcare professionals and service providers to ensure understand the importance of 1-3-6 recommendations, 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 families. We will use the advisory committee to help prioritize efforts and to help develop tools to evaluate the ongoing needs. Some of the proposed activities that have already been brainstormed as we discussed the goals under this new funding opportunity include: again completing a needs assessment of our stakeholders, this may involve revising and send out an updated survey and/ or conducting forums, hosting meetings, trainings, conducting grand rounds while also exploring opportunities to have our partners attend trainings, webinars and/ or participate in continuing education coursework focused on the various aspects of newborn screening and early intervention. As we reestablish baseline data this may also be an area where the program can utilize quality improvement as we evaluate small steps of change.

By the end of Year 2 of this proposed grant the CNMI will also work to create a plan as to how we can expand the infrastructure and support hearing screening up to age 3 which will include data collection and reporting. This plan will outline the resources, key stakeholders, partnerships, and services necessary to implement such efforts to screen infants and toddlers throughout the CNMI. A public health approach will used to ensure that efforts align with other public health and/or service programs throughout the CNMI. In efforts to meet this goal the CNMI EHDI Program will meet with partnering agencies, Maternal and Child Health programs, such as but not limited to the Title V Children and Youth with Special Health Care Needs (CYSHCN) Program, Newborn Bloodspot Program, Maternal, Infant, and Early Childhood Home Visiting (MEICHV) Program, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), Early Head Start; and Family-to-Family Health Information Center, as well as our pediatricians. The EHDI Program will work to expand to the healthcare clinics on the outlying islands of Tinian and Rota and also include private practices and FQHCs. The team will need to determine best practices, determine resources, training needs as well evaluate the current and needed infrastructures to collect, monitor and report the data on this population.

### **Family Engagement & Early Childhood Coordination**

The CNMI EHDI Program has worked to support families through the entire process from identification to intervention. Ms. Shiella Marie Deray is the EHDI Program Coordinator and one of her responsibilities is to ensure that families receive timely parent-to-parent support at the time of confirmation of hearing loss. She offers specific support and resource dissemination about deafness/hearing loss in addition to general Part C service coordination system and support. She helps connect families with other families and provide support throughout this time of transition. With the intent to expand hearing screening through three (3) years of age, the EHDI program will hire an additional staff member to serve as the Newborn Screening Follow-up Specialist, who will further ensure that families complete follow-up screening, evaluation, enrollment into EI, and access parent-to-parent support as needed.

For the 12 past years the CNMI EHDI Program in collaboration with the CNMI Public School System have hosted a DHH Family and Professional Partnership event. Families from all three islands are brought together along with many of the professionals that serve them, to share their story, share concerns, and learn new and exciting ideas, commonly there are over 100 children and adults participating. The activities for each family event are planned based on parent input

and slowly the families themselves are starting to lead the discussions, opening new channels of communication, sharing their ideas and making plans for future events. Feedback from participating families has always been very positive, but the strongest feedback received is generally related to the quality of topics discussed and the opportunity to network with other families during the day-long event. The EHDI Program will continue to utilize these annual events to engage families.

Two additional achievements that we hope to further springboard off of are the Pacific Parent / Deaf and Hard of Hearing Leadership Workshop and the ASL Community classes. The Pacific Parent / Deaf and Hard of Hearing Leadership Workshop was the pinnacle of our efforts to enhance family engagement. The Pacific Deaf/Hard of Hearing Leadership Workshop brought together parent leaders to receive training to develop leadership skills and be part of their islands systems change. This training was unique because it was devoted exclusively to training family members with children who are deaf or hard of hearing to be effective agents of change. It was a two-day meeting that provided interactive opportunities, up-to-date information, while exploring content that was customized for the CNMI and Pacific Islands. We had 3 staff from the National Hands & Voices as presenters with 8 participants from Saipan and 4 visiting guests from the Guam EHDI Program. Also in this training 4 Deaf adults attended the training. These DHH adults wanted to see how they can empower the DHH youths. However, there is still a challenge of having the CNMI DHH adults to be active with our DHH families. Our plan is to explore the possibility of DHH mentorship through on-line, where we connect CNMI DHH youths with other DHH youth in the US.

