



# Texas Early Hearing Detection and Intervention (TEHDI) Program



**Annual Report for Calendar Year 2010**



*Texas Early Hearing  
Detection and Intervention*



## **Texas Early Hearing Detection & Intervention Texas Department of State Health Services**

### **Annual Report / Calendar Year 2010**

**Department of State Health Services  
Texas Early Hearing Detection and Intervention Program  
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## Letter from the TEHDI Coordinator



### TEXAS DEPARTMENT OF STATE HEALTH SERVICES

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Date

Dear Friends of the TEHDI Program:

I am pleased to provide to you the first TEHDI Program Annual Report for calendar year (CY) 2010. Activities and data from CY 2010 represented the most up to date and accurate information at the time of the creation of the annual report. The report was prepared as a response to recommendations made by the Centers for Disease Control and Prevention (CDC) and the Health Resources Services Administration (HRSA) to provide the current status and future plans to state early hearing detection and intervention (EHDI) program stakeholders.

The TEHDI Program was established by House Bill (HB) 714, 76th Legislature, 1999. The Department of State Health Services (DSHS) – Family and Community Health Services Division – Newborn Screening Unit implemented the TEHDI Program to establish screening, monitoring, and outreach standards for the care of children with hearing loss. In addition to the creation of the state newborn hearing screening program, the law provided a certification program for birthing facilities, allowing DSHS to set certification criteria, such as delineated metrics and reporting requirements.

The enclosed report provides information on past accomplishments, current projects, and future plans for the TEHDI Program. If you have any questions regarding the report or would like to discuss it further, please do not hesitate to call me.

Sincerely,

A handwritten signature in black ink that reads "Mary Gwyn Allen".

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### — Acknowledgements —

Thank you to the Newborn Screening Unit at DSHS, including David R. Martinez, Newborn Screening Unit Manager, and Eugenia Dunham, Newborn Screening Support Group Manager. Thank you to the Graphics Department at DSHS for the layout and design of the annual report, especially Veronica Primeaux.

Thank you to CDC for providing a cooperative agreement with activities that have inspired the creation of the TEHDI Program Annual Report. CDC's mission is to collaborate to create the expertise, information, and tools that people and communities need to protect their health - through health promotion; prevention of disease; injury and disability; and preparedness for new health threats. (<http://www.cdc.gov/about/organization/cio.htm>)

### — Contributors —

The annual report was developed with contributions from the following:

**Mary Gwyn Allen**, TEHDI Coordinator

**James Goolsby**, TEHDI Program Educator

**Mary Catherine Hess**, Child Health Coordinator, Optimization Zorn (OZ) Systems

**Melissa Nagle**, TEHDI Program Specialist

**Sarah Shaw**, TEHDI Quality Assurance Specialist

### — Stakeholder Review Group —

We would like to thank the following participants for their valuable input and suggestions:

**Julie Barrett**, Au.D., Manager at Texas Children's Health Center - The Woodlands

**Lisa Crawford**, Parent Liaison for the Educational Resource Center on Deafness (ERCOD) at the Texas School for the Deaf (TSD)

**Jean Origer**, Program Specialist for Department of Assistive and Rehabilitative Services (DARS), Early Childhood Intervention (ECI)

**Brent Pitt**, Manager of Services to Students with Sensory Impairments for TEA

### Mission Statement

The goal of early hearing detection and intervention is to identify hearing loss and provide intervention services as early as possible in an effort to prevent speech, language, and other delays so that newborns, infants, and children reach their maximum potential.

### TEHDI Program Background

- HB 714, 76th Legislature, 1999, established the Texas Newborn Hearing Screening (NBHS) Program by adding Texas Health and Safety Code, Chapter 47. The statute provided for the implementation of the state's newborn hearing screening, tracking, and intervention program, which became effective May 11, 2000. The DSHS - Family and Community Health Services Division - Newborn Screening Unit implemented the program to establish screening, diagnosing, monitoring, and outreach standards for the care of newborns, infants, and children with all degrees of hearing loss.
- In Texas, the NBHS Program is referred to as the TEHDI Program.
- In CY 2010, the statute required that certain facilities offer newborn hearing screening to all families of newborns during the birth admission.
- Parents must give written permission before the hearing screening is performed and/or infant's medical record is released to the TEHDI Program.

### Responsibilities of the TEHDI Program

The TEHDI Program is designed to oversee the newborn hearing screenings, diagnostic evaluations, and referrals to the early intervention process through a tracking system. The program assists in identifying those newborns with hearing loss, as soon as possible, so that the ability to develop communication and social skills is obtained at the earliest stage.

### Funding:

In 2008, the TEHDI Program received federal funding through CDC and HRSA. Funds were awarded to states to address the critical issue of the significant number of infants who are lost to follow-up. Details of the CDC and HRSA-funded activities can be found on pages 23-29.

In addition to the CDC and HRSA funding, the program receives state monies.



The overall goals of EHDI as stated by the CDC\* are:

Goal 1: All newborns will be screened for hearing loss before one month of age, preferably before hospital discharge.

Goal 2: All infants who screen positive will have a diagnostic audiologic evaluation before three months of age.

Goal 3: All infants identified with a hearing loss will receive appropriate early intervention services before six months of age.

Goal 4: All infants and children with late onset, progressive, or acquired hearing loss will be identified at the earliest possible time.

Goal 5: All infants with hearing loss will have a medical home.

Goal 6: Every state will have a complete EHDI tracking and surveillance system that will minimize loss to follow-up.

Goal 7: Every state will have a comprehensive system that monitors and evaluates the progress towards the EHDI goals and objectives.

\*The goals are taken from the CDC EHDI website:  
<http://www.cdc.gov/ncbddd/hearingloss/ehdi-goals.html>

### Facts About Hearing Loss...

- Every day in the United States approximately one to three in 1,000 newborns (or 33 babies a day) are born with permanent hearing loss.<sup>1</sup>
- With a birth rate of approximately 400,000 babies, Texas will have approximately 1,200 infants and newborns born with a hearing loss each year.<sup>2</sup>
- Congenital hearing loss that is not detected within the first few months of life can significantly delay speech and language development.
- Not all forms of hearing loss are expressed at birth and may be progressive or late onset.
- Infants identified with a hearing loss can be fit with amplification as young as eight days of age.
- Only half of the babies born with hearing loss exhibit a risk factor.<sup>3</sup>
- The first few months of life offer the critical “window of opportunity” for stimulating the neural pathways to the language processing areas of the brain necessary to help newborns, infants, and children learn fundamental language, social, and cognitive skills.
- Newborn hearing loss is 20 times more common than phenylketonuria (PKU) and is the number one birth defect in the U.S.<sup>4</sup>

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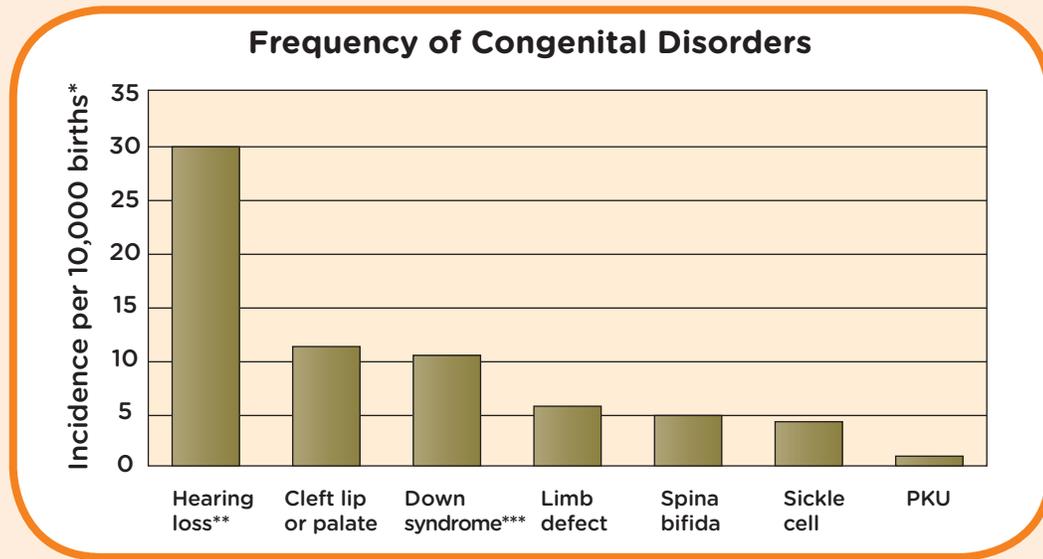
<sup>1</sup> American Speech and Hearing Association

<sup>2</sup> Approximate birth rate taken from Vital Statistic figures.

<sup>3</sup> American Speech and Hearing Association

<sup>4</sup> North Dakota Chapter of the American Academy of Pediatrics

The following graph shows the incidence rate of various congenital disorders per 10,000 births.



\*Statistics from National Center for Hearing Assessment and Management.

\*\*Neonatal Intensive Care Units experience neonates who have a higher incidence of risk factors associated with hearing loss, thus resulting in a higher percentage than average of newborn hearing loss.

\*\*\*Applicable for birth mothers under 25 years of age.

### The TEHDI Continuum of Care

The TEHDI continuum of care involves five components: Birth Screen, Outpatient Screen, Audiological Evaluation, Referral to Early Childhood Intervention, and Medical Home.

