Republic of the Philippines
Department of Health
OFFICE OF THE SECRETARY

March 31, 2014

DEPARTMENT CIRCULAR
No. 2014 - 0150

FOR : **All UNDERSECRETARIES, ASSISTANT SECRETARIES, DIRECTORS OF BUREAU, CENTERS FOR HEALTH DEVELOPMENT, SERVICE AND CHIEFS OF MEDICAL CENTERS AND HOSPITALS**

SUBJECT : **GUIDELINES FOR UNIVERSAL NEWBORN HEARING SCREENING PROGRAM (UNHSP) IMPLEMENTATION**

The Department of Health – Family Health Office (DOH-FHO) and the Newborn Hearing Screening Center -National Institute of Health, UP-Manila (NHSC-NIH-UPM) has developed a guidelines for the implementation of Universal Newborn Hearing Screening Program (UNHSP) which will serves as a comprehensive guide and reference material for service providers and health workers who are engaged in the provision of newborn hearing screening, be it actual screening, training of health workers, or application of intervention strategies. The roles and responsibilities of each service provider are, likewise, outlined in the guidelines for a clearer delineation and discharge of functions.

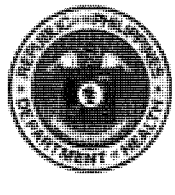
In view of this, the newly approved guidelines shall be used as the reference document in the implementation of the program in all hospitals facilities at all levels. Guidelines will be posted at the DOH website at *www.doh.gov.ph* and for reference, please see attached Microsoft Word Format of the guidelines.

By authority of the Secretary of Health

JANETTE LORETO-GARIN, MD, MBA-H
Undersecretary of Health
Women Children and Family Health Cluster

Universal Newborn Hearing Screening Act 2009

Manual of Operations for Republic Act 9709



NHSRC

Newborn Hearing Screening Reference Center

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EDITORS AND WRITERS

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Teresa Luisa I. Gloria-Cruz, MD MHPed
Erasmo Gonzalo DV Llanes, MD
Maria Rina T. Reyes-Quintos, MD MClinAud
Rosario R. Ricalde, MD
Ma. Leah C. Tantoco, MD MClinAud
Nathaniel W. Yang, MD
Anna Pamela C. Dela Cruz, MD
Marieflor Cristy M. Garcia, MD
Patrick John P. Labra, MD
Jeanette C. Reymundo-Plete, MD
Jenny Lyn Y. Uy, MD
Ma. Elena M. Santos, MClinAud
Ma. Luz San Agustin, RN
Sheryl Mae Lagrana, RN
Marina Lyn Lazaro, RN

PARTICIPANTS OF THE WRITE WORKSHOP ON NEWBORN HEARING SCREENING

I. PHILIPPINE NATIONAL EAR INSTITUTE (PNEI)

Generoso T. Abes, MD MPH
Christopher Malorre E. Calaquian, MD, MHA
Abner L. Chan, MD
Charlotte M. Chiong, MD PhD
Teresa Luisa I. Gloria-Cruz, MD MHPed
Erasmo Gonzalo DV Llanes, MD
Rosario R. Ricalde, MD
Maria Rina T. Reyes-Quintos, MD MClinAud
Ma. Leah C. Tantoco, MD MClinAud
Nathaniel W. Yang, MD
Ma. Luz San Agustin, RN

II. NEWBORN HEARING SCREENING REFERENCE CENTER

Charlotte M. Chiong, MD PhD
Jose M. Acuin, MD
Erasmo Gonzalo DV. Llanes, MD
Rosario R. Ricalde, MD
Ma. Elena M. Santos, MClinAud

III. PHILIPPINE SOCIETY OF OTOLARYNGOLOGY HEAD AND NECK SURGERY (PSO-HNS) - PHILIPPINE ACADEMY OF NEUROTOLOGY, OTOLOGY AND RELATED SCIENCES (PANORS)

Norberto V. Martinez, MD
Joel A. Romualdez, MD, MClinAud
Joanne Sebastiana M. De Ramos, MD

IV. CENTRAL OFFICE-DOH

Atty. Nicolas Lutero
Honorata Catibog, MD, MNSA
Juanita Basilio, MD, MPH
Rosalie Paje, MD, MPH
Ernie Vera, MD
Elizabeth Matibag, MD
Ma. Luisa Tioczon, MD
Cynthia Rosuman, MD
Frank Diza, MD
Joyce Ducusin, MD, MPH
Anthony Calibo, MD
Ms. Aida Cuadra, RN
Ms. Lita Orbillo,RN
Mr. Davidson Teh, RN
Ms. Frances Rose Elgo, MPH

V. CENTRAL FOR HEALTH DEVELOPMENT (CHDs)

Edna Abcede,MD
Maria Paz Corralez, MD, MPH
Reinhard Dalumpines, MD
Maria Gracia Gabriel, MD
Ms. Malou Malana
Ms. Hermie Pascual

VI. DOH HOSPITALS

Ruben Flores, MD - Dr. Jose Fabella Memorial Hospital
Jose Malanyaon, MD - Dr. Jose R. Reyes Memorial Medical Center
Diosdado Uy, MD – Bicol Medical Hospital

VII. OTHER GOVERNMENT AGENCIES

Department of Education

Ann Quizon, MD
Maribel Cabal
Zeny Conion
Jay Garces
Loida Ramos, MPH

Philippine Health Insurance Corporation

Clementine Bautista, MD
Arlyn Cabondilla, MD
Frances Pargas, MD
Giovanni Roan, MD

National Council on Disability Affairs
Jose Abaño
Ramon Espejo
Mateo Lee
Ma. Rosario Rimorin

Newborn Screening Reference Center- UPM-NIH
Carmencita Padilla, MD
Eva Cutiongco Dela Paz, MD
Aster Lyn Sur, RN
Vina Mendoza
Elouisa Reyes
Riza Suarez

National Barangay Operations Office – Department Of Interior and Local Government
Ms. Yolanda Go
Reinalda Raffinan, MD

Council for the Welfare of Children
Ma. Elena Caraballo
Tristan Flores

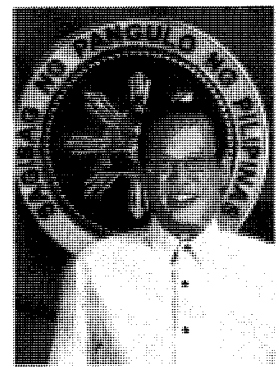
Neighborhood Early Childhood Care and Development
Marilyn Manuel

VIII. HEALTH PROFESSIONAL SOCIETIES
Rodolfo Dela Cruz, MD –Philippine Society of Audiology
Jaime Flor, MD - Philippine Society of Audiology
Alejandro Opulencia, MD - Philippine Society of Audiology
Ms. Marisa Caumeran
Cecilia Banca-Santos

IX. PRIVATE HOSPITALS
Joseph Darvin, MD- Manila Doctors Hospital
Lyra Veloro, MD – The Medical City

X. Support Group
A. Parent Council for the Welfare of the Hearing Impaired Children
Melanie Rara, Ara Rara
Ms. Amelia Rara
B. Private School
Hamilton Calderon
Rebecca Santos- St. Francis School-VSA
C. Non Government Organizations
Hubert Ramos, MClinAud- Better Hearing Philippines Inc.

FOREWORD



MALACAÑAN PALACE
MANILA

MESSAGE

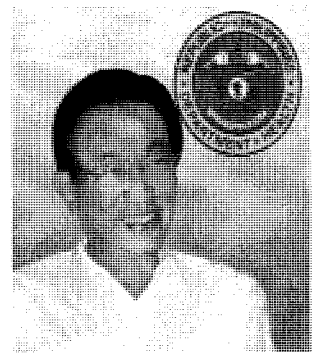
My warmest greetings to the **Philippine National Ear Institute**, on the publication of your **Manual of Operations** for the **Universal Newborn Hearing Screening Program**. Let me also acknowledge the **Department of Health** for your role on the crafting of the publication.

The success of our development agenda rests on the enthusiasm, resolve, and well-being of our people, and it is your government's mission to elevate the quality of their lives. Our citizenry's welfare can be secured at the earliest possible moment through newborn screening, which can prevent the onset of any disease that may deprive a child of the chance to achieve his fullest potential. This Manual is an important step towards our drive to mitigate hearing loss and impairment among newborns. It is my hope that our professionals in this sector will make full use of this publication to advance their practice and improve the overall state of medical care in the country.

One of the core objectives of my administration is to ensure that every Filipino receives ample medical attention, through the implementation of Universal Health Care. In this and other vital pursuits towards nation-building, let us demonstrate passion, excellence, and integrity, as our actions will be instrumental in empowering our citizenry, the ultimate catalysts in our goal of lasting, equitable progress.

BENIGNO S. AQUINO III

Republic of the Philippines
Department of Health
OFFICE OF THE SECRETARY



MESSAGE

The Department of Health (DOH) commends the **Philippine National Ear Institute of the National Institutes of Health-University of the Philippines Manila** on its initiative to develop the *Manual of Operations (MOP)* for the Newborn Hearing Screening Program.

The benefit of administering newborn screening for deafness cannot be overemphasized. Early identification and interventions can prevent severe psychosocial, educational, and linguistic repercussions. Infants who are not identified before 6 months of age incur delays in speech and language development. This necessitated the imperative action to institutionalize a program for screening.

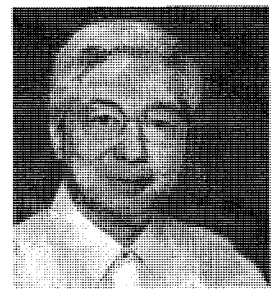
The passage of the Universal Newborn Screening Hearing and Intervention Act of 2009 put the focus on the prevention and early diagnosis of congenital hearing among newborns. The designation of the U.P. National Institutes for Health as the Newborn Hearing Screening Reference Center established the Central facility to define testing and referral protocols, to maintain the external laboratory proficiency testing program, to oversee the national testing database and case registries, to assist in training activities and to oversee the content of information materials. This being a national program that needs to be implemented down at the local level clearly mandated the drafting of a Manual of Operations to be adopted by the to-be-designated Newborn Hearing Screening Centers.

At this juncture, we reaffirm the Department of Health's commitment to be the lead agency in implementing this Act. With everyone's support, we know that the full implementation of this Program will be realized.

Onwards to *Kalusugan Pangakalahatan!*

Congratulations and *Mabuhay*!

Enrique T. Ona, MD
Secretary of Health



UNIVERSITY OF THE PHILIPPINES

Quezon City

OFFICE OF THE PRESIDENT

MESSAGE

Isang mapagpala't mapagpalayang araw sa inyong lahat!

I congratulate the National Institutes of Health of UP Manila for the creation of this Manual of Operations (MOP) for the Newborn Hearing Screening Program (NHSP). For more than a decade, UP Manila through the Philippine National Ear Institute has been a tireless partner of the people by providing cutting-edge research on hearing and balance. You have attained an enviable status as one of the country's most dedicated and innovative leaders in health research and care.

True to the University's mission of shaping minds that shape the nation, your research works have aided not only in the promotion of awareness on hearing issues, but have influenced also policy-making in the country. These feats truly reflect UP's vision as being a university where strong research is employed in solving our country's problems.

May this Manual of Operations, finalized in cooperation with the Department of Health, be instrumental in ensuring that newborn children in this country are protected from hearing loss through effective screening and care. The guidance this manual provides will mean the true spirit of Republic Act (RA) No. 9709 (An Act Establishing a Newborn Screening Program for the Prevention, Early Diagnosis and Intervention of Hearing Loss) will be felt by families all over the country. Let us work to ensure that our children will not be deprived of their right to full and healthy development as individuals, as well as their right to a better quality of life.

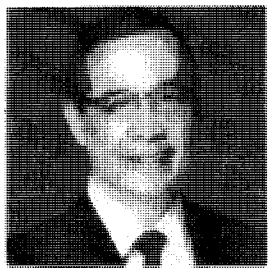
I pledge the support of my administration to both the UP Manila National Institutes of Health and the Newborn Hearing Screening Reference Center. May the efforts of everyone involved – from specialists and researchers to educators and staff – result in meeting the objectives of RA 9709. This manual makes me very optimistic that the protocols, expertise and organization required to make this goal a reality will be attained.

In line with UP Manila's mission to be not only an outstanding but also a relevant institution of higher learning, let us use our resources to ensure that the interests of our country's youth are given priority. May these efforts result in a future where no child is deprived of his or her hearing needlessly and where they are given every opportunity to be productive members of society. Let us do the best for our country's children!

Mabuhay ang NHSRC! Mabuhay ang UP Manila! Mabuhay ang Unibersidad ng Pilipinas!

ALFREDO E. PASCUAL
President

University of the Philippines Manila
The Health Sciences Center
Office of the Chancellor



MESSAGE

After newborn screening, UP Manila rejoices in another milestone program that addresses another pressing health problem in Filipino newborns.

The enactment of Republic Act 9709, or the Act that establishes the Universal Newborn Hearing Screening for the Prevention, Early Diagnosis and Intervention of Hearing Loss in August 2009 institutionalizes the urgent need for newborn hearing screening and emphasizes the importance of early identification and intervention.

I am so happy and proud that this law was passed and approved based on the findings of the researches conducted by our very own Philippine National Ear Institute under the National Institutes of Health. This is exactly what I mean by my entrepreneurial research thrust – conducting relevant researches with policy impact that can be translated into national policies and eventually into concrete programs that help address major health problems affecting the people.

It has almost been three years since the enactment of Republic Act 9709 and it is time for the law to be implemented in accordance with its intents and goals. To be able to do this, however, implementing guidelines have to be prepared and protocols and procedures for screening and other tasks have to be in place.

This Manual of Operations fills that purpose. It serves as a comprehensive guide and reference material for service providers and health workers who are engaged in the provision of newborn hearing screening, be it actual screening, training of health workers, or application of intervention strategies. The roles and responsibilities of each service provider are, likewise, outlined in the MOP for a clearer delineation and discharge of functions.

I commend behind those behind the preparation of this Manual. Your painstaking work and finalization of this material ensures the hurdling of one vital step towards the successful realization of the program. More challenges are coming but with the concerted efforts of the concerned institutions, health providers, other stakeholders and the public, there is no reason why Filipino children cannot enjoy a good life and future even with hearing impairment.

MANUEL B. AGULTO, MD
Chancellor

LIST OF FIGURES, TABLES AND APPENDICES

Appendices

ACRONYMS

AABR	Automated Auditory Brainstem Response
ASSR	Auditory Steady State Response
BEmONC	Basic Emergency Obstetric and Newborn Care
BHS	Barangay Health Station
BHW	Barangay Health Worker
CHO	City Health Office
CoNHScA	Collaboration on Newborn Hearing Screening Advocacy
DOH	Department of Health
DPOAE	Distortion Product Otoacoustic Emissions
DSHS	Department of State Health Services

ECCD	Early Childhood and Care Development
ENT	Ear, Nose and Throat
FDA	Food and Drug Administration
HI	Hearing Impairment
LGU	Local Government Unit
MHO	Municipal Health Office
NHS	Newborn Hearing Screening
NHSC	Newborn Hearing Screening Center
NHSP	Newborn Hearing Screening Provider
NHSRC	Newborn Hearing Screening Reference Center
NICU	Neonatal Intensive Care Unit
NIH	National Institutes of Health
NTC	National Telecommunications Commission
NSC	Newborn Screening Center
OAE	Otoacoustic Emissions
PANORS	Philippine Academy of Neurotology, Otology and Related Sciences
PCA	Post Conceptional Age
PCSO	Philippine Charity Sweepstakes Office
PSO-HNS	Philippine Society of Otolarynogology Head & Neck Surgery
QOL	Quality of Life
RA	Republic Act
RHU	Rural Health Unit
SNR	Signal to Noise Ratio
TBA	Traditional Birth Attendant
TEOAE	Transient Evoked Otoacoustic Emissions
UNHS	Universal Newborn Hearing Screening
UNHSP	Universal Newborn Hearing Screening Program

ACKNOWLEDGEMENT

Senator Loren Legarda
Senator Miriam Defensor Santiago
Senator Pia Cayetano
Congressman Arthur Y. Pingoy, MD 2nd District, South Cotabato
Congressman Narciso D. Santiago III, (Partylist- ARC)
Esperanza Cabral, MD, Former DOH Secretary
Ramon Arcadio, MD, Former UP Manila Chancellor
Perla Santos-Ocampo, MD, National Scientist and Former UP Manila Chancellor
Lulu Bravo, MD, Former UP Manila Vice Chancellor for Research
Vicente Belizario, Jr. MD, UP Manila Vice Chancellor for Research
Joselito Jamir MD, UP Manila Vice Chancellor for Administration
Alfredo QY Pontejos MD and the Department of Otorhinolaryngology,
UP College of Medicine- Philippine General Hospital

INTRODUCTION

A. Brief History of Universal Newborn Hearing Screening in the Philippines

Hearing loss is known to be one of the most common disabilities among newborns. Prevalence studies worldwide revealed that approximately 1-4 infants per 1,000 live births are affected. With this information at hand, the Philippine National Ear Institute (PNEI) initiated research in newborn hearing screening since the year 2000. In a study conducted in a rural population in Bulacan in 2004, it has been revealed that 1 per 724 babies are born with bilateral severe to profound hearing loss, thus, 0.14% or 8 babies born daily are estimated to have profound deafness in our country alone.