The CNMI Early Intervention program, functions under partnership between the CNMI Public School System and the Commonwealth Healthcare Corporation/Division of Public Health Services (DPHS). An Interagency Agreement exists between the two entities to assure early intervention services for children birth to 3 years of age.

The CNMI EHDI Program continues to work collaboratively with other CHCC-Division of Public Health Services. With the DPHS-Immunization Program the inpatient hearing screening results are included at the back of the immunization card or “yellow card” as we call it. As for the WIC Program, it is part of the intake to check the yellow card for the hearing screening results. If the child needs a hearing screening, the program calls the CNMI EHDI Program directly to set an outpatient hearing screening appointment. The MEICV Program too has included the hearing screening results as part of the family’s initial data intake. They are required to ask for the hearing screening results and recorded in the participants’ record. The audiologist together with the EHDI Program Coordinator also introduces the family for parent to parent support. This allows the newly identified families to be connected with the Parent Support Partners (PSP) as part of the family engagement. The EHDI Coordinator meets with parents individually to discuss about the PSP program and to also get consent to release their contact information to the PSP. In addition to current parent support and engagement efforts, the program will work to develop a partnership with the newly established Family to Family (F2F) Health Information Center in the CNMI. The CNMI F2F Health Information Center aims to provide information, education, technical assistance, and peer support to families of children and youth with special healthcare needs or disabilities and the professionals who serve them, which is in line with the CNMI EHDI Program’s objectives around family engagement. The program will further be able to support families of children who are DHH with resources available

through the F2F Health Information Center, including informational material, training opportunities regarding disability and special healthcare needs, parent leadership training, as well as computers and other information technology resources for families to access assistance for things like Medicaid, medical referral, and other related resources.

As we move into this new grant cycle the CNMI EHDI Program will prepare a detailed assessment plan that will evaluate these partnerships and collaborative efforts that are in place. Again potential through a quality improvement mindset the EHDI Program can evaluate the coordination of care looking closely at communication, needed training, referrals, and data sharing, establish baseline and make improvement goals.

As in the past the CNMI the EHDI Program will also continue to look for opportunities to partner with federal EHDI partners such as CDC, FL3 and NCHAM. As part of the budget the CNMI EHDI Program will plan to send 1 or 2 EHDI staff and a parent / family leader to the National EHDI Meeting. The National EHDI Conference is known to be a dynamic and interactive meeting that has built a strong reputation for bringing together a wide variety of attendees including those who work in state Early Hearing Detection and Intervention Programs those professionals that provide screening, diagnostic and early intervention support to young children with hearing loss and their families.

Over several days of meetings, attendees have the opportunity to participate in plenary, breakout, and poster sessions and will explore exhibits on the latest information and resources related to EHDI. Collaboration is the heart of the conference. It is also worth noting that in addition to the main conference agenda there typically is a meeting for Pacific Jurisdiction. This additional meeting supports collaboration regionally where the islands are able to highlight successes and discussing challenges and their program work.

## **WORK PLAN**

The CNMI Work Plan specifically describes the program goals and objectives, activities, timeframes, team members responsible. The activities that will be used to achieve each of the program goals and objectives are included as an attachment (See Attachments, 1: Work Plan & Logic Model).

Additionally, a Logic Model was developed to present the conceptual framework for the proposed project, explaining the links among program elements (See Attachments, 1: Work Plan & Logic Model).

## **RESOLUTION OF CHALLENGES**

As the CNMI EHDI Program moves toward making changes in our small community, the CNMI does not foresee too many challenges in working together to design and implement activities described in the work plan. Scheduling group meetings of needed entities is relatively easy and program partners are generally flexible and willing to work together. Our location and remoteness is however, an ongoing challenge. Although the CNMI EHDI Program has put in place many safety nets and strategies to overcome foreseen obstacles, screening and diagnostics could be delayed when there are technical problems or computer malfunctions. First and foremost, we assure that equipment is calibrated and working well. Our location can also create challenges for the fitting of earmolds and hearing aids in a timely manner. We have utilized Fedex as an express mail courier, but this significantly increases the expense of shipping. To

overcome this challenge, we have created a small loaner bank of hearing aids and the audiologist is making insta-molds to make modifications and get infants fit with new molds in a timely manner. This allows time for the procurement of permanent ear molds through a professional manufacturer.

