Virgin Islands
Department of Health

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Early Hearing Detection & Intervention Project (EHDI)

GUIDELINES FOR NEWBORN HEARING SCREENING

Developed by:

Maternal Child Health &
Children With Special Health Care Needs Program
&
EHDI Advisory Committee

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May 2004

INTRODUCTION AND PURPOSE OF THE PROJECT

These guidelines for newborn hearing screening are intended as a guide for the development and implementation of recommended procedures in conducting and administering an Early Hearing Detection & Intervention program in the Virgin Islands.

A comprehensive EHDI program includes the following components: universal newborn hearing screening; follow-up screening for infants who do not pass the birth admission screen, diagnosis of hearing loss, intervention, and data management/surveillance.

Newborn hearing screening is only one component of a comprehensive approach to the identification and management of childhood hearing loss. The process requires follow-up diagnostic services, counseling, intervention programs, and parental education programs. This process should be administered by a multidisciplinary team of individuals such as audiologists, primary care / sub-specialty physicians, educators, speech/language pathologists, nurses, and parents. Otologic and genetic consultation are highly recommended in the management of childhood hearing loss.

Late identification of hearing loss often results in significant delays in speech, language, social, cognitive and emotional development. It is important to perform newborn hearing screening and refer infants by six (6) months of age for confirmation of hearing loss. Research and national experience indicates that children identified at birth with mild to severe hearing loss who receive intervention before six months of age, develop significantly better in language ability, i.e., comprehension, expression and social development. Without newborn screening, hearing loss is typically not identified until two (2) years of age. Identification of hearing screening at birth can permanently improve the lives of children with hearing loss or deafness.

The EHDI program's goal is to address Healthy People 2010 National Performance measure #28.11 **(*Appendix* 1)** to reduce the morbidity associated with hearing loss. Policy statements by the Joint Commission of Infant Hearing (JCIH) **(*Appendix* 2)**, and the American Academy of Pediatrics (AAP) **(*Appendix* 3),** are the standards that guide the program.

The recommended criteria for a successful program are: to ensure that every newborn is screened for hearing loss during the birth admission or by one (1) month of age; infants are rescreened by two (2) months of age if missed or referred; and are referred for audiological diagnostic evaluation to confirm significant hearing loss by three (3) months of age. A referral to appropriate, family-centered early intervention services should be done by six (6) months of age.

The V.I. Department of Health, MCH & CSHCN Program is responsible for providing personnel and equipment to implement and sustain newborn hearing screening and follow-up in the territory.

INITIAL NEWBORN HEARING SCREENING (OAE/ABR)

- **During the birth admission all newborns will have at least one hearing screening before discharge from the nursery.** The screening may be repeated as necessary, before discharge.

- Infant should be at least twelve (12) hours old at the time of screening.

- All parents must receive a parent brochure explaining hearing screening prior to the screening process.

- Educate parents about the importance of hearing screen and advise them of their right to file an objection or refusal. (***Appendix 4 Waiver Form***). If parents refuse screening, the waiver form must be signed. Give parents brochure which describes and explains the screening process and a checklist with developmental milestones.

- If the infant passes the first hearing screen in both ears, the screening process is complete.

- The technician will document that the infant was screened and records the infant's results in the medical record or nursery log and on the birth admission card or baby book.

- Inform parents and primary provider (medical home) of result, written and verbal.

- Newborns who pass the initial screening and are not at risk for late onset hearing as determined by JCIH indicators, do not need to be rescreened. Provide parent with written results and hearing checklist on discharge.

- Assess all newborns for risk indicators of delayed onset or progressive hearing loss. The infant's primary provider will be notified of any identified risk factors associated with the potential for hearing impairment, which may warrant follow-up screening.

- Results will go to the electronic birth certificate. (when available)

- All missed infants must be reported to the EHDI Project.

INITIAL SCREENING NOT PASSED

- Newborns who do not pass the initial screening on one or both ears must have second screening performed before discharge. Conduct the second screening as soon as possible after the first. Provide written results to parents with a follow-up screening appointment with the audiologist within two weeks of discharge or by one month of age.

- Screening results that result in a "Fail" during the birth admission will be designated as "Refer" which indicates a referral for further diagnostic testing.

- In all cases the Newborn Hearing Screening Technician is responsible for completion of the initial or rescreen by one (1) month of age. The screener must refer all questionable outpatient screen results to the audiologist ***(Appendix 5).***

- If the infant refers in one or both ears after a secondary screening, a referral must be made for an outpatient screen with an Audiologist. Parents should be given an appointment to MCH before discharge. This screening should be completed by two (2) months of age. The screening technician will complete the Referral for Audiological Diagnostic Evaluation form and give to parent.

- Screening results, name, address and telephone number of the Audiologist should be given to the parents before discharge.

- MCH Audiologist will complete the audiological diagnostic evaluation and submit a report to the primary care provider and the EHDI Project Director. Infants who are diagnosed with any type of hearing loss must be referred to the Part C Early Intervention Program for follow-up by six (6) months of age using the Birth-Three Infants & Toddlers Referral form ***(Appendix 6).***

OUTPATIENT SCREENING

- Infants who require a hearing screen after being referred from birth admission screening or were discharged before receiving a hearing screening***.(Appendix 7).***

- Follow-up screening must be done within one month of initial screening.

- If the infants is receiving an initial outpatient screening, he/she must be immediately re-screened following a refer result in one or both ears.

- If the final outpatient screen is a "Refer", the screening technician will notify the MCH Audiologist. The Audiologist will notify the parent to schedule an appointment and the primary care provider.

- Infants who do not pass the outpatient screening must be immediately referred for audiological diagnostic evaluation. This evaluation should be performed within three months of the initial screening and no later than six months of age.

- The hearing screener will complete the referral for audiological diagnostic evaluation and forward to the audiologist and EHDI Project.

- Infants who pass the outpatient screen, but have risk factors for progressive or late onset hearing loss, should receive audiological monitoring every six months until three years of age.

- Outpatient screening results must be placed on the medical record.

MISSED SCREENING

- In the event that an infant has been discharged without having been screened for hearing loss, the discharge nurse will provide information for the parent to contact MCH and / or the primary provider to report the missed screen. (***Appendix 8).***

- Contact with the parent and / or primary provider will be documented in the screening log by MCH / EHDI staff.

- It is the responsibility of the screening technician to ensure that missed screen (or appointment for initial screen) infants are known to MCH / EHDI for follow-up. This must be documented on the Infant Hearing Screening Log Weekly Report.

- Audiologist will contact parent within fifteen (15) days after discharge to schedule an appointment. A letter will be sent to parents for an appointment after three (3) attempts to schedule a screening test. This must be documented on the monthly report and the database.

TRANSFERS

- If a newborn is transferred to another facility ***(Appendix 9),*** and was not screened for hearing because of an acute medical problem, the nursery will:

    - Communicate to MCH, Birth-Three Program, and Audiologists that the screening was not done.
    - Communicate to the primary provider that the screening was not done
    - Audiologist will follow-up within two (2) weeks of initial contact by parent or primary provider of infant's return.

- MCH / EHDI will document and record all missed screens.

NON RESIDENT BIRTHS

- Any infant born in the United States Virgin Islands will have the hearing screen conducted, regardless of the island or state of residency.
- The results of the screening will be documented on the infant's discharge summary and will identify, if needed, follow-up testing with an audiologist.
- The parents should be provided with written results and an appointment to MCH for this follow-up at the time of discharge.

