



# **PUBLIC HEALTH**

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## **Universal Newborn Hearing Screening**

Washington State Board of Health  
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## Outline

- Provide an overview of *How* and *Why* Universal Newborn Screening is performed
- Present Washington specific data including how well we are achieving the “1-3-6 Goals”
- Share some of the challenges to ensuring all infants are screened and receive recommended services
- Answer questions and discussion



## Early Hearing-loss, Detection, Diagnosis and Intervention (EHDDI) Program Goals

Ensure that all infants born in the state of Washington:

Goal 1: Are screened for hearing loss before hospital discharge or at least by one month of age

Goal 2: Receive diagnostic audiological evaluation by three months of age

Goal 3: Are enrolled in early intervention services by six months of age, if they have hearing loss



## Infant Hearing Loss

- Up to 270 infants are born deaf or with hearing loss in Washington State each year
- The first two years of life are critical for learning speech and language
- Even a mild hearing loss can interfere with a child's ability to learn speech and language
- Early intervention services by 6 months of age helps with age appropriate language and social-emotional development

## Profile 2012

- ~ 86,000 births
- No mandate for hearing screening
- 63 birthing hospitals – all have Universal Newborn Hearing Screening (UNHS) programs
- 61 hospitals submitting data to the Early Hearing-loss, Detection, Diagnosis and Intervention (EHDDI) program
- Newborn Screening blood spot card used to report screening results

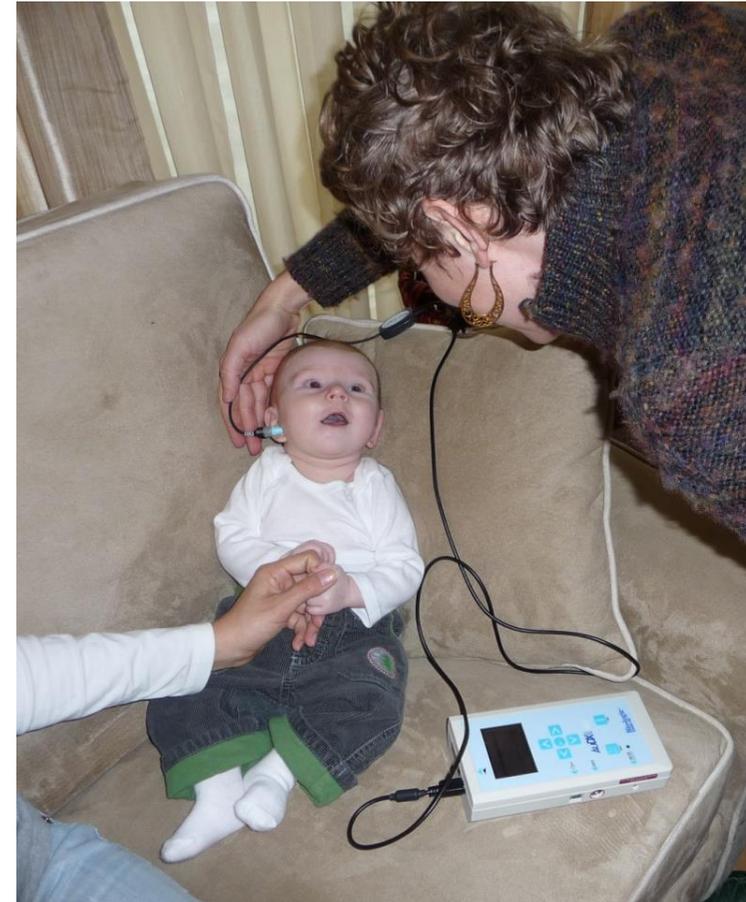
## Newborn Hearing Screening

- Non-invasive
- Baby asleep
- Automated test
- 10-20 minutes
- Result is “pass” or “refer”
- Two types of testing methods



## Otoacoustic Emissions (OAE)

- Probe placed in infants ear
- Tiny microphone sends sounds into the ear
- Inner ear (cochlea) produces an “echo” that is recorded in the probe and processed by the machine



## Automated Auditory Brainstem Response (AABR)

- Auditory stimuli presented to child
- Electrodes measure brain response to sound
- Automated response detection



