



Using Virtual Technology to Fully Implement EHDDI (Early Hearing Detection, Diagnosis and Intervention) in Rural Settings

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Kim Hamren, M.Ed, CED, LSLS Cert. AVT

Yoko Ishii, AuD, CCC-A

Maura Berndsen, MA, CED, LSLS Cert AVT

Listen and Talk

Seattle, WA



LEARNING OBJECTIVES

- Describe the 1-3-6 Goal for EHDI.
- Describe the outcomes of children who are deaf/hard of hearing when services are provided.
- Describe the available virtual services for children who are deaf/hard of hearing.



WHO YOU ARE

Who is with us today?





WHO WE ARE

Our Mission

Listen and Talk teaches children with hearing loss to communicate and learn through listening and spoken language.

Our Vision

No child is limited by hearing loss.







HEARING LOSS

Most Frequently Occurring Birth Defect

- 183 infants born with hearing loss among 88,381 births in WA in 2016
- Approx. 2 in 1,000 births





IMPACT OF HEARING LOSS

Until recently:

- Only babies with a risk factor, were screened:
 - Roughly 50 percent of newborns who were deaf/hard of hearing were sent home with undetected hearing loss.
 - On average, children with hearing loss were first identified at age 2 ½ to 3 years old.



IMPACT OF HEARING LOSS

Until recently:

- Children whose hearing loss was not identified during the critical period often fell behind their peers in language, cognitive, and social skills.

The first two years of life are the most critical for learning speech and language.



EHDDI

- In 1993, National Institute of Health (NIH) endorsed universal newborn hearing screening leading to the Newborn and Infant Hearing Screening and Intervention Act of 1999
- The EHDDI (Early Hearing-Loss Detection, Diagnosis and Intervention) Tracking and Surveillance system was developed by the WA DOH in cooperation with the Centers for Disease Control and Prevention (CDC)



1-3-6 GOAL

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All babies are screened for hearing loss prior to **1** month of age



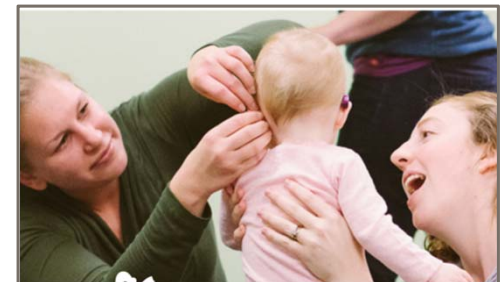
Xlmh\$ srxl

Those that are referred receive diagnostic audiological evaluation by **3** months of age.



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Those that are diagnosed with hearing loss receive early intervention by **6** months of age.



