PROCEDURE FOR: **Hearing Screening: Newborn**

POLICY:

1. In accordance with Connecticut General Statutes (Public Act 19a-59), performance of universal newborn hearing screening is a standard of care.

   a. All well newborn infants admitted to the Newborn Nursery will be screened.

   b. Infants admitted to the Neonatal Intensive Care Unit will be screened after reaching 34 weeks' corrected gestational age.

2. The Nursing Manager of the nurseries is ultimately responsible for the Newborn Hearing Screening Program. Responsibility for the oversight and implementation of the program resides with the Neonatal Clinical Nurse Specialist or designee of the Nursing Manager of the nurseries.

3. Only individuals who are specifically trained will perform hearing screening. Responsibility for the training of screening personnel rests with the Neonatal Clinical Nurse Specialist or other designated individuals.

   a. Staff may be trained by an experienced staff RN as designated by the Neonatal Clinical Nurse Specialist.

   b. Staff performing under the following job descriptions are trained to perform hearing screening:

      1. Clinical Nurse I to IV - Newborn Nursery

      2. Nursing Care Associates

      3. Clinical Nurse II to IV – NICU

      Not all RNs in the NICU will be trained to perform hearing screening because of the difficulty in maintaining competency with a large staff. Staff who have an interest in learning to perform will be trained based upon assessment of unit needs.

   c. Hearing screening staff will have competency validated prior to independently performing screens.

      1. Selected aspects of performance of newborn hearing screening may be included in annual competency assessment.

   d. The training plan for newborn hearing screening is incorporated into the NICU/Newborn Orientation Plan.

      1. All NICU/NBN nursing staff will receive an overview of the Newborn Hearing Screening Program.

4. Infants will be screened using the Natus Algo 3 Newborn Hearing Screener (Natus Medical, Inc., 1501 Industrial Road, San Carlos, CA 94070, Phone: (650) 802-0400, Technical Service: (800) 255-3901.

   a. The newborn hearing screener will be operated according to the instructions listed in the equipment manual.

PROCEDURE FOR: **Hearing Screening: Newborn**

b. The equipment manual will be stored with the hearing screener.

c. The equipment will be checked by Clinical Engineering at regular intervals.

5. Parents who refuse hearing screening because of conflicts with religious beliefs and practice must sign the newborn hearing screening waiver which is located in the CT Department of Public Health Manual "Universal Newborn Hearing Screening Program Birthing Facility Guidelines". The completed form will be placed in the infant's chart and a copy sent to the Department of Public Health.

6. If an infant is back transported from the NICU/SCN or NBN to home hospital prior to completion of hearing screening, the receiving nursery and primary care provider will be notified.

7. Data files from the Natus Algo 3 hearing screener will be downloaded to a diskette on a regular basis. A hard copy of the data will be maintained.

8. Newborn hearing screening information, including results and missed screens, will be communicated to the CT Department of Public Health by the individual so designated by the nursing manager.

9. When an infant "refers", a second screen will be performed on both ears prior to the infant's discharge. It is recommended that this repeat screen be done at a later time, rather than immediately, especially for newborns who may have amniotic fluid and/or vernix in the ear canal.

   a. An exception to this may be when the infant has a syndrome that is known to be associated with hearing loss.

10. Hearing screeners are required to perform initial 3 minute nursery scrub and to wash hands between infants.

11. Audiology referrals may be made at the discretion of the attending physician for infants at high risk for hearing loss.

12. Audiology referrals may be made when infants have normal screens but are at risk for progressive hearing loss, for example congenital CMV.

DESIRED PATIENT OUTCOMES:

1. Infants with hearing loss will be identified early so that services can be initiated as soon as possible.

2. Infants with hearing loss or those at risk for progressive hearing loss will have timely follow-up with Audiology after discharge from the nursery.

3. Infants diagnosed with hearing loss will have a Birth-to-Three referral initiated (if criteria are met).

4. Screening "refer" rates of < 5% will be achieved.

PROCEDURE FOR: Hearing Screening: Newborn

PROCEDURE:

