

# Identification of Hearing Impairment in Visayas

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# Deafness vs. Hearing Impairment

**Hearing impairment** is describe as loss of hearing in one or both ears. The level of impairment can be mild, moderate, severe or profound

**Deafness** refers to the complete loss of ability to hear from one or both ears.

*(WHO)*

# Hearing Impairment

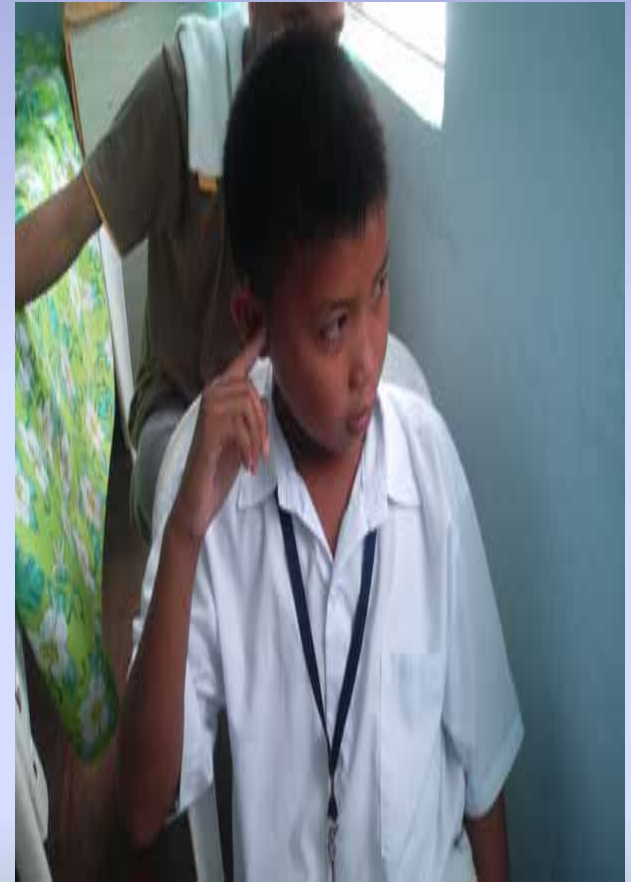
## Warning Signs of Hearing Loss

- daydreaming
- inattention
- behavior problems
- lethargy
- failure to follow simple commands
- verbal expression of misunderstanding
- articulation disorders
- limited speech or vocabulary
- difficulty with verbal tasks
- difficulty with phonetic decoding
- persistent colds
- mouth breathing
- unusual voice quality

# School screenings 2006-2007

## 2006

- Grade 1 teachers trained
- 7328 students were screened in Bacolod from 33 schools
- 30% have impacted wax
- 32 students have hearing impairment



# 2007

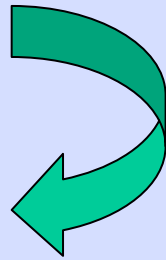
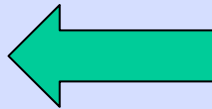
- 11,384
- (8,884) 20 schools in south of negros
- 2500 in Panay island
- 5 schools in aklan and 2 schools in roxas



# Results

- 15% (1805) have impacted wax
- 42 students have hearing impairment
- 38 students need hearing aids
- 3 students have unilateral losses

# Screenings





# Grade of Impairment

Performance with Conversational Voice Test	Grade of Impairment	Corresponding Audiometric ISO Value
Able to hear whispers.	No Impairment	25dB or better
Able to hear and repeat words spoken in normal voice at 1 meter.	Slight Impairment	26 – 40dB
Able to hear and repeat words using raised voice at 1 meter.	Moderate Impairment	41 – 60dB
Able to hear some words when shouted into better ear.	Severe Impairment	61 – 80dB
Unable to hear and understand even a shouted voice.	Profound Impairment	81dB or greater



# Pure Tone Audiometry

- ***Air Conduction Thresholds*** - the minimum effective sound pressure level of signal that is capable of evoking an auditory sensation
- ***Bone Conduction Thresholds*** - directly stimulate the cochlea