In 2007, a Task Force on Newborn Hearing Screening was convened by PSO-HNS with the PNEI working group, which rigorously researched, analyzed and considered the benefits of the Universal Newborn Hearing Screening Program (UNHSP) for further recommendation and implementation. It was in the same year that the first annual Collaboration on Newborn Hearing Screening Advocacy (CoNHScA) was held, where activities, practices and experiences of the UNHSP in various communities were conveyed.

With the numerous endorsements and advocacy programs that were put forward to emphasize the importance of early detection and intervention for infants through UNHS, subsequent legislative efforts played an important role by emphasizing the need for the appropriate intervention and providing hearing screening access across the nation. It was in January 2008 when Senator Loren Legarda was informed of PNEI studies related to UNHS as well as the Task Force Efforts and the 2007 Position Paper. Support from the Department of Health, headed by the former Secretary, Francisco T. Duque, III was later sought through a meeting with PSO-HNS and PANORS in May 2008.

The Senate Bill No. 2390 or the Universal Newborn Hearing Screening and Intervention Act of 2008 was officially filed and submitted on June 10, 2008 by its authors, Senators Miriam Defensor Santiago, Loren B. Legarda and Pia S. Cayetano. Almost exactly a year after, the Conference Committee Report recommending that SBN-2390 consolidated with HBN-2677 were approved by the Senate and the House of Representatives. Consequently, enrolled copies of the consolidated version of SBN-2390 and HBN-2677, sponsored by Congressmen Narciso D. Santiago III and Arthur Y. Pingoy, Jr. and signed by the Speaker and Secretary General of the House of Representatives

were received by the Senate and were sent to the Office of the President of the Philippines for signature and approval.

In June 12, 2009, Republic Act 9709 also known as the Universal Newborn Hearing Screening and Intervention Act was approved and signed into law by the President of the Philippines, Gloria Macapagal Arroyo (Appendix A). RA 9709 establishes a UNHS program for the prevention, early diagnosis and early intervention of hearing loss and requiring all newborns to have access to hearing screening. With this successful ratification, the drafting of the Law's Implementing Rules and Guidelines was done under the supervision of former Health Secretary - Esperanza Cabral and close collation with PNEI and other stakeholders. In June 28, 2009, IRR of RA 9709 was approved, signed and disseminated as Administrative Order 2010-0020 (Appendix B).

Philhealth circular No. 011-2011 was signed by the President and CEO of Philhealth, Dr. Rey B. Aquino on August 5, 2011 (Appendix C). The mechanism for Philhealth claims was stated in this circular.

B. UNHS Milestones

2007	Task Force on Newborn Hearing Screening convened by PSO-NS with PNEI working group
	First annual Collaboration on Newborn Hearing Screening Advocacy (CoNHScA)
January 2008	PNEI studies related to UNHS, PSO-HNS Task efforts and Position Paper forwarded to Senator Loren Legarda
April 2008	Technical working group convened by the senate for UNHS Program legislation
May 2008	PSO-HNS meeting with DOH Secretary Francisco Q. Duque to reiterate support for UNHS Program legislative efforts
June 10, 2008	Prepared and submitted jointly by the Committee(s) on Health and Demography and Finance with Senator(s) Miriam Defensor Santiago, Loren B. Legarda and Pia S. Cayetano as

	author(s) per Committee Report No. 71, recommending its approval in substitution of SBNOs. 1209 and 1372
October 2, 2008	Senate Bill forwarded to the House of Representatives
June 2009	Bicameral approval
July 15, 2009	SBN-2390 and HBN-2677 sent to the Office of the President of the Philippines for signature and approval
August 12, 2009	RA 9709 approved and signed into law by the President of the Philippines, Gloria Macapagal Arroyo
June 28, 2010	RA 9709 Implementing Rules and Regulations approved and signed by then DOH Secretary Esperanza Cabral as Administrative Order 2010-0020
December 2010	Drafting of the Manual of Operations with the Department of Health
August 05, 2011	Philhealth issues Circular 011-2011 indicating that Newborn Hearing Screening is included in the Newborn Care Package

C. Vision, Mission, Goals and Strategic Directions

Vision

"No Filipino newborn shall be deprived of a functional sense of hearing."

Every newborn shall be given access to physiologic hearing screening examination prior to hospital discharge or at the earliest feasible time for the detection of hearing loss.

Mission

- To have all newborns undergo hearing screening prior to hospital discharge or within three months if born outside the hospital;
- To provide an accessible, effective and efficient system of services;

- To implement time-bound intervention: hearing screening within the first month, hearing evaluation within the third month and early intervention by the sixth month;
- To provide the necessary services for hearing habilitation/rehabilitation;
- To monitor the incidence and prevalence of hearing loss in the Philippines;
- To promote awareness and information campaign to the public about hearing loss.

Goals

- To implement an effective system to have all newborns undergo hearing screening and increase the proportion of infants who are screened for hearing loss within their first month of life;
- To identify hearing loss through audiologic evaluation among infants within three months of age;
- To implement early intervention services among infants diagnosed with hearing loss within six months of age.

Strategic Directions

- Identify standards and policies for hearing screening and follow-up
- Determine effective ways of implementing standards and policies
- Collaborate with families, local government units, hospitals, health centers and other stakeholders
- Acquire financial and funding support from government agencies and non-government organizations
- Educate and disseminate information among key stakeholders (e.g. trainings, media)
- Monitor, track and evaluate hearing screening data to generate research, formulate policies and improve the program

- Generate ways to improve accuracy and quality of hearing screening data
- Devise a sustainable system for the program

D. Universal Newborn Hearing Screening (UNHS) System Framework

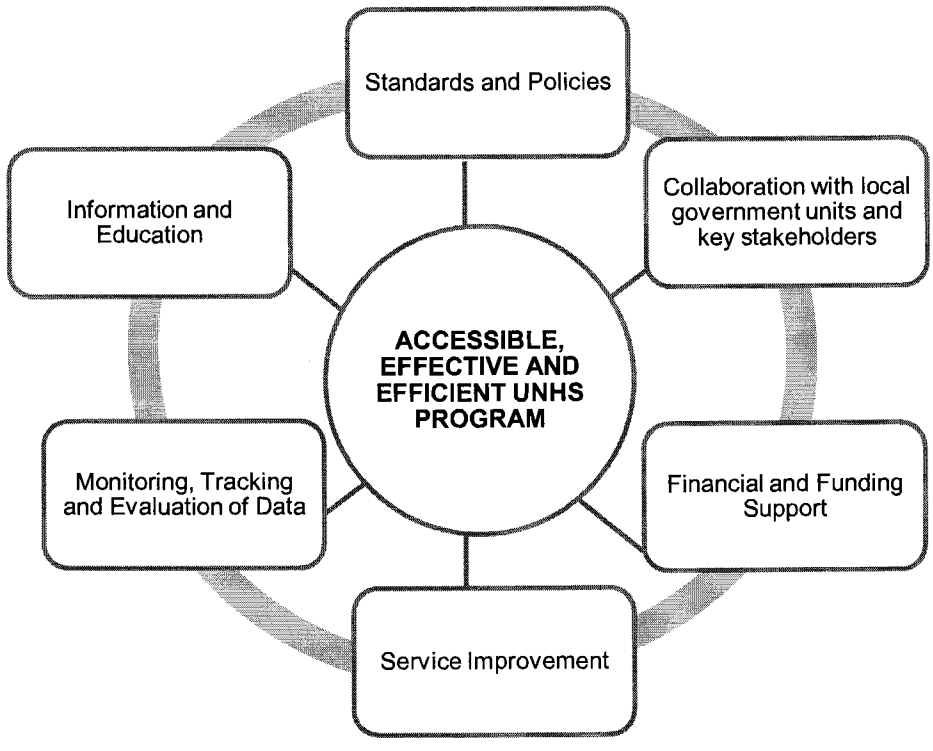


Figure 1. UNHS System Framework

I. OVERVIEW

A. Who are qualified to be screened?

In accordance with international clinical practice guidelines and provision in Republic Act 9709, ***all newborns in the Philippines, with the consent of the parent/s or guardian*** should be subjected to universal hearing screening. All infants identified with hearing loss should have access to resources necessary to reach their maximum potential.

B. When is the right time to screen?

The right time to screen is ***on or after (≥) 24 hours after birth***, before the infant is discharged if hospital born. If the infant is out-of-hospital born then he or she should be screened ***not more than (≤) 3 months of age***, regardless where they are delivered (includes infants who were hospital born but hearing screening was not done before discharge). For purposes of ***PhilHealth reimbursement, babies must be screened within (≤) 2 months (60 days) of age***.

Hearing screening done in a hospital or birthing facility is performed as close to discharge as possible to give time for the passage of amniotic fluid or vernix from the external auditory canal. For those babies who received medical treatment, the test should be conducted only after the baby is perceived well.

C. Where to avail of Newborn Hearing Screening?

The ***Department of Health*** in collaboration with the National Institutes of Health Philippines shall ***categorize, license and certify Newborn Hearing Screening Centers*** where the newborn hearing screening tests can be done.

D. Who can perform the Newborn Hearing Screening Test?

Qualified ***adult (≥ 19 years old)*** personnel who may perform the newborn hearing screening may include audiometrists, audiologists, licensed health professionals such as medical technologists, physicians, nurses, midwives and trained health workers like nursing attendants and barangay health workers. Individuals who would like to be able to perform the standard procedures must be certified in a DOH-NIH training program as prescribed in Section 11, RA 9709 and IRR Rule 5 Section 21.

E. What methods can be used in Newborn Hearing Screening?

Currently acceptable universal screening methods are otoacoustic emissions (OAE) and automated auditory brainstem response (AABR). If OAE and AABR are not available in the vicinity of the place of birth despite ***full cooperation and effort of the parents/guardians***, DOH and NHSRC approved alternative methods may be performed by health workers trained on the alternative method employed. Such alternative methods include the World Health Organization questionnaires (APPENDICES and) and the Reflexive "Baah" Test. Technologies and methods may change and will be updated periodically, every three (3) years by the DOH and NHSRC.

II. CLASSIFICATION OF PATIENTS

All newborns, whether hospital born, out of hospital born, high risk, non-high risk or re-admitted, must undergo newborn hearing screening, as described in the Section 6, RA 9709.

Facility Born Babies: Babies who are born in the hospital and other health facilities (basic emergency obstetric and newborn care (BEmONC)-capable facilities, maternity lying-in clinics, rural health units (RHUs), barangay health stations (BHS), birthing facilities, private midwives clinics and other facilities as determined by DOH). See Appendix D for the DOH classification of hospitals and other head care facilities.

Home Born Babies: Babies delivered at home, whether or not the birth was attended by a midwife, nurse or physician.

High Risk Babies: Babies who have one or more of the high risk factors for hearing loss (also includes, late-onset hearing loss and progressive hearing loss). These babies require closer monitoring even if they "pass" during the initial testing stage because of the possibility of late-onset or progressive hearing loss (Appendix E).

Non-High Risk Babies: Babies who do not have any of the high-risk factors. The parents/caregivers of these babies have to be informed of the normal hearing milestones, to watch for the normal development of speech and language and to consult their physicians for any concerns.

III. NEWBORN HEARING SCREENING PROCEDURES, STANDARDS AND PROTOCOLS

A. NEWBORN HEARING SCREENING METHODS

A1. Currently Acceptable Standard Newborn Hearing Screening Methods

1. ***Automated Auditory Brainstem Response (AABR)***

   Sounds are played to the baby's ears after electrodes are placed on the baby's head to detect responses. This screening measures how the hearing nerve responds to sounds and can identify babies who have a hearing loss.

2. ***Otoacoustic Emissions (OAE)***

   A miniature earphone and microphone are placed in the ear. Sounds are played and a response is measured. If the ear reacts, a response can be measured in the ear canal by the microphone. When a baby has a hearing loss, no response can be measured on the OAE test. The two types of OAE screenings are:

   a. *Transient Evoked Otoacoustic Emissions (TEOAE)*
      Sounds emitted in response to an acoustic stimulus of very short duration; usually clicks but can be tone-bursts.

   b. *Distortion Product Otoacoustic Emissions (DPOAE)*
      Sounds emitted in response to two simultaneous tones of different frequencies.

A2. Alternative methods, instruments and procedures

Every effort should be made to provide objective hearing screening tests, as mentioned above, to the newborn. Validated DOH and NHSRC approved alternative methods may be used as community based hearing screening tests in the absence of OAE and AABR for initial screening. Using these alternative methods may increase the number of babies being screened because it will be more accessible, based on the studies of Garcia et al 2012[25] and by Abes, FL and Gloria-Cruz, 2012. However, other methods maybe developed in the future which can further improve accessibility to more valid testing. A fee cannot be charged to those who will undergo screening using alternative methods.

B. CURRENTLY APPROVED NEWBORN HEARING SCREENING DEVICES

The NHSRC shall recommend technologies and equipment that are registered at the Food and Drug Authority (FDA). Applications forms (Appendix F) for device certification shall be made available online at the NIH, NHSRC and DOH websites.

Devices should have a well-defined and detailed warranty specification for hardware and software (if applicable) servicing and support for the duration of the certification. It should be calibrated in accordance with the manufacturer's recommendation and a log should be kept documenting the dates of calibration, repair or replacement of parts.

Devices should have a local distributor with a nationwide coverage.

Devices should be able to display and print out screening results either directly or indirectly (thermal paper, inkjet printer, laser printer or capture and print-out LCD or computer monitor display) the name, date, time and result of test (Pass/Refer) for each ear.

The specific minimum device specifications for currently acceptable technologies are as follows:

1. ***Distortion Product Otoacoustic Emissions (DPOAE)***

   Stimulus type: 2 primary puretones; stimulus measured at 2f1-fs

   Stimulus intensity (dB SPL) (L1/L2): 65/55 or 60/50

   Frequency ratio (f2/f1): 1.22-1.24

   F2 frequency region: 2-5 kHz; 1-6 kHz; 2-6 kHz; 1.5-12 kHz

   Pass Protocol: response from 3 out of 4 frequencies

2. ***Transient Evoked Otoacosutic Emissions (TEOAE)***

   Stimulus type: click

   Click rate: 50-80 per second

   Stimulus Intensity: 70-84 dB SPL

   Frequency region: 1-5 kHz; 1.5-4.5 kHz; 2-6 kHz; 0.7-4 kHz

Pass Protocol: Presence of a response as an SNR of at least 3-6 dB, or an overall minimum amplitude (wideband) response of 6 dB, with a reproducibility of 50% or greater

3. ***Automated Auditory Brainstem Response (AABR)***

Stimulus: click

Click type: 0.1 msec

Stimulus polarity: rarefaction, condensation or alternating

Sweep rate (clicks/sec: within 32-62

Input frequency range: within 30-3,000 Hz

Stimulus intensity: 35 dB

Pass Criteria: Automated

C. PROTOCOLS

The newborn hearing screening protocols should be in accordance to the classification of the patient and availability of hearing screening devices or methods. Refer to Appendices G, H and I for the recommended newborn hearing screening algorithms. These algorithms may be changed every ***three (3) years*** depending on best available evidence.

This is the summary of current, acceptable, appropriate hearing screening procedures that can be done in a health care facility according to its capability as determined by the DOH.

1. **For health facilities without OAE or AABR and without health professionals, but with trained health workers**
   - Screening using the Reflexive Behavioral Test (voice or "Baah" Test)
     Sound is presented 1-2 feet away from the ear. The result is "PASS" if heard, "REFER" if otherwise.
   - Level 1 Questionnaire is filled-out by the parent or guardian (Appendix J).
2. **For health facilities without OAE or AABR and with health professionals**
   - Screening using the Reflexive Behavioral Test (voice or "BAAH" Test)

- Use Infant Milestones Related to Hearing as checklist (See Appendix K)
- Level 2 Questionnaire is filled-out by the attending doctor or midwife (Appendix L).

3. **For health facilities with OAE and AABR and with health professionals or trained health workers**
   - OAE or AABR

The referring health care professional should be informed by the facility of the results and its implications and suggest the necessary follow-up tests.

D. STOP CRITERIA DURING SCREENING SESSIONS

Stop criteria defines the conditions under which no further screening test is needed.