AUDIOLOGICAL DIAGNOSTIC EVALUATION

- Infants who have not passed initial or repeat hearing screening are referred for audiological diagnostic assessment and evaluation.
- Obtain a detailed family, birth and medical history. Address parental concerns.
- Obtain OAE. If OAE results are normal, testing may be terminated. Discuss results with parent, provide information on normal hearing, speech and language milestones.
- Perform otoscopic evaluation, as indicated.
- Perform screening ABR. If ABR screening is not passed, perform full diagnostic assessment. This may immediately follow the screening ABR.
- Discuss results and follow-up recommendations / options with parents.
- Prepare a written report interpreting test results and describing the diagnostic profile.

- If hearing loss is confirmed, refer to the primary care provider along with the report. A referral to an ENT specialist is recommended to obtain an otologic diagnosis and medical clearance for amplification.

- The audiologist will counsel the family and schedule the child for hearing aid amplification, when indicated.

TRACKING AND FOLLOW-UP

- Ensure that outpatient rescreens are scheduled before or at the time of discharge.

- Monitor the status of missed inpatient or outpatient screens.

- Rescreening may be coordinated with first well child visit when appropriate.

- Provide parents with contact information for any questions or further information.

- When possible, communicate in the primary language of the home.

- Documents attempts to contact parents whose infants missed appointments for rescreens and / or audiological diagnostic evaluation: at least three times by phone and mail.

- Update files of referred infants on a regular basis, e.g., data submitted from the audiologists and screeners.

- Monitor missed screens, no shows, transferred patients and risk factors for late-onset or progressive hearing loss.

INITIAL AND REPEAT HEARING SCREEN PROCEDURE

- Initial birth admission screens are performed by newborn screening technician.
- OAE responses are easier to detect when ear canals are not blocked with debris.
- On initial scrub wash hands three to five minutes. Follow universal precautions before handling infant.
- Confirm to parents that this is a hearing screen, not a diagnostic assessment.
- Perform screening when the infant is quiet, in a quiet room or section of the nursery. The best results are obtained if the infant is quiet and still. Screening should be performed after the infant is fed, swaddle and comfortable. **If the infant is fussy and/or moving, do not attempt to perform a hearing screening.** If the infant cannot be calmed, the screener should notify the attending nurse or aide to attend to the baby's needs and proceed to screen the next infant.
- Discard probe tip in proper receptacle.
- Inform parents of results verbally and written. Document in nursery log pass /refer, MCH / EHDI screening log, crib card and discharge summary.
- A Newborn Hearing Screen report form must be completed and documentation placed in the hospital chart for infants who:
    - Are not screened before discharge
    - Pass with identified risk indicator(s)

- Complete an referral for audiological diagnostic evaluation for any infant who did not pass the second screen during the birth admission or during outpatient screening.

DOCUMENTATION

- Screening technicians will submit screening logs on a monthly basis to the audiologists, with the exception of infants who are referred. These will be submitted on a weekly basis for outpatient screening by the audiologists or screening technician(s) under the supervision of the audiologist. ***(Appendix 10).***

- Audiologists will complete the monthly report summary by:

    - Using the log submitted by the screening technician.
    - Summary (written report) of referrals for audiological evaluation and assessment with test results and diagnostic profile
    - Documentation of confirmed hearing loss and follow-up referrals.
    - Documentation of follow-up recommendations to the parents and primary provider.
    - Documentation of attempts to contact parents of infants missed during the birth admission and / or who did not return for outpatient screen.

- If hearing loss is confirmed complete referral to ENT specialist or evaluation to obtain an otologic diagnosis and clearance for amplification.

- Submit reports to the MCH / EHDI office by the due date of each month (First working Monday).

- Screener will document screening date(s), time and results in the nursery log. All documentation on the patient's medical record must be completed by Nursery staff.

- **Parent refusal:**

    - Provide parent with a newborn hearing screening brochure (***Appendix 11).***
    - Discuss pertinent data explaining the purpose of screening.

- Parents who refuse to allow procedure must sign a waiver.
- Signed waiver must be placed on medical record.
- Submit a copy of the signed waiver to primary care provider and the MCH / EHDI office.

QUALITY IMPROVEMENT/PROGRAM EVALUATION

- MCH / EHDI will develop a quality improvement program (QIP) which identifies and addresses quality issues pertinent to the newborn hearing screening program.