0 – 25	Normal
26 – 40	Mild
41 – 60	Moderate
61 – 80	Severe
81 & up	Profound



# Important for the Child's Development

- Hearing ability
- Communication skills
- Intellectual and Social Development

# Pediatric Hearing Evaluation

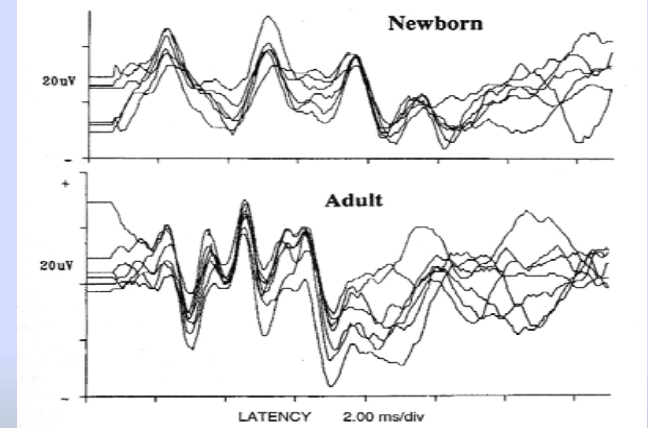
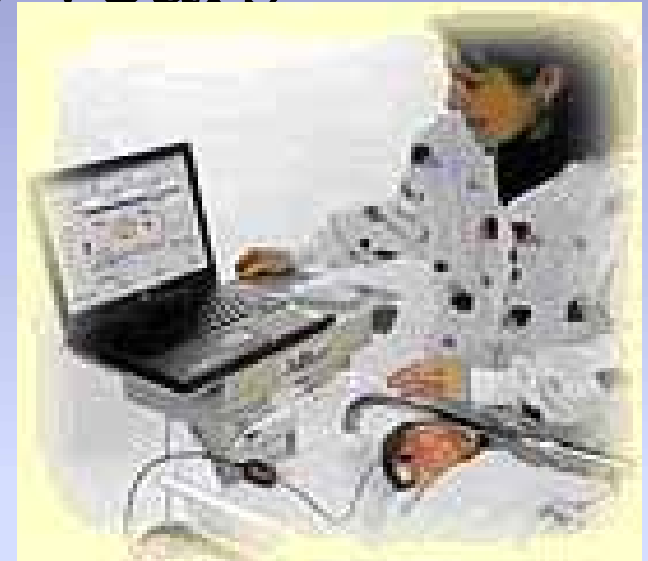
- **Otoacoustic Emission (OAE)**
  - > a screening tool that measures the motile activities of the hair cells
  - > Assesses auditory function through the level of the cochlea.
  - > Acoustic emissions generated by the outer hair cells in the cochlea are elicited by direct acoustic stimulation, and are recorded by a small microphone placed in the ear canal
  - > Presence of evoked otoacoustic emissions is correlated with hearing thresholds of 30 dB or better.



# Infants up 2 1/2 years

- Auditory Brainstem Response (ABR)

- usually performed for infants and young children, that evaluates how well sounds travel along the hearing nerve pathways from the ear to the brainstem
- effective screening tool in the evaluation of suspected retrocochlear pathology such as an acoustic neuroma or vestibular schwannoma



- Behavioral Observation Audiometry (BOA)
  - > assess changes in child's behavior in response to speech and/or tones
  - > Responses suggestive of hearing
    - Motor activity
    - Eye movement toward the source of sound
    - Cessation of activity
    - Crying
    - Startle

- **Visual Reinforcement Observation Audiometry (VROA)**

- > Assesses hearing acuity using conditioned responses to sound, i.e., head turning. Appropriate for testing children from 7 through 30 months of age.
- > The child is conditioned to provide a specific response to an acoustic stimulus
- > a head turn in the direction of the sound source is rewarded by lighting and/or activating an animated toy.