The process is as follows:

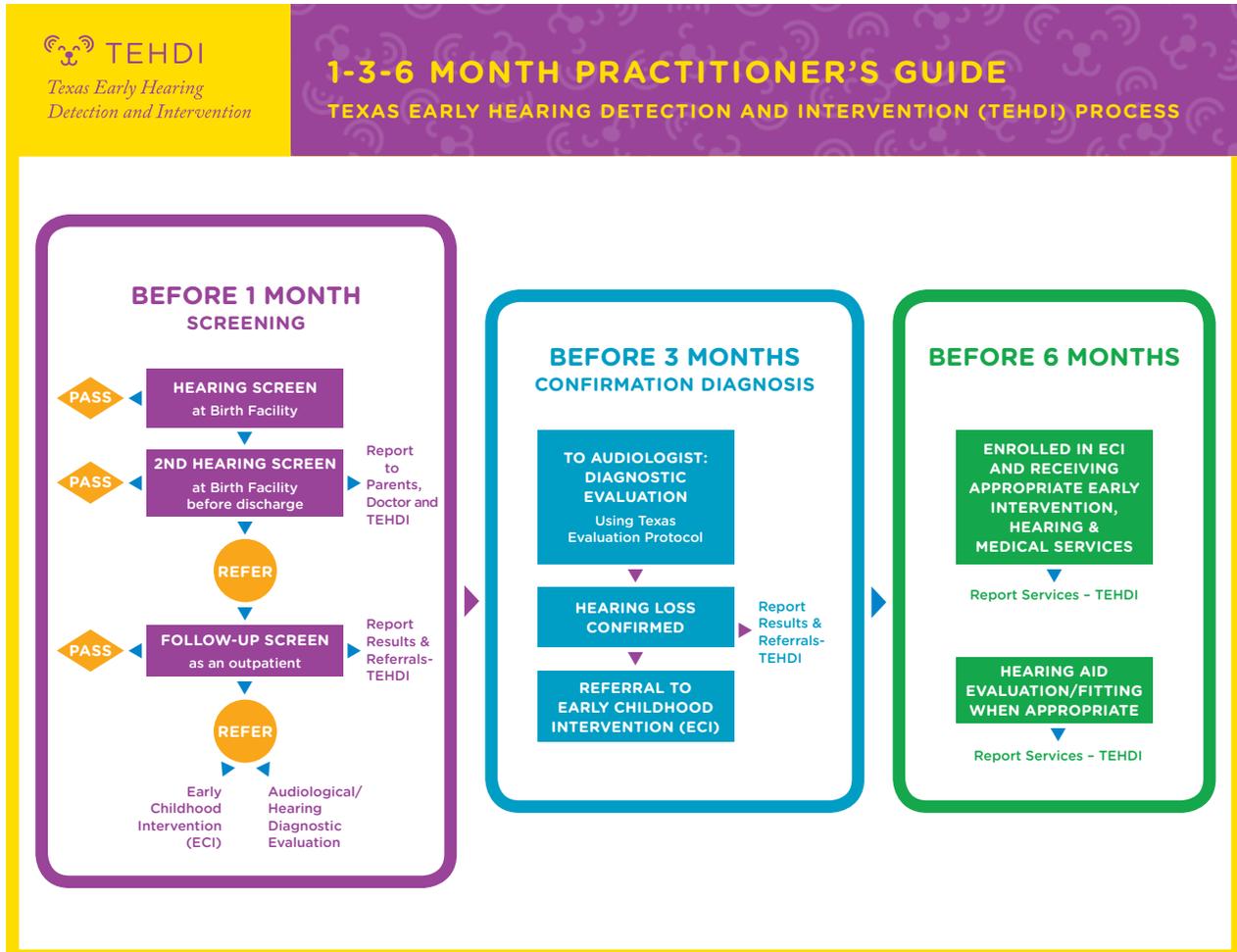
- Birth Screen:** A UNHS program is established within a birthing facility. UNHS programs offer the hearing screening to the family. The first screen is performed between 12 and 24 hours after birth. If the newborn does not pass the first screen (in one or both ears), it is recommended that a second screen be performed prior to discharge. The birthing facility reports results to DSHS using the TEHDI MIS. The newborn's family, and physician or medical home receive a written report of the hearing screening outcome. If a newborn does not pass the second screening before discharge, referral is made to a local resource for outpatient screening.
- Outpatient Screen:** The outpatient screen is performed on infants who did not pass or missed the birth screen while in the birthing facility. The outpatient screen can be performed by the birthing facility, an audiologist, or in some rare cases, the medical home. The outpatient screening provider sends the family, and physician or medical home a written report of the results. The outpatient screening provider reports the results to DSHS using the TEHDI MIS. If the newborn does not pass the outpatient screening test, he or she is referred to the DARS-ECI Program and an audiologist for a diagnostic evaluation using the Texas Audiologic Evaluation Protocol for Newborns.

- ***Audiological Evaluation:*** The Texas Pediatric Protocol for Audiology recommends using diagnostic Auditory Brainstem Response, and if not previously done, Otoacoustic Emissions to verify cochlear activity. The results are sent to the family, and physician or medical home. The audiologist reports the results to TEHDI MIS and refers the newborn to the DARS-ECI Program if hearing loss is confirmed or cannot be ruled out. The audiologist prescribes hearing aids, when appropriate. The newborn or infant is continually monitored by the audiologist and indirectly through the physician or medical home.
- ***Referral to the DARS-ECI Program:*** In CY 2010, the Individuals with Disabilities Education Act (IDEA), Part C, required a referral to early intervention services be made within two working days of identification of hearing loss. The DARS-ECI Program refers the child to the Local Education Agency (LEA) for Auditory Impairment (AI) services as outlined in the Memorandum of Understanding between TEA and DARS-ECI. The DARS-ECI Program and LEA services are available to newborns, infants, and children up to age three years when eligibility is determined. The DARS-ECI Program and LEA services coordinate transition services upon the child's third birthday.
- ***Medical Home:*** The medical home or physician continues to monitor the child as recommended by the Joint Commission on Infant Hearing 2007 Position Statement.



## The 1-3-6 Month Practitioner's Guide

The 1-3-6 Month Practitioner's Guide is an overview of the steps in the TEHDI continuum of care. The guide provides a brief explanation of the recommended steps for care during the hearing screening, diagnosis, and intervention processes.



## TEHDI Program Stakeholders

An integral component of the TEHDI Program is its coalition with other stakeholders within the continuum of care for newborns, infants, and children with hearing loss. Stakeholders include:

- DARS-ECI
- TEA
- Deaf and Hard of Hearing Leadership Council
- Texas Hands & Voices™
- DARS Office of Deaf and Hard of Hearing Services
- ERCOD at TSD

## Stakeholders' Roles in the TEHDI Continuum of Care

DARS-ECI is a statewide program that serves children, birth to 36 months, who are eligible for services based upon a developmental delay, a qualifying medical condition, or a visual or hearing impairment as defined by the TEA. DARS-ECI's role, with parental consent, is to refer children who have a confirmed hearing loss to their LEA, and to coordinate referrals required to determine eligibility. DARS-ECI accepts referrals for children with suspected hearing loss through TEHDI MIS and other referral sources such as pediatricians and audiologists. If parents are in agreement, DARS-ECI will refer the child to an audiologist to confirm the hearing loss and address any other concerns the parent may have about their child's development. TEA's role in the TEHDI continuum of care is to provide leadership, guidance, and resources to help meet the educational needs of students with hearing loss.

The Deaf and Hard of Hearing Leadership Council is comprised of members from various state agencies, stakeholder organizations, and the deaf community. The purpose of the council is to provide leadership and guidance in the development of comprehensive services for infants and families referred after a hearing screening. The council provides a far-reaching plan to campaign statewide to expand awareness of the early hearing detection and intervention process, and to assist all newborns, infants, and children of Texas who have hearing loss.

Texas Hands & Voices™ is a non-profit organization providing non-biased support to families and their newborns, infants, and children who are deaf or hard of hearing in order to improve communication access and educational outcomes.

The Office of Deaf and Hard of Hearing Services within DARS has regional resource specialists that provide information and identify solutions for individuals who are deaf or hard of hearing. The resource specialists collaborated with the TEHDI Program to provide outreach to the providers in their area regarding the need for follow-up care after a did not pass result on the newborn hearing screening.

The ERCOD at the TSD serves as a state resource center on the education of children who are deaf or hard of hearing. ERCOD provides outreach programs to children, families, and professionals across the state. These programs include workshops, training, materials, distance learning, and support. Some examples of the programs offered are Family Signs, which provides free online sign language instruction and Guide By Your Side, which offers parent-to-parent support to families with children who are deaf or hard of hearing (birth-21) from parent guides located across the state.



## Professionals Participating in the TEHDI Continuum of Care:

### Birthing Facility Staff

Teams of professionals, including audiologists, physicians (neonatologists, pediatricians, other primary health care physicians, otolaryngologists), and nursing personnel are traditionally involved in establishing the UNHS component of the TEHDI continuum of care. In addition to audiologists, personnel who perform the screening procedure may include nurses, nursing assistants, technicians, and speech-language pathologists.

### Outpatient Hearing Screening

All infants who do not pass a birth hearing screening exam should be rescreened before one month of age. In many cases, the birthing facility performs the outpatient hearing screen, but pediatricians, audiologists, and other health care professionals may also provide the screen. The outpatient screening provider options depend on the birth facility resources, as well as community provider availability.

### Audiologic Assessment and Diagnosis

The initial audiologic test battery to confirm the existence of a hearing loss in infants should be performed by an audiologist or physician who has skills and expertise in evaluating newborns and infants with hearing loss. These professionals should be skilled in providing pediatric audiological diagnostic and auditory habilitation services, including the selection and fitting of appropriate amplification devices for newborns, infants, and young children.