Training opportunities are also limited on a small island. To assure providers are practicing and using the most up to date technology to best serve the CNMI children training has been incorporated into the grant. Several relationship and letters of commitment have been established to assure we have support from national organizations and well-respected professionals in the field. We have also been able to identify many resources online such as the National Center for Hearing Assessment and Management (NCHAM), Family Voices, Center of Disease Control & Prevention / EHDI materials, Pacific Deaf Blind Project, Center for Childhood Deafness / Boys Town Research Hospital, etc.

The challenging economic state of the CNMI is a potential barrier, given that we have many families that live under the poverty level, minimum wage is at \$7.25 and the cost of living is high. This presents a challenge as many families are concerned about daily needs and work naturally takes priority, lessening their availability to partake in family engaging activities that further support their children. The CNMI EHDI Program does its best to inform families early of upcoming events and to further support families the program tends to offer childcare at the events to lessen the burden. The CNMI EHDI Program also feels that family engagement is an integral part to the EHDI Program and recognizes its value. With that said, we plan to discuss this very point to determine what families want and when and how often they are available. We also look towards HRSA and new partners, such as the newly established CNMI Family to Family Health Information Center and the national Family Voices organization to develop leadership among parents as we have attempted to do this over the years and have had limited success. This is not to say that parents are not involved, they are, however they have not moved towards leadership roles, remaining only as active participants in events that are organized by the EHDI Program.

There is always a concern around the area of sustainability of the program as we have relied on the grant for many years, but the EHDI Program has already started addressing this over the past few years. The program staff will be working with organizational leadership on allocating funds reimbursed from insurers for newborn hearing screens back to the program to further support goals and objectives. Most importantly the CNMI EHDI Program has worked hard to reduce expenses. The program continues to utilize Maico MB 11 Classic as the AABR screening machine at nursery and outpatient screening. In the previous years, the program was regularly spending over \$10,000 for supplies with a significant amount going towards the shipping to get them to the CNMI. With the MB11 Classic there are still expenses such as electrode gel, electrode sensor geltabs and eartips but that is only around \$1,000 dollars. Further conversations with the hospital and the MCHB Administrator are planned to address potential program income to support personnel and other program costs.

## **EVALUATION AND TECHNICAL SUPPORT CAPACITY**

The CNMI's EHDI has adopted the philosophy that evaluation is a routine, integral aspect of all program operations and is a natural extension of the planning process and work plan creation.

The process evaluation will focus on documenting progress toward the achievement of each EHDI goal. The EHDI program will work with a Program and Evaluation Consultant to provide guidance and technical support on Continuous Quality Improvement (CQI) efforts. We have also reached out to Alyson Ward, who oversees the National Center for Hearing Assessment and Management's quality improvement (QI) technical assistance for state Early Hearing Detection and Intervention (EHDI) programs to assist us in the area of quality improvement. She has been the CNMI's QI advisor this past grant cycle and we look forward to working with her further. She is an excellent support as she has been involved in QI with several states and also have experience in health promotion, education, policy, and evaluation (See Attachment, 4: LOAs/MOUs).

The overall program impact will be monitored by outcomes to the identified goals and objectives and performance measures. Performance and outcome measures in both informal and formal reports will be prepared to evaluate our goals. Reports will include such items as:

**Screening:**

- Percent of infants screened in comparison to the number of infants born.
- Rate of infants screened within 1 month of age
- Rate of infants who were referred who obtained re-screen
- Percent of infants lost to follow up at the point of screening and rescreening
- Parent survey to assess knowledge of program and their infants screening results

**Assessment:**

- Rate of infants lost to follow up at point of diagnostics
- Rate of infants who were referred that obtained an audiologic assessment.
- Rate of audiologic assessments completed by 3 months of age
- Parent survey to assess knowledge of program and their infants screening results

**Intervention:**

- Rate of enrollment in early intervention services by 6months with a medical home
- Rate of time it takes to be fit with amplification, if the family so elects this option
- Rates of achievement of appropriate language and communication developmental outcomes.
- Documented trainings provided and training evaluation forms
- Parent surveys will also be collected to further assess knowledge of the overall program and their infant's development

**Data Systems / Linkages:**

- Number of programs EHDI is linking with
- Number of infants referred and sources of their referral
- Data on services rendered to support infants with hearing loss.

