Newborn Hearing Screens and the NICU Population

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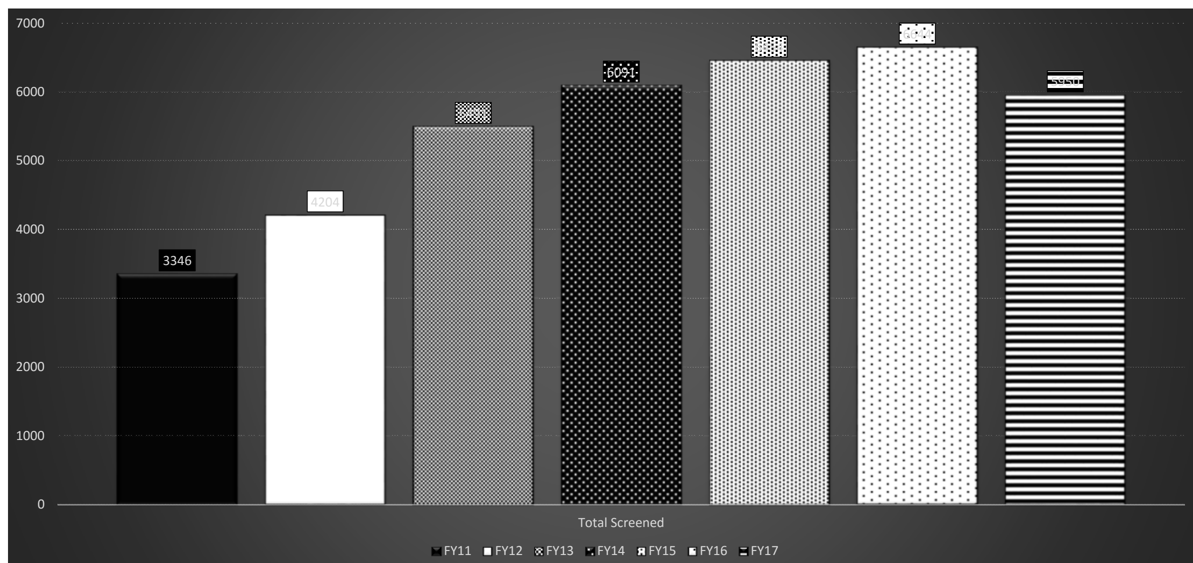
Number of Babies Screened at TCH Medical Center



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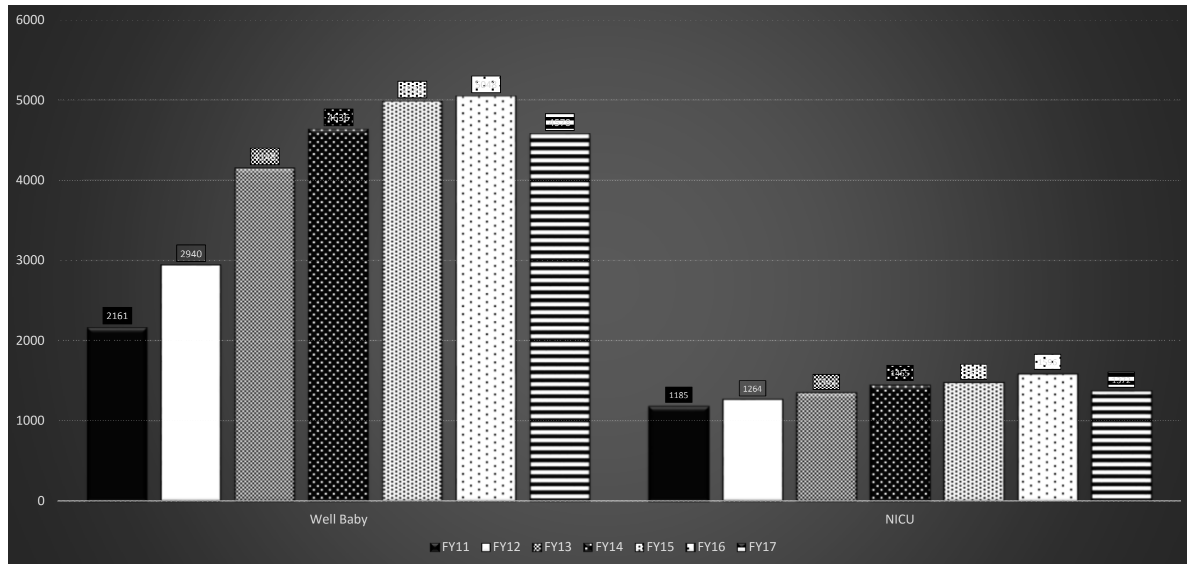