### Early Childhood Intervention

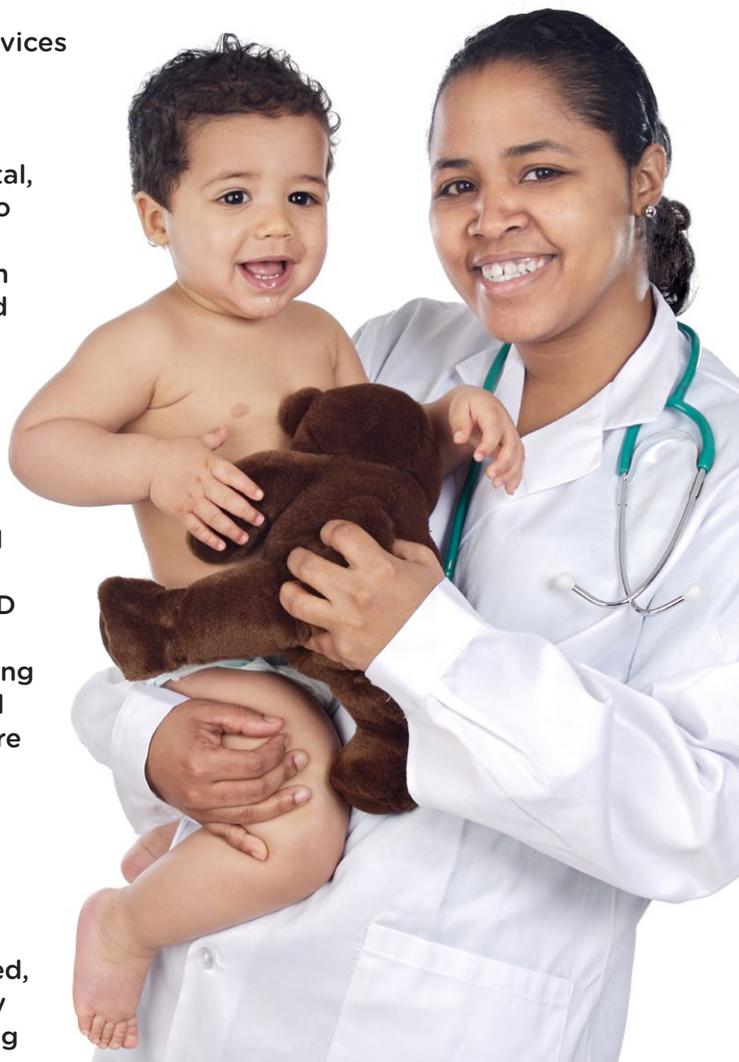
DARS-ECI provides case management services to assist an eligible child to gain access to the rights and procedural safeguards under the IDEA Part C and to needed medical, social, educational, developmental, and other appropriate services. In order to receive DARS-ECI case management, the child must be eligible for services, have an identified need for case management, and the family must agree to services.

### Educational Assistance

TEA works with the DARS-ECI Program to provide assistance to families with newborns, infants, and children who are deaf or have hearing loss. Local DARS-ECI programs work with LEAs, Regional Day School Programs for the Deaf, and the TSD so that specialized services, specific to newborns, infants, and children with hearing loss are made available. These specialized services, as defined by state guidelines, are known as AI services.

### Medical Home

According to the American Academy of Pediatrics, a medical home model delivers primary care that is accessible, continuous, comprehensive, family-centered, coordinated, compassionate, and culturally effective to all children and youth, including



children and youth with special health care needs (<http://medicalhomeinfo.org/>). One of the most critical issues to the TEHDI Program is loss to follow-up. The coordination of follow-up services by the medical home directly impacts the newborn or infant's outcomes. Collaboration and coordination is important between all professionals who participate in the EHDl process.

## TEHDI MIS

The TEHDI Program uses a web-based system, called TEHDI MIS, for its EHDl program. Data is entered and tracked by the system. The TEHDI MIS is designed to be used by the professionals in the TEHDI continuum of care listed above to provide follow-up services and coordination of care for newborns, infants, and children through age three.

- Data from the birth screens and test results are entered into the system as the testing occurs in birthing facilities.
- A newborn, infant, or child's hearing loss diagnosis and disposition is entered into the system by audiologists and intervention specialists.
- The TEHDI MIS is the repository for over two million records that have been collected since implementation in 1999.

The TEHDI MIS was developed and is maintained by a DSHS contractor, OZ Systems. OZ Systems staff members provide a variety of support functions for the TEHDI Program. Under the contract in 2010, OZ Systems performed the following functions and activities:

1. Training in the use of the TEHDI MIS.
2. Administrative services, which include certification of providers and monitoring of provider data.
3. Technical assistance, by responding to questions from parents, audiology providers, and other health care providers regarding newborn and pediatric hearing testing and methods of intervention.
4. Limited follow-up services which include contacting families via phone and letter to encourage and support the family in following up with outpatient screening providers. Monthly postcards are sent to primary care providers to notify them that they have patients who require an outpatient screen. In addition, personnel work with outpatient screening, audiology, and primary care providers (PCP) to acquire screening, diagnostic, and intervention data.

WELCOME

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TEHDI PROGRAM

MORE INFO

[TEHDI Website](#)

Please login below using you eScreener Plus username and password. If you have problems logging in please contact the help desk via e-mail at [ozhelp@oz-systems.com](mailto:ozhelp@oz-systems.com) or call 866-427-5768 Opt. 2, and ask to speak with the EHDl Coordinator .

USERNAME:

PASSWORD:

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TEHDI

**DSHS TEHDI Program Staff****TEHDI Coordinator (Mary Gwyn Allen)**

Mary Gwyn Allen serves as the Program Coordinator for the TEHDI Program, which provides subject matter expertise and coordinates the overall program activities. Prior to joining DSHS, she served as the Project Manager and Follow-up Consultant for the Infant Hearing Program and a Local Health Unit Administrator for the Arkansas Department of Health. Prior to this, Dr. Allen was a faculty member in the Psychology Department of the University of Arkansas at Little Rock and Ouachita College. Dr. Allen received her Master of Arts in applied psychology and a doctorate, D.Min. in interfaith ministry.

**Project Assistant/Quality Assurance Specialist (Sarah Shaw)**

Sarah Shaw began her work with the TEHDI Program as the Project Assistant where she provided technical assistance and certification monitoring for birthing facilities. In September of 2010, Sarah became the Quality Assurance Specialist where she oversees all activities aligned with the goals and objectives of the cooperative agreement with the CDC. Sarah Shaw came to Texas after receiving her Master of Public Health and Bachelor of Science from Tulane University. Prior to her work with DSHS, Sarah held positions within the state, and both the nonprofit and for profit sectors, including a long term employment with Project Transitions in Austin, Texas.

**Program Specialist/Education Specialist (James Goolsby)**

James Goolsby serves as the Program Educator for the TEHDI Program which is responsible for overseeing educational activities and materials, while coordinating outreach training through a HRSA-funded grant. Prior to joining the TEHDI team, he served with the Texas DSHS - Mental Health and Substance Abuse Division developing divisional policies and service contracts. He also served with the Texas Department of Criminal Justice as a policy and procedures writer.

**Newborn Screening Support Group Manager (Eugenia Dunham)**

Eugenia Dunham serves as the Manager of the Newborn Screening Support Group, which provides program support and oversight for the Newborn Screening Unit, including the TEHDI Program. Prior to joining the DSHS team, Eugenia spent over 20 years in nonprofit management, which included social work, a supervisor position of a mental health clinic, a director position at the American Red Cross in Greater New York, and an Executive Director role for the Greater Options for Adolescent Lives, Inc. in Boston. She holds a Master's Degree in Social Work and Public Health from Columbia University.

**Child Health Program Coordinator (Mary Catherine Hess)**

Mary Catherine Hess serves as the Child Health Program Coordinator for the TEHDI Program and is employed by OZ Systems in Arlington, Texas. She has been working with EHDl programs for more than a decade. From 2001-2008, she was the Program Administrator for Rhode Island's EHDl Program. She has presented at local, regional, and national EHDl events on topics related to newborn hearing screening program oversight, data management, and data reporting. She holds an Master of Arts in Linguistics from Gallaudet University and a Bachelor of Science in Communication Disorders from the University of Texas at Austin.

**TEHDI Advocate (DaShondra Daniels)**

DaShondra Daniels' role is to work directly with birthing facility personnel to provide technical support for the TEHDI online database system. She ensures birthing facility staff document and record information into the TEHDI MIS; reviews birthing facility census information; verifies quality of data at individual birthing facility sites; identifies babies in need of further care; and assists birthing facilities with correct data entry. Her role also includes educating birthing facility staff on the importance of correct and timely documenting of screening information, addressing any areas in need of improvement.

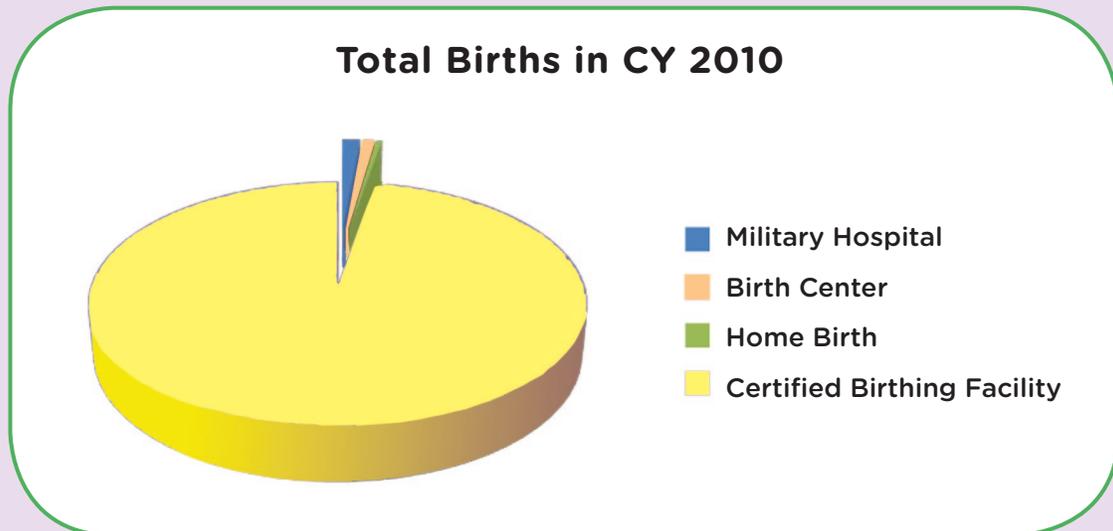
**TEHDI Customer Support (Melissa Ornelas)**

Melissa Ornelas' primary role is working with the DSHS on care coordination and follow-up activities. She works closely with families to make sure their babies have had a hearing screening and educates them on the importance of having a hearing test. She is also a mother of a child with hearing loss who was born before the development of the TEHDI Program and diagnosed at five years of age. In 2010, Melissa worked closely with the DSHS to help coordinate facilities for the regional workshops during CY 2010.