1. Stop Criteria for Well Baby (Non-High Risk) using OAE

Assuming that screening conditions are adequate (quiet baby, quiet room, acceptable probe fit):

- OAE screening in the well-baby, roomed-in with mother
- Two (2) screening sessions of no more than three (3) screens per ear are recommended, for a total of a maximum six (6) screens per ear. The screening sessions should be conducted several hours apart.
- If result of the first test of the first session is "PASS" then the patient is declared "PASS" for that ear. There is no need for a second session.
- If the result of the first test of the first session is "REFER" then, 2 more tests can be done for that session. If the results of the three tests are "REFER" then a second session is conducted at least 2 hours later.
- A baby who had a "REFER" result on OAE should not be rescreened with AABR but rather should proceed to a diagnostic ABR and/or - ASSR.

2. Stop Criteria for High Risk Infants using OAE

Assuming that the screen conditions are adequate (quiet baby with minimal movement, quiet room, acceptable electrode impedance and headphone placement):

- Baby should be screened close to the time of discharge.
- If the baby is less than five (< 5) days old, follow the well-baby protocol.
- If the baby is at least five (≥ 5) days of age, recommended stop criteria are one (1) screen per ear.
- A baby who had a "REFER" result on OAE should not be rescreened with AABR but rather should proceed to a diagnostic ABR and/or ASSR.

Table 1: Stop Criteria for Well Baby OAE and High Risk Baby <5 days old

SESSION	FIRST SESSION			SECOND SESSION			READING
TRIAL	1st	2nd	3rd	1st	2nd	3rd	
POSSIBLE RESULTS	Pass						PASS
	Refer	Pass					PASS
	Refer	Refer	Pass				PASS
	Refer	Refer	Refer				2ND SESSION*
				Pass			PASS
				Refer	Pass		PASS
				Refer	Refer	Pass	PASS
				Refer	Refer	Refer	REFER**

* 2nd session with an interval of at least 2 hours from 1st session
** Proceed to diagnostic ABR / ASSR

See Appendix M for the stop criteria algorithm for well baby OAE and high risk baby <5 days old.

3. Stop Criteria for all infants using Automated Auditory Brainstem Response (AABR)

- Maximum of two (2) screens per ear

E. FOLLOW-UP TESTING AND MANAGEMENT FOR "REFER" RESULTS

Please follow flowcharts for the Newborn Hearing Screening Program (Appendices G, H and I). These are the key points in the algorithm:

1. Follow-up testing must be done within one to three (1–3) months. Rescreening of infants should include re-evaluation of both ears even if only one (1) ear failed at initial screen.
    a. For OAE outpatient rescreening, 3 screening per ear is recommended (Table 2).
    b. For AABR outpatient rescreening, one screen per ear is recommended.

Table 2: Stop Criteria for OAE Outpatient Screening (per ear)

TRIAL	1st	2nd	3rd	4th	READING
	Pass				Pass
	Refer	Pass			Pass
	Refer	Refer	Pass	Pass*	Pass
	Refer	Refer	Pass	Refer	Refer
	Refer	Refer	Refer		Refer

* If the infant has a "Pass" result on the third trial; another trail must be done. If the result of the fourth trial is a "Pass" then the final result is a "Pass", if the result is a "Refer" then the final result is a "Refer".

See Appendix N for the stop criteria algorithm for OAE outpatient screening.

2. Formal auditory brainstem response, auditory steady state response (ASSR), and/or behavioral audiometric tests (if available) are recommended for infants who do not pass 2nd screening within three (3) months.

3. All infants with identified hearing loss should be referred by the primary health care professional to a board-certified ENT specialist within six (6) months after detection of hearing impairment for further management by a multidisciplinary team. The same primary health care professional should refer to other specialists and other professionals for continuing care.

4. Intervention in the form of hearing aid fitting, hearing and behavioral rehabilitation must be recommended within 6 -12 months after consult with an ENT specialist.

5. The health care professional who is providing primary care services to the infant is responsible for ensuring access to a team of professionals in multiple disciplines for habilitation and management.

F. SCREENING ENVIRONMENT

The NHSC must ensure that the screening environment is consistent with technical standards set by the NHSRC. There should be minimal noise, ≤ 40 dB. Hearing screening may be done in a designated room or at bedside. Acoustic dividers or curtains should be present. Radio, cell phones, TV and other audio devices must be turned off. Tests shall be done after nursing or feeding and away from other babies. Screening rooms shall always be available during screening times.

G. DECONTAMINATION OR DISINFECTION TECHNIQUES

The NHSP must ensure that all hearing equipment and methods are maintained according to infection control guidelines as prescribed by the DOH and the Philippine Hospital Infection Control Society (PHICS) and other infection control societies.

H. CONVEYING TEST RESULTS AND INFORMATION TO FAMILY

Screening results should be conveyed immediately to the parent/s or guardian so they understand the outcome and the importance of follow-up when indicated. The official result of the screening test (OAE or AABR) should be printed on thermal paper or captured using camera or scanner indicating the date and time of acquisition. Appendix O shows an example of the hearing screening official result. The official result is not the same as the Newborn Hearing Screening Registry Form.

Conveying test results shall be part of the Certifying Training Program. To facilitate this process for families, hearing screening personnel should ensure the following:

- Communications with immediate family members (parent/s or guardians) are ***confidential*** and presented in a caring and sensitive manner, preferably face-to-face.
- Medical professionals, specifically the Head of the Hearing Screening Center, primary care giver, physician or pediatrician of the child should also be aware of the results of the screening test and are documented in the hospital medical record.
- Before discharge, parents should be offered an appointment for follow-up testing if the newborn has a "REFER" result.

- The Head of the Hearing Screening Center is primarily accountable for the accuracy of the results and the reporting of the same to the parents or guardians, primary care physician or pediatrician, hospital/health facility and NHSRC.
- The NHSP has the responsibility of providing educational materials based on DOH and NHSRC recommendations. Educational materials should provide accurate information at an appropriate reading level and in a language or dialect they are able to comprehend. Appendices P and Q shows an example of such brochures. Materials should include a list of rehabilitation services, diagnostic and therapeutic facilities, hospitals, schools, therapy centers and support groups in the locality. NHSP are encouraged to submit materials to the DOH and NHSRC for approval and cataloging prior to posting and/or distribution.
- For "REFER" results, the NHSP are required to give a written referral to a specific service provider for further management.
- The NHSP are required to follow-up and document all high risk patients.
- It is expected that most of the results of screening would be "PASS" for both ears. However, it should be emphasized that hearing loss may have a delayed onset and that milestones related to hearing should be observed in the infant (Appendix K).

I. REGISTRY FORM AND REPORTING

A NHS Registry Form (Appendix R) from the NHSRC will be available for use for all institutions (hospital, clinic, health center). The NHS Registry Form contains the following information:

General Data

Patient's Code
Name of Infant (Last, First, Middle)
Date and Time of Birth
Infant's Gender
Birthing Facility Name and Complete Address
Birthing Facility Code to be given by DOH (includes all hospitals and lying-in centers, home births will also be given a unified code number)
Infant's Medical Record Number in the Birthing Facility*
Mother's Name (Last, First, Middle)
Mother's Medical Record Number in the Birthing Facility*
Mother's Complete Address
Mother's Telephone Number
Name and Complete Address of Infant's Health Professional (Physician or midwife) or Clinic (Physician or Clinic that will undertake the care of the baby following discharge)*

** data may not be available*

Screening Data

Type of Screening: Initial or Rescreen
Date of Screening
Screening Facility Name and Complete Address
Screening Facility Code to be given by DOH
(includes all hospitals, clinics and health centers with capacity to screen)
Birth weight (in grams)
Gestation Age (in weeks)

Risk Factors for Hearing Loss

Neonatal indicators:
Hyperbilirubinemia requiring transfusion
Ventilation >48 hrs
Illness or condition requiring NICU >48 hrs
Ototoxic medications
Features or other findings associated with a syndrome known to include hearing loss
Family history of permanent childhood hearing loss
Craniofacial anomalies including those with morphological abnormalities of the pinna and ear canal
In-utero infections such as CMV, herpes, toxoplasmosis, syphilis or rubella

Method of Screening (OAE or AABR)

Results: Right: Pass or Refer
Left: Pass or Refer
Others: Not performed, Declined, Discharged

Verifier Data

Complete Name
License Number (if applicable)
Signature of Verifier
(may be physician, audiologist, nurse, midwife or health worker who has been officially designated by the screening facility)

A Microsoft Excel format summary table with cover page (Appendix R) containing all pertinent information of all the patient's screened during the previous month will be submitted by the centers on or before the 7th day of the succeeding month. The registry forms and the official results of the OAE or AABR with the thermal paper or photo print-out showing the date and time (Appendix S) of the test should be scanned and stored electronically for quality control purposes.

All original forms and scans are kept in the centers or hospital files. The parent or guardian should have a copy of the registry form and official result, ideally attached or recorded in the infants "baby book."

IV. CATEGORIES FOR CENTERS

The UNHS program is best organized if you have a multi-disciplinary approach at the outset. A medical home concept for newborns is the most ideal set-up, which emphasizes on the role of the primary care physician with the full complement of a pediatrician, otorhinolaryngologists and speech therapists. More so, coordination of specialty medical care, provision for referrals for various services, assurance of timely follow-up and medical interface for medical interventions are also crucial to ensure program efficiency among NHSPs.

A. CATEGORIES OF SCREENING CENTERS

Category A (Newborn Hearing Screening Center)

- This center has the capacity to do hearing loss screening and could also provide for the preventive aspect of hearing impairment.

Category B (Newborn Hearing Diagnostic Center)

- This center can do both hearing loss screening and initial audiologic diagnostic evaluation such as an Audiometric Brainstem Response (ABR)/ Audiometric Steady State Response (ASSR). This facility will act as coordinator for the surrounding Category A Newborn Hearing Screening Centers. Each province should have at least one Category B center.

Category C (Newborn Hearing Diagnostic and Intervention Center)

- This center has the capacity to do hearing screening, repeat OAE and/or ABR and hearing aid fitting; at least one center should be present per region. This is the lowest category for a Regional Database Center.

Category D (Newborn Hearing Diagnostic, Intervention and Rehabilitation Center)

- This center has the capacity to do newborn hearing screening, repeat ABR/ASSR, hearing aid fitting, ear surgery, cochlear implantation and speech rehabilitation

Newborn Hearing Screening Reference Center (NHSRC)

- A central facility of the National Institutes of Health that defines testing and follow-up protocols, maintains an external laboratory proficiency testing program, oversees the national testing database and case registries, assists government and non-government agencies in the training activities in all aspects of the program, and oversees content of educational materials.

B. REQUIREMENTS FOR PERSONNEL

All personnel involved in the NHSP should undergo a certifying course. All personnel in newborn hearing screening centers should at least be 19 years old high school graduate, proficient in English, with good communication skills. Managers such as physicians (ENT, Pediatricians, Family Physicians, General Practitioners, etc) and audiologists shall submit appropriate credentials. Physicians and other members of the health care team should be currently licensed. Applications for NHSC personnel training shall be submitted to the NHSRC. The application form (Appendix T) shall be made available for download through the NIH, NHSRC and DOH websites. Certifying training programs for all personnel, including managers (doctors and audiologists), shall be conducted by the NHSRC and shall be coordinated with the DOH. The training programs will include didactics, skills building, return demonstration and written evaluation and shall be consistent with DOH standards. Objective demonstration of competence above a minimum passing level and compliance with DOH regulations is required for continued certification.

C. REQUIREMENTS FOR CENTERS

Managers of Newborn Hearing Screening Centers should have passed the Category (A, B, C or D) specific certifying workshop prior to submission of application for licensing. Applications forms for Newborn Hearing Screening Center licensing shall be available for distribution together with the Category specific certification for managers and or technicians (Appendix U).

Applications which are available for download from the NIH, NHSRC, and DOH websites for the certification and checklist for basic requirements for category specific

Newborn Hearing Screening Centers (Appendix M) shall be submitted to the NHSRC then forwarded to the Department of Health.

Onsite inspection of facility and equipment will be done by the DOH in coordination with the NHSRC. ***The DOH has the sole authority to give the certification for operation of Newborn Hearing Screening Centers.***

Category A: Newborn Hearing Screening Center

Duration: Certification should be renewed every three (3) years

Facility: Area of at least 3 x 3 sq. meters with ambient sound not greater than (≤) 40 dB

Equipment: Otoacoustic emission test machine (either a transient-evoked or distortion product type) and/or an Automated Audiometric Brainstem Response (AABR) Test Machine

Connectivity: Access to a computer with internet, spreadsheet program (MS Excel Open Office), scanner, camera, and or data capturing device capable of electronic transmission (such as cellphone, smartphone, tablet with camera)

Personnel: Licensed physician or clinical audiologist (graduate of Masters in Clinical Audiology) to perform screening and manage the center, passed the NHS training program given by the NIH and is able to send electronic monthly reports to the NHSRC

Optional: Adult personnel (≥ 19 years old), at least high school graduate, proficient in English, with good communication skills who passed the NHS training program given by the NHSRC.

Quality Assurance:

- Perform initial hearing screening to all newborns as previously defined
- Give advice and provide materials on hearing screening and detection of hearing loss in infants and children
- Follow-up and do re-testing of "REFER" patients from 1 month to 3 months of life
- Provide an annual maintenance plan of equipment

Category B: Newborn Hearing Diagnostic Center

Licensing: Certification should be renewed every three (3) years

Facility: Dedicated sound treated room at least 3 x 4 sq. meters, with bed, that could accommodate audiologic/audiometric diagnostic machines such as the ABR and/or ASSR, immitance machine and clinical audiometer with play audiometry capability

Connectivity: Computer with internet, spreadsheet program (MS Excel, Open Office), scanner or camera or data capturing device capable of electronic transmission (such as cellphone, smartphone, tablet with camera)

Equipment: Otoacoustic Emission Test Machine (Distortion Product type or DPOAE) and/or Automated Auditory Brainstem Response (AABR)

Auditory Brainstem Response (ABR) Machine and/or Auditory Steady State Response (ASSR)

Immittance Machine (Tympanometer)

Clinical Audiometer with play audiometry capabilities

Personnel: Clinical audiologist (Masters in Clinical Audiology graduate)
Licensed physician or Otorhinolaryngologist (Diplomate of the Philippine Society of Otorhinolaryngology-Head & Neck Surgery)
**Clinical audiologist or ENT to supervise, act as reader, and manager of the center, and is able to send electronic monthly reports to the NHSRC.*

Optional: Adult personnel (>/= 19 years old), at least high school graduate, proficient in English, with good communication skills who passed the NHS training program given by the NHSRC.

Quality Assurance:

- Perform initial hearing screening to all newborns as previously defined
- Give advice and provide materials on hearing screening and detection of hearing loss in infants and children
- Follow-up and do re-testing of "REFER" patients from 1 month to 3 months of life
- Follow-up and to further testing of patients who has two (2) "REFER" results in separate occasions within the first six (6) months of life.
- Provide an annual maintenance plan of equipment

Category C: Newborn Hearing Diagnostic and Intervention Center

Licensing: Licensing should be renewed every three (3) years.

Facility: Sound treated, dedicated room, at least 3 x 4 sq. meters with one (1) bed, that could accommodate audiologic/audiometric diagnostic machines such as the auditory brainstem response (ABR), immittance machine, hearing aid fitting equipment. The center must also have behavioral audiometric equipment.

Connectivity: Dedicated computer with internet, spreadsheet program (MS Excel Open Office), scanner, camera or data capturing device capable of electronic transmission (such as cellphone, smartphone, tablet with camera)

Equipment: Otoacoustic Emission Test Machine (Distortion Product type or DPOAE) and or AABR

Audiometric Brainstem Response (ABR) and /or ASSR;

Immittance Machine (Tympanometer)

Clinical Audiometer with play audiometry capabilities

Hearing aid fitting equipment

Personnel: Clinical audiologist (Masters in Clinical Audiology graduate)
Otorhinolaryngologist (Diplomate of the Philippine Society of Otorhinolaryngology-Head & Neck Surgery)
**Clinical audiologist or ENT to supervise, act as reader, and manager of the center, and is able to send electronic monthly reports to the NIH-NHSRC*

Optional: Adult personnel (>/= 19 years old), at least high school graduate, proficient in English, with good communication skills who passed the NHS training program given by the NHSRC.

Quality Assurance:

- Perform initial hearing screening to all newborns as previously defined
- Give advice and provide materials on hearing screening and detection of hearing loss in infants and children
- Follow-up and do re-testing of "REFER" patients from 1 month to 3 months of life
- Follow-up and to further testing of patients who had two (2) "REFER" results in separate occasions within the first six (6) months of life.

- Able to offer intervention such as hearing aids and other implantable devices within 6 months to one year of life
- Able to refer for speech and occupational therapy for hearing rehabilitation within the hospital, center or easily accessible facility
- Provide an annual maintenance plan of equipment

Category D (Newborn Hearing Diagnostic, Intervention and Rehabilitation Center)

Licensing: Licensing should be renewed every three (3) years.