Well Baby FY 2017

	Number of Screens Completed	Pass Both		Refer		Pass Follow-up Screen		Dx Hearing Loss		No Contact	
1st Quarter	1206	1203	99.751%	2	0.166%	1	50%	1^	50%	0	0%
2nd Quarter	1025	1025	100.000%	0	0.000%	0	0%	0	0%	0	0%
3rd Quarter	1137	1134	99.736%	3	0.264%	1	33%	0	0%	2*	67%
4th Quarter	1210	1206	99.669%	4	0.331%	4	100%	0	0%	0	0%
Year Total	4578	4568	99.782%	9	0.197%	6	67%	1^	11%	2*	22%

^ Sensorineural hearing loss

* One has moved out of state and one has had no contact with TCH since discharge

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Well Baby FY 2018

	Number of Screens Completed	Pass Both		Refer		Pass Follow-up Screen		Dx Hearing Loss		No Contact	
1st Quarter	1285	1279	99.533%	6	0.467%	4	67%	2	33%	0	0%
2nd Quarter	1353	1348	99.630%	5	0.370%	0	0%	3	60%	2*	40%
3rd Quarter											
4th Quarter											
Year Total											

* One family is working with International Services to schedule.
* Voicemails left for one family and they have not returned calls.
- **19% growth in the first half of FY18 compared to first half of FY17 (407 more screened)**

NICU FY 2017

	Number of Screens Completed	Pass Both		Refer		Normal Hearing		Dx Hearing Loss		No Contact		Deceased / Discharged to Hospice / Follow-up Out of State	
1st Quarter	387	366	94.574%	21	5.426%	5	24%	10	48%	5	24%	1	5%
2nd Quarter	315	305	96.825%	10	3.175%	1	10%	3	30%	3	30%	3	30%
3rd Quarter	315	298	94.603%	17	5.397%	2	12%	7	41%	7	41%	1	6%
4th Quarter	355	340	95.775%	15	4.225%	0	0%	7	47%	7	47%	1	7%
Year Total	1372	1309	95.408%	63	4.592%	8	13%	27	43%	22*	35%	6	10%

* 3 families cancelled the OP ABR, 2 could not be tested in NICU due to no sleep and high ambient noise levels, and 1 no-showed for OP ABR

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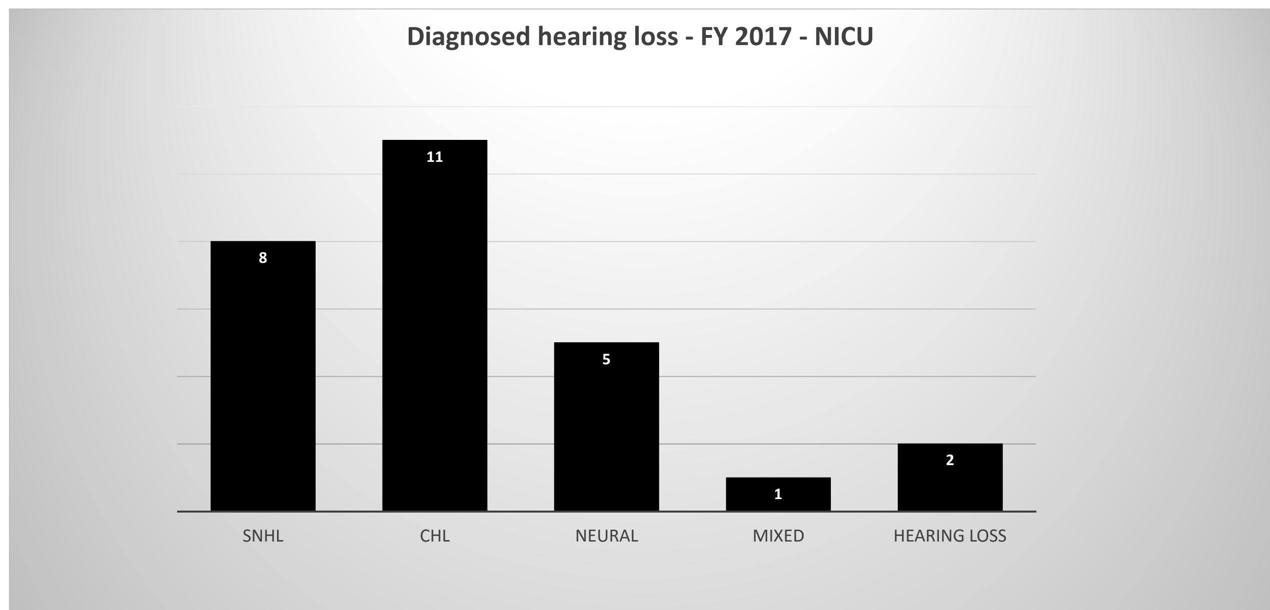