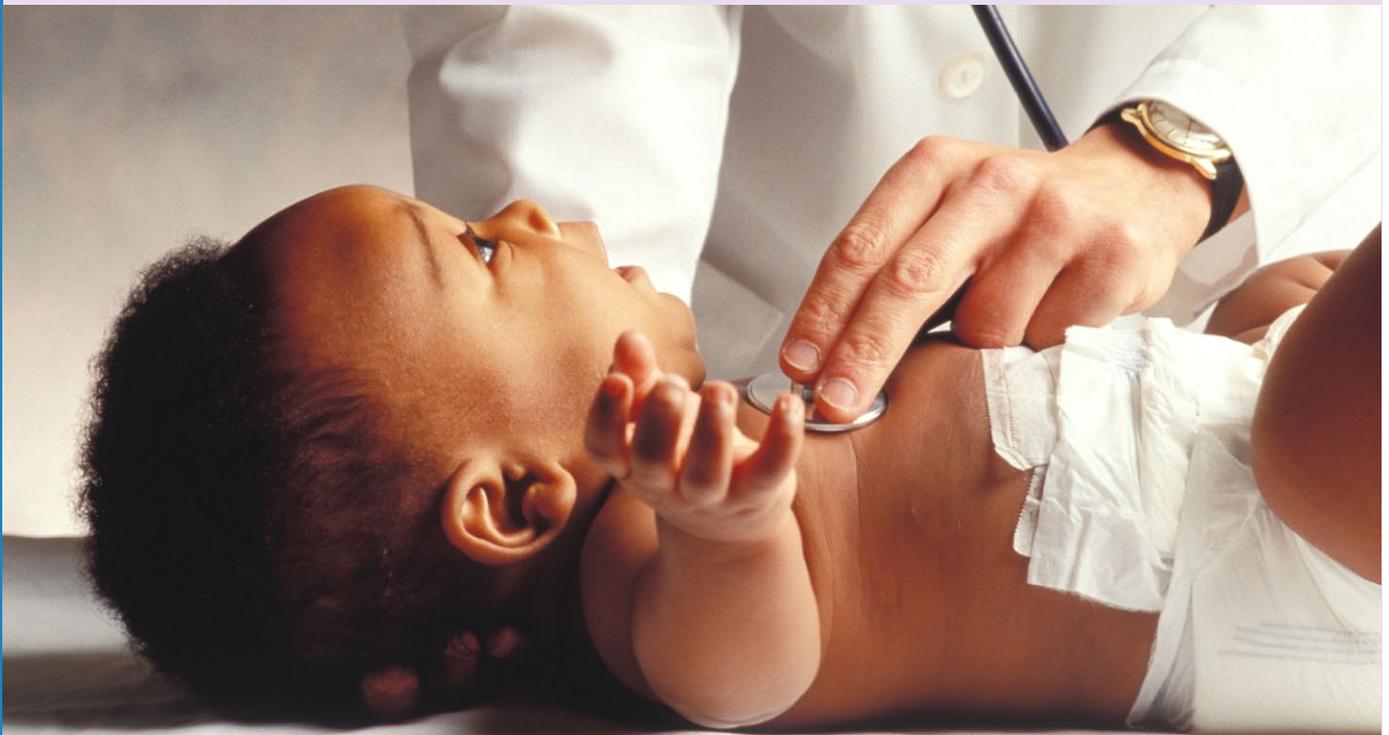
## Birth Facilities in Texas

Birth Distribution Graph:

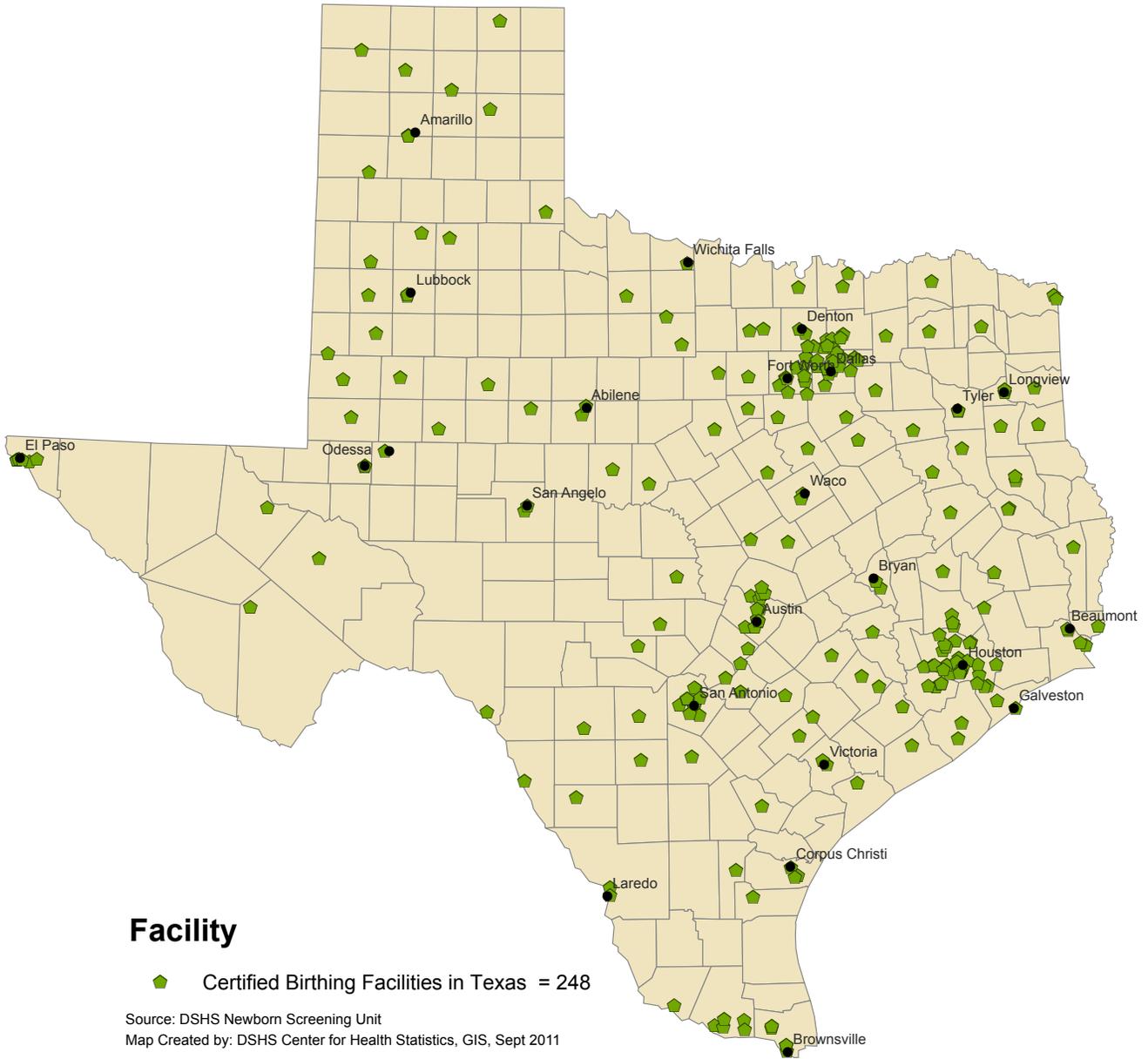


Data source: DSHS Vital Statistics Unit

Ninety-seven percent (382,039 babies) of all births in Texas occurred in a certified birthing facility during CY 2010. The other three percent (10,761 babies) were born in exempt facilities or in the home. This percentage includes military hospitals, which are not included in the Texas Health and Safety Code, Chapter 47; birthing centers operated by midwives, which are not included in Texas Health and Safety Code, Chapter 47 until the 83rd Legislative Session; and babies born in the home.



The map below illustrates the distribution of certified birthing facilities throughout Texas.



## TEHDI Program Certification

The TEHDI Program was created by HB 714, 76th Legislature, 1999. The law requires DSHS to establish certification criteria for implementing a UNHS program. During certification review, UNHS programs are evaluated using performance metrics. The performance metrics and benchmarks for CY 2010 were as follows:

UNHS Program Performance Metrics Metrics are calculated from data entered into TEHDI MIS	Goals	Minimum Standards
1. Percentage of newborns or infants screened prior to discharge	98%	95%
2. Percentage of newborns or infants who pass the screening prior to discharge	95%	90%
3. Percentage of newborns or infants in the neonatal intensive care unit who are not "In Process"	90%	85%
4. Percentage of records that contain parental contact information for those newborn or infants that do not pass the hearing screen at birth	90%	80%
5. Percentage of records with documented correspondence to parents about the newborn or infant's hearing screening result	95%	90%
6. Percentage of records that contain PCP contact information	90%	80%
7. Percentage of records with documented correspondence to PCPs about hearing screening results for all newborns	99%	95%
8. Percentage of hearing screening results imported electronically into TEHDI MIS	90%	90%

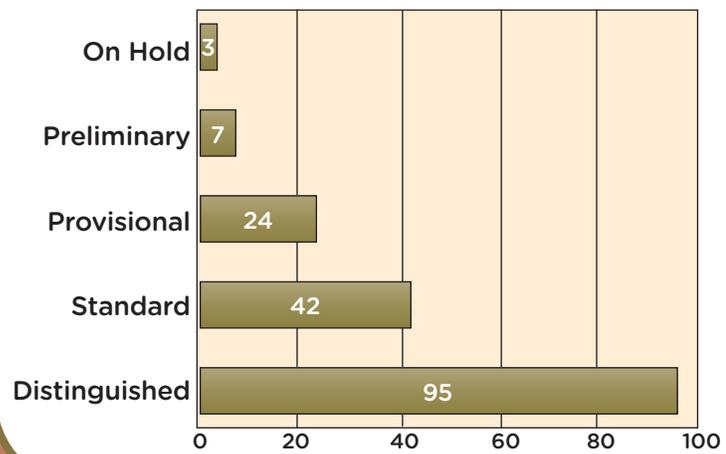
By Texas Administrative Code, Title 25, Part 1, Chapter 37, Subchapter S, a birthing facility's performance metric scores determine their certification level. Five certification levels can be assigned based on the metrics: 1) Preliminary; 2) Standard; 3) Distinguished; 4) Provisional; and 5) Decertified. A program that meets the "Minimum Standards" will be awarded a Standard certification level. A program meeting the "Goals" will be awarded a Distinguished certification level. Preliminary certification levels are awarded to a UNHS program during their first certification review, regardless of their performance. A program that does not meet the minimum standards will receive a Provisional certification level. UNHS programs with multiple Provisional certifications can lead to decertification.