**System of Coordinated Care:**

- Number of participants that are aware of and follow the JCIH 1-3-6 recommended timeline guidelines;
- Number of deaf or hard of hearing patients that have a care coordination plan;
- Number of care coordination plans developed with the parent or family, caretakers;

- Number of care coordination plans that are shared across providers (i.e. specialists, audiologists); and
- Number of health care professionals that have developed partnerships with state Title V CYSHCN programs regarding systems integration and family centered care coordination.

The ultimate goal of the CNMI EHDI program is to ensure that all infants are screened for hearing loss, infants who refer are diagnosed by three months of age, referred to EI within 1 week and to ensure they are enrolled in early intervention by six months, for the development of normal speech, language, and cognition through a medical home approach. These goals are frequently referred to as the 1- 3- 6- plan. The CNMI EHDI IS database will be the primary tool to provide the data to evaluate if goals and outcomes are being met. The EHDI-IS integrates with the Health & Vital Statistics Office (HVSO) / linking vital records data with results extracted from the hearing screening equipment. The EHDI-IS has had multiple revisions and upgrades throughout the years. Originally the EHDI-IS used a SQL Server 2005, Windows Server 2003, Internet Information Services (IIS) 6.0, ASP.NET 2.0, Remote Desktop Services, and Microsoft Access and linked with the Office of Health and Vital Statistics stand alone, in-house developed database that followed 1989 birth certificate standard. In 2009, the EHDI Program provided technical assistance to the HVSO and developed a web-based birth certificate system that followed the 2003 standard, and vital statistics started to use the new system in 2010. Then the HVSO migrated to an even newer system based on NAPHSIS's State & Territorial Exchange of Vital Events (STEVE) specifications. A customized script was developed for the STEVE application in order to create a functional, automated data exchange between the EHDI-IS and the STEVE database. This system was implemented and used until May of 2015 when it crashed. Thankfully data was backed up and the CNMI EHDI Program was able to write a new program to import most of the birth certificate records from the STEVE system into a new birth certificate system that the HVSO is still using. While the HVSO system has remained the same over the past few years, the CNMI EHDI-IS system was updated and transitioned to a web-based system. This transition was to improve interoperability, scalability, and security. We are currently in discussions with HSVO about data linkage as they are exploring options and plan to transition to a new birth certificate system potentially as soon as January 2020.

Utilizing the EHDI-IS the following data is reviewed: the percentage of infants born and screened by one month of age; the percentage of infants who refer on the hospital screen that receive an outpatient rescreen; the percentage of infants who refer on the rescreen that receive a comprehensive diagnostic audiological evaluation before three months of age; the number of days the referral was made after diagnosis; the percentage of infants percentage number of infants enrolled in early intervention by six months of age; and the percentage of families that are received. Data within the EHDI-IS will be used to evaluate and track infants lost to follow-up and loss to documentation.

Since moving into a web-based system, the program has been evaluating the data based and have been making enhancements for more comprehensive data collection, analysis and reporting. For one, the EHDI Program took the lead in the integration of the Newborn Metabolic Screening data within the EHDI-IS. The newborn metabolic screening was re-implemented in CHCC last 2015. Since then, the Newborn Screener and Family Support Coordinator (NSFSC) has been tracking and monitoring all babies who received their newborn metabolic screening. The NSFSC has access to the Oregon Public Health Laboratory database. Every week data is reviewed for each

infant born and manually enters the result into the EHDI-IS, so for each infant born there is a newborn hearing screening result and newborn metabolic screening result recorded. CHCC has contracted with Oregon Public Health Laboratory to conduct the newborn metabolic screening. All the newborn metabolic kits are sent off to Oregon for analysis. Results are usually available within 2 to 3 weeks. Similar to the newborn hearing screening, infants born at CHCC receive their newborn metabolic screening prior to hospital discharge. However, there is a challenge with our newborn metabolic screening. Collection is only on Mondays and Tuesdays all day and on Wednesday's mornings. This is because of the shipping challenges. The courier explained that shipping of these kits usually takes about 3 days. So, for infants born on Wednesday afternoons until Saturday, families have to come back to CHCC Laboratory the following week for blood draw.

Another enhancement that was done with the CNMI EHDI-IS was that the diagnosis data collection was expanded to be more comprehensive. The data inputs include what type of hearing loss, degree of hearing loss, type of audiologic evaluation, frequency of hearing loss, date of referral to EI, hearing aid fitting and recommendation of next appointments. Lastly, to track data on family engagement, we have included a parent-to-parent support component in our EHDI-IS. The component includes a checklist and dates of when the DHH family resources were given to the families.

### **ORGANIZATIONAL INFORMATION**

CHCC is a quasi-governmental corporation, and while it is a part of the CNMI Government, it is semi-autonomous. The CHCC is the operator of the Commonwealth's healthcare system and the primary provider of healthcare and related public health services in the CNMI. In 2011, all functions and duties of the CNMI Department of Public Health including management of federal health related grants were transferred to the Commonwealth Healthcare Corporation, so that the CHCC is the successor agency to the now defunct Department of Public Health. As stated in our introduction, the only hospital is also administered by CHCC. There are three divisions under the corporation: 1) Public Health -- provides preventive and community health programs in which many are federally funded; 2) Hospital; and 3) Community Guidance Center.

Besides the hospital, the CHCC also operates several outpatient facilities, providing an estimated 80 percent of all outpatient health care in the CNMI. Several clinics are physically located at the hospital, including the adult clinics (providing internal medicine, surgery and orthopedics services), hemodialysis unit, a women's clinic focusing on obstetric and gynecologic care, a pediatric clinic for children from birth to age 18, and a walk-in acute-care clinic. There are five private outpatient clinics along with peripheral clinics on the islands of Tinian and Rota. Homecare nursing services are available through two private sector agencies. The CNMI Early Hearing Detection and Intervention (EHDI) program falls under the direction of the Division of Public Health Services (DPHS) Maternal Child Health Bureau. The mission of the Maternal and Child Health Bureau is "To promote and improve the health and wellness of women, infants, children, including children with special healthcare needs, adolescents, and their families through the delivery of quality prevention programs and effective partnerships". With that said the successes of the EHDI program are also significantly due to the collaborative efforts between the Division of Public Health and Public-School System. Nurses are utilized under the Hospital Division who coordinate and carry out the initial hearing screenings. Follow-up screenings and Audiological Evaluations are conducted through the CHCC outpatient Children's Clinic.

Referrals are then made to the Early Intervention program to coordinate care and intervention services. The organizational landscape of the CHCC is unique in the United States in that a hospital system and public health exist under one umbrella organization. This has worked in the Program's favor, allowing access to office space for program staff, ease in integrating program efforts in the hospital setting and outpatient clinics, and has been a source of support for partnerships with pediatric providers.

Also under the CHCC is the Grants Management Office and the office of the Chief Financial Officer. Established in 2016, the CHCC Grants Management Office is responsible for ensuring compliance with federal regulations and audit requirements. The Chief Financial Officer is responsible for planning, implementing and evaluating the fiscal performance and ensuring the long-term financial future of the CHCC. The chief financial officer is responsible for all the functions related to the financial operations of the organization.

In addition to these organization capacity components, the EHDI program is able to leverage DPHS Maternal and Child Health Bureau external partnerships, including: Public School System (Early Intervention, Head Start, SPED), Child Care Development Fund (CCDF) Program, Public Health Dental Clinic, Disability Network Partners (DNP), Northern Marianas College University Centers for Excellence in Developmental Disability (UCEDD), Joeten Kiyu Public Library and others for meeting the intended goals and objectives of the project.

Mentioned in previous sections of this proposal, the program has accessed technical assistance and expertise from national partners such as Hands and Voices and NCHAM as well as technical assistance available through the HRSA Maternal and Child Health Bureau and the National Voices organization for parent leadership and peer to peer support.

Efforts around assessing Maternal and Child health population needs are done so through a comprehensive 5 year needs assessment and subsequent interim needs assessment updates that are conducted annually as part of the overall DPHS Maternal and Child Health Bureau. The next comprehensive 5 needs assessment will be completed by July of 2020. Being that the EHDI program is administered through the DPHS Maternal and Child Health Bureau, it is heavily involved in the routine assessment of our target population needs as well as implementing activities to address the identified priorities.