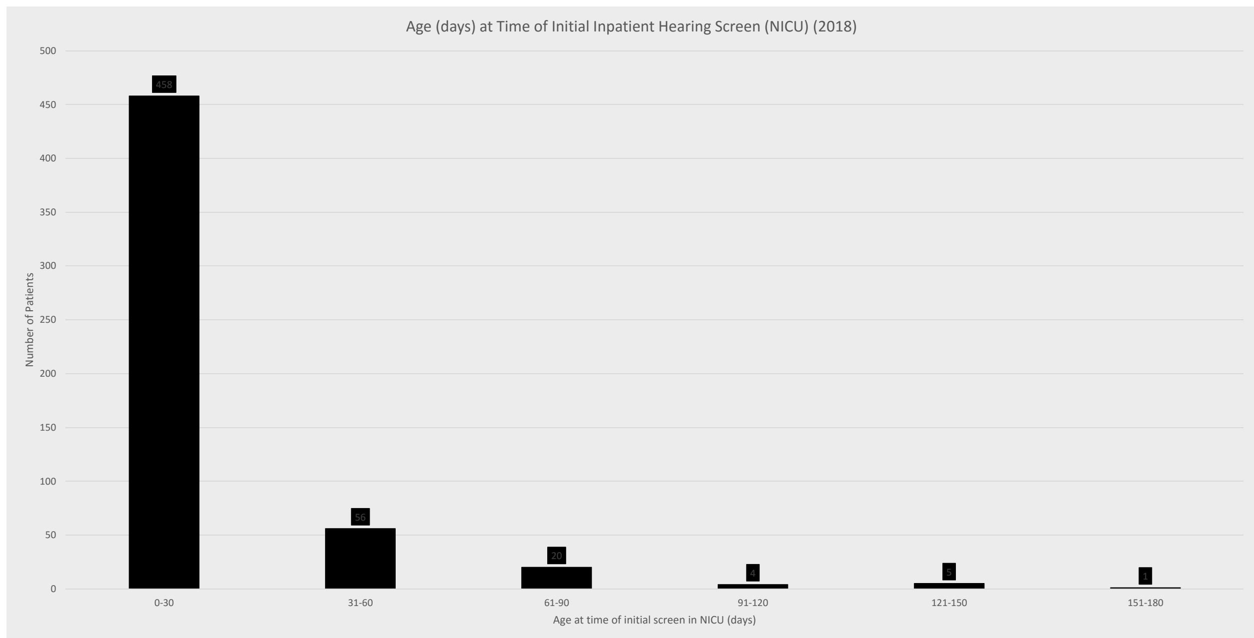
2% of NICU population diagnosed with hearing loss