Facility: Sound treated, dedicated room, at least 3 x 4 sq. meters with a bed, that could accommodate audiologic/audiometric diagnostic machines such as the auditory brainstem response (ABR), immittance machine, behavioral audiometry equipment, hearing aid fitting, speech and occupational therapy services

Connectivity: Dedicated computer with internet, spreadsheet program (MS Excel Open Office), scanner, camera, or data capturing device capable of electronic transmission (such as cellphone, smartphone, tablet with camera)

Equipment: Otoacoustic Emission Test Machine (Distortion Product type or DPOAE) and/or AABR;

Audiometric Brainstem Response (ABR) and/or ASSR;

Immittance Machine (Tympanometer)

Clinical Audiometer with play audiometry capabilities

Hearing aid fitting equipment

Personnel: Clinical audiologist (a graduate of Masters of Clinical Audiology)
Otorhinolaryngologist (Diplomate of the Philippine Society of Otorhinolaryngology-Head & Neck Surgery)
**Clinical audiologist or ENT to supervise, act as reader, and manager of the center, and is able to send electronic monthly reports to the NHSRC*

Adult personnel (≥ 19 years old), at least high school graduate, proficient in English, with good communication skills who passed the NHS training program given by the NHSRC

Speech therapist/speech pathologist, occupational therapist

Developmental pediatrician

Optional: Pediatric Neurologist, Pediatric Endocrinologist/geneticist, Clinical Psychologist, other personnel

Quality Assurance:

- Perform initial hearing screening to all newborns as previously defined
- Give advice and provide materials on hearing screening and detection of hearing loss in infants and children
- Follow-up and do re-testing of "REFER" patients from 1 month to 3 months of life
- Follow-up and to further testing of patients who had two (2) "REFER" results in separate occasions within the first six (6) months of life.
- Able to offer intervention such as hearing aids and other implantable devices (cochlear implant, bone anchored hearing aid) within 6 months to one year of life
- Able to refer for speech and occupational therapy for hearing rehabilitation within the hospital, center or easily accessible facility
- Provide an annual maintenance plan of equipment

Newborn Hearing Screening Reference Center

A central facility of the National Institutes of Health that defines testing and follow-up protocols, maintains an external laboratory proficiency testing program, oversees the national testing database and case registries, assists government and non-government agencies in the training activities in all aspects of the program, and oversees content of IEC materials.

Personnel Requirements:

Certified ENT subspecialist (Otologist) and/or clinical audiologist
(graduate of Masters in Clinical Audiology)
Project Development Officers
Epidemiologist (graduate of MS Epidemiology, Public Health or MS Clinical Epidemiology)
Data encoders
Research assistants

V. ROLES AND RESPONSIBILITIES OF UNHS IMPLEMENTERS

A. Lead Agencies

Department of Health

The DOH shall be the lead agency in implementing the provisions of this Act. For this purpose, the DOH shall perform the following functions:

1. Develop a comprehensive program for prevention and management of hearing loss of children.
2. Appropriate, leverage, and mobilize resources of the various offices within the DOH, NIH-NHSRC, PHIC, and other health related facilities, and other external resources
   to fully implement the Law.
3. Enjoin local government, stakeholders, concerned health personnel and workers at all levels to fully implement the UNHS
4. Expand the Advisory Committee on Newborn Screening to include representatives for hearing screening.
5. Coordinate with other national government agencies, Local government units, health professional organizations and societies, funding agencies, development partners, socio-civic organizations private sectors and others in the implementation of the UNHS.
6. Include newborn hearing screening in its health communication plan, advocacy and social mobilization campaigns.
7. Coordinate with the NIH-NHSRC for the following:
   - Certification of NHSCs, devices and personnel
   - Preparation of defined testing protocols and quality assurance programs
   - Maintenance and improvement of the NHS registry
   - Development of alternative hearing screening methods, instruments, and procedures
   - Definition of candidacy and the promulgation of selection criteria regarding appropriate treatment and/or rehabilitative interventions for the deaf or hearing-impaired child.
   - Production of newborn hearing screening registry cards

- Preparation and distribution of advocacy campaign activities and dissemination of public
  information materials
- Formulate policies for the institutionalization of the program at all levels of implementation. Integrate the NHSP into the current health care delivery system. It should become part and parcel of a routine procedure for newborn in hospitals, public and private health institutions,
- Ensure that a network for prompt recall of those with "refer" results is established in collaboration with the LGUs, government agencies, and other non-government organizations
- Establish a network of hospitals, health facilities and diagnostic hearing centers for the referral and management of those newborns who had "refer" result and for confirmatory test.
- Coordinate with the following groups for their possible role in the implementation of the UNHSP:
  - Patients' support groups and service provider delivery groups involved in attending to the needs and concern of individuals who are deaf and hard-of-hearing and their families
  - Qualified professional personnel who are proficient in deaf or hard-of-hearing children's language and who possess the specialized knowledge, skills and attributes needed to serve deaf and hard-of-hearing infants, toddlers, children and their families
  - Other health and education professionals and organizations.
- Monitor the extent to which hearing screening and evaluation are conducted in health institutions, and assist in the development of UNHSPs for hospitals, health institutions and diagnostic hearing centers. The DOH shall require these healthcare institutions to periodically submit data on newborns screened in their facility and include compliance to this function as a criterion for renewal of certification.

National Institutes of Health - Newborn Hearing Screening Reference Center

The NIH – NHSRC shall assist the Department of Health in the implementation of the program by performing the following functions:

- Defines and recommends newborn hearing screening testing and follow-up protocols which includes hearing screening methods, devices used, location, manner and timing of newborn hearing testing.
- Conducts personnel certifying courses together with the DOH
- Conducts testing and certification of newborn hearing screening devices and methods
- Distributes newborn hearing screening registry cards and advisory materials
- Maintains and oversees the national hearing screening database and case registries
- Assists government and non-government agencies in all aspects of the program including implementation, trainings, awareness campaigns including overseeing content of IEC materials.

B. Major Stakeholders

To ensure the implementation of the UNHSP, the following organizations/agencies identified below shall have the following responsibilities:

1. **Health facilities** (hospitals, birthing facilities, rural health units and health centers) shall:
    - Integrate newborn hearing screening in the delivery of health services in the respective healthcare institutions.
    - Institutionalize NHS services in healthcare facilities by ensuring that information, education, communication, screening, recall, referral, and management of newborns who had a "refer" result are being provided in the healthcare facilities.
    - Ensure that all staff in the healthcare institutions is oriented about the benefits of NHS, the integration of the services in their current health services provided in the health facility and the roles and responsibilities of the staff in the institutionalization of the services.
    - Designate people who will be responsible for the following:
    - Educating expectant parents about the significance of NHS
    - Conducting hearing screening

- Recalling high risk patients in need of further management
- Referring newborns for further audiologic examination and management
- Establish a financial system that will ensure the effective and efficient collection of fees and services for the duly-certified Newborn Hearing Screening Center
- Monitor and evaluate the operations of Newborn Hearing Screening in the health facility
- Define creative health financing packages to make NHS accessible, particularly to the economically deprived.

2. **DILG** shall advocate and encourage the cooperation of LGUs to take active role in the implementation of RA 9709. Assist the DOH in the monitoring and evaluation of the program.

   LGUs shall:

   - Develop the capabilities of health workers in the implementation of RA 9709. Public health physicians and other designated health workers should be trained to conduct hearing screening tests on all newborns in their locality;
   - Appropriate budget for the training of their public health workers on how to do newborn hearing screening;
   - Issue local ordinances and resolutions that integrate Newborn Hearing Screening in the local health delivery system and the appropriation of budget such as, but not limited to, the following: 1) operation of RA 9709;) training of personnel on how to conduct hearing screening; 3) establishment of a hearing screening center in the locality ,4) purchase of the hearing screening equipment 5) referral of a newborn detected with hearing loss to a referral center for further evaluation and treatment;
   - Ensure that adequate and sustained newborn hearing screening services such as information, education, communication, screening, recall, and follow-up are being provided in all LGU Health facilities (Rural Health Unit/ City Health Unit, Lying-in clinics, City/Municipal/District/Provincial Hospitals);
   - Establish a functional case management for the recall and referral system with a strategically accessible NHS health facility referral center;
   - Establish coordination and networking among concerned agencies in the implementation of the law
   - Monitor and evaluate the implementation of the law in their localities

- Explore/encourage creative health financing packages to make newborn hearing screening accessible particularly among the economically deprived populace;
- Perform other roles and responsibilities as deemed necessary for the implementation of this Act.

3. **Academe, Health Professional Societies, National Organizations of HealthProfessionals shall:**
   - Ensure that all its members are aware of the significance of newborn hearing screening to their clients, their families and the society at large;
   - Define mechanisms that will ensure and monitor that its members are doing their moral and social obligations to inform parents about the significance of Newborn Hearing Screening
   - Recommend the inclusion of NHS as part of the curricula of all allied health professions

4. **All DOH agencies such as Family and Child Health, National Center for Disease Prevention and Control (NCDPC), Bureau of Health Facilities and Services (BHFS) and Regional Center for Health and Development and National Center for Health Facilities and Development (NCHFD) shall** ensure adequate policy and logistical support to the UNHSP. These technical partners will play the following major role:
   - BHFS – regulation of the NHSC and its different categories
   - NCDPC – for the integration of UNHSP with other DOH programs
   - NCHFD - for the capacity building of DOH Hospital for the effective conduct of the UNHSP
   - FDA- for the technical regulation of hearing screening and testing devices and equipment as well as devices for rehabilitation (Hearing aids and Hearing implants)

5. **Council for the Welfare of Children shall:**
   - Ensure NHS in the establishment of the system for early detection, prevention, referral and intervention of congenital hearing loss and disabilities in early childhood
   - Promote NHS as an integral part of the Early Childhood and Care Development (ECCD) programs implemented at the national, regional and local levels;

- Provide avenues in developing innovative advocacy and communication approaches and social mobilization in partnership with civil societies, non-government organizations and other groups;
- Include NHS-related indicators in the monitoring and evaluation system of child advocacy programs.

6. National Advisory Committee on NHS

To ensure sustainable inter-agency collaboration, the National Advisory Committee on NHS shall be created and made an integral part of the Office of the Secretary. It shall:

- Review and recommend risk factors to be included in the NHS.
- Review and recommend the standard NHS hearing screening fees to be charged by NHSC for each newborn.
- Recommend corrective measures and strategic directions as deemed necessary.

VI. RESEARCH AND DEVELOPMENT, STATISTICS, DATABASE AND INFORMATION

Robust information from actual operations is needed to provide evidence of the achievement of the goals set out by the law. Such information can be obtained from the data generated from screening, further testing and early intervention activities, captured and aggregated as near real time as possible. Data must flow through all levels of the UNHS program in an open and transparent manner in order to inform decisions regarding policies. Security of patient information must always be protected and respected.

The data gathered will be used to build a national registry that will track interventions and outcomes of newborns with hearing impairment.

A. CORE DATASET

Aside from the data elements, mostly patient identifiers and hearing screening results in the NHS Registry Card the following will also be reported by the NHS Centers:

1. Patient Identifiers, Hearing Screening Results and Risk Factors – NHS Registry Card

2. Interventions

Date of initial referral to intervention facility
Type of intervention: facility based / home based
Name of provider:

Date of first enrollment (onset of intervention)
Functional communication: oral /sign/none
Hearing aid: right ear / left ear
Other devices: right ear / left ear

3. Referrals from the community, other facilities

Referral for diagnostic ABR/ASSR
Referral for behavioral audiometry / VRA
Referral for hearing aid fitting
Referral for surgery (includes cochlear implant, BAHA, microtia surgery)
Referral for speech therapy, hearing rehabilitation
Referral for occupational therapy (includes other types of communication sign language, etc.)
Duration to see: delay in referrals
Reasons for delays in referral

B. PERFORMANCE INDICATORS

Indicator data will be aggregated at the regional and national level for trending, provider profiling and benchmarking with local and international standards.

1. Percentage (%) of facility births screened prior to discharge or within 3 months (calculated from total number of newborns screened divided by total newborns in the facility.)
2. Referral rate (calculated from total number of newborns referred to Newborn Hearing Screening Reference Center/ audiology center divided by total number of newborns screened by NHSC.)
3. Average time from NHSC referral to audiological assessment.
4. Yield – calculated as number of newborns with audiologically diagnosed hearing impairment divided by total newborns screened by NHSC.
5. Percentage of DOH-licensed and PhilHealth accredited facilities that are providing newborn hearing screening services with or without utilization of PHIC newborn package
6. Other indicators at Newborn Hearing Screening Center
    - % of newborns screened who fail initial screening
    - % of newborns screened who fail second screening
    - % of screened newborns who fail re-screening referred for further audiological evaluation (confirmatory)
    - % of screened newborns with permanent childhood hearing impairment, moderate-severe HI
    - % of screened newborns with HI referred for habilitation (hearing aid or cochlear implantation)
    - % of screened newborns with HI referred for speech therapy
    - % of families of newborns refusing screening (identify reasons)
    - % of newborns who failed initial screen not coming back for re-screen

- % of newborns who fail re-screen not referred or submitting for confirmatory tests or further audiological tests

The data set can be used by every local hearing program or accredited newborn hearing center for management and audit. It is envisioned that an online system will be developed which allows providers and public health officials to benchmark their performance, monitor improvement, compare their services with national standards. Specific data can be exported enabling the creation of a focused report.

Furthermore, the core data set will be used for the following:

- Establishment of a national hearing registry
- Program evaluation within 1 year
- Development of efficient data management and monitoring from screening, diagnosis to intervention
- Cost-effectiveness study of existing UNHSP
- Identification of causes and risk factors for hearing loss (e.g. proportion of rubella among PCHI patients --- highlight improvement in vaccination coverage)
- Formulation of outcomes research (speech & language development, QOL post-intervention)
- Development of community –based screening methods
- Identification of motivating factors for submitting for hearing screening
- Determination of effectiveness of active vs passive surveillance among local health workers in identifying babies with HI
- Development of reliable and valid alternative hearing screeners in the community to identify suspected infants for facilitation of referral to NHSCs
- Identification of methods to enhancing availability and accessibility of NHSCs
- Development of efficient hospital-based screening protocols
- Identification of motivating factors for submitting for hearing screening
- Development of process evaluation (conduct of screening-referral for audiologic testing-referral for habilitation-referral for speech therapy-documentation-reporting) to identify factors in enhancement of the implementation of the program and attainment of program objectives

C. MONITORING AND EVALUATION

All NHSCs must be annually reviewed in terms of compliance with the following standards:

1. Contract -Based Standards

On terms of reference of contract, if NHS provider is a contracted agency of a bigger facility or hospital

2. Technical Standards

If the NHS provider operates and maintains its facility and equipment in terms of technical specifications and standards established by audiological sources and the device manufacturers

3. Customer Service Performance

Demonstrating the NHS provider's efforts and acumen at providing customer service. The components of this section will include:

a. Inquiry and Complaint Tracking Database - listing incidents by source, types, and outcomes.

b. Customer Survey – based on customer service surveys. Service will be rated based on a statistical evaluation of customer responses.

4. NHS Performance Standards

Based on operations standards set forth by this manual, including any notices of exceptions or instances of non-compliance and provider's performance in curing those deficiencies. Also, consideration will be given to a NHS provider's active participation in the UNHS program, projects, committees, task forces, etc., and multi-agency training exercises. Also includes:

a. Qualifications of clinical personnel (including certifications and continuing education)

b. Maintaining all required clinical equipment in good working order

c. Adherence to clinical protocols

d. Clinical Performance – Based on clinical outcomes of screening the NHS operations. This includes Quality Improvement Processes such as referral rates, yields and turnaround times.

VII. FUNDING AND SUSTAINABILITY

A. Components Needing Funding

There are approximately 2 million newborns per year, 80% of whom are born at home and 50% are indigent. To implement the program, the following are the components that need funding:

Newborn Hearing Screening Centers in regions where there are no private licensed providers:

1. Screening equipment such as OAE and AABR
2. Confirmatory or definitive tests such as ABR, ASSR and behavioral tests
3. Hearing aid fitting equipment
4. Staff (manager, audiometricians, audiologists) for the centers

Department of Health (CHD) and NIH-NHSRC:

1. Training workshops (honorarium for facilitators, manuals, exam and certificates)
2. NHS Center licensing (transportation cost and honorarium of inspector)
3. Registry forms
4. Courier / electronic transmission fees for forms
5. Registry / data management facility at the NIH
6. Salaries of NIH-NHSRC staff
7. Project development
8. Educational materials development
9. Information dissemination and advocacy activities
10. Database development
11. Standards development (evaluation of new methods and technologies)

B. Sources of Funding

The following can be the sources of funding:

1. General Appropriations Act – DOH / NIH Philippines
2. Philippine Health Insurance Corporation (PhilHealth)
3. PCSO and other funding institutions
4. Fees derived from certification and training
5. Income from sale of NIH newborn registry cards
6. Donations from the private sector

C. Sustainability of the Program

It is envisioned that all NHSC will be financially sustainable not just from provision of hearing tests but also from a broader array for hearing services for the

hearing impaired covering a wider population base. Centers must strive to provide services that are of real value while improving internal efficiencies and achieving economies of scale.