Key personnel who will implement and assist and assure activities of CNMI EHDI program are the following:

**Director of the Division of Public Health Services**

**Margarita Torres Aldan**, has an MPH in Health Administration and Planning and is the Director of the Division of Public Health Services, Commonwealth Healthcare Corporation, Saipan, MP. Margarita is responsible for carrying out the functions and management of the Division of Public Health Services under the Commonwealth Healthcare Corporation, which includes all federally funded prevention programs such as the Early Hearing Detection and Intervention Program. She is actively involved with local, national, international preventive and wellness organizations on various public health activities coordinated by agencies such as the World Health Organization (WHO); Department of Health and Human Services; and Association of State and Territorial Health Officials (ASTHO), Ayuda Network, Inc, Council on

Developmental Disabilities, etc. She has been instrumental in writing grants and implementing programs/activities to ensure continuity of services/programs for women, infants, children, including children with special health care needs, and adolescents.

### **MCHB Administrator**

**Mrs. Heather Pangelinan** graduated in 2006 with a BA in Social Sciences from Boise State University and an MS in Counseling in 2018. She has been with MCHB since 2014 and took on the role of Maternal and Child Health Bureau Administrator in 2016. As the Administrator, Mrs. Pangelinan works to ensure alignment and coordination of all MCH Bureau Programs, including the EHDI program, so that women, children, including children and youth with special healthcare needs, and their families receive healthcare and related services within a comprehensive and well-coordinated system.

### **Program & Evaluation Consultant**

**Dr. Angie Mister, Au.D CCC-A** Dr. Mister is an Audiologist and has worked in pediatric audiology for 21 years providing diagnostic and amplification services to infants and children as well as providing administrative support. Dr. Angie Mister provides all audiological services for the public-school system. For this upcoming grant cycle, Dr. Mister will program be contracted as the Program & Evaluation Consultant, utilizing program data and information on program activity updates to provide feedback and evaluation regarding the program's progress towards meeting stated goals, objectives, and related evaluation measures. As the only audiologist in the CNMI, Dr. Mister will be involved in engaging early childhood professionals and pediatric providers within the EHDI Learning Collaborative as well as taking part in family support activities.

### **EHDI Program Coordinator**

**Shiella Marie Deray – Program Coordinator** – Ms. Deray has been working with EHDI program for 10 years. She has excellent interpersonal skills when working and talking to parents. She is experienced in the screening of infants using Otoacoustic Emissions (OAE) and Automated Auditory Brainstem Response (AABR) screening equipment. Ms. Deray connects the newly identified DHH families with other families. She has been trained by National Hands & Voices HQ to provide unbiased parent support. She has her AA degree in the field of nursing and has worked as the EHDI Newborn Screener and Family Support Coordinator prior to her being the EHDI Program Coordinator.

### **EHDI System Administrator**

**Vacian Pangelinan - EHDI Systems Administrator** has been working with EHDI program for 3 years. He is very independent and skillful when it comes to computers. In a short amount of time he is able to familiarize the CNMI EHDI-IS and how it works. Vacian works on ensuring the uploading and cleansing of the hearing screening data. Vacian has also been trained under CHCC IT Director, Anthony Reyes on the Resource Patient Management System (RPMS). This database allows him to extract raw hearing screening data and compare it with EHDI-IS database for tracking, surveillance and accountability. Aside from managing the database, he is also in charge of compiling the monthly data reports and nurses monthly report.

### **Data Consultant**

Mr. Quansheng Song's work towards this project includes the data linkage of records and the overall de duplication of data within the EHDI-IS. He will work closely with the EHDI System Administrator to download & import birth certificate data, import & link hearing screening records, import & link metabolic data, de-duplicate hearing data, maintain & manage windows servers, maintain & manage database server, and create / update reports, generate ad hoc queries. Mr. Song is the developer of the CNMI EHDI-IS and continues to provide support in the areas where we have not been able to find individuals within the Division with similar expertise. During this last period of the current grant cycle Mr. Song will be transitioning his roles and duties to the EHDI Systems Administrator and will now focus mainly on ensuring data linkage between the EHDI-IS and the new birth records system that is projected to be launched by the Health and Vital Statistics Office in 2020.