NICU 1/1/18 – 6/30/18

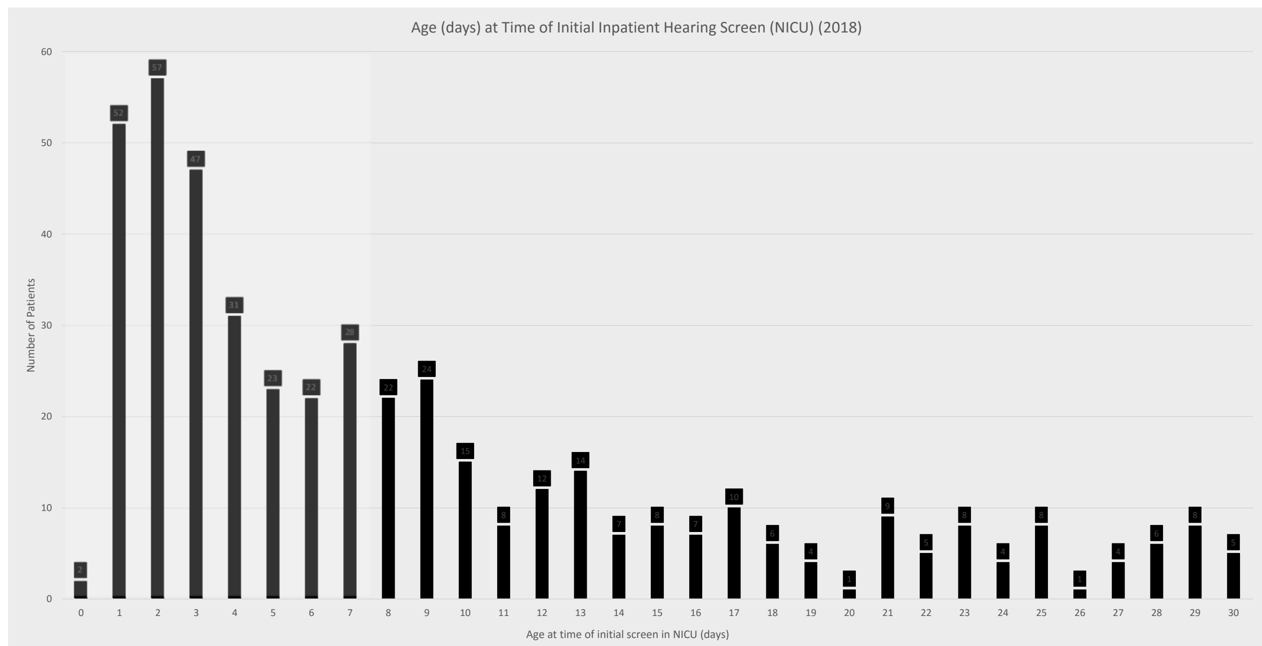
- 557 NICU patients
- 3 deceased
- 544 screened
- 10 not yet screened
  - 1 in NICU for 6 months and receiving palliative care
  - 3 in CICU for 3-4 months
  - 5 in NICU and not yet "medically stable"
  - 1 cannot be screened due to bilateral aural atresia
    - Audiologist at bedside 7/3/18 for diagnostic ABR; however, baby did not sleep
    - Sedated ABR will be ordered

NICU 1/1/18 – 6/30/18

	Number of babies
Did not pass the initial hearing screen	31 (5.7%)
Normal hearing	3
Diagnosed with hearing loss	14 (2.6%)
Future appointment for diagnostic ABR	9
No contact	1
Follow-up out of state	1
Deceased	3



83% of babies screened by 1 month of age



262 babies (47%) screened by 1 week of age

Timing of Diagnostic ABR

- 17 completed diagnostic ABRs
  - 6 (35%) completed within 1 week of screen
  - 9 (53%) completed within 2 weeks of screen
  - 15 (88%) completed within 1 month of screen
  - 17 (100%) completed within 2 months of screen

Loss to Follow-up (LTF)

- Nationally, 95% of babies receive the inpatient newborn hearing screen prior to discharge
- Nationally, approximately 33% of patients do not receive timely and appropriate diagnostic testing and early intervention (LTF)
- In Texas, LTF rate is higher:
  - 53.7% in 2015
- Texas Children's Hospital Medical Center (Pavilion for Women and Newborn Center) LTF rates:
  - 33% for FY17 (22% WB, 35% NICU)
  - 13% for FY18 (through May) (18% WB, 11% NICU)
  - Contact attempts ongoing

Why are LTF/LTD rates so high?

- Contact information incorrect in TEHDI (e.g., disconnected phone numbers, invalid addresses)
- Patient name changes
  - Can lead to multiple records in TEHDI
- Insurance coverage
- Parental refusal to release personal information to TEHDI

Medicaid and Medical Insurance Coverage

- The law requires insurance (Medicaid or private) to cover the hearing screening
  - Parents often do not know this and they will not schedule necessary appointments due to concern for out-of-pocket expenses
- Hearing aids are not always covered
- Medicaid will typically cover the cost of hearing aids; however, some Medicaid types do not always authorize hearing aids
- Private insurance coverage varies greatly
- Charity options are available if needed

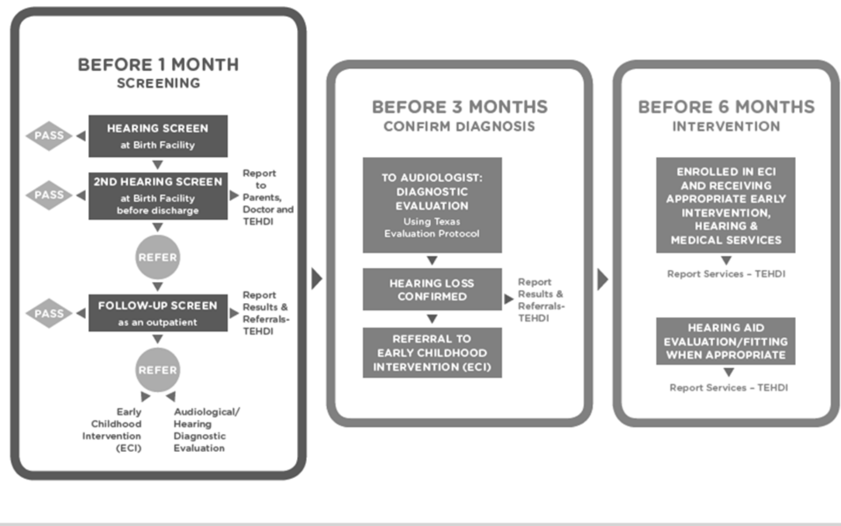
Texas Administrative Code
TITLE 25 Health Services
PART 1 Department of State Health Services
CHAPTER 37 Maternal and Infant Health Services
SUBCHAPTER S Newborn Hearing Screening