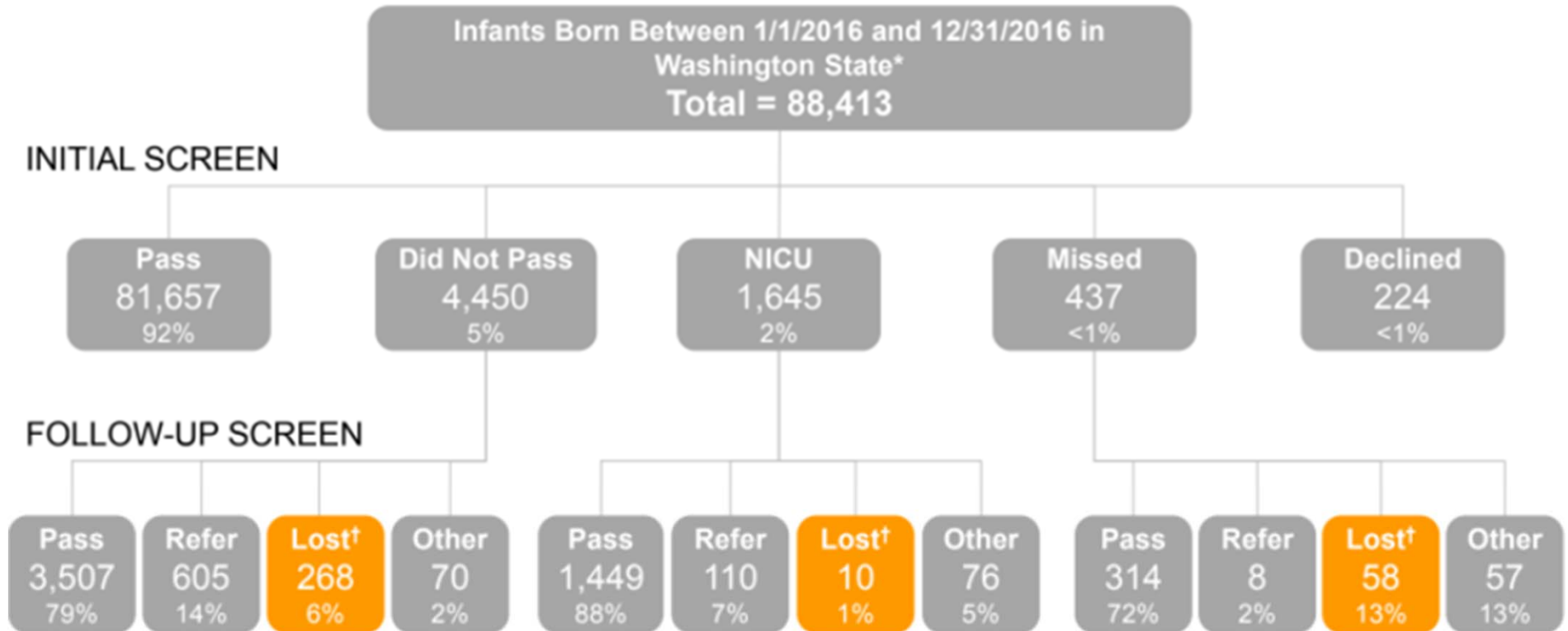


TODAY

- All states have established EHDI/EHDDI
- More than 96 percent of all newborns born in WA were screened in 2016
- 69% of children confirmed to have a permanent hearing loss were enrolled in intervention programs by age 6 months in 2016



CHALLENGES



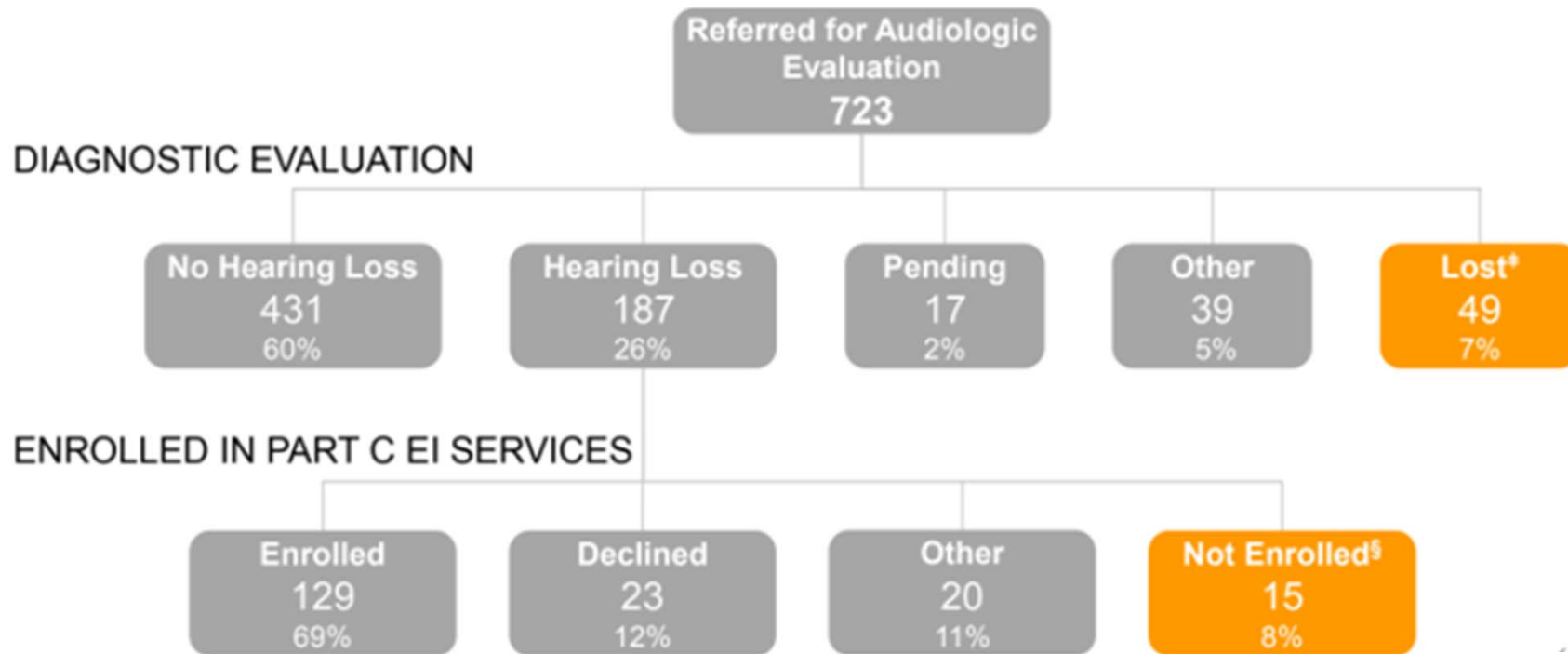
* Excludes many infants delivered by midwives at home or in a birth center and infants born before 5/1/16 at Bremerton and Whidbey Naval hospitals.

† Infant lost to follow-up or documentation.

- **336 infants lost to follow-up after the not passing the first hearing screen.**



CHALLENGES



- Only 56% of infants were identified before three months of age.
- 49 infants (7%) were lost to follow-up after being referred to audiology.
- 15 infants (8%) were lost to follow-up after receiving a diagnosis of hearing loss.



OUTCOMES

The LOCHI (Longitudinal Outcomes of Children with Hearing Impairment) study has found...

- Children with severe hearing loss had their language outcomes delayed by 0.3 SD when HA fitting was delayed from 6 months to 12 months.
- Children with moderate hearing loss had their language outcomes delayed by 0.3 SD when HA fitting was delayed from 6 months to 24 months.



TRADITIONAL SERVICE DELIVERY

- Diagnostic confirmation leads to referral to Part C/ESIT and medical services.
- Families work with team specializing in serving children who are deaf/hard of hearing
 - Otolaryngologist
 - Audiologist
 - Teacher of the Deaf/Speech-Language Pathologist
- Home Visits for children birth-3 years
- Hearing care/Audiology in clinics

Pathway to Services: Infants & Toddlers who are Deaf/Hard of Hearing



A flow chart developed for the state of Washington by a multi-agency team including:

Center for Childhood Deafness and Hearing Loss (CDHL)
 www.cdhl.wa.gov CDHL Outreach: 855-342-1670

Department of Health (DOH)
 www.doh.wa.gov EHDDI program: 206-418-5613 Genetics: 253-395-6742

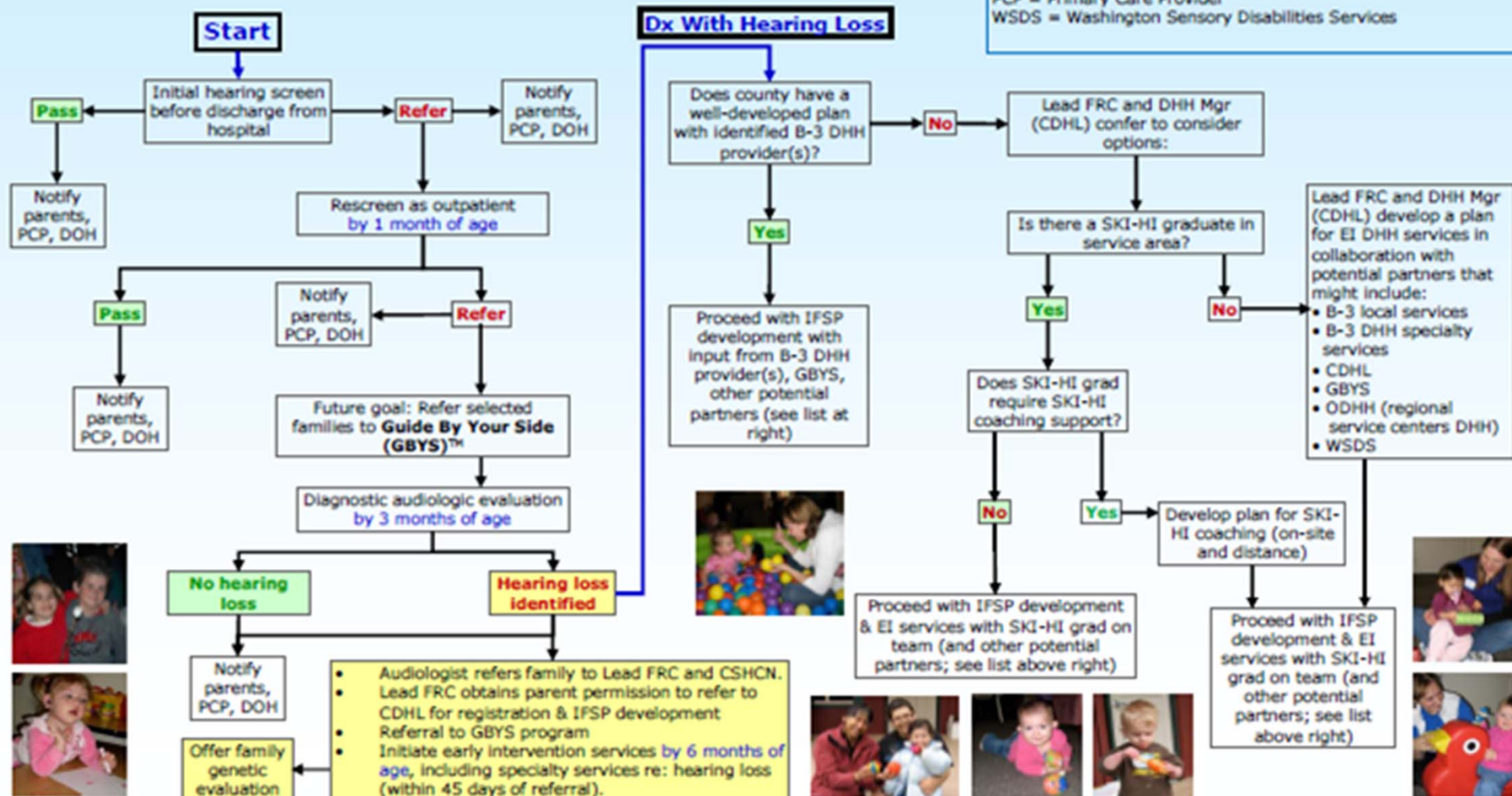
Early Support for Infants and Toddlers Program (ESIT)
 www.del.wa.gov/esit/ Family Health Hotline at 1-800-322-2588

Office of the Deaf and Hard of Hearing (ODHