# Guam Early Hearing Detection & Intervention Project (Guam EHDI) Annual Report

## Project Period: July 1, 2016 - June 30, 2017

Mother holding her new born baby boy during his hearing screening test facilitated by Guam EHDI staff.

Guam EHDI Logo

Guam CEDDERS Logo

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## About Guam EHDI

The Guam EHDI Project was established in 2002 through a federal grant awarded to the University of Guam Center for Excellence in Developmental Disabilities Education, Research, & Service (Guam CEDDERS). The Guam EHDI Project receives support through a Cooperative Agreement by the U.S. Health and Human Services (HHS), Health Resources and Services Administration (HRSA). The Centers for Disease Control and Prevention (CDC) also provides funding support to complement Universal Newborn Hearing Screening on Guam by implementing Guam ChildLink-EHDI, an integrated data tracking & surveillance system to support the Guam EHDI Project.

Through the efforts of this Project, the Universal Newborn Hearing Screening and Intervention Act, Public Law 27-150, became law in December 2004. Guam’s local legislation aligns with national goals and assures an upgraded standard of care for all babies born on Guam.

The goals of the current Guam EHDI Project are to assure that:

* all babies born on Guam are screened for hearing loss by 1 month of age;
* babies with hearing loss are diagnosed by 3 months of age;
* quality early intervention services they need are initiated by 6 months of age. This is also known as the “1-3-6 Plan."

Early identification of hearing loss is important because:

* Hearing loss is the most frequent birth defect.\*
* Undetected hearing loss has serious negative consequences.
* There are dramatic benefits associated with early identification of hearing loss.

\*Source: National Center on Hearing Assessment & Management (NCHAM), Utah State University.

## Project Achievements

* Benchmarks (targeted numbers) were met for hearing screening performed on newborns at the civilian birthing sites before 1 month of age.
* Benchmarks were met for infants needing outpatient rescreen.
* Benchmarks were met for the first time for infants needing a high risk rescreen.
* Strategies used to reduce the number of infants lost to follow-up in the outpatient rescreen category included:

1. Scheduling and giving hearing screening outpatient appointments at the birthing sites before discharge.
2. Offering flexible hearing screening appointment dates and sites.
3. Making reminder calls about appointment date and time.

* Public awareness on the importance of early detection of hearing loss through the screening and evaluation processes was greatly enhanced by the Project’s participation in 10 community outreach events during the year.
* Guam EHDI and the Department of Public Health and Social Services (DPHSS), in collaboration with the University of Hawaii, Telecommunications and Social Informatics (TASI) Research Program, continued to collaborate on the efforts toward interoperability between the Electronic Health Record (EHR) and Guam ChildLink - EHDI.
* Efforts continued to strengthen the data collection and reporting system in preparation of the long-term goal of turning ChildLink - EHDI to system partners.

## Types of Hearing Loss Identified from November 2002-Present

Conductive1 58

Sensorineural2 27

Mixed3 7

Total: 92

There were 92 infants identified with a hearing loss since the Guam EHDI project began in 2002. These infants were all offered early intervention services through the Guam Department of Education, Guam Early Intervention System (DOE-GEIS).

1Conductive Hearing Loss - Type of hearing loss where sound is not conducted efficiently through the outer ear canal to the eardrum and can often be medically or surgically corrected.

2Sensorineural Hearing Loss - Type of hearing loss when there is damage to the inner ear or to the nerve pathways from the inner ear to the brain.

3Mixed Hearing Loss - Type of hearing loss that is a combination of conductive hearing loss and sensorineural hearing loss.

Note: Data is from infants born at civilian sites: Guam Memorial Hospital Authority (GMHA), Sagua Mañagu Birthing Center (SMBC), and Guam Regional Medical City (GRMC).

## Initial Screening\*

\*Initial Screening - Screening of infants for potential hearing loss prior to discharge from the birthing site.

Graph and table: Percent Screened and Benchmark

Subject

2014

2015

2016

Percent Screened represented by the color blue

99%

99%

99%

Benchmark represented by the color orange

98%

99%

99%

The Guam EHDI project has maintained a 99% initial hearing screening rate at all civilian birthing sites. Guam Regional Medical City data is included in the 2015 and 2016 screening rate.

## Percent Lost to Follow Up at Outpatient Rescreen\*

\*Outpatient rescreen - Follow-up rescreen of infants who did not pass their initial hearing screening.

The Lost to Follow Up (LFU) rate for outpatient rescreens decreased to 2% in 2015. The LFU rate slightly increased to 3% in 2016, but remained below the benchmark for this level.

Graph and table: Percent LFU Outpatient Rescreen and Benchmark

Subject

2014

2015

2016

Percent LFU Outpatient Rescreen

5%

2%

3%

Benchmark

10%

10%

10%

## Percent Lost to Follow Up at High Risk Rescreen\*

\* High Risk Rescreen - Follow-up rescreen of infants who passed their initial hearing screening but have risk factors for potential late onset hearing loss.

The LFU rate for High Risk Rescreens was at 17% in 2014, exceeding the benchmark for that year. In 2015, the rate decreased to 16%, but was over 6% over the established 10% benchmark for the year. In 2016, the rate significantly decreased to 10%, meeting the established Guam EHDI benchmark.