# 3 years old to school age

- Play Audiometry

- > child is conditioned to listen to auditory stimuli

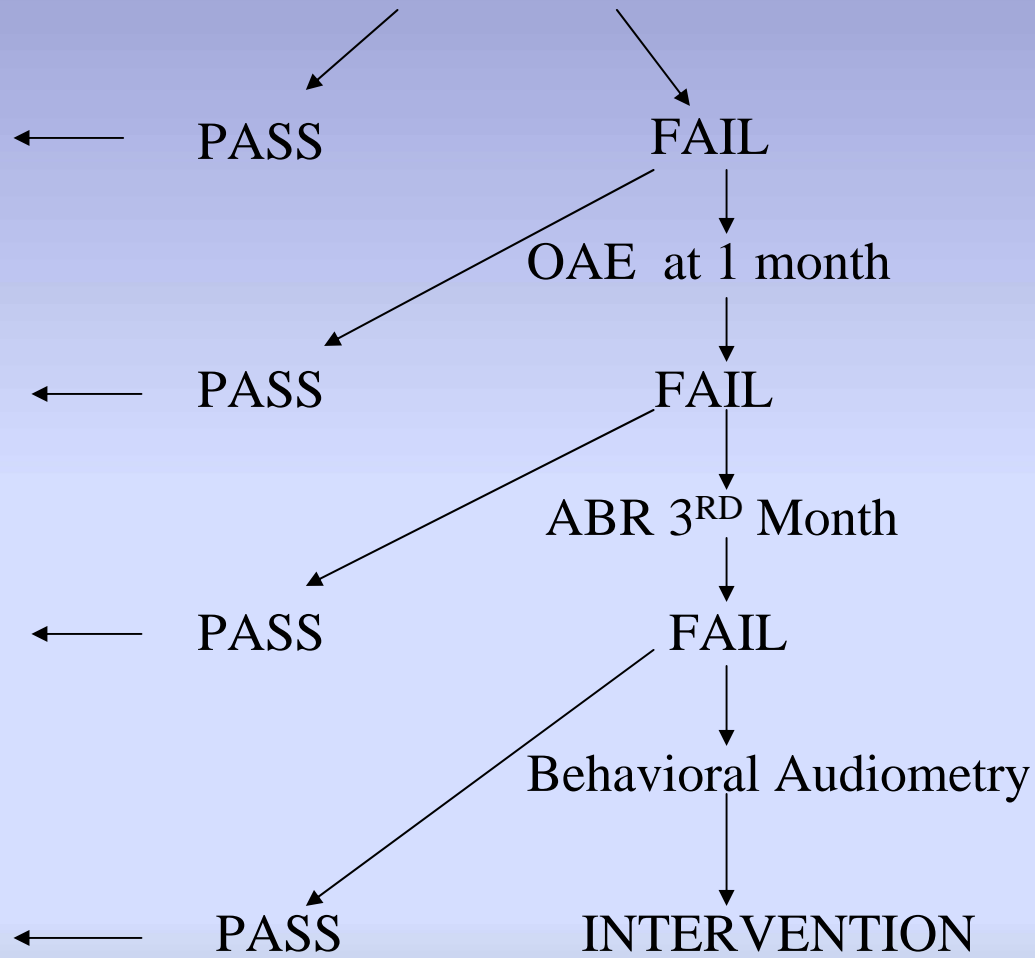
- > respond to the sound by participating in a specific play activity (i.e., throwing a block in a bucket, placing pegs in a board, placing rings on a peg, etc.).





# OAE (2<sup>ND</sup> Day)

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# 2006 VECC statistics

- Total of 290 were tested
- 16% (49) Iloilo
  - Normal hearing - 57% (28)
  - Hearing loss - 39% (19)
  - Unilateral loss - 4% (2)

# 2007 VECC statistics

- Total of 353 were tested
- 17% (62) Iloilo
  - Normal hearing - 35% (22)
  - Hearing loss - 65% (40)

# Common cause

- Ototoxicity
- Family history
- Low birth weight
- Rubella

No child is too young to be tested.

No child is too young to be fitted with  
hearing aids.

No child is too young for habitation.