- The QIP will:
  - Develop, maintain and monitor ongoing quality assurance.
  - Develop, implement and maintain program policies and procedures.
  - Identify areas in need of improvement and implement corrective plans as necessary.
  - Establish the frequency of internal review and evaluation according to the overall MCH/EHDI project plan.
  - Develop and utilize forms to review and evaluate the program.
  - Identify job titles and individuals responsible for review and evaluation.
  - Identify established, acceptable parameters for refer rates, according to the standards.
  - Establish procedures to ensure that follow-up phone calls are made in a timely manner;
  - Establish procedures to ensure that all documents and reports are complete and accurate

- Develop benchmarks (used to evaluate progress based on identifiable goals that are useful in monitoring and evaluating the program) and quality indicators to ensure program effectiveness to include the following:
  - A minimum of 95% of all infants will be screened during their birth admission or before one month of age.
  - Outcome measures; monitor pass and refer rates. Refer rate should not exceed 10% and should average 1-4%.
  - Return for follow-up rate should be 70% or more.
  - Services are provided based on standards of care.
  - Method to determine that screening personnel follow infection control measures.
  - Parent / provider surveys / evaluation to measure satisfaction with screening process.
  - Information transmission and dissemination in a timely manner

- Quality indicators are used to ensure program effectiveness, consistency and stability. These should include the following:
    - % of infants screened during the birth admission
    - % of infants screened before one month of age
    - % of infants who did not pass the inpatient screen
    - % of babies who did not pass the outpatient screen

- Documented periodic monitoring of equipment calibration.

TRAINING AND SUPERVISION OF SCREENING PERSONNEL

- Screenings can be conducted by any individual who receives appropriate training and meets competency standards.

- Staffing and scheduling of screeners should allow for all infants to be screened regardless of the day or time they are born.

- Training and supervision of screeners is the responsibility of the MCH staff audiologists.

- MCH audiologists will regularly monitor screeners' testing procedures (at least twice a year or as indicated by quality monitoring); and provide on-going supervision of screening personnel to assure appropriate technique and performance of screening.

- All training is competency based and involve hands-on components.

- Training curriculum should include:

    - Communicating screening test results to parents and physician
    - How to make referrals
    - Infection control / universal precautions
    - Supplies necessary for screening
    - Information on use and maintenance equipment
    - Documentation and reporting of results
    - Benefits of testing

- A competency checklist should be completed and signed off when competencies are met. ***(Appendix 13).***

- Requirements of screeners:

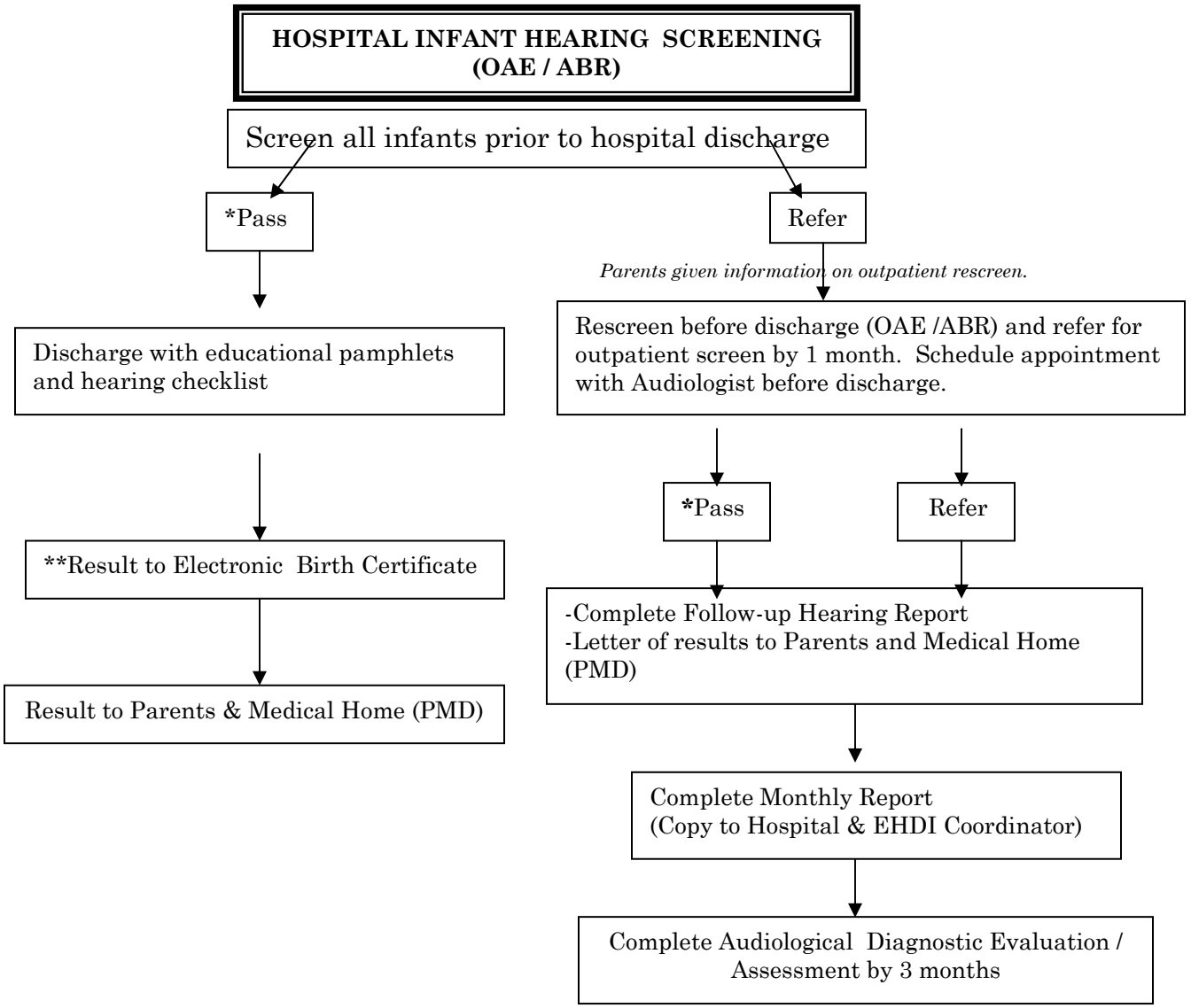
    - Demonstrate competency in using equipment and performing testing procedure.
    - Have a high school diploma or GED certificate.
    - Follow standard uniform dress code.
    - Perform screening on evenings, holidays and week-ends to ensure that all infants are screened during birth admission.

RISK FACTORS FOR LATE-ONSET OR PROGRESSIVE HEARING LOSS

- All infant with risk indicators who passes the initial birth admission screen (OAE * ABR), or who has risk factors for late onset or progressive hearing loss should be retested by 3 months of age and receive audiological monitoring at 6 months intervals until 3 years of age.

- Risk factors for progressive or delayed onset hearing loss:
    - Positive family history of permanent childhood hearing loss
    - Syndromes known to include sensorineural or conductive hearing loss or Eustachian tube dysfunction.
    - Mechanical ventilation at birth
    - Postnatal infections associated with hearing loss including bacterial meningitis.
    - Head trauma
    - Neurodegenerative disorders, or sensory motor neuropathies
    - Recurrent or persistent otitis media with effusion for at least three months.
    - Hyperbilirubinemia with or without exchange transfusion
    - In utero infections such as: Cytomegalovirus, herpes, rubella, syphillis, toxoplasmosis