The certification process is completed semi-annually in June and October. Forty-five days prior to certification, the TEHDI Program sends an announcement to the UNHS program manager, risk management office, and office of the chief executive officer within the birthing facility, notifying the facility that certification is due. The letter provides a listing of the performance metrics that will be assessed, as well as an invitation to participate in one of two teleconferences dedicated to certification. During the teleconferences, facilities are given an overview of the certification process and provided the opportunity to ask questions and report known issues that may impact their performance metrics.

OZ Systems provides the TEHDI Program with performance metric scores and recommended certification level for the facilities up for review. The TEHDI Program reviews the scores and issues reported by the facilities to determine a final certification level. Letters are then generated with the actual percentage results and the facility's certification level and are sent to the UNHS program manager, risk management office, and office of the chief executive officer within the birthing facility. A formal certificate accompanies the letter provided to the UNHS program manager.

In CY 2010, 171 birthing facilities, or approximately 69 percent of the 248 birthing facilities, were recertified by the TEHDI Program. Below is a chart of the certification outcomes after the data was reviewed:

**Certification Status of Birthing Facilities**



## Birthing Facilities Receiving Distinguished Certification in CY 2010

Austin Women's Hospital	Hillcrest Baptist Medical Center
Baptist Medical Center	Houston Northwest Medical Center
Bay Area - Corpus Christi Medical Center	Huguley Memorial Medical Center
Baylor Medical Center at Carrollton	Hunt Regional Medical Center
Baylor Medical Center at Frisco	Huntsville Memorial Hospital
Baylor Medical Center at Garland	Kingwood Medical Center
Baylor Medical Center at Grapevine	Knapp Medical Center
Baylor Medical Center at Irving	Laredo Medical Center
Baylor Medical Center at Waxahachie	Las Colinas Medical Center
Ben Taub General Hospital	Las Palmas Medical Center
Brackenridge Hospital	Longview Regional Medical Center
Brownwood Regional Medical Center	Lyndon B. Johnson General Hospital
Centennial Medical Center	Mainland Medical Center
Christus Hospital St. Elizabeth	Medical Center Of Lewisville
Christus Santa Rosa Hospital	Medical Center of McKinney
Christus Santa Rosa Hospital New Braunfels	Medical City Dallas Hospital
Christus Spohn Hospital Alice	Memorial Hermann Hospital Southeast
Christus St. Catherine Hospital	Memorial Hermann Katy Hospital
Christus St. John	Memorial Hermann Memorial City
Christus St. Michael Health System	Memorial Hermann Northeast
Clear Lake Regional Medical Center	Memorial Hermann Northwest
Cleveland Regional Medical Center	Methodist Dallas Medical Center
Covenant Hospital Levelland	Methodist Mansfield Medical Center
Cuero Community Hospital	Methodist Richardson Medical Center
Cypress Fairbanks Medical Center	Methodist Willowbrook Hospital
Del Sol Medical Center	Metroplex Health System
Doctors Hospital	Navarro Regional Hospital
Doctors Hospital- Laredo	North Austin Medical Center
Doctors Hospital Tidwell	North Central Baptist Hospital
East Houston Regional Medical Center - A Campus of Bayshore Medical Center	North Hills Hospital
East Texas Medical Center Tyler	Oakbend Medical Center
Ennis Regional Medical Center	Palestine Regional Medical Center
Good Shepherd Medical Center	Palo Pinto General Hospital
Hendrick Medical Center	Peterson Regional Medical Center
Hill Regional Hospital	Rice Medical Center
	Round Rock Medical Center

**Birthing Facilities Receiving Distinguished Certification in CY 2010 (cont.)**

San Angelo Community Medical Center  
 San Jacinto Methodist Hospital  
 Seton Northwest  
 Seton Southwest  
 Shannon Medical Center  
 Sierra Providence Eastside Regional  
 South Austin Hospital  
 Southwest Texas Methodist Hospital  
 St. David Georgetown  
 St. Joseph Medical Center  
 Texas Harris Methodist H.E.B.  
 Texas Health Arlington Memorial

Texas Health Presbyterian Allen  
 Texas Health Presbyterian Dallas  
 Texas Health Presbyterian Plano  
 Texoma Medical Center  
 The Woman’s Hospital Of Texas  
 The Women’s Hospital at Renaissance  
 Trinity Mother Frances Hospital  
 Valley Baptist Medical Center-Brownsville  
 Valley Regional Medical Center  
 Wadley Regional Medical Center  
 Weatherford Regional Medical Center  
 Wilson N Jones Medical Center

The following is an example of the TEHDI Program certificate that birthing facility programs receive during certification.

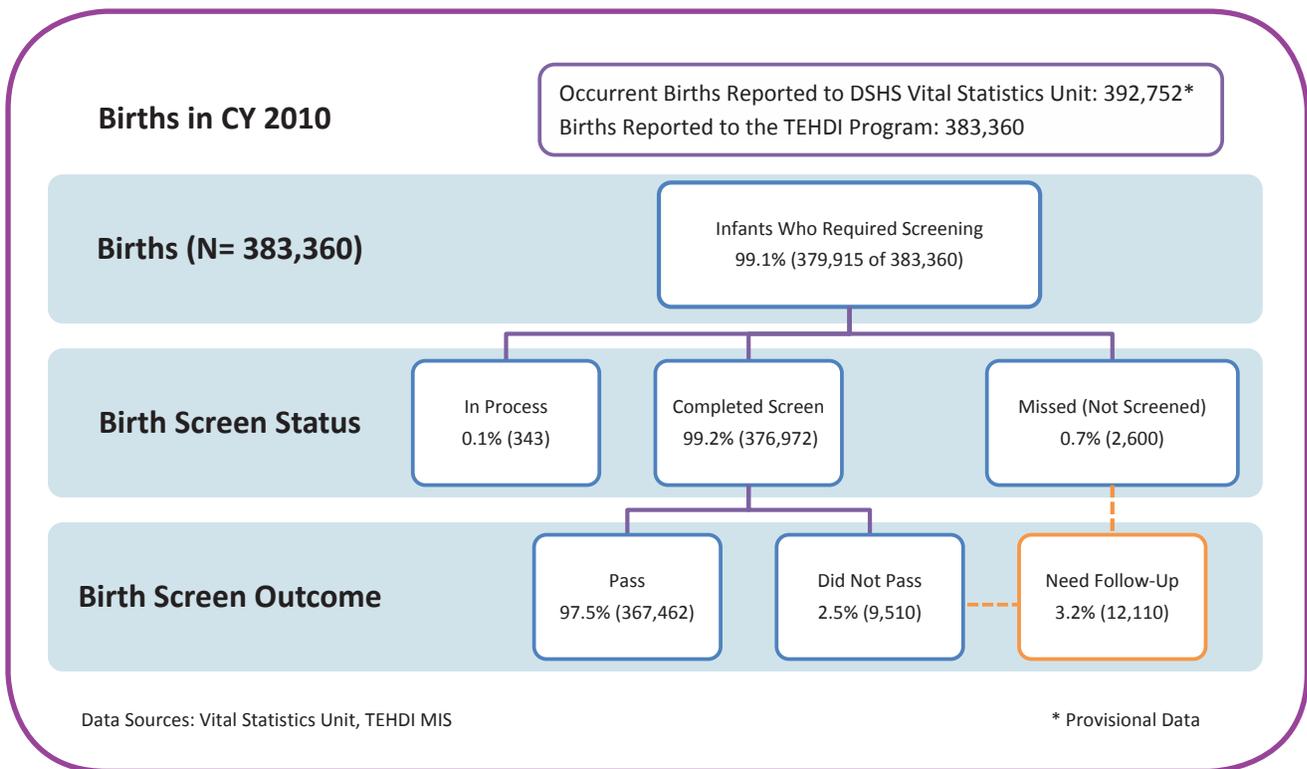


## CY 2010 Statistics

### Screening Process

The following is a depiction of how newborns and infants move through the birth screen process.\*

- “Infants who Required Screening” is used to account for the newborns or infants that meet certain criteria. It excludes those infants who are deceased, too ill to receive a newborn hearing screening, or family refusal of hearing screening.
- “In Process” refers to newborns or infants who were not screened and discharged from the birthing facility at the time of data collection, such as a baby still in the neonatal intensive care unit.
- “Need Follow-Up” is comprised of newborns or infants who either “Do Not Pass” or “Miss” the birth screen prior to discharge from a certified birthing facility. The newborns or infants within the “Need Follow-Up” category were referred for an outpatient hearing screening or in some special circumstances were referred directly to an audiologist for a diagnostic evaluation.



\* The variation in births reported to the Vital Statistics Unit and the TEHDI Program are due to home births or facilities that were not required to report in 2010. Facilities not required to report to TEHDI MIS in 2010 include hospitals licensed under Chapter 241 that offer obstetrical services and are located in a county with a population of less than 50,000, military hospitals, and birth centers operated by licensed midwives, unless they received funding for equipment in 2002.