VIII. ADVOCACY AND INFORMATION DISSEMINATION FOR UNHS

The objectives for advocacy and information dissemination are to provide awareness of the Universal Newborn Hearing Screening Program and to encourage those who are already practicing to continue with the implementation of UNHS. The target groups are parents, potential parents (those applying for a marriage license) or guardians as well as the different disciplines, organizations who provide care to women and children. Dissemination can be carried out through seminars/workshops, broadcast media, internet, social networking or small print media such as posters or brochures advocated by the NIH and DOH.

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APPENDIX A

Republic Act 9709

S. No. 2390
H. No. 2677

Republic of the Philippines
Congress of the Philippines
Metro Manila

Fourteenth Congress

Second Regular Session

Begun and held in Metro Manila, on Monday, the twenty-eighth day of July, two thousand eight.

[REPUBLIC ACT No. 9709]

AN ACT ESTABLISHING A UNIVERSAL NEWBORN HEARING SCREENING PROGRAM FOR THE PREVENTION, EARLY DIAGNOSIS AND INTERVENTION OF HEARING LOSS

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

SECTION 1. *Short Title.* – This Act shall be known as the "Universal Newborn Hearing Screening and Intervention Act of 2009".

SEC. 19. *Effectivity Clause.* – This Act shall take effect fifteen (15) days after its publication in at least two (2) newspapers of general circulation.

Approved.

PROSPERO C. NOGRALES
Speaker of the House of Representatives

JUAN PONCE ENRILE
President of the Senate

This Act which is a consolidation of Senate Bill No. 2390 and House Bill No. 2677 was finally passed by the Senate and the House of Representatives on June 3, 2009.

MARILYN B. BARUA-YAP
Secretary General
House of Representatives

EMMA LIRIO-REYES
Secretary of the Senate

Approved: AUG 12 2009

GLORIA MACAPAGAL-ARROYO
President of the Philippines

0

50384

http://www.senate.gov.ph/republic_acts/ra%209709.pdf

APPENDIX B

Administrative Order No. 2010-0020

Republic of the Philippines
Department of Health
OFFICE OF THE SECRETARY

June 28, 2010

ADMINISTRATIVE ORDER
No. 2010 – 0020

SUBJECT: **RULES AND REGULATIONS IMPLEMENTING REPUBLIC ACT (R.A.) NO. 9709 OTHERWISE KNOWN AS THE "UNIVERSAL NEWBORN HEARING SCREENING ACT OF 2009"**

The following rules and regulations are hereby promulgated to implement **Republic Act (R.A.) No. 9709**, otherwise known as the **Universal Newborn Hearing Screening and Intervention Act of 2009**, an act establishing a **Universal Newborn Hearing Screening (UNHSP) Program** for the prevention, early diagnosis, and intervention of hearing loss.

SECTION 29. ***Effectivity Clause*** – This Implementing Rules and Regulation shall take effect immediately after its publication in a newspaper of general circulation.

6/28/10
ESPERANZA I. CABRAL, MD
Secretary of Health

http://home.doh.gov.ph/ao/ao2010-0020.pdf

APPENDIX C

Philhealth Circular No. 011-2011

Republic of the Philippines
PHILIPPINE HEALTH INSURANCE CORPORATION
Citystate Centre, 709 Shaw Boulevard, Pasig City
Healthline 637-9999 *www.philhealth.gov.ph*

PHILHEALTH CIRCULAR
No. 011-2011

To : **All PhilHealth Stakeholders and All Concerned**

Subject : **New PhilHealth Case Rates for Selected Medical Cases and Surgical Procedures and the No Balance Billing Policy**

C. Newborn Care Package (NCP)

1. The package shall be increased to One Thousand Seven Hundred and Fifty Pesos (Php 1,750) which shall include the following services, immediate drying of the newborn, early skin-to-skin contact, cord clamping, non-separation of mother/baby for early breastfeeding initiation, eye prophylaxis, Vitamin K administration, weighing of the newborn, BCG vaccination, Hepatitis B immunization (1st dose), Newborn Screening Test (NBS), Newborn Hearing Screening Test, and Professional fee (that includes breastfeeding advice and physical examination of the baby, among others).
2. In instances when the enumerated services for NCP above were not provided completely or patient-members were asked to purchase/access services outside the facility and an Official receipt is attached to the claim, the member shall be reimbursed all eligible expenses detailed in the attached OR/s with the said payment to the member deducted from the case payment that would be paid to the health facility.
3. In instances where, upon post-audit, services were not rendered or were not complete as shown above, then these shall be charged to future claims of the health facility with corresponding sanctions or penalties the Corporation may charge
4. All NCP claims are covered by the NBB Policy as described in Section III.

Date: 8/11/11

Page 5 of 6

XI. Effectivity

This Circular shall take effect for all claims with admission date of September 1, 2011. Further, this Circular shall be published in any newspaper of general circulation and shall be deposited thereafter with the National Administrative Register at the University of the Philippines Law Center.

DR. REY B. AQUINO
President and CEO
Date signed: 8/11/11

Date: 8/11/11
CERTIFIED TRUE COPY

PhilHealth

OP-S11-43026

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http://www.philhealth.gov.ph/circulars/2011/circ11-A_2011.pdf

APPENDIX D

Department of Health Classification of Hospitals and Other Health Facilities

CLASSIFICATION OF HOSPITALS			
GENERAL	**LEVEL 1**	**LEVEL 2**	**LEVEL 3**
Clinical Services and Facilities for In-Patients	Consulting Specialists in: Medicine Pediatrics OB-Gyne Surgery	Level 1 plus all	Level 2 plus all:
		Departmentalized Clinical Services	Teaching/training with accredited residency training program in the 4 major clinical services
	Emergency and Out-patient Services	Respiratory Unit	Physical Medicine and Rehabilitation Unit
	Isolation Facilities	General ICU	
	Surgical/Maternity Facilities	High Risk Pregnancy Unit	Ambulatory Surgical Clinic
	Dental Clinic	NICU	Dialysis Clinic
Ancillary Services	Secondary Clinical Laboratory	Tertiary Clinical Laboratory	Tertiary lab with histopathology
	Blood Station	Blood Station	Blood Bank
	1st Level X-ray	2nd Level X-ray	3rd level X-ray
	Pharmacy		

CLASSIFICATION OF OTHER HEALTH FACILITIES			
A	**B**	**C**	**D**
Primary Care Facility	**Custodial Care Facility**	**Diagnostic/ Therapeutic Facility**	**Specialized Out-patient Facility**
With In-patient Beds: • Infirmary/Dispensary • Birthing Home	Psychiatric Care Facility	Laboratories • Clinical Lab/HIV • Blood Service Facilities • Drug Test Lab • NB Screening Lab • Water Lab	Dialysis Clinic (DC)
			Ambulatory Surgical Clinic (ASC)
Without Beds: • Medical Out-patient Clinics • OFW Clinics • Dental Clinics	Drug Abuse Treatment and Rehabilitation Center (DATRC)	Ionizing Machines as X-ray, CT Scan, mammography and others	In-Vitro Fertilization (IVF) Centers
	Sanitarium/ Leprosarium	Non-Ionizing Machines as ultrasound, MRI and others	Radiation Oncology Facility
	Nursing Home	Nuclear Medicine	Oncology Center/Clinic

APPENDIX E

Risk Indicators Associated With Permanent Congenital, Delayed-Onset, or Progressive Hearing Loss in Childhood

(Joint Committee on Infant Hearing 2007 AAP, AAOHNS, ASHA)

1. Caregiver concern regarding hearing, speech, language, or developmental delay.
2. Family history of permanent childhood hearing loss.
3. Neonatal intensive care of >5 days, or any of the following regardless of length of stay: ECMO, assisted ventilation, exposure to ototoxic medications (gentamycin and tobramycin) or loop diuretics (furosemide/lasix), and hyperbilirubinemia requiring exchange transfusion.
4. In-utero infections, such as CMV, herpes, rubella, syphilis, and toxoplasmosis.
5. Craniofacial anomalies, including those involving the pinna, ear canal, ear tags, ear pits, and temporal bone anomalies .
6. Physical findings, such as white forelock, associated with a syndrome known to include a sensorineural or permanent conductive hearing loss.
7. Syndromes associated with hearing loss or progressive or late-onset hearing loss, such as neurofibromatosis, osteopetrosis, and Usher syndrome Other frequently identified syndromes include Waardenburg, Alport, Pendred, and Jervell and Lange-Nielson
8. Neurodegenerative disorders, such as Hunter syndrome, or sensory motor neuropathies, such as Friedreich ataxia and Charcot-Marie-Tooth syndrome.
9. Culture-positive postnatal infections associated with sensorineural hearing loss, including confirmed bacterial and viral (especially herpes viruses and varicella) meningitis.
10. Head trauma, especially basal skull/temporal bone fracture requiring hospitalization.
11. Chemotherapy

APPENDIX F

Application for Form for Device Certification

Form A-213 Page 1/1

Newborn Hearing Screening Reference Center

National Institutes of Health, UP Manila, Ermita, Manila

APPLICATION FORM

NEWBORN HEARING DEVICE

Name: _____
SURNAME FIRST NAME MIDDLE NAME
Company / Institution Name: _____
Address: _____
Phone: (__)_____ Cellphone: _____ Fax: (__)_____
Email: _____ Website: _____

DEVICE APPLIED FOR:

- ☐ Transient Evoked Otoacoustic Emissions (TEOAE)
- ☐ Distortion Product Otoacoustic Emissions(DPOAE)
- ☐ TEOAE and DPOAE
- ☐ Automated Auditory Brainstem Response (AABR)
- ☐ TEOAE, DPOAE and AABR

MODEL NAME: _____

MODEL NUMBER: _____

MANUFACTURER: _____

ADDRESS OF MANUFACTURER: _____

DATE RELEASED: _____

LOCAL DISTRIBUTOR: _____

ADDRESS OF DISTRIBUTOR: _____

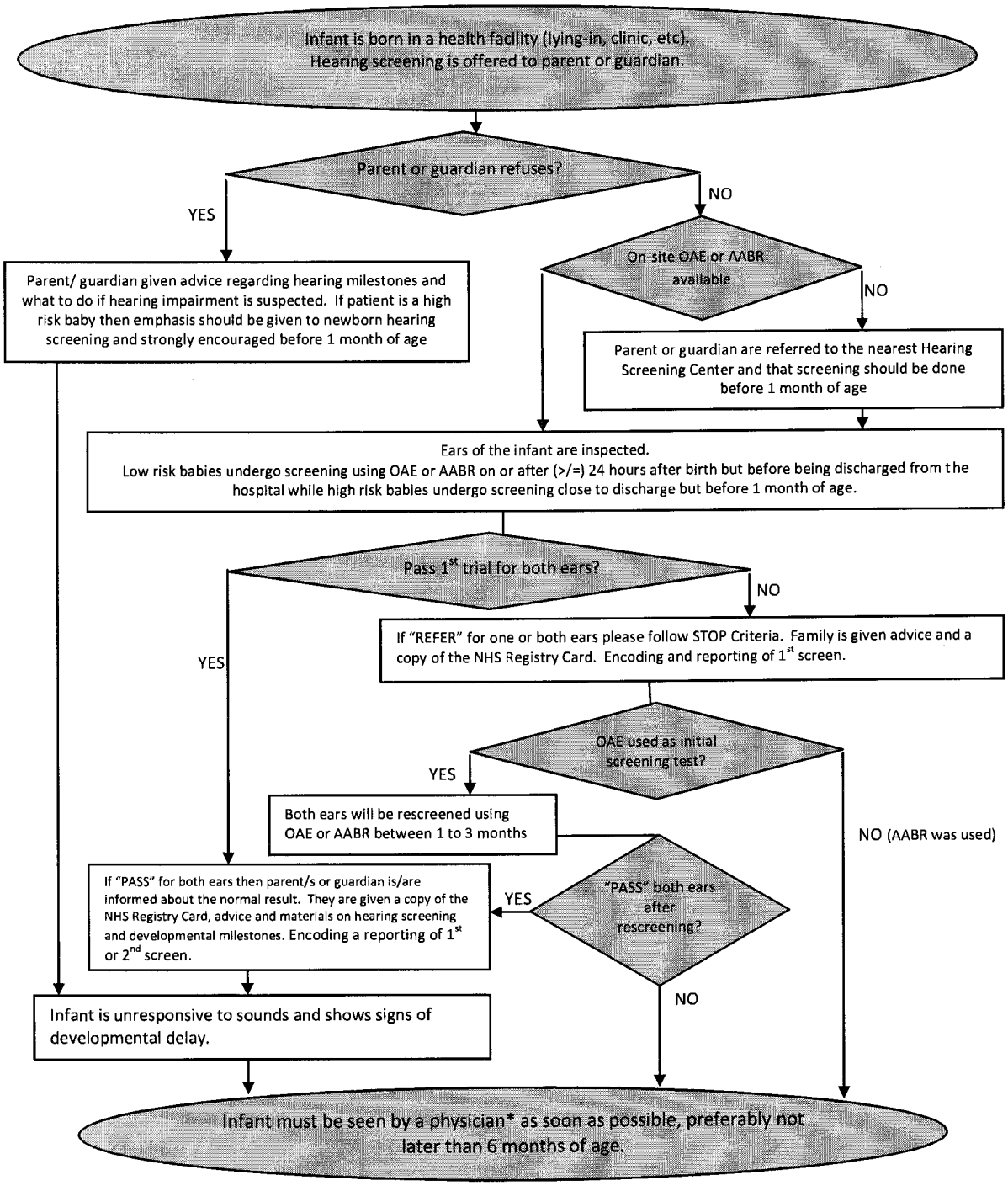
CONTACT NUMBER OF DISTRIBUTOR: _____

EMAIL OF DISTRIBUTOR: _____

FOR NHSRC ONLY:
Application Received by: _____ Date of Application: _____
Signature of Recipient: _____
Fee paid: P_____(OR _____) Date of OR: _____
Result of Evaluation: ☐PASS ☐FAIL Reason: _____
Formal Report Received by:_____ Date: _____
Date Certificate Issued: _____ Certificate Received by: _____ Date: _____
Name of Evaluators: 1 _____ Signature: _____
2 _____ Signature: _____
3 _____ Signature: _____

APPENDIX G

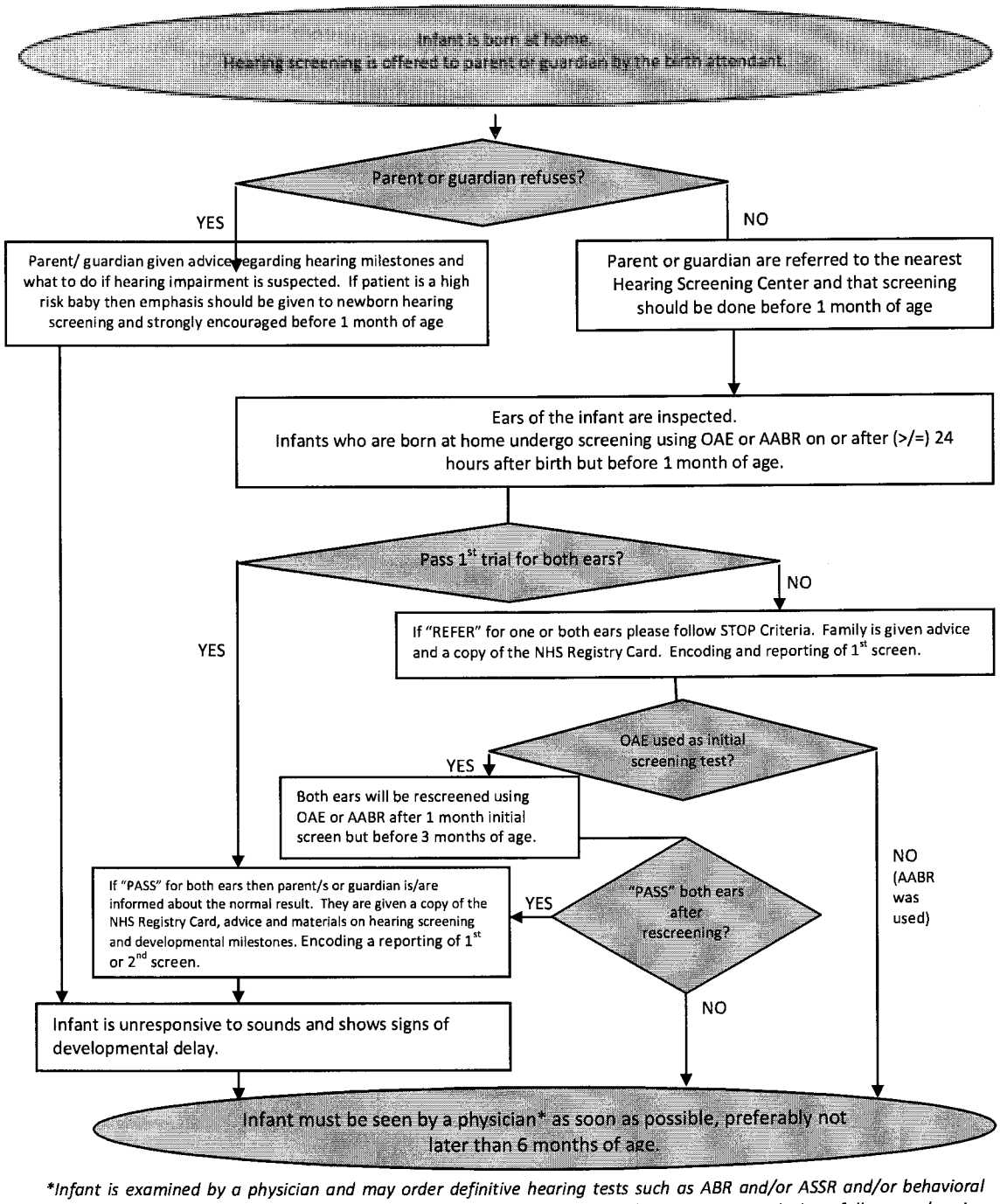
Newborn Hearing Screening Algorithm for Facility Born Babies



**Infant is examined by a physician and may order definitive hearing tests such as ABR and/or ASSR and/or behavioral audiometry. Depending on the result/s, the ENT gives a diagnosis and may recommend close follow-up, hearing amplification, further imaging techniques, surgery for hearing (cochlear implant, BAHA), or consult with a developmental pediatrician.*

APPENDIX H

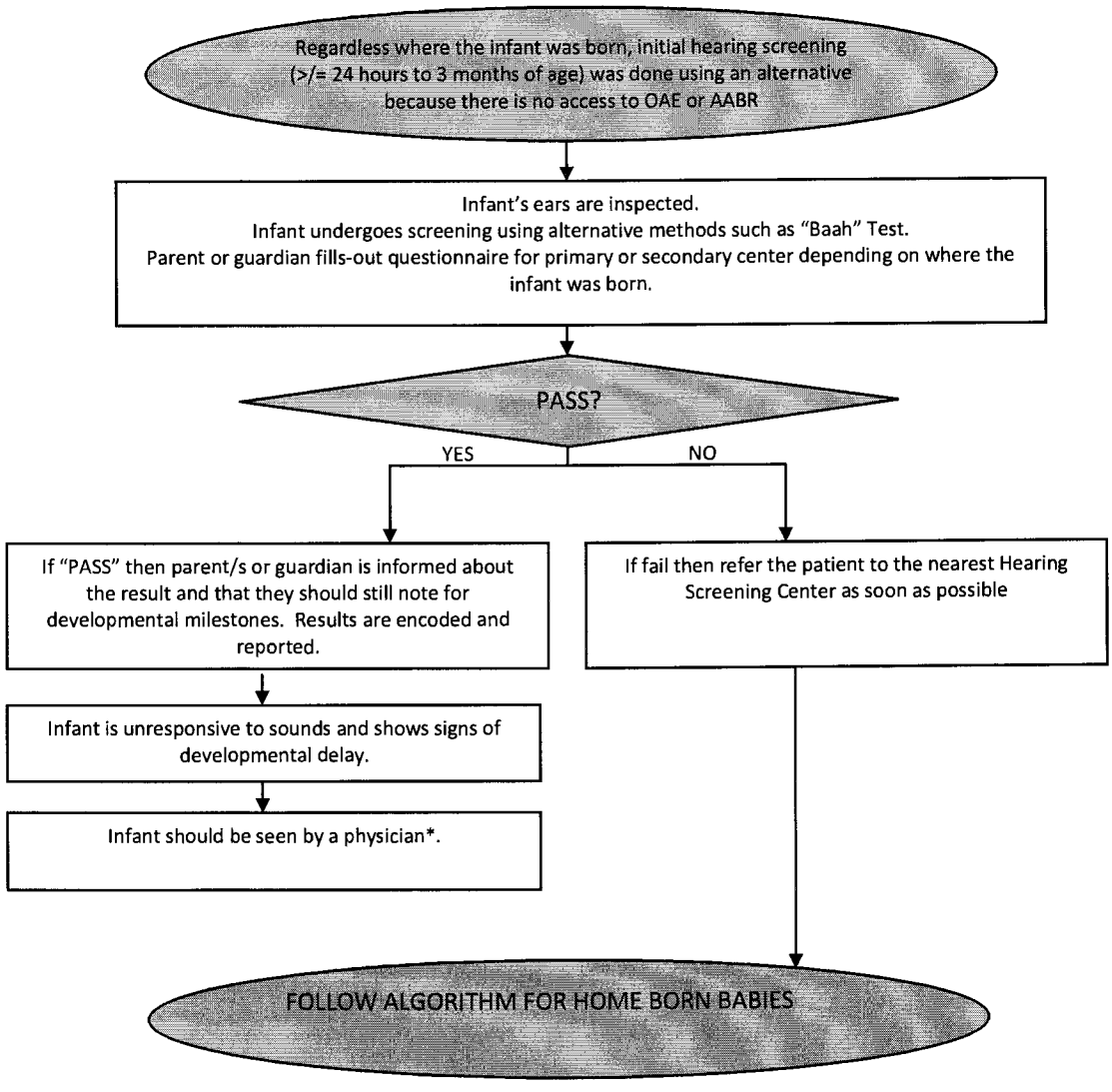
Newborn Hearing Screening Algorithm for Home Born Babies



**Infant is examined by a physician and may order definitive hearing tests such as ABR and/or ASSR and/or behavioral audiometry. Depending on the result/s, the ENT gives a diagnosis and may recommend close follow-up, hearing amplification, further imaging techniques, surgery for hearing (cochlear implant, BAHA), or consult with a developmental pediatrician.*

APPENDIX I

Newborn Hearing Screening Algorithm Using Alternative Methods



**Infant is examined by a physician and may order definitive hearing tests such as ABR and/or ASSR and/or behavioral audiometry. Depending on the result/s, the ENT gives a diagnosis and may recommend close follow-up, hearing amplification, further imaging techniques, surgery for hearing (cochlear implant, BAHA), or consult with a developmental pediatrician.*

APPENDIX J

UNHS High Risk Questionnaires For Community-Based Facilities*

Level 1 Questionnaire

Universal Newborn hearing Screening
Community-Based Program
Questionnaire for Screening Congenital Hearing Impairment
(Primary Center)
THIS FORM SHOULD BE FILLED UP DURING THE FIRST HEALTH FACILITY VISIT

Name .....Age.....years.....months.....days.....
Mother's Name .....Contact Number: .....
Date of Birth:.....Date of Report: .....
ID # .....Sex □ Male □ Female
Address.....

I. Neonatal High Risk Factors

Risk Factors	No	Yes
a. Was the birth weight<1,500grams?		
b. Did the child cry right after birth?		
c. Did the child stay at the hospital more than 5 days after birth?		
d. Was the child yellowish a few days after birth?		
e. Any defects of the head and neck?		
f. Is there a family history of deafness?		

II. Maternal Concern (Primary)

Does your child respond to loud sounds? □ Yes □ No

III. Health Care Concern (Primary)

Does your child respond to loud sounds? □ Yes □ No

*ANY YES ANSWER ON ***PART I-III*** , INFANT SHOULD BE REFERRED TO SECONDARY CENTER WITHIN FOUR WEEKS.

Filled up by:

_____
Signature over Printed Name

_____ _____
Designation Name of Health facility and address

APPENDIX K

Milestones Related to Hearing

Birth to 3 months	Reacts to loud sounds with startle reflex Is soothed and quieted by soft sounds Turns head to you when you speak Is awakened by loud voices and sounds Smiles in response to voices when spoken to Seems to know your voice and quiets down if crying
3 to 6 months	looks or turns toward a new sound responds to "no" and changes in tone of voice imitates his/her own voice enjoys rattles and other toys that make sounds begins to repeat sounds (such as ooh, aah, and ba-ba) becomes scared by a loud voice or noise
6 to 10 months	Responds to his/her own name, telephone ringing, someone's voice, even when not loud Knows words for common things (cup, shoe) and sayings ("bye-bye") Makes babbling sounds, even when alone Starts to respond to requests such as "come here" Looks at things or pictures when someone talks about them
10 to 15 months	Plays with own voice, enjoying the sound and feel of it Points toward or looks at familiar objects or people when asked to do so Imitates simple words and sounds; may use a few single words meaningfully Enjoys games like peek-a-boo and pat-a-cake Follows one step commands when shown by a gesture
15 to 18 months	Follows simple directions, such as "give me the ball" without being shown Uses words he/she has learned often Uses 2 to 3 word sentences to talk about and ask for things Knows 10 to 20 words Points to some body parts when asked
18 to 24 months	Understands simple "yes-no" questions (Are you hungry?) Understands simple phrases ("in the cup," "on the table") Enjoys being read to Points to pictures when asked
24 to 36 months	Understands "not now" and "no more" Chooses things by size (big, little) Follows two step commands, such as "get your shoes and come here" Understands many action words (run, jump)

APPENDIX L

UNHS High Risk Questionnaires For Community-Based Facilities*
Level 2 Questionnaire

Universal Newborn Hearing Screening
Community-Based Program

Questionnaire for Screening Congenital Hearing Impairment
(Secondary Center)

Name .....Age.....years.....months.....days.....
Mother's Name .....Contact Number: .....
Date of Birth:.....Date of Report: .....
ID # .....Sex □ Male □ Female
Address.....

Birth History

Rank of child .....
Mode of delivery □ Normal □ Caesarian □ Vacuum extraction □ Forceps
□ Others .....
Gestational age ..... weeks □ Full term □ Premature/ x
Apgar scores at 1,5,10 mintures + ..., ..., ...
Birth weight .....grams

Complications during pregnancy:

□ None
□ Bleeding □ Infection □ Diabetes □ Trauma □ Drugs
□ Hypertension/toxaemia □ Premature labor □ Prolonged labor □ Rashes & Fever

Risk Factors	No	Yes
a. Birth weight <1500 grams		
b. Apgar score of <5 in five minutes		
c. History of NICU admission for 48 hours		
d. History of mechanical ventilation use > 5 days		
e. History of bacterial meningitis/ neonatal sepsis		
f. Administration of ototoxic drugs e.g. gentamicin		
g. Congenital infections (TORCH)		
h. Hyperbilirubinemia requiring exchange transfusion		
i. Defects of the head and neck		
j. Features and other findings associated with hearing loss		
k. Family history of permanent hearing loss in childhood		

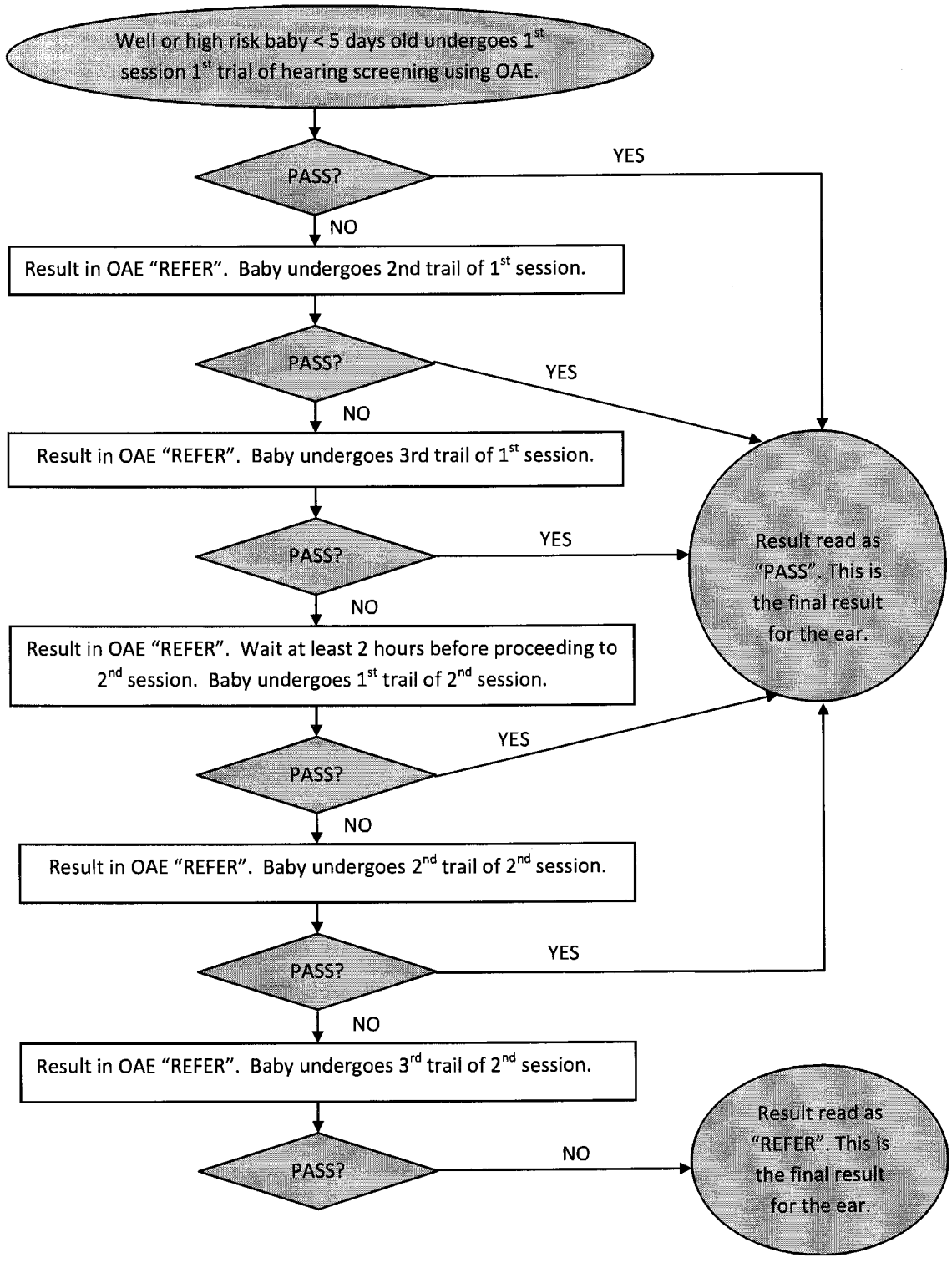
*Based from JCIH 2007 High Risk Criteria
ANY YES ANSWER or OAE REFER, INFANT SHOULD BE REFERRED TO TERTIARY CENTER WITHIN FOUR WEEKS.

_____
Signature over Printed Name

_____ _____
Designation Name of Health Facility and address

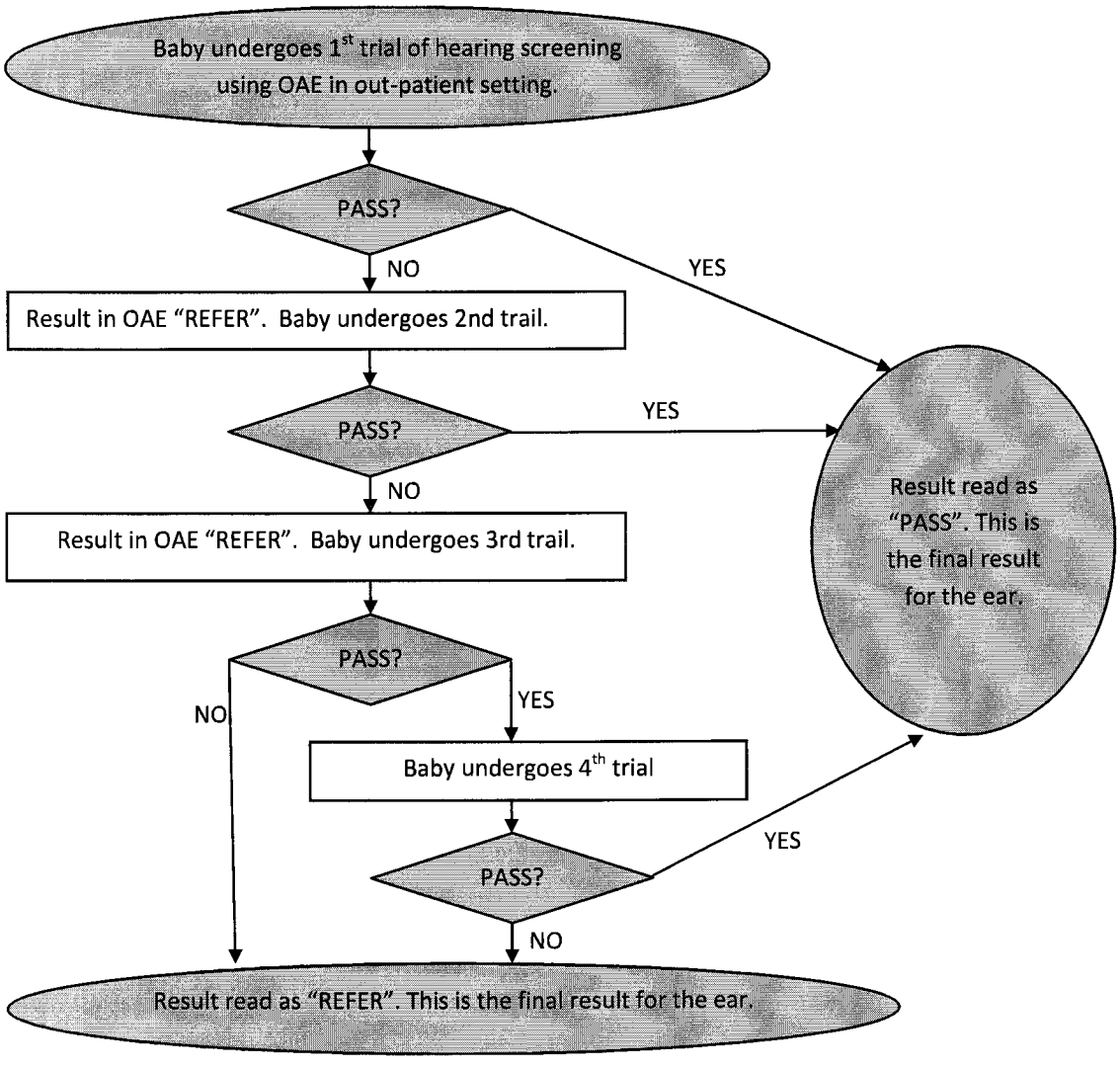
APPENDIX M

Stop Criteria Algorithm for Well Baby OAE and High Risk Baby <5 days Old



APPENDIX N

Stop Criteria Algorithm for OAE Outpatient Screening



APPENDIX O

Sample of Newborn Hearing Screening Official Result

PHILIPPINE NATIONAL EAR INSTITUTE
PHILIPPINE GENERAL HOSPITAL
University of the Philippines Manila
Department of Otorhinolaryngology
2nd Floor Central Block, Philippine General Hospital
Taft Avenue, Ermita, Manila 1000
Telephone: 521-8450 local 2153; Telefax: 522-0946
Website: ; E-mail address:

OTOACOUSTIC EMISSIONS (OAE).
Hearing Screening Results

Name of Patient: _____ Age/Sex: _____ EU Control No: _____
Address & Tel. No.: _____ Date of Birth: _____
Referring Doctor: _____ Date Tested: _____ Tested by: _____

The hearing screening test was done using otoacoustic emissions (OAE) test. Below are the results, please do not hesitate to get in touch with us if you have any question regarding the screening procedure or the results.

	* PASS	**REFER
RIGHT EAR:	[ ]	[x]
LEFT EAR:	[ ]	[x]

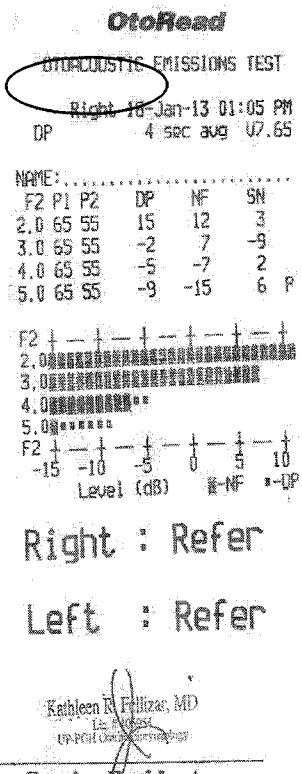
COMMENTS:

*PASS: Means that the hearing pathway from the ear canal to the cochlea is normal development of speech and language unless there are other problems.

**REFER: Means that further evaluation and testing is needed to make su impairment. Earwax or a baby who is very active during the test may leac recommend a repeat screen in 1-3 months time.

PLEASE SHOW THE RESULTS TO YOUR PHYSICIAN. Even if your baby doctor will decide whether a re-screen is needed (if your child is high risk fc evaluation is required.

PLEASE BE ADVISED THAT IT IS IMPORTANT TO CONSULT YOU THERE IS ANY CHANGE OR PROBLEMS REGARDING YOUR CHILD'S I



Kathleen R. Fellizar, MD
Ear Service Resident
(Signature Over printed name)

Maria Rina T. Reyes-Quintos, M.D.
Consultant
Section of Audiology

APPENDIX P

Sample of Newborn Hearing Screening Brochure

Hearing & Speech Ages /Stages

0 to 3 buwan
- Tumatahimik sa boses at tunog
- Nagugulat sa malakas na tunog

3 to 6 buwan
- Lumilingon sa tunog
- Nagsisimulang gumaya ng tunog (e.g. ba-ba-ba)

6 to 9 buwan
- Lumilingon kahit malayo ang pangalan
- Nakakaintindi ng simpleng salita

9 to 12 buwan
- Nakakaulit ng isang salita
- Nakakagaya ng tunog ng hayop

12 to 18 buwan
- Gumagamit ng 10 o higit pang salita
- Nakakasunod sa mga simpleng utos

18 to 24 buwan
- Gumagamit ng 20 o higit pang salita
- Kombinasyon ng 2 o higit pang salita

2 to 3 taon
- Gumagamit ng 2 hanggang 3 salita sa pangungusap.
- Sumusunod sa "two-step" utos

If you have any concerns about your baby's

Republic Act 9709

UNIVERSAL NEWBORN HEARING SCREENING AND INTERVENTION ACT

AN ACT ESTABLISHING A UNIVERSAL NEWBORN HEARING SCREENING PROGRAM FOR THE PREVENTION, EARLY DIAGNOSIS AND INTERVENTION OF HEARING LOSS AMONG CHILDREN

Was approved by the President of the Philippines (8/12/2009)

Newborn Hearing Screening

Baby, dinig mo ba?

Philippine Newborn Hearing Screening Program

Philippine National Ear Institute

Philippine General Hospital

Ear Unit Phone: 5548400 loc 2072

Ano, Bakit at Papaano ang Newborn Hearing Screening

Halimbawa ng batang sinusuri

Ilang mga bata ang may problema sa pandinig

Matinding pagkahina ng pandinig ay natatagpuan sa humigit kumulang sa 2-4 sa 1000 bata.

Humigit kumulang sa 50% ng mga bata ay walang senyales o dahilan sa pagkahina ng pandinig.

Sometimes babies lose their hearing and the reason is never known.

Bakit ipatesting ang baby?

Ang unang taon ng bata ay mahalaga sa pag kakaroon ng mahusay na pagsasalita. Meron ng teknolohiya para ma suri ang pandinig kahit isang buwan pa lamang si baby.

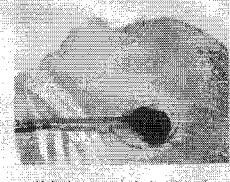
Kapag may nakitang paghina ng pandinig ito ay matutugunan

May solusyon!

Kung mas maagang malaman ang paghina sa pandinig mas maagang matutulungan ang bata.

Ang mga pagsasaliksik ay nagpapatunay na, kapag maagang nalaman na may problema sa pandinig at mabigyan ng katugunan sa edad na 6 na buwan.

Ang bata ay medaling makapagsasalita at makapag-aaral kahalintulad sa ibang mga batang kasing edad nya.



Halimbawa ng batang sinusuri

Paano ba ang Hearing Screening?

Ang pag screen ay mabilis at hindi masakit. Ito ay ginagawa kapag ang baby ay natutulog.

Ang maliliit na tunog ay pinadadaan sa pamamagitan ng espesyal na earphones.

Ang resulta ay makikita sa OAE at ABR (Auditory Brainstem Response) o AABR.

Ang kasalukuyang teknolohiya ay madali at sigurado!

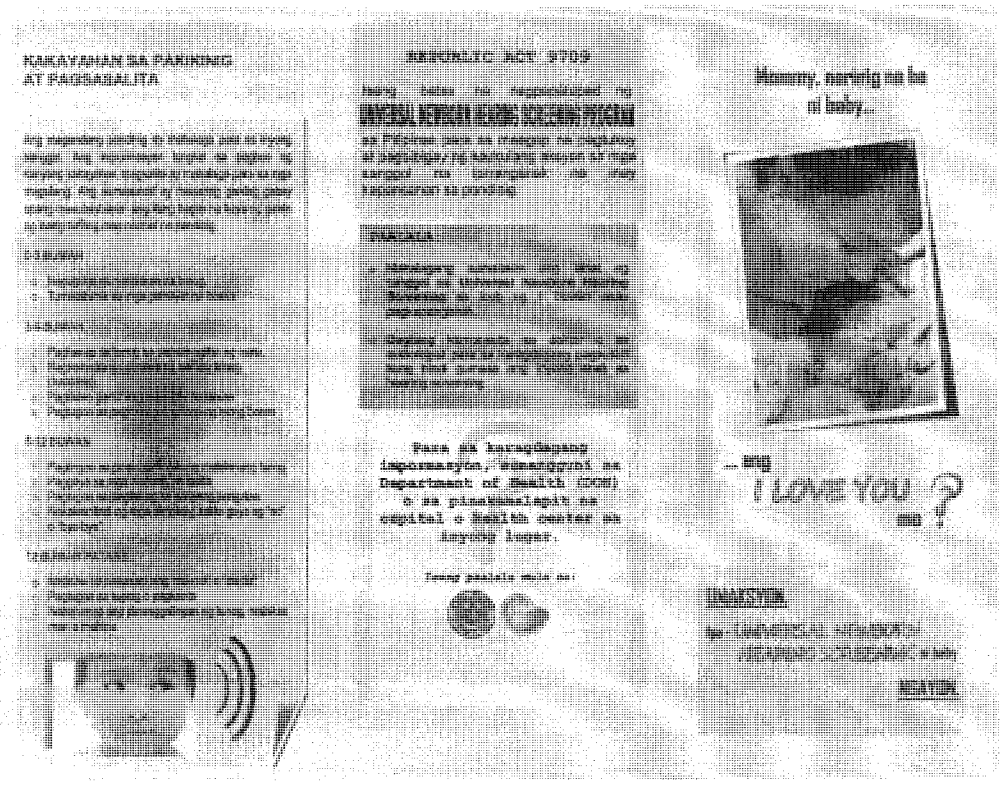
Paalala!

Ang pandinig ay dapat natitiyak sa tuwi-tuwina habang sya ay lumalaki.

NEWBORN HEARING SCREENING ay ang unang paraan sa pag tantay ng pandinig at pagkabihasa sa pagsasalita ng bata.

APPENDIX Q

Sample of Newborn Hearing Screening Brochure



KAKAYAHAN SA PANDINIG AT PAGSASALITA

REPUBLIC ACT 9709

Mommy, narinig na ba ni baby...

... ang I LOVE YOU ... ?

UNIVERSAL NEWBORN HEARING SCREENING PROGRAM

GAANO KADAMING SANGGOL ANG IPINAPANGANAK NA BINGI?

Ang pagkabingi ay isa sa mga karaniwang kapansanan ng mga sanggol sa buong mundo. Base sa impormasyon mula sa National Institutes of Health, **2-4 sa 1,000 sanggol ay isinisilang na may kapansanan sa pandinig**. Ito ay maaring dulot ng matutuhang sakit ng ina habang nagbubuntis o maaring nakuha sa lahi. May mga bata din na posibleng mabingi habang sila'y nagkaka-edad sa sanhi ng pabalik-balik na impeksyon sa tenga, meningitis at iilang pang kondisyon. May mga pagkakataon din na ang dahilan ng pagkabingi ay hindi natutukoy.

BAKIT KAILANGAN IPA-HEARING SCREENING SI BABY?

50% ng mga bata na ipinapanganak na may kapansanan sa pandinig ay walang sintomas na sila'y bingi kaya't hindi agad nasusuri. Ang kakayahang makarinig ay mahalaga sa pagbuo ng abilidad sa pananalita lalo na sa mga unang taon ng buhay ng inyong mga anak. Ang batang bingi ay maaaring mahirapan sa pakikipag-usap o sa pag-aaral. Kaya hinihikayat ang maagang pagtukoy sa pagkabingi para mabigyan ng kaukulan at wastong rehabilitasyon sa iatong madaling panahon.

PAANO NALALAMAN KUNG MAY PROBLEMA SA PANDINIG SI BABY?

Susuriin ang pandinig ni baby sa pamamagitan ng **Universal Newborn Hearing Screening**. Sa test na ito malalaman kung normal o may posibleng problema sa pandinig ang inyong anak. Mahalagang sumailalim si baby sa test na ito sa loob ng unang buwan ng pagkapanganak. Gamit ang *oto-accoustic emission* kung saan may mga pinapatong na lunog sa bawat tainga, malalaman kung ito ay narinig ni baby o hindi. Ang test na ito ay maaaring gawin ng kahit tulog si baby. Ito ay mabilis at walang dulot na pinsala sa inyong mga anak.

PAANO KUNG HINDI PUMASA SA HEARING SCREENING SI BABY?

Maraming posibleng dahilan kung bakit hindi nakapasa si baby sa hearing screening. Marahil siya ay malikot, may impeksyon o pagbabara sa tainga o dahil sa posibleng problema sa pandinig ng bata. Kailangan ng karagdagang pagsusuri upang matiyak ang tunay na sanhi ng hindi niya pagpasa sa hearing screening. Mahalagang kumonsulta sa doctor (ENT) o audiologist at sundin ang anumang rekomendasyon na galing sa kanila.

Hinihikayat na sundin ang schedule na ito, **batay sa edad** ng inyong anak, para sa maagap na pagtukoy at paghibigay ng kaukulang aksyon sa mga sanggol na may kapansanan sa pandinig.

UNANG BUWAN	PANGATLONG BUWAN	PANG-ANIM NA BUWAN
Hearing Screening (OAE)	Hearing Test	Early Intervention

PAANO KUNG PUMASA SA HEARING SCREENING SI BABY?

Ang pagpasa ni baby sa hearing screening ay nangangahulugang hindi mana kailangan sumailalim sa iba pang pagsusuri sa ngayon. Ngunit hindi dapat ipag-walang bahala ang iba pang posibleng maging sanhi ng pagkabingi na maaaring maganap sa kanyang paglaki. Kung, sa anumang oras, mayroon kang napansin na pagbabago tungkol sa pandinig o kakayahan magsalita ng inyong anak, kumonsulta sa ENT o audiologist upang makapagpa-schedule ng hearing test. Ang pandinig ay **maaaring surrin sa anumang edad**.

APPENDIX R

Newborn Hearing Screening Registry Form

NEWBORN HEARING SCREENING | **PATIENT CODE** | **FACILITY CODE**

HEARING SCREENING CENTER
Name: _____
Address: _____
_____

PHILHEALTH: ☐ YES ☐ NO

DATE OF BIRTH: __/__/__ (M M D D Y Y)
TIME OF BIRTH: _____pm/am **MULTIPLE?:**____

GENDER: ☐ Male ☐ Female

DATE OF SCREENING: __/__/__ (M M D D Y Y)

TYPE OF SCREENING:
☐ Initial
☐ Rescreen: _____

METHOD OF SCREENING:
☐ OAE
☐ AABR
☐ Others: _____

RESULT:	**RIGHT**	**LEFT**
Pass	☐	☐
Refer	☐	☐
Not Performed	☐	☐

BIRTH WEIGHT: _____ grams
GESTATION AGE: _____weeks
RISK FACTORS FOR HEARING LOSS:
☐ Hyperbilirubinemia requiring transfusion
☐ Ventilation > 48 hours
☐ NICU admission >48 hours
☐ Ototoxic medication
☐ Features associated with syndrome:
_____
☐ Family history of permanent childhood hearing loss
☐ Craniofacial anomalies with deformed pinna or ear canal
☐ In-utero infections (CMV,

NAME OF INFANT (if available): _____
NAME OF MOTHER: _____
Surname Firstname Middlename
ADDRESS: _____
House Number Village / Barangay City Province Zipcode
PHONE: (_____)_____ **PHYSICIAN/DOCTOR:** _____

SCREENER NAME: _____
SIGNATURE: _____

APPENDIX S

Microsoft Excel Format for Monthly Summary Report

Form D – Cover Page for Monthly Report

Newborn Hearing Screening Reference Center
National Institutes of Health, UP Manila, Ermita, Manila

COVER PAGE FOR MONTHLY REPORT

CENTER CODE: _____ MONTH: _____ YEAR: _____

NAME OF CENTER: _____

ADDRESS: _____

TELEPHONE: _____

NAME OF ENCODER: _____

CELLPHONE OF ENCODER: _____ EMAIL OF ENCODER: _____

NAME OF MANAGER: _____

CELLPHONE OF MANAGER: _____ EMAIL OF MANAGER: _____

NAME OF HOSPITAL OR BIRTHING FACILITY: _____
(For NHSC with MOA with hospitals or birthing facilities)

ADDRESS OF HOSPITAL OR BIRTHING FACILITY: _____
(For NHSC with MOA with hospitals or birthing facilities)

INFANTS BORN WHERE THERE IS A HEARING CENTER	NUMBER
TOTAL BIRTHS	
LIVE BIRTHS	
LIVE BIRTHS WITH PHILHEALTH	
LIVE BIRTHS WITHOUT PHILHEALTH	
SCREENED WITH PHILHEALTH	
SCREENED WITHOUT PHILHEALTH, DIRECT PAYMENT	
SCREENED WITHOUT PHILHEALTH, WITHOUT PAYMENT (mission, free services)	
INFANTS BORN IN ANOTHER FACILITY (WITH OR WITHOUT MOA)	
SCREENED WITH PHILHEALTH	
SCREENED WITHOUT PHILHEALTH, DIRECT PAYMENT	
SCREENED WITHOUT PHILHEALTH, WITHOUT PAYMENT (mission, free services)	

NOTE: If a Newborn Hearing Screening Center has a formal Memorandum of Agreement (MOA) with a hospital or birthing facility then please make a separate report per hospital or birthing facility.

NEWBORN HEARING SCREENING REGISTRY MONTHLY SUMMARY
MONTH:_____ YEAR:_____

PATIENT CODE							FACILITY CODE			TESTING DATE	RISK FACTORS	TEST	RESULTS
First	Middle	Last	Month	Day	Year	Gender	Region	Type	Licensing	MM/DD/YYYY	Y/N	OAE/ABR/OTH	P/F

NEWBORN HEARING SCREENING REGISTRY MONTHLY SUMMARY
MONTH:_____ YEAR:_____

NAME OF INFANT			BIRTH		BIRTHING FACILITY		MOTHER'S			INFORMATION			VERIFIER'S INFORMATION			
Last	First	Middle	Date	Time	Name	Address	Last Name	First Name	Middle Name	Name Verifier	Address	Contact No.	Date	Address	Contact No.	Comments

NEWBORN HEARING SCREENING REGISTRY MONTH
MONTH:_____ YEAR:_____

APPENDIX T

Application Form for Newborn Hearing Screening Center Personnel

Form B-213 Page 1/2

Newborn Hearing Screening Reference Center
National Institutes of Health, UP Manila, Ermita, Manila

APPLICATION FORM

CERTIFYING WORKSHOP ON NEWBORN HEARING SCREENING

Name: _____
SURNAME FIRST NAME MIDDLE NAME

Birthday: _____ Age: _____ Gender: ☐ Male ☐ Female
MONTH DAY YEAR

Home Address: _____ Home phone (__)_____
_____ Cellphone: _____
Work Address: _____ Work phone: (__)_____
_____ Fax: (__)_____
Email: _____

CATEGORY APPLIED FOR:
☐A Newborn Hearing Screening Center
☐B Newborn Hearing Diagnostic Center
☐C Newborn Hearing Diagnostic and Intervention Center
☐D Newborn Hearing Diagnostic, Intervention and Rehabilitation Center

EDUCATION: (DO NOT WRITE ON-GOING OR UNFINISHED STUDIES)

LEVEL	INSTITUTION / SCHOOL AND ADDRESS	YEAR FINISHED	CERTIFIED TRUE COPY SUBMITTED (Checked by NHSRC)
High School			☐
College			☐
Post-graduate (MD)			☐
Masters			☐
Doctoral (PhD)			☐
Other Diplomas, Certificates, Training			☐

WORK / PROFESSIONAL EXPERIENCE: (May attach additional sheets)

	POSITION	INSTITUTION / COMPANY AND ADDRESS	INCLUSIVE DATES	CERTIFICATION OF EMPLOYMENT SUBMITTED: (Checked by NHSRC)
Current				☐
				☐
Previous				☐
				☐

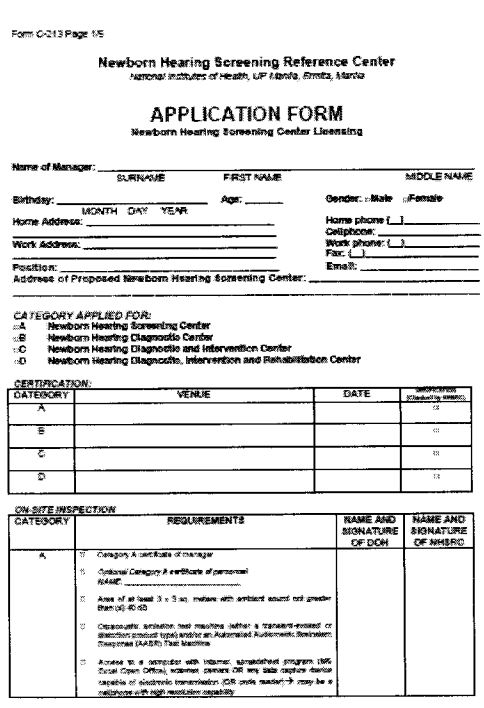
Form B-213 Page 2/2

Name: _____
SURNAME FIRST NAME MIDDLE NAME

FOR NHSRC ONLY:
Application Received by: _____ Date of Application: _____
Signature of Recipient: _____ Fee paid: P_____(OR _____)
Date of Workshop: _____ Date of OR: _____
Venue of Workshop: _____
Result of Workshop: ☐PASS ☐FAIL
Date Certificate Issued: _____
Name of Workshop Coordinator: _____
Signature of Workshop Coordinator: _____

APPENDIX U

Application Form for Newborn Hearing Screening Center



Form C-213 Page 1/5

Newborn Hearing Screening Reference Center
National Institutes of Health, UP Manila, Ermita, Manila

APPLICATION FORM
Newborn Hearing Screening Center Licensing

Name of Manager: _____
SURNAME FIRST NAME MIDDLE NAME

Birthday: _____ Age: _____ Gender: ☐Male ☐Female
MONTH DAY YEAR

Home Address: _____ Home phone (__)_____
Cellphone: _____
Work Address: _____ Work phone: (__)_____
Fax: (__)_____
Position: _____ Email: _____
Address of Proposed Newborn Hearing Screening Center: _____

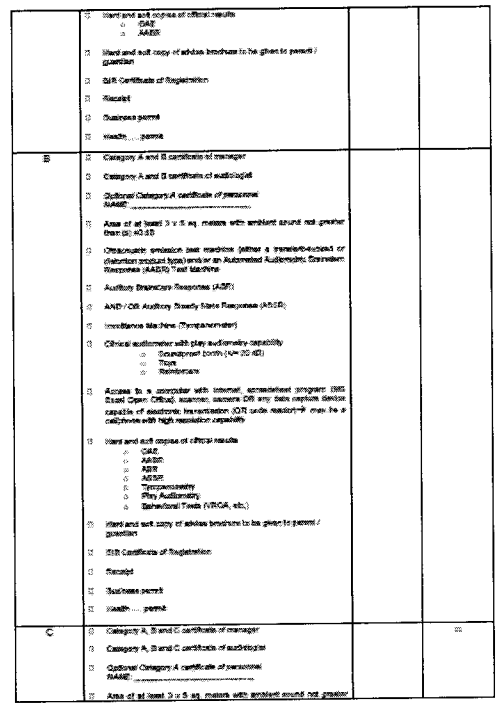
CATEGORY APPLIED FOR:
☐A Newborn Hearing Screening Center
☐B Newborn Hearing Diagnostic Center
☐C Newborn Hearing Diagnostic and Intervention Center
☐D Newborn Hearing Diagnostic, Intervention and Rehabilitation Center

CERTIFICATION:

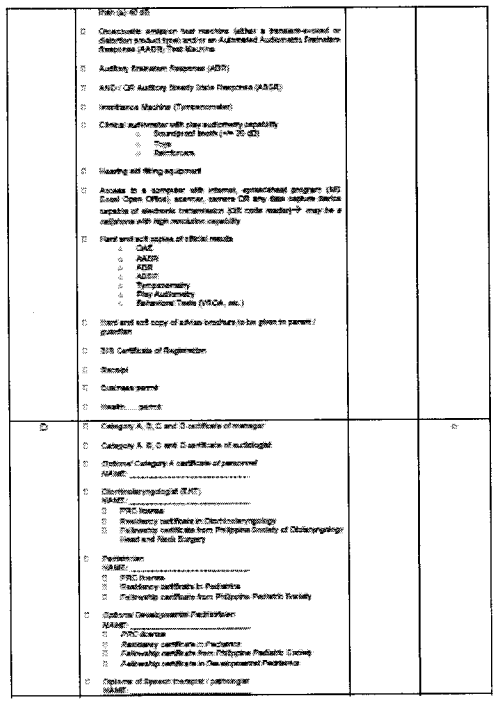
CATEGORY	VENUE	DATE	SIGNATURE (Endorsed by NHSRC)
A			☐
B			☐
C			☐
D			☐

ON-SITE INSPECTION

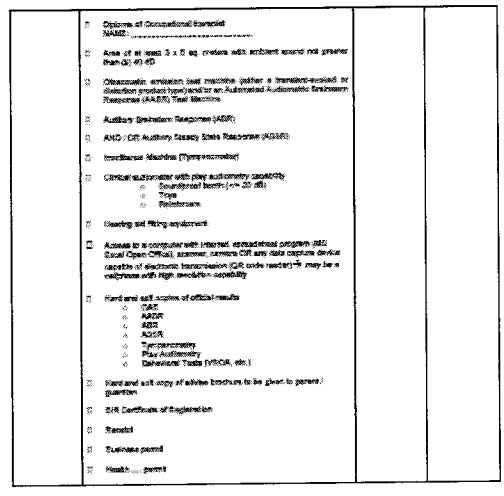
CATEGORY	REQUIREMENTS	NAME AND SIGNATURE OF DOH	NAME AND SIGNATURE OF NHSRC
A	☐ Category A certificate of manager ☐ *Optional Category A certificate of personnel* *NAME: _____* ☐ Area of at least 3 x 5 sq. meters with ambient sound not greater than (≤) 40 dB ☐ Otoacoustic emission test machine (either a transient-evoked or distortion product type) and/or an Automated Auditory Brainstem Response (AABR) Test Machine ☐ Access to a computer with internet, spreadsheet program (MS Excel Open Office), scanner, camera OR any data capture device capable of electronic transmission (QR code reader)→ *may be a cellphone with high resolution capability*		



	☐ Hard and soft copies of official results ○ OAE ○ AABR ☐ Hard and soft copy of advice brochure to be given to parent / guardian ☐ BIR Certificate of Registration ☐ Receipt ☐ Business permit ☐ Health ..... permit		
B	☐ Category A and B certificate of manager ☐ Category A and B certificate of audiologist ☐ *Optional Category A certificate of personnel* *NAME: _____* ☐ Area of at least 3 x 5 sq. meters with ambient sound not greater than (≤) 40 dB ☐ Otoacoustic emission test machine (either a transient-evoked or distortion product type) and/or an Automated Auditory Brainstem Response (AABR) Test Machine ☐ Auditory Brainstem Response (ABR) ☐ AND / OR Auditory Steady State Response (ASSR) ☐ Immittance Machine (Tympanometer) ☐ Clinical audiometer with play audiometry capability ○ Soundproof booth (+/= 20 dB) ○ Trips ○ Reinforcers ☐ Access to a computer with internet, spreadsheet program (MS Excel Open Office), scanner, camera OR any data capture device capable of electronic transmission (QR code reader)→ *may be a cellphone with high resolution capability* ☐ Hard and soft copies of official results ○ OAE ○ AABR ○ ABR ○ ASSR ○ Tympanometry ○ Play Audiometry ○ Behavioral Tests (VROA, etc.) ☐ Hard and soft copy of advice brochure to be given to parent / guardian ☐ BIR Certificate of Registration ☐ Receipt ☐ Business permit ☐ Health ..... permit		
C	☐ Category A, B and C certificate of manager ☐ Category A, B and C certificate of audiologist ☐ *Optional Category A certificate of personnel* *NAME: _____* ☐ Area of at least 3 x 5 sq. meters with ambient sound not greater		☐



	than (≤) 40 dB ☐ Otoacoustic emission test machine (either a transient-evoked or distortion product type) and/or an Automated Auditory Brainstem Response (AABR) Test Machine ☐ Auditory Brainstem Response (ABR) ☐ AND / OR Auditory Steady State Response (ASSR) ☐ Immittance Machine (Tympanometer) ☐ Clinical audiometer with play audiometry capability ○ Soundproof booth (+/= 20 dB) ○ Trips ○ Reinforcers ☐ Hearing aid fitting equipment ☐ Access to a computer with internet, spreadsheet program (MS Excel Open Office), scanner, camera OR any data capture device capable of electronic transmission (QR code reader)→ *may be a cellphone with high resolution capability* ☐ Hard and soft copies of official results ○ OAE ○ AABR ○ ABR ○ ASSR ○ Tympanometry ○ Play Audiometry ○ Behavioral Tests (VROA, etc.) ☐ Hard and soft copy of advice brochure to be given to parent / guardian ☐ BIR Certificate of Registration ☐ Receipt ☐ Business permit ☐ Health ..... permit		
D	☐ Category A, B, C and D certificate of manager ☐ Category A, B, C and D certificate of audiologist ☐ *Optional Category A certificate of personnel* *NAME: _____* ☐ Otorhinolaryngologist (ENT) *NAME: _____* ☐ PRC license ☐ Residency certificate in Otorhinolaryngology ☐ Fellowship certificate from Philippine Society of Otolaryngology Head and Neck Surgery ☐ Pediatrician *NAME: _____* ☐ PRC license ☐ Residency certificate in Pediatrics ☐ Fellowship certificate from Philippine Pediatric Society ☐ Optional Developmental Pediatrician *NAME: _____* ☐ PRC license ☐ Residency certificate in Pediatrics ☐ Fellowship certificate from Philippine Pediatric Society ☐ Fellowship certificate in Developmental Pediatrics ☐ Diplomate of Speech therapist / pathologist *NAME: _____*		☐



	☐ Diplomate of Occupational therapist *NAME: _____* ☐ Area of at least 3 x 5 sq. meters with ambient sound not greater than (≤) 40 dB ☐ Otoacoustic emission test machine (either a transient-evoked or distortion product type) and/or an Automated Auditory Brainstem Response (AABR) Test Machine ☐ Auditory Brainstem Response (ABR) ☐ AND / OR Auditory Steady State Response (ASSR) ☐ Immittance Machine (Tympanometer) ☐ Clinical audiometer with play audiometry capability ○ Soundproof booth (+/= 20 dB) ○ Trips ○ Reinforcers ☐ Hearing aid fitting equipment ☐ Access to a computer with internet, spreadsheet program (MS Excel Open Office), scanner, camera OR any data capture device capable of electronic transmission (QR code reader)→ *may be a cellphone with high resolution capability* ☐ Hard and soft copies of official results ○ OAE ○ AABR ○ ABR ○ ASSR ○ Tympanometry ○ Play Audiometry ○ Behavioral Tests (VROA, etc.) ☐ Hard and soft copy of advice brochure to be given to parent / guardian ☐ BIR Certificate of Registration ☐ Receipt ☐ Business permit ☐ Health ..... permit		

FOR NHSRC ONLY:
Application Received by: _____ Date Received by NHSRC: _____
Signature of Recipient: _____
Date Forwarded to DOH: _____
Name NHSRC assigned: _____
Address NHSRC assigned: _____
Work phone NHSRC assigned: _____ Cellphone: _____ Email: _____

FOR DOH ONLY:
Application Received by: _____ Date Received by DOH: _____
Signature of Recipient: _____
Date of On-site Inspection: _____
Fee paid: _____ OR Number: _____ Date Paid: _____
Date of on-site inspection: _____
Name DOH assigned: _____
Address DOH assigned: _____
Work phone DOH assigned: _____ Cellphone: _____ Email: _____

Name NHSRC assigned: _____
Address NHSRC assigned: _____
Work phone NHSRC assigned: _____ Cellphone: _____ Email: _____

STATUS: ☐ License issued Date issued: _____ Received by: _____
☐ License not issued Reason: _____