Effective May 14, 2015

RULE §37.503 Confidentiality and General Access to Data

This section establishes the guidelines to protect the confidentiality of patients in accordance with Texas Occupations Code, Chapter 159, and Texas Health and Safety Code, §47.008 (relating to Confidentiality and General Access to Data) and §47.009 (relating to Immunity from Liability).

(1) The birthing facility, provider, or program shall ensure that the written consent of a parent is obtained before any individually-identifying information on the newborn or infant is released through the TEHDI MIS.



American Academy of Pediatrics (AAP) Early Hearing Detection and Intervention (EHDI) Goals

- Ensure every child with hearing loss is diagnosed and receives appropriate, timely intervention.
- Enhance pediatricians', other physicians', and non-physician clinicians' knowledge about the EHDI 1-3-6 guidelines—screening by 1 month of age, diagnosis of hearing loss by 3 months of age, and entry into early intervention (EI) services by 6 months of age.
- Ensure newborn hearing screening results are communicated to all parents and reported in a timely fashion according to state laws, regulations, and guidelines.
- Incorporate EHDI into an integrated, medical home approach to child health.

Texas Administrative Code
TITLE 25 Health Services
PART 1 Department of State Health Services
CHAPTER 37 Maternal and Infant Health Services
SUBCHAPTER S Newborn Hearing Screening

RULE §37.505 Screens, Follow-up, and Reporting

(a) After an initial or a follow-up hearing screening is performed, the birthing facility that operates the program, other programs, or other providers shall report the results to the parents. The results are also reported to the attending or primary care physician or other applicable healthcare provider, and with parental consent, any individually-identifying information to the department according to the requirements in Texas Health and Safety Code, Chapter 47. The results are reported to the department within five business days after the date of birth or the date of discharge. The physician or health care provider attending to the infant who needs follow-up care should direct, track, and coordinate appropriate and necessary care.

(b) The follow-up hearing screen should be performed within 30 days from date of discharge from the birthing facility.

(c) If the newborn or infant does not pass the follow-up hearing screen, the program or provider performing the screens shall:

(1) assist in coordinating and scheduling a diagnostic audiological evaluation with another program or licensed audiologist who performs these evaluations; and

(2) refer the newborn or infant to Early Childhood Intervention Services, Department of Assistive and Rehabilitative Services.

(d) Unless the newborn or infant has been hospitalized since birth, the diagnostic audiological evaluation must be completed:

(1) no later than the third month of birth; or

(2) upon referral by the newborn's or infant's primary care physician or other applicable health care provider.

(e) The program, person, or provider that identified or diagnosed the newborn or infant with hearing loss shall refer the family for Part C Early Childhood Intervention services, in accordance with 34 Code of Federal Regulations §303.303(a)(2)(i) (relating to Referral Procedures) as soon as possible, but in no case more than seven days after the child has been identified and not later than the sixth month after birth and through the time the child is an infant, unless the infant has been hospitalized since birth. A referral can come from a primary referral resource identified in §303.303(c) (relating to Primary Referral Sources).

1-3-6 Guideline

- How can we make this work for the NICU population?
- The initial screen needs to be completed as early as medically possible
  - Do not wait for discharge orders
  - Requires excellent communication among hearing screen technicians and NICU staff
- If the initial screen is completed as early as medically possible, the diagnostic ABR can be completed prior to discharge in most cases

NICU = Difficult Environment for an ABR

- Ambient and electrical noise
- Ventilator
- Infusion pump
- Neighbors' bedside equipment
- Baby not sleeping
  - For the diagnostic ABR, the baby must be asleep and quiet for 45-90 minutes.

Suggestions for Successful NICU Diagnostic ABRs

- If possible, move patient into a private room for the ABR
- Unplug unused equipment surrounding the bed
- Feed the baby immediately prior to the ABR
- Have the parent or a volunteer hold the baby during the ABR
- For older babies, sedation may be needed