## Follow-Up Care Results Based On Birth Screen Outcome

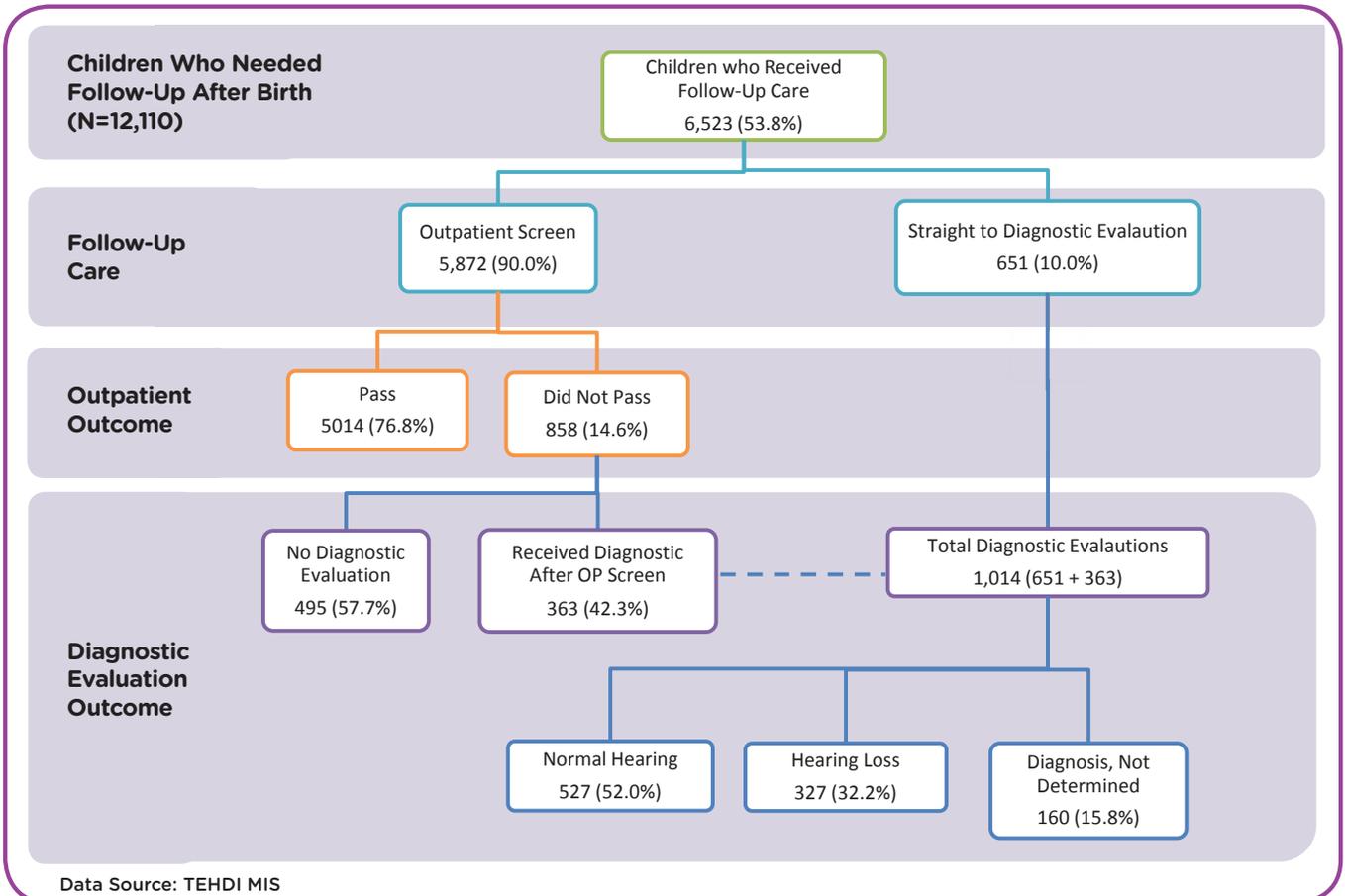
The following demonstrates the correlation between birth screen outcome and the receipt of follow-up care, including outpatient screening and/or diagnostic evaluation.

- If the newborn or infant did not pass the hearing screening at birth, he/she is more likely to receive follow-up care compared to a newborn or infant who missed the hearing screening at birth.
- The TEHDI Program attempts to address this issue by producing scripts and educational materials for providers and families to give a clear message about the importance of follow-up services.



## Outcome for CY 2010

The TEHDI Program uses the TEHDI MIS to track newborns and infants through the screening, diagnostic, and intervention process. The chart below illustrates the number of newborns or infants who received follow-up care and/or a diagnosis of hearing loss. The TEHDI Program categorizes lost to follow-up as newborns or infants who did not receive either an outpatient or diagnostic evaluation. The lost to follow-up rate is comprised of two possibilities: 1) newborns or infants who do not receive the recommended services, known as true lost to follow-up, and 2) newborns or infants who receive services, but the services are not reported to TEHDI MIS, which is known as lost to documentation.



Data Source: TEHDI MIS

## TEHDI Program / CDC-Funded Activities for CY 2010

In 2008, a three year cooperative agreement was awarded to the TEHDI Program by the CDC. The focus of the cooperative agreement is on data sharing/integration initiatives to address the ongoing need for accurate and complete data in TEHDI MIS. Major projects prior to CY 2010 included:

- hiring a Quality Assurance Specialist,
- implementing a pilot project with medical home providers, and
- evaluating the TEHDI MIS.

The TEHDI MIS evaluation was conducted from July through September of 2009 in collaboration with CDC representatives. The evaluation, in addition to other measures and processes, determined a need to: 1) increase the use of TEHDI MIS, and 2) improve the quality and accuracy of TEHDI MIS data. The findings provided direction for the cooperative agreement activities in CY 2010. Activities undertaken by the TEHDI Program to address the identified needs include the following:

### 1. Increase the Use of TEHDI MIS

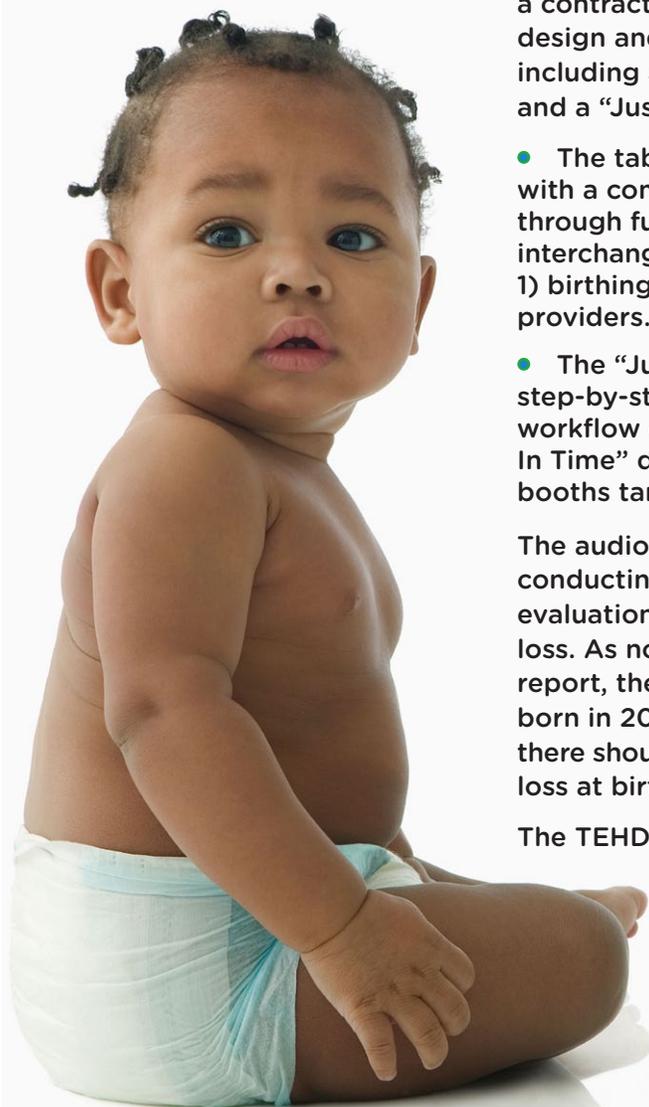
The TEHDI Program increased outreach efforts to potential TEHDI MIS users by hosting exhibit booths at conferences and workshops throughout the state. The program entered into a contract with Sherry Matthews Advocacy Marketing to design and produce outreach materials for conferences, including a table top display with interchangeable graphics and a “Just In Time” desk tool for audiologists.

- The table top display materials were designed to coincide with a comprehensive TEHDI Program curriculum developed through funding from HRSA. The program developed interchangeable messaging for the following three audiences: 1) birthing facilities; 2) audiologists; and 3) medical home providers.

- The “Just In Time” desk tool was developed to provide a step-by-step instructional guide on the use of the TEHDI MIS workflow designed specifically for audiologists. The “Just In Time” desk tools are distributed at conference exhibit booths targeting audiologists.

The audiologist plays a vital role in the TEHDI Program by conducting both outpatient screenings and diagnostic evaluations for newborns and infants with suspected hearing loss. As noted in the CY 2010 Statistics Section of this annual report, there were 250 infants with confirmed hearing loss born in 2010. With an incident rate of two to three per 1000, there should be an average 1,200 confirmed cases of hearing loss at birth.

The TEHDI MIS evaluation revealed that the routine workflow for the audiologists was more time consuming and complicated than other system components. The program identified these issues as major factors contributing to the low reporting statistics for audiologists. A modified audiologist workflow in the TEHDI MIS will be implemented in CY 2011.



## TEHDI Program / CDC-Funded Activities for CY 2010 (cont.)

It is anticipated that the “Just In Time” desk tool and the modified workflow may increase TEHDI MIS use by audiologists.

**TEXAS EARLY HEARING DETECTION AND INTERVENTION**

Access and update your patient's newborn hearing screening record online through the TEHDI system at [www.TEHDI.com](http://www.TEHDI.com).

**Hearing Screens in the hospital are the first step.**

- Ensure all families receive accurate hearing screening results.
- Help families understand next steps with educational and referral information.
- Report up-to-date information and accurate hearing screening results to the medical home and TEHDI.

**Three babies with hearing loss are born each day in Texas.**

**How does TEHDI benefit you?**

TEHDI can assist you by providing:

- In-person and online technical assistance trainings.
- Access to a list of professional contacts in your area online.
- Scripted messages and letter templates for all hearing screening outcomes.
- Free educational materials targeting parents and providers.

An example of the conference display board funded by the CDC cooperative agreement with targeted messaging for birthing facilities.