GUIDELINES FOR INFANT HEARING SCREENING



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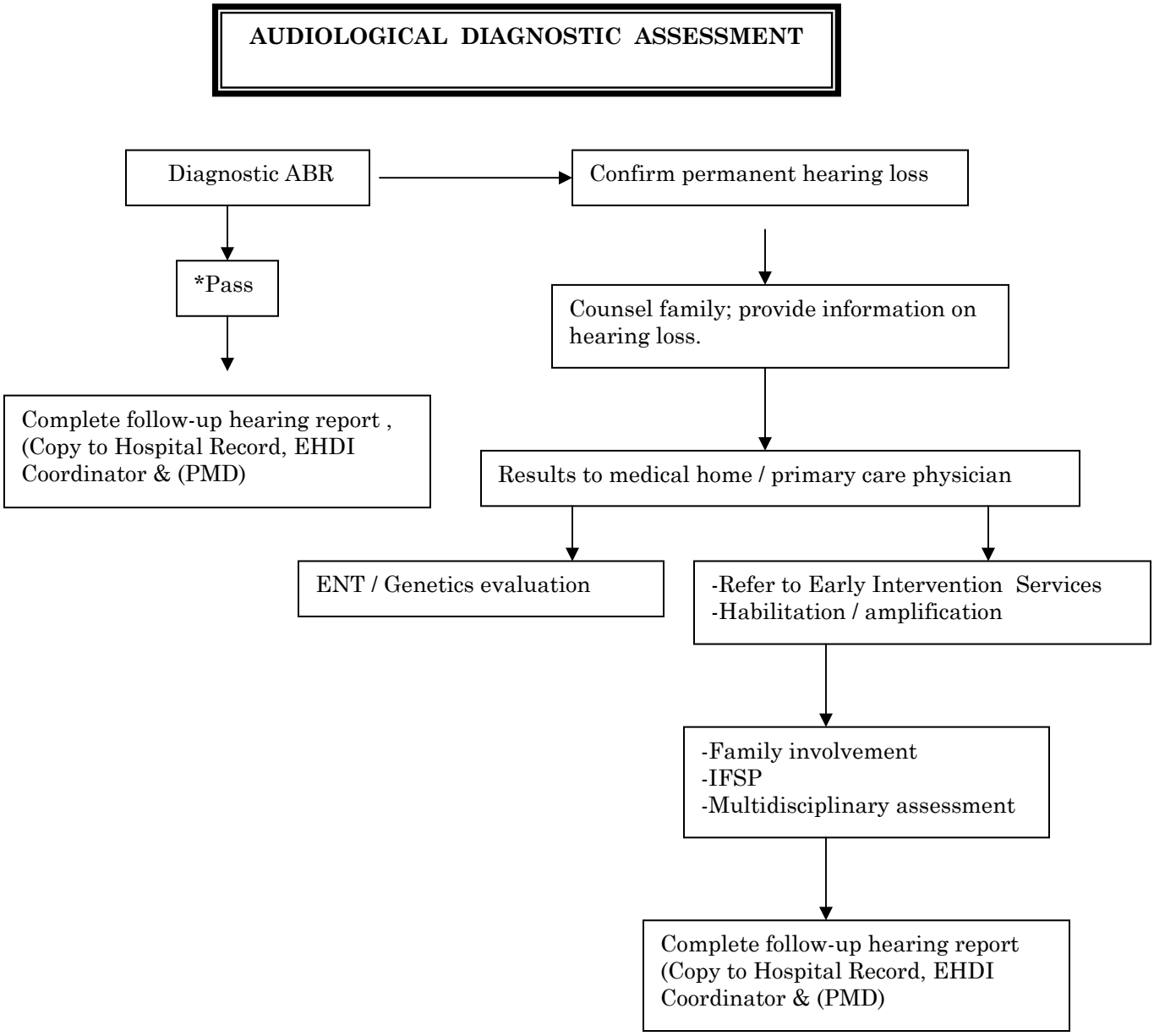
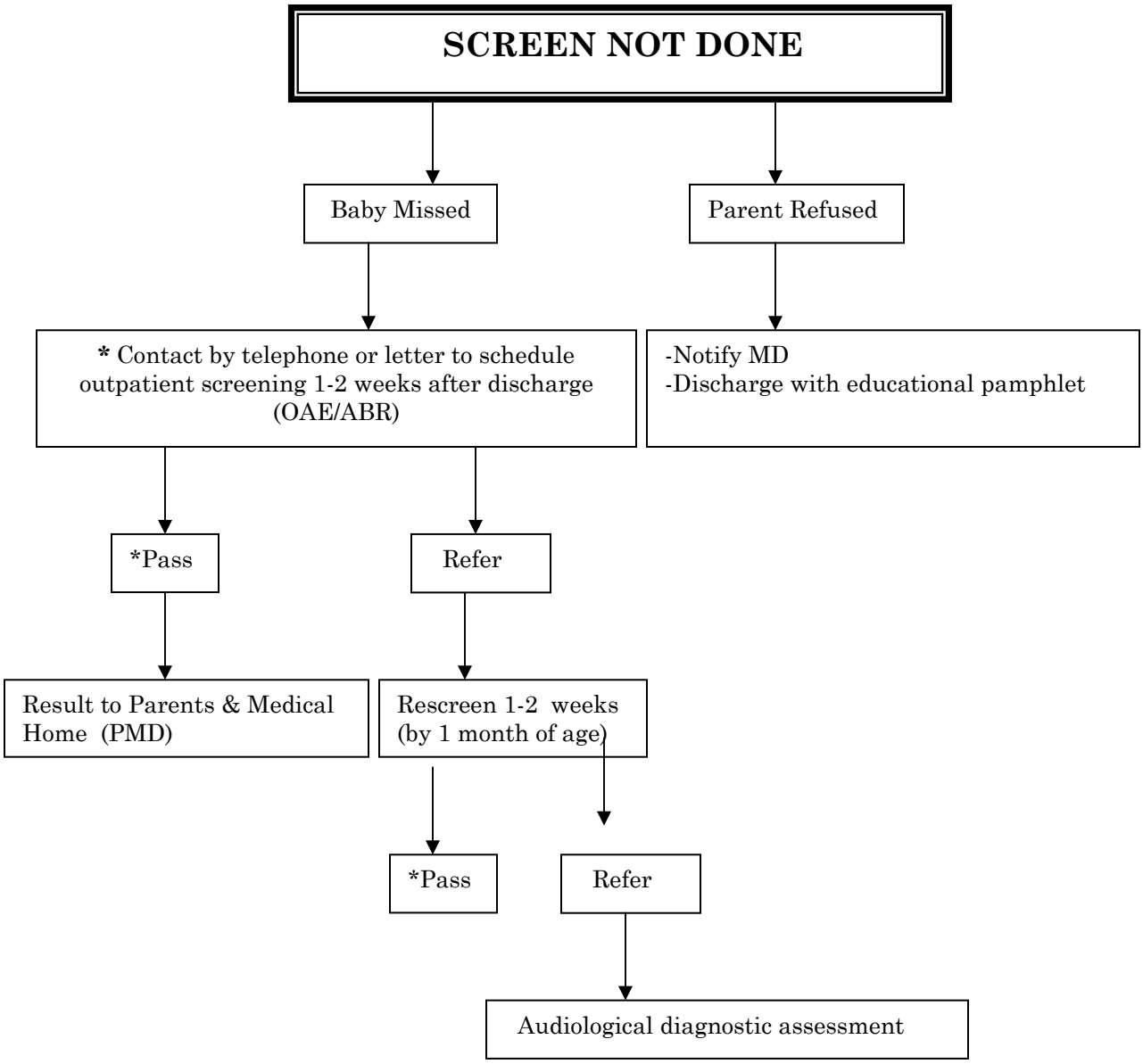


- **Infants who fail initial screen (OAE * ABR), or who have risk factors for late onset or progressive hearing loss should be retested by 3 months of age and at 6 months intervals up to 3 years of age.**



*****Document attempts to contact on monthly reports.