Graph and table: Percent LFU for High Risk Rescreen and Benchmark

Subject

2014

2015

2016

Percent LFU for High Risk Rescreen

17%

16%

10%

Benchmark

20%

10%

10%

## Diagnostic Audiological Evaluation (DAE)\*

\*Infants who do not pass a follow-up rescreen, receive a DAE to determine whether or not a hearing loss is present and if so, the type and severity of the hearing loss.

Year

Total Referred for DAE

Total DAEs completed

Total with DAE by 3 months

Total with Normal Hearing

Total with Hearing Loss

Total receiving EI Services

Total Receiving EI Services before 6 months

Total Pending DAE

Total Deceased

Total Relocating/Refusing Services

Total LFU

2014

50

31

13

10

8

5

4

6

1

7

5

2015

38

20

4

14

2

1

1

13

0

3

2

2016

46

14

5

9

3

1

1

16

0

9

7

There were a total of 14 infants LFU between 2014-2016. Guam EHDI continues to focus efforts on decreasing LFU for infants needing diagnostic audiological evaluation. Guam EHDI’s audiologist consultant is assisting the project with quality improvement activities at this level.

Dr. Renee Koffend conducting a hearing screening test to a newborn baby girl while being held by her mother.

Hearing screening device.

## Guam EHDI Timeline

* November 2002: Hearing screening of infants prior to discharge from birthing sites commences
* September 2003: The Guam EHDI project began the process of designing and implementing a data system to monitor Project goals
* September 2004: Guam ChildLink – EHDI, the tracking and surveillance data system for the Guam EHDI project, was piloted
* December 2004: PL 27-150: Universal Newborn Hearing Screening and Intervention Act
* June 2006: Pilot remote entry into Guam ChildLink – EHDI with SMBC
* January 2007: Electronic Data exchange between GMHA and Guam ChildLink – EHDI
* April 2007: GEIS remote connection established to Guam ChildLink - EHDI
* June 2008: Audiological Associates was given remote, electronic access to Guam ChildLink – EHDI
* November 2009: Pilot of two-step initial screening protocol at SMBC
* September 2010: Implementation of two-step initial screening protocol at SMBC & GMHA
* November 2011: GMHA starts billing for screening services
* March 2013: Follow-up Rescreens at Chief Brodie
* September 2013: Guam ChildLink – EHDI converted to a web-based system
* June 2014: Needs assessment for interoperability between EHR at DPHSS and Guam ChildLink – EHDI conducted.
* May 2015: Audiologist Consultant contracted for Project
* September 2015: GRMC opens its doors and reports initial hearing screening data to Guam ChildLink - EHDI
* March 2016: Interoperability supports continue
* July 2016: One-step screening process pilot starts at GMHA
* October 2016: New audiology clinic opens
* February/March 2017: System Sustainability: GMHA & DPHSS take over EHDI Pre-Natal Orientation
* March 2017: Two-step hearing screening process reinitiated at GMHA
* April 2017: New EHDI funding cycle awarded with emphasis on Parent/Family Engagement

Guam EHDI Logo

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For more information, visit the [Guam EHDI website.](http://www.guamehdi.org/)

## Guam EHDI

Phone: 735-2466

TTY: 734-6531

Email: nenihearing@guamcedders.org

Location: Dean Circle House 22, University of Guam

Office Hours: Monday - Friday, 8am - 12 noon; 1pm - 5pm

The Guam EHDI Advisory Committee held its quarterly meeting on December 13, 2016. Attending were: (Front Row, Left to Right) Pamela Sablan, RN, Unit Supervisor Neonatal Intensive Care Unit (NICU) Guam Regional Medical City (GRMC); Julia Flores, Sibling; Joyce Tejeresas, Parent, Co-Chairperson; Renee Koffend, Aud., CCC-A, Guam CEDDERS Audiologist Consultant; Margarita Gay, RN, Chairperson, Project Bisita I Familia Project Director, Department of Public Health & Social Services (DPHSS); Valerie Meno, RN, Head Nurse, Guam Memorial Hospital Authority (GMHA) Labor & Delivery; Bing Opena, RN, Head Nurse, GMHA Nursery; and Ruth Sabangan, RN, Head Nurse, GMHA NICU. (Back Row, Left to Right) Marivic Guiao, RN, Head Nurse, GMHA Obstetrics (OB) Ward; Robert Leon Guerrero, M.D., Guam Champion Pediatrician; Glenda Leon Guerrero, RN, Maternal Child

Nurse Manager, GRMC; Lina Leon Guerrero, Manager, Sagua Mañagu; Camille Glory, GRMC; Terrie Fejarang, Project Coordinator, Guam EHDI; Britney Babauta, Unit Secretary Labor & Delivery, GRMC; Jenika Ballesta, Research Associate, Guam CEDDERS; Christina Jung, Research Associate, Guam CEDDERS; Lt. Kyle Shepard, Audiologist, U.S. Naval Hospital Guam; LeeAnn Santos, Ph.D., Speech-Language Pathologist Educational and Developmental Intervention Services (EDIS); Edmund Cruz, Program Coordinator Parent Agency Network; Joseph Mendiola, Interoperability Data Manager, Guam EHDI; and Marie Wusstig, Training Associate, Guam EHDI.

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