## 2. Improve the Quality and Accuracy of TEHDI MIS Data

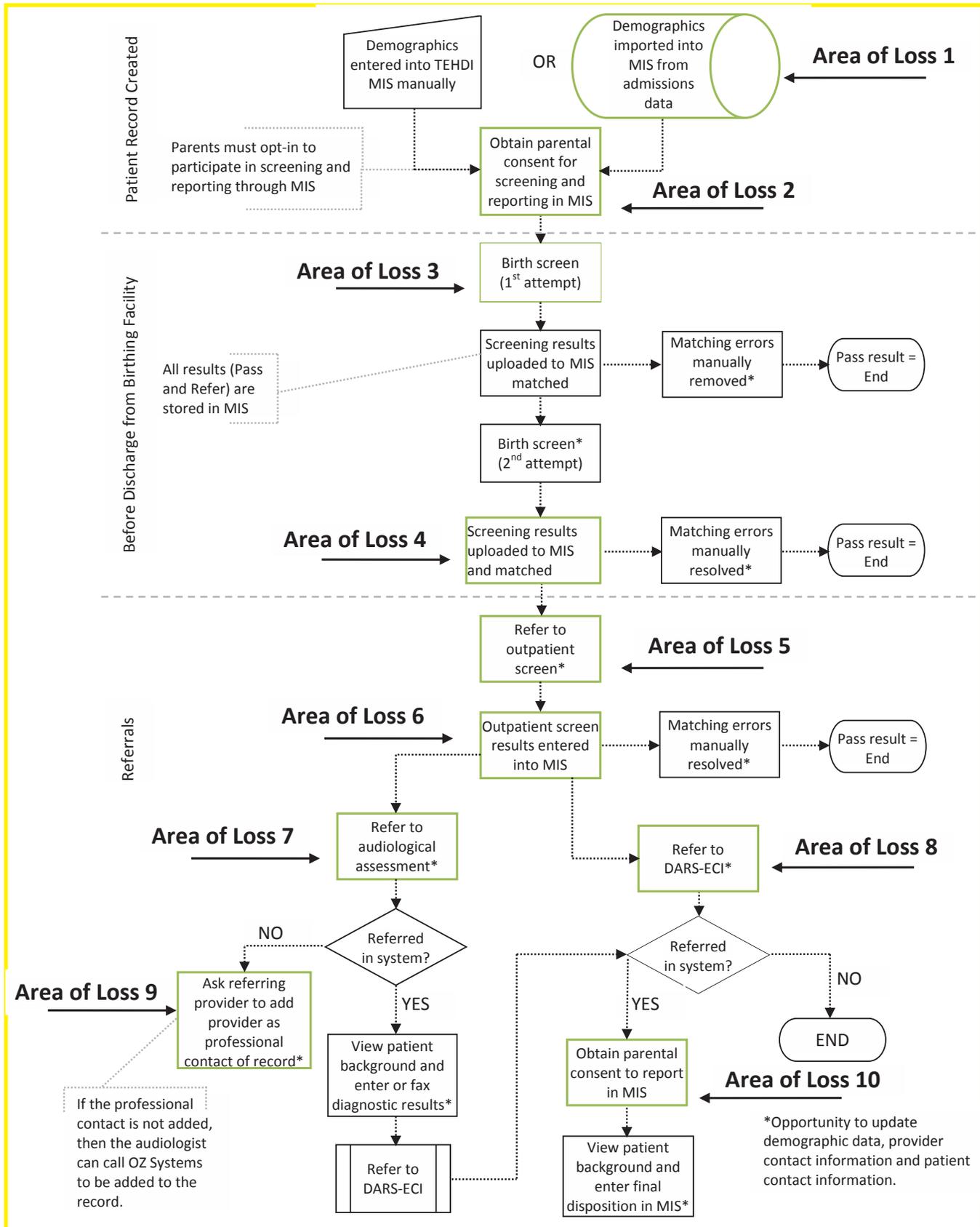
The TEHDI Program, with the help of DSHS Information Technology, contracted with Loblolly Consulting, L.L.C. to investigate data sharing/integration opportunities. The consulting firm was initially hired to conduct a detailed assessment of data sharing/integration between the newborn hearing and the newborn screening program within DSHS. During the early stages of the assessment, the consultant and TEHDI program staff expanded the scope to include a comprehensive review of the TEHDI continuum of care to identify potential points of focus for future data sharing/integration initiatives.

The consultants conducted multiple focus groups and interviews with TEHDI MIS users, as well as potential key players in future data sharing/integration initiatives. The assessment report identified 30 potential points at which a newborn or infant can become lost to follow-up/lost to documentation within the current newborn hearing screening process. See pages 25 and 26 for the TEHDI continuum of care flowchart. The identified loss points occurred when newborns or infants did not receive services in the following three major areas: 1) inpatient and outpatient screening; 2) diagnostic evaluation; or 3) early intervention.

The report provided multiple recommendations on internal and external data sharing/integration initiatives. The TEHDI Program used the recommendations and findings from the assessment to provide data sharing/integration options to DSHS leadership. DSHS decided to move forward on a contract with OZ Systems to implement a birth notification project. The initiative will obtain data directly from the certified birthing facilities electronic health record systems.

When completed, newborn hearing screeners in certified birthing facilities will match screening results that are directly imported from the hearing screening equipment with the appropriate patient record. The TEHDI MIS will be pre-populated with patient records created from the demographic information that was automatically imported from the birthing facility's electronic health record system. This initiative addresses the ultimate goal of improved quality and quantity of data, as well as eliminating duplicate data entry.

## TEHDI Continuum of Care Flowchart



## Area of Loss Breakdown

(Legend: *TEHDI Continuum of Care Flowchart*, see page 25)

Area of Loss	Category	Loss Point	Result	Key Reason(s)
1, 4, & 6	Importing/ Uploading Data	Lack of demographic match with screening results	Loss to documentation	Demographic differences between admissions data and screening device data makes matching the record difficult and creates the perception of a missed screen.
2	Parental Consent	Parental Non-consent for screen	Missed screen	Parents refuse screen potentially due to lack of awareness and inadequate education prior to screen request.
2	Parental Consent	Parental Non-consent for state notification	Loss to documentation	Parents refuse to release screening information to DSHS.
3, 4, 5 & 6	Birth Screen; Outpatient Screen	Equipment malfunction	Loss to documentation; Missed screen	Screening equipment malfunctions. Hearing screen is missed or data is corrupted or lost.
5, 7, & 8	Refer to Outpatient Screen, Audiology, and DARS-ECI	Outpatient screens, Audiologist, DARS-ECI	Missed screen; Loss to documentation	Parents not returning due to difficulty in finding a provider or other factors.
7	Referral to Audiologist	Audiologists not referred through the system	Loss to documentation	Audiologists report that they do not have access to the client record. Additional step required to gain access to the record by contacting TEHDI MIS contractor.
8	Referral to DARS-ECI	DARS-ECI providers not referred through system	Loss to documentation	Only those DARS-ECI providers referred through TEHDI MIS as professional contacts can update the patient record with results and information.
9	Reporting by Audiologists	Audiologists	Loss to documentation	Many audiologists say they don't have time to report. Double data entry is also a deterrent.
10	DARS-ECI Parental Control	No parental consent for DARS-ECI to report	Loss to documentation	Separate parental consent requirement for DARS-ECI reporting creates risk for an additional loss point.

\*Each area of loss contains multiple loss points.

## TEHDI Program / HRSA-Funded Activities

In 2008, the TEHDI Program received funding from HRSA to provide educational materials designed to help reduce the incidence of infants who are lost to follow-up at each stage of the TEHDI continuum of care. During CY 2010, the three-year HRSA grant and an additional one-year supplemental grant funded the following activities:

- Development of a TEHDI Program educational outreach curriculum and corresponding educational materials;
- Provision of outreach trainings conducted by TEA trainers;
- Development of webinars on two curriculum modules for “Prenatal” and “Universal Newborn Hearing Screening”;
- Partnership with a parent support group to review educational information for cultural diversity and sensitivity; and
- Collaboration with OZ Systems to fund the purchase of hearing screening equipment by birthing facilities.

### Outreach Education Curriculum

The TEHDI Program implemented educational initiatives to provide information regarding early hearing detection and intervention to targeted health care providers. The first phase of the outreach education project was a comprehensive curriculum to cover the TEHDI continuum of care. Curriculum contents were developed based on recommendations from focus groups that assessed the program’s website and education materials. Principles of cultural awareness and competency were incorporated into the curriculum to guide health care providers in the provision of care to a multicultural population.

During CY 2010, the TEHDI Program completed six of eight curriculum modules including:

1. **Overview** - educates administrative and leadership level individuals on the goals and objective of the TEHDI Program.
2. **Prenatal** - raises awareness of newborn hearing loss to prenatal health care providers by providing information regarding TEHDI Program resources for a child born with hearing loss.
3. **UNHS** - educates providers who perform the universal newborn hearing screening in the birth facility about their role in the TEHDI Program and best practice recommendations for performing the screening, obtaining the data, and communicating the screening process and results with the families and other providers.
4. **Medical Home** - informs medical home providers, such as pediatricians, about their role in the care of newborns, infants, and children with suspected or confirmed hearing loss and reinforces the positive aspects of a medical home.



## TEHDI Program / HRSA-Funded Activities (cont.)

5. **Outpatient Screening** - focuses on the responsibility of outpatient hearing screening providers for delivering follow-up care for newborns or infants with suspected hearing loss.
6. **Audiology & Diagnostic Evaluation** - provides specific information on the responsibilities of the pediatric audiologists in the diagnosis of hearing loss in a newborn or infant. The final two curriculum modules were developed in CY 2011 to complete the spectrum of health providers in the hearing screening, diagnosis, and intervention process.
7. **Ear, Nose and Throat Physicians** - introduces the TEHDI Program goals and activities to physicians who specialize in otolaryngology.
8. **Early Intervention** - provides information on the necessary collaboration between the TEHDI Program and regional DARS-ECI programs.