## Hospitals/Midwives

- birth rosters
- dried blood screen
- hearing screen results



DOH  
Office of Newborn  
Screening  
-process all cards

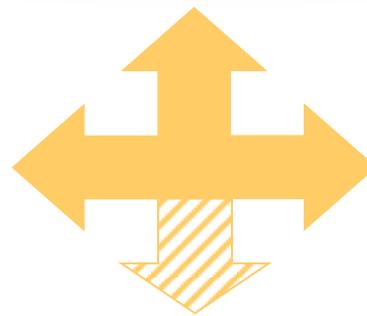
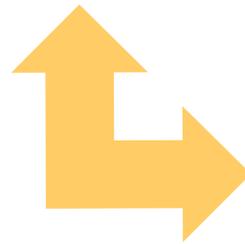


## EHDDI

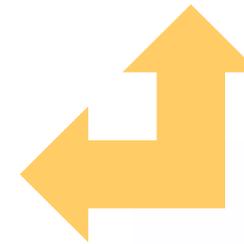
## Tracking and Surveillance System



Primary Care Provider

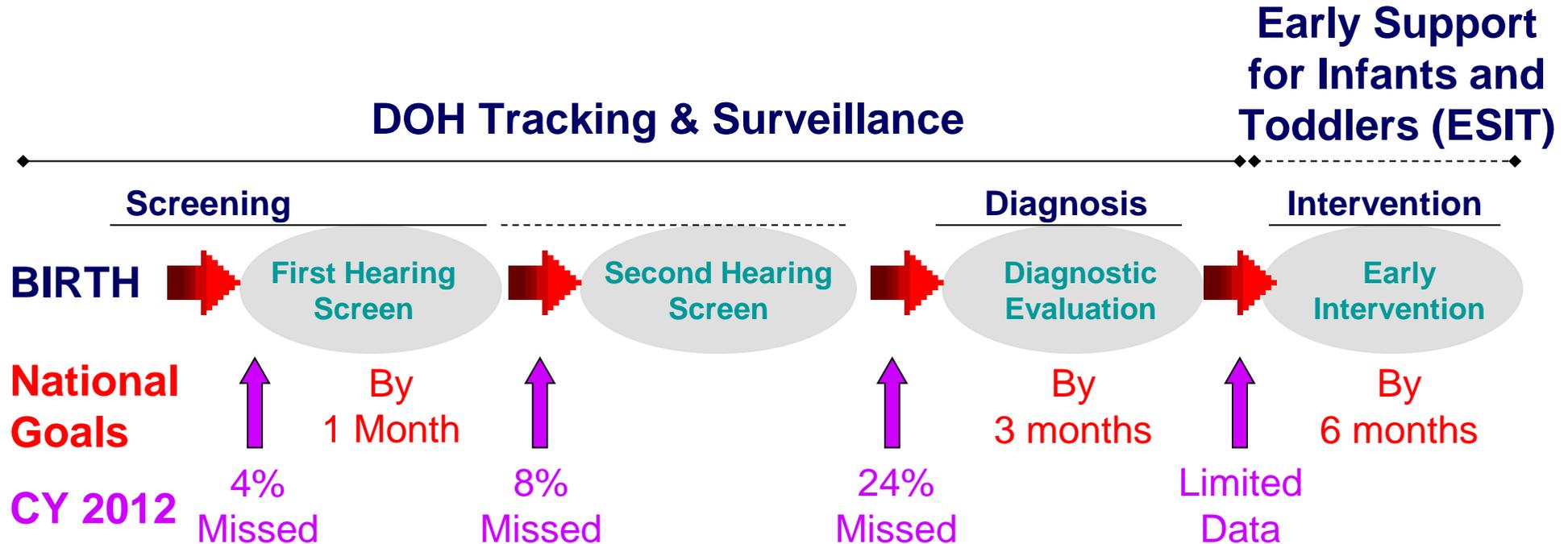


Audiologist



Infant

# Early Hearing-loss, Detection, Diagnosis and Intervention



An effective screening program *requires* 3 components: screening, diagnosis and intervention.

## 2012 Results

- Screening

- ✓ 86,180 births
- ✓ 83,000 infants screened (96%) and <1% Refused

- Diagnosis

- ✓ 579 infants referred
- ✓ 267 normal results
- ✓ 156 with hearing loss
- ✓ 156 loss to follow-up/documentation

- Intervention

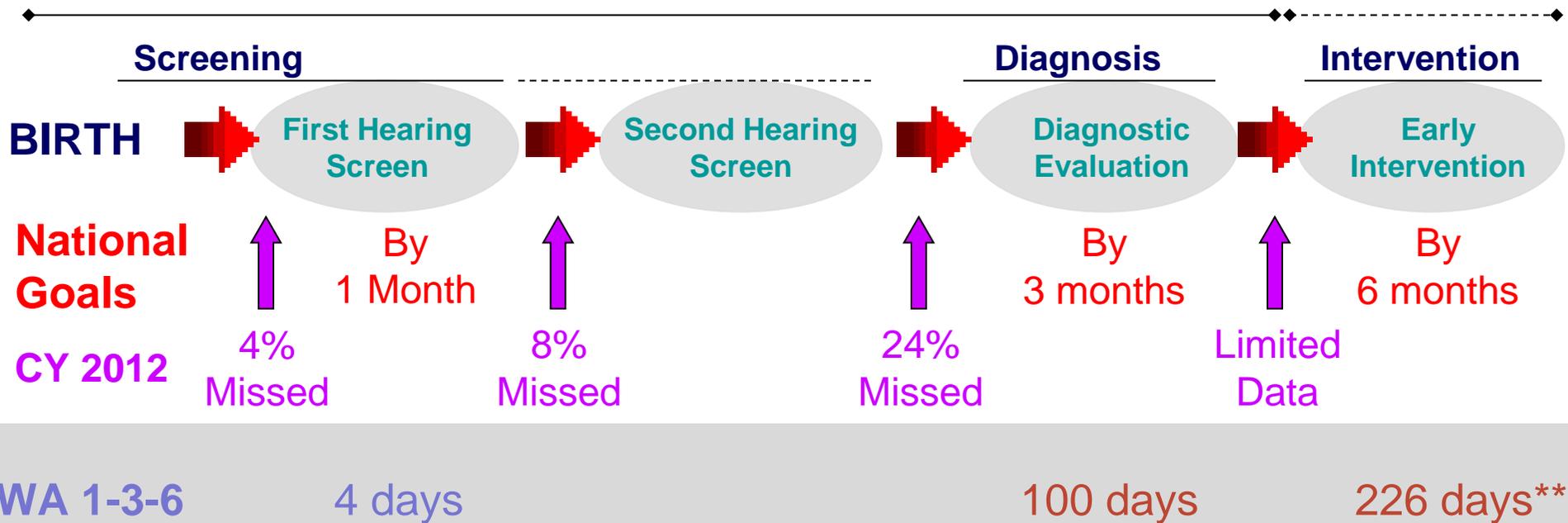
- ✓ Limited data – only 76 of 168\* linked with ESIT
- ✓ Likely 92 infants entered into early intervention but not found in ESIT

*\* 12 infants linked who passed initial hearing screening*

# Early Hearing-loss, Detection, Diagnosis and Intervention

## DOH Tracking & Surveillance

## ESIT



An effective screening program *requires* 3 components: screening, diagnosis and intervention.

\*\* limited data and wide ranges from 28-822 days

## Challenges

- Loss to follow-up/documentation
- Decentralized testing (lack quality control)
  - High referral rates increase staff work
  - Physician/Community mistrust
- Rely on voluntary reporting by audiologists
- Lack of diagnosis and early intervention professionals
- Delays for infants needing early intervention services
- Out-of-hospital births
- “Border babies”
- Sustainable funding

## Partners Supporting Newborn Hearing Screening

- Washington Birthing Hospitals and Washington State Hospital Association
- Pediatric Audiologists
- Pediatricians and American Academy of Pediatrics
- Department of Early Learning – Early Screening for Infants and Toddlers/ Family Resource Coordinators
- Department of Social and Health Services – Office of the Deaf and Hard of Hearing
- Hands & Voices – Guide By Your Side
- March of Dimes
- Seattle Children’s Hospital
- Washington Sensory Disabilities Services
- Early Intervention Providers
- Center for Childhood Deafness and Hearing Loss

## Summary

- Point-of-Care newborn hearing screening has unique challenges that result in higher numbers of missed screens and loss-to-follow-up/documentation
- Washington EHDDI is doing very well at meeting the “1” goal, but improvements are needed to achieve the “3” and “6” goals
- EHDDI staff continue to partner with many in striving to attain these goals

# Questions?

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