



EARLY HEARING DETECTION,
DIAGNOSIS, AND INTERVENTION
PROGRAM

The EHDDI Program



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EHDDI

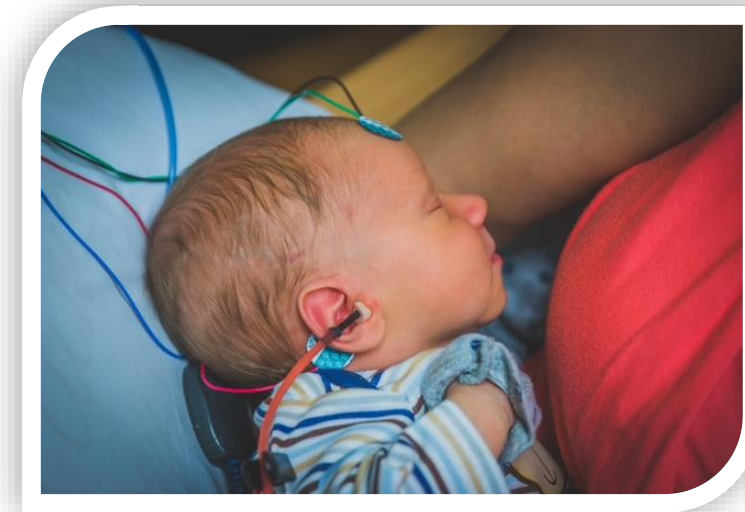
SCREENING METHODS AND TARGETED CONGENITAL CYTOMEGALOVIRUS
(CCMV) SCREENING

Newborn Hearing Screening Methods



Otoacoustic Emissions (OAE)

Automated Auditory
Brainstem Response (ABR)



Newborn Hearing Screening

- Point-of-Care testing
- Immediate result provided “pass” or “refer”
- Non-invasive
- Baby asleep
- Physiologic test
- Automated test
- Quick ~2-10 minutes
- Effectively identifies which babies need further testing



Newborn Hearing Screening

Initial screen

- Before hospital discharge (2 attempts)
- With midwife or audiologist before one month of age if not completed in a hospital