The TEHDI Program created the curriculum modules for outreach educators to provide information to stakeholders in a peer-to-peer setting. After an initial training, the outreach educators are certified to present specific curriculum modules based on their background and expertise. The educators receive standardized slide presentations, training manuals, and tool kits containing the appropriate educational materials for each module. The educational materials in the toolkit, including brochures, DVDs, and fact sheets, are provided to training session attendees at the end of each training by the outreach educators. All materials have been evaluated by subject matter experts for content and cultural competency. The TEHDI Program developed materials in English and Spanish.

### Collaboration with TEA

The TEHDI Program contracted with TEA to provide trainings using the curriculum modules, "Overview" and "Medical Home." Two trainers were selected and certified during a two day "train-the-trainer" session. The trainers established contacts in five pilot regions within Texas including Dallas/Plano, Fort Worth, Houston, McAllen, and Tyler. The TEA collaboration began in November 2010. The trainers presented a total of 15 trainings in November and December 2010 (five "Medical Home" and ten "Overview" presentations).

The "Medical Home" presentation was offered with the option of free continuing education credits as an incentive for participation. Each participant was required to complete an evaluation of the presenter and curriculum content. Results of the evaluations will be used to modify the presentations during an annual review process.

### Webinar Development

The TEHDI Program developed two online webinars on the "Prenatal" and "UNHS" curriculum modules. The program provided the script for the webinar and the webinar designer added motion, a narrator, and transition slides. The webinars are provided at no cost and available online at the DSHS TEHDI Program webpages: [www.tehditraining.com/prenatal](http://www.tehditraining.com/prenatal) and [www.tehditraining.com/UNHS](http://www.tehditraining.com/UNHS). Participants receive a certificate upon completion of the training.

### Collaboration with Parent Support Group

The TEHDI Program contracted with a parent support organization to provide a parent perspective on various program initiatives including educational materials. As the outreach curriculum was designed and implemented, the program received information and recommendations from parents who had newborns, infants, or children with a hearing loss. Their input was incorporated in the curriculum design. The parent support group also

## TEHDI Program / HRSA-Funded Activities (cont.)

provided feedback on a potential educational tool kit for parents, including making recommendations for materials to be included, and organization of the kit. In addition, the contract provided funding for a parent of a child with hearing loss to attend the national EHDl conference and annual conference on family support for children with hearing loss.

### Supplemental Grant for Hearing Screening Equipment

During CY 2010, the TEHDI Program received a supplemental grant from HRSA. Through a contract with OZ Systems, UNHS programs were offered a one-time opportunity to implement a Best Practices Project. The project provided stipends for the purchase of hearing screening equipment. Applicants that were awarded stipends were required to implement additional best practices within their facility to improve follow-up for newborns or infants at risk for hearing loss. Suggested practices included the:

- Use of scripts when delivering information about the hearing screening results to families;
- Creation of a local PCP list for parents to facilitate the selection of a pediatrician prior to discharge;
- Scheduling of an appointment for the outpatient hearing screening prior to discharge;
- Scheduling of an audiological assessment with a local pediatric audiologist at the time of a “did not pass” result on the outpatient screening, or
- Dedication of one or two team members to manage the data collection and entry into TEHDI MIS.

A total of 23 certified birthing facilities received the equipment stipend. The selected facilities were required to produce proof of purchase and two follow-up reports regarding their best practice implementation.



## Hearing Screener Workshops

As discussed in previous sections within the annual report, certified birthing facilities play a crucial role in the follow-up process for each newborn or infant suspected of hearing loss. The newborn's demographic and hearing screening data entered by birthing facility staff is the foundation for follow-up efforts by the TEHDI Program and health care providers as the newborn or infant moves through the screening, diagnosis, and intervention process. The program conducted hearing screener workshops throughout Texas to educate birthing facilities on the importance of their role in the TEHDI continuum of care. The targeted programs were birthing facilities with consistent unsatisfactory levels in the certification process. The TEHDI program invited Standard and Distinguished level birthing facilities when space was available to facilitate peer-to-peer support within the birthing facility community.

The one day workshop included presentations on the TEHDI Program, the TEHDI MIS, hearing screening equipment, and best practices for newborn hearing screening programs. Upon completion of each presentation, evaluations were provided by participants to assist in improving the workshop content. Subject matter experts discussed reporting methodology using TEHDI MIS and hearing screening equipment usage. In addition, hearing screening equipment vendors afforded the birthing facilities the opportunity to use different hearing screening equipment and ask questions about the equipment.

Collaborative efforts with DSHS, CDC, HRSA, the National Center for Hearing Assessment and Management, and OZ Systems allowed the TEHDI Program to host the workshops at no cost to the participants. The program conducted five workshops throughout the state, during CY 2010 with attendees representing 93 facilities. The workshops were held in the following cities: Amarillo, Corpus Christi, Galveston, Lufkin, and Tyler. The participant feedback and evaluations were overwhelmingly positive. The program will continue to conduct workshops in CY 2011.



## TEHDI Program Representation - Conferences During CY 2010

The TEHDI Program had education materials on display at the following conferences and events:

Name of Conference	Month(s) in 2010	Location of Conference
Texas Academy of Physician Assistants Conference	February	Houston, Texas
EHDI Conference	February-March	Chicago, Illinois
Texas Association of Neonatal Nurse Practitioners	March	Galveston, Texas
Texas Speech-Language-Hearing Association Convention	March	Fort Worth, Texas
Texas WIC Conference	April	Austin, Texas
Texas Association of Obstetricians and Gynecologists	April	Galveston, Texas
Association of Texas Midwives	April-May	Austin, Texas
Cochlear's Celebration of Speech and Hearing Month	May	Austin, Texas
Statewide Conference on Education for the Deaf and Hard of Hearing	July	Ft. Worth, Texas
Texas EHDI Summit	August	Dallas, Texas
Texas Pediatric Society Annual Meeting	November	Sugarland, Texas
Texas Academy of Audiology	November	Richardson, Texas



## Looking Ahead to the CY 2011 Annual Report

The CY 2011 annual report will go into detail on the following events and projects:

- HB 411, 82nd Legislative Session, 2011 was passed and impacted the TEHDI Program as follows:
  - Change in birth facility definition to remove exemptions and add new facilities;
  - Change in language from “shall offer” to “shall perform, either directly or through a transfer agreement,” with regards to the hearing screening within birthing facilities, which changed the newborn hearing screening in birthing facilities from an opt-in to an opt-out option; and
  - Change in language from “may access” to “shall access” TEHDI MIS for reporting.
- As discussed in the CDC section of the report, the TEHDI Program initiated a birth notification project with TEHDI MIS vendor, OZ Systems. The project plans to:
  - Import demographic data to TEHDI MIS using birthing facility’s electronic health records;
  - Reduce the need for duplicate data entry; and
  - Increase the quantity and quality of data within TEHDI MIS.
- The TEHDI Program works closely with the DARS-ECI Program to track the enrollment of newborns or infants with suspected or confirmed hearing loss. The goals of the collaboration with DARS-ECI Program are to:
  - Increase the number of referrals to the DARS-ECI Program through TEHDI MIS; and
  - Develop an informal data sharing agreement with the DARS-ECI Program.
- The TEHDI Program initiated a Care Coordination Pilot Project using HRSA funding during CY 2011:
  - Develop new and creative follow up methods for a targeted region of Texas; and
  - Examine the effectiveness of the new methods.
- The TEHDI Program continues to provide outreach to stakeholders using the HRSA developed curriculum. The following groups have staff members certified to use the curriculum modules in CY 2011:
  - TEA
  - TEHDI Program
  - OZ Systems
  - University of Texas School of Nursing

## TEHDI Program Resources

### TEHDI Program Websites

- a. DSHS TEHDI Program: [www.dshs.state.tx.us/tehdi](http://www.dshs.state.tx.us/tehdi)
- b. TEHDI MIS: [www.tehdi.com](http://www.tehdi.com)
- c. DSHS TEHDI Program Educational Materials:  
<https://secure.thstepsproducts.com/default.asp#newborn>

### Early Hearing Detection and Intervention Background Websites

- a. National Center for Hearing Assessment and Management (NCHAM):  
[www.infanthearing.org](http://www.infanthearing.org)
- b. Texas EHD: [www.txehdi.org](http://www.txehdi.org)

### Training Websites

- a. NCHAM - Newborn Hearing Screening Training Curriculum (Videos):  
[www.infanthearing.org/nhstc\\_dvd/streaming.html](http://www.infanthearing.org/nhstc_dvd/streaming.html)
- b. TEHDI Program Universal Newborn Hearing Screening Webinar:  
[www.tehditraining.com/UNHS/](http://www.tehditraining.com/UNHS/)
- c. TEHDI Program Prenatal Webinar:  
[www.tehditraining.com/prenatal/](http://www.tehditraining.com/prenatal/)
- d. Texas Health Steps Online Provider Education:  
<http://txhealthsteps.com>
- e. THSteps Newborn Hearing Screening Course:  
<http://txhealthsteps.com/catalog/coursedetails.asp?crd=1703>
- f. Office of Minority Health - Cultural Competency Information:  
<http://minorityhealth.hhs.gov/templates/browse.aspx?lvl=1&lvlID=3>

### Websites with Additional Information on Newborn Hearing

- a. Texas Connect: [www.callier.utdallas.edu/txc.html](http://www.callier.utdallas.edu/txc.html)
- b. Texas Hands & Voices™: [www.txhandsandvoices.org](http://www.txhandsandvoices.org)
- c. Texas Parent to Parent: [www.txp2p.org](http://www.txp2p.org)
- d. Communities of Support: [www.communitiesofsupport.org](http://www.communitiesofsupport.org)
- e. Educational Resource Center on Deafness:  
<http://www.texasdhhresources.org>
- f. Joint Committee on Infant Hearing: [www.jcih.org](http://www.jcih.org)
- g. March of Dimes: [www.marchofdimes.com](http://www.marchofdimes.com)
- h. My Baby's Hearing: [www.babyhearing.org](http://www.babyhearing.org)
- i. National Newborn Screening and Genetics Resource Center:  
<http://genes-r-us.uthscsa.edu>