ACTION	**POINTS OF EMPHASIS**
1. Prior to beginning the screening, determine the following:	1. Testing may need to be deferred to another time.
a. The infant is greater than 34 weeks' corrected gestational age.	
b. The infant weighs more than 1800 grams.	
c. There is no skin condition present (such as epidermolysis bullosa) that would preclude placement of adhesive sensors and care couplers.	c. Another mode of testing, such as with ear probe, may be needed. This would need to be done by an audiologist.
d. Are there craniofacial malformations that might increase the likelihood of hearing loss?	
e. If the infant is currently on antiobiotics (Vancomycin, Gentamicin, Tobramycin) or other ototoxic meds such as Furosemine (Lasix).	e. Ideally, antiobiotics should be discontinued prior to screening. If the infant will be discharged immediately after completing the antibiotic course, the screen should be performed as close to discharge as possible.
f. Is the infant on CPAP? Is there a tracheostomy?	f. Infant flow CPAP and trach collars create excessive ambient interference to screening. Efforts should be made to complete hearing screen prior to performance of tracheostomy.
g. If the infant is having a problem with suspected gastroesophageal reflux that is not yet being treated with meds.	g. Defer screening to reevaluate status of GE Reflux.
h. If the infant is in an appropriate state for testing – quiet, asleep after feeding is recommended.	
i. Are there other issues happening? Are there concerns that the infant may be septic, may have had other procedures, lab work, difficult IV starts or other nursing concerns?	
2. Scheduling process for newborn hearing screening:	
a. Well infants in NBN:	

PROCEDURE FOR: Hearing Screening: Newborn

1) MD order for newborn hearing screen is a part of the standing admission orders.

2) Hearing screening may be performed as long as the infant is physiologically stable.

    2) Amniotic fluid or vernix in the ear canal may increase refer rates if screening is done too soon after birth.

3) The status of hearing screens will be communicated during change of shift report.

b. NICU, SCN and NBN Boarders:

1) The Neonatal CNS or designee will review the Neonatal log book for all admissions.

2) The names of all infants will be written in the Audiology communication book at the date that corresponds with their reaching 34 weeks' corrected gestational age.

3) The Neonatal CNS or designee, in conjunction with the NICU attending and charge nurse, will assess the immediacy of discharge status of infants hospitalized short term in NICU.

4) Weekly discharge planning rounds will also provide a forum for determination of infants who require hearing screening.

5) In the event that a screen has been missed or a second screen is required because of "refer" on the initial screen and the infant has been discharged, the case manager will contact the family and make arrangements for the screening to be done.

    a) The form "Infant Discharged Without Hearing Screen" will be completed and a copy sent to the Department of Public Health.

    1.

3. Performance of Hearing Screening:

PROCEDURE FOR: Hearing Screening: Newborn

a. The hearing screener checks the Audiology Communication Book to determine which infants require screening or receives report from nursing staff that infant is ready for discharge.

b. The screener verifies that the infant is ready to be screened.

b. Refer to Step 1 of this procedure.

c. The screener stamps the infant's order sheet with the stamped order for newborn hearing screening.

c. The order will then be dated/timed and signed by the MD or AP and then transcribed by the RN.

d. The hearing screen is performed according to the instructions in the equipment manual.

1) Hearing screening is typically done in the infant's incubator or crib in the nursery.

1) Screen may be done in family rooms if there is excessive activity in the nurseries.

2) For well newborns, screens may be done in mother's room on the OB floor.

2) Screens done in the presence of a parent should be performed by someone who is available to answer questions in the event of a referral.

3) Screens may be done while a parent or nurse is holding an infant.

3) There may be myogenic interference from respirations or heartbeat.

a) This may be beneficial for some infants in NICU such as those with CNS disorders such as HIE or those who are being weaned from opioids.

4) Screens may be done while a parent or nurse is holding an infant.

5) Demographic data and risk factors for hearing loss are to be entered on all patients.

5) Refer to Appendix A for list of risk factors.

4. Educate families about hearing screening by distributing brochures and showing videos. Education components include:

4. Video is available on parent education channel.

a. Rationale for newborn hearing screening.

b. Procedure – noninvasive.

c. Location of testing.

d. Usual time that the tests will take.

PROCEDURE FOR: <u>Hearing Screening: Newborn</u>

1) "Pass" – hearing should be adequate for normal speech and language development.

2) "Refer" – further testing by audiologist is necessary. It does not mean that the infant has a hearing loss.

2) State of Connecticut Department of Public Heath brochures are available to provide information about testing sites.

e. Families' role in assessing infant's hearing and bringing concerns to their pediatrician.

f. Risk factors in NICU patients that might increase the likelihood of hearing loss.

g. Parent to parent network available pending diagnostic testing.

g. Brochures for parent to parent network are available.

h. The Birth-to-Three system and services available when diagnosed with hearing loss or at risk for progressive hearing loss (for example, CMV patient).

h. Developmental specialists will make the referral when infants meet criteria for Birth-to-Three.

5. Document results of hearing screening:

a. Newborn Log Book (well newborns only): date, initials of screener, results of screen.

b. Audiology Communication Book (NICU/SCN/NBN Boarders): date, initials of screener, results of screen.

c. Parent Letter: write in date of screen, label with addressograph label or addressograph the form.

1) If "pass" – check the box for pass and place paper in parent mailbox (NICU/SCN/NBN) or on infant's clipboard (well newborns).

2) If "refers" – do not complete the "Recommendations" section. Place the letter, along with the physician letter, in the chart slip cover with the Nursery Discharge Sheet.

d. Physician Letter: addressograph both pages.

PROCEDURE FOR: **Hearing Screening: Newborn**

1) Write in:

   a) MD name (first and last) or last name and city/town of practice.

   a) This is the infant's primary care provider after discharge, not the NICU or NB service attending. The name of the primary care provider may be found in the newborn log book for well newborns; or in the files of the care manager of the neonatal information system database for patients who have been hospitalized in the NICU. Many families may not have selected a primary care provider at the time the screen is completed.

   b) Date and signature of person performing the screen.

   c) Check "AABR" as the method of testing.

   d) Recommendations section:

      1] If "pass", check the box and place the letter in the chart in the slip cover with the Nursery Discharge Sheet.

      2] If "refer", do not check the box for referral until the infant has referred two times.

2) Place the result sticker from the Natus screener on the letter.

2) Stickers containing results cannot be printed once the machine has been turned off.

3) The physician letter will be faxed to the infant's primary care provider at discharge. Lists of current addresses, phone numbers and fax numbers of CT pediatricians are maintained in the Newborn Nursery and the NICU.

6. Equipment Maintenance:

   a. Hearing supplies will be used for a single infant.

PROCEDURE FOR: Hearing Screening: Newborn

b. After completion of the screen, all cables and sensor wires that have been in contact with the infant or bedding should be wiped with SaniWipes. SaniWipes should be wrung out so not dripping wet.

b. The solution should be allowed to dry before the equipment is used on another infant.

c. The outside of the laptop may be wiped with SaniWipes which have been wrung out so there is no liquid dropping from them.

d. The coupler cables and sensor wires are stored in the drawer or bin, taking care that they cannot be pulled against the sides of the drawer.

d. There should be no excess length of cable outside the machine that can be "caught" in the wheels.

e. Screener is stored in the newborn nursery.

f. Every month (usually on the first) the machine is to be left plugged in and turned on for a 24 hour period to keep the system fully charged.

f. The screener may be turned off and taken to infants' bedsides during this time.

7. Communication of Results:

   a. Parents or responsible party notification:

      1) If infant passes the screen, parents will be informed verbally and by letter.

      2) If infant "refers", the letter should not be left for the family until they have been spoken to about the interpretation of the results. This communication should be done by the attending physician or advanced practitioner.

   b. Primary Care Provider Notification:

      1) Results of hearing screen (physician letter) will be faxed at the time of infant's discharge.

      2) For infants who have been hospitalized in the NICU, results of hearing screen and plans for follow-up, if needed, are included in the computer-generated discharge summary.

PROCEDURE FOR: Hearing Screening: Newborn

c. Department of Public Health Notification:

c. Refer to CT Department of Public Health Manual: "Universal Newborn Hearing Screening."

1) Required data will be entered into the Department of Public Health Newborn Screening System for inborn infants.

2) For outborn infants, the records will be electronically transferred to JDH by the birth hospital. The results of hearing screening will be entered in the same manner as for inborn infants.

8. Referrals for Diagnostic Testing:

8. A parent-to-parent support network is available through the Division of Child and Family Studies. A referral may be made with the family's approval.

a. Referrals for diagnostic testing will be made to the Audiology Department at the University of Connecticut Health Center or to another center per parental request or based on infant's needs. This information will be documented on the Nursery Discharge Sheet.

1) Appointments at UCHC may be made by calling Audiology appointments at x4414 or x2804.

2) When a referral is made, the following information needs to be provided: baby's name, medical record number, birth date, pertinent discharge information and newborn metabolic screen accession number.

2) The person making the referral should state that testing for a pediatric patient is required.

3) Scheduled Audiology appointments will be written on the Nursery Discharge Sheet which is given to the family at discharge.

4) If the infant is discharged without an appointment, the phone number for Audiology will be written on the Nursery Discharge Sheet so that the parents can make an appointment on their own.

4) Phone numbers of testing centers are available in the State of CT Department of Public Heath pamphlet "A Parent's Guide to Diagnostic Hearing Testing of Infants".

PROCEDURE FOR: **Hearing Screening: Newborn**

5) If the infant is discharged without and Audiology appointment, the Case Manager will inform the primary care provider about the need for follow-up testing and this information will be documented in the discharge summary.

APPROVAL: Nursing Standards Committee

EFFECTIVE DATE: 3/84

REVISION DATES: 3/85, 7/87, 3/92, 5/96, 9/99, 8/00, 10/01, 9/02, 12/05, 12/08

REVIEWED DATES: 12/07