Repeat screen

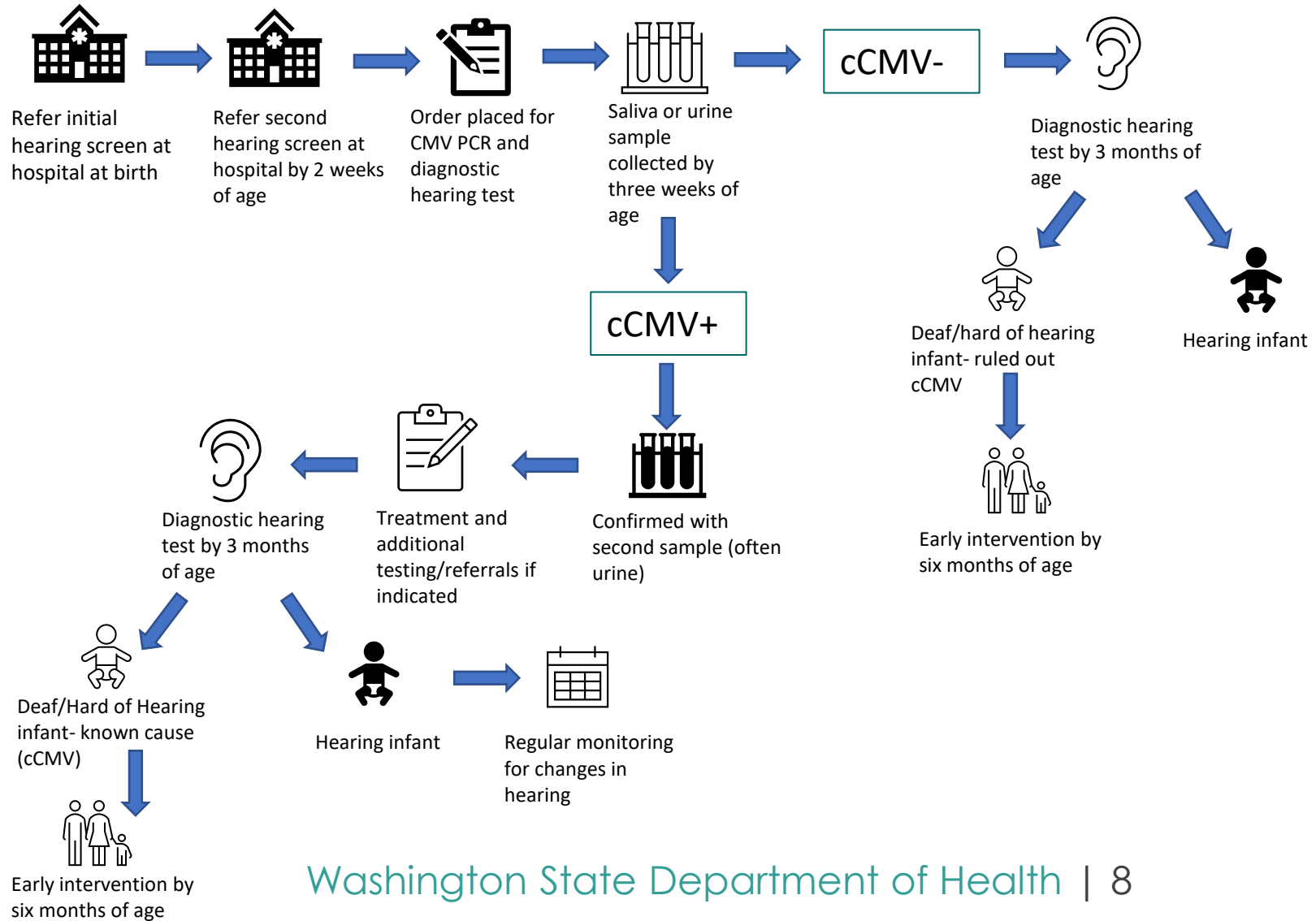
- As outpatient at hospital or audiology clinic before one month of age



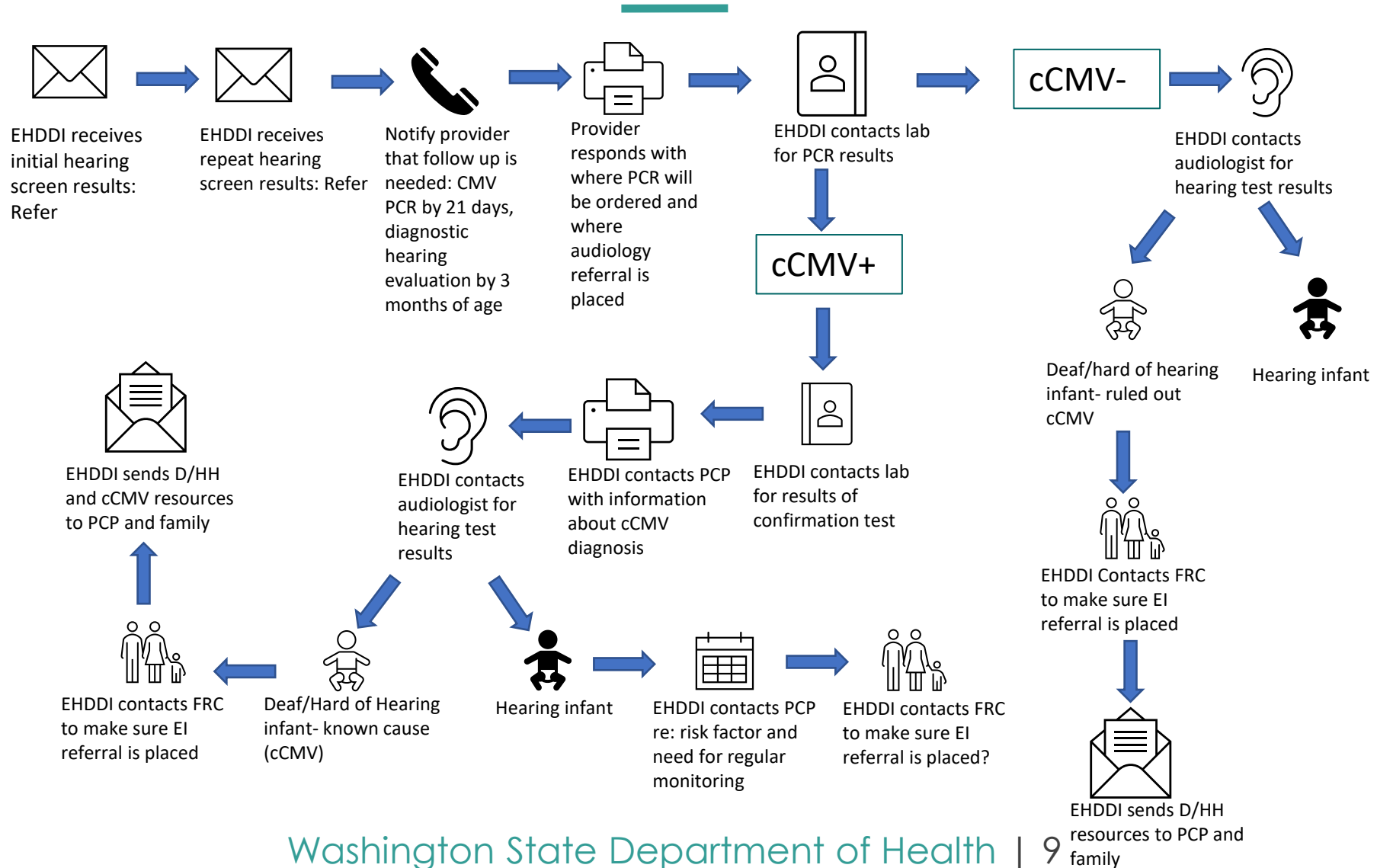
Targeted cCMV Screening

- Urine or saliva is collected from an infant after they do not pass their second newborn hearing screening
- Polymerase chain reaction (PCR) test
- Helps determine whether cCMV is the cause of a child's hearing loss
- Must test for CMV within 21 days of life to determine if CMV infection is congenital

Targeted cCMV Screening



Targeted cCMV Screening- EHDDI Program



EHDDI's Role

Education and outreach regarding new protocol

Follow-up work to ensure:

- Hearing screening and reporting happen within 21 days of life
- PCR was done after child did not pass hearing screen
- PCR results are received and shared with primary care provider and audiologist
- Infants who test positive receive appropriate follow up care, early intervention and information about cCMV

Targeted cCMV Screening Reliability

Polymerase chain reaction (PCR) of saliva or urine

- High sensitivity (>97%) and specificity (99%)
- Positive result should be confirmed with second sample (often urine)

Targeted screening lacks sensitivity

- Unable to identify infants with cCMV whose hearing loss develops later or have other impacts
- Approximately 10-15% of children with cCMV will have hearing loss
- Newborn hearing screening identified 57% of all CMV-related hearing loss that occurred in the neonatal period (Fowler et al. 2017)

Six states mandate targeted screening

- UT, IA, VA, NY, CT, IL

Newborn Hearing Screening Considerations

There is no mandate for hearing screening in Washington

Currently 27% of second hearing screenings occur after 21 days of life

- Average age of second screen = 22 days
- Median age of second screen = 15 days

Special considerations need to be made for infants with extended stays in the Neonatal Intensive Care Units (NICU)

Logistics for placing the order for the PCR test at the time of referral on second hearing screening

Challenges with timely reporting of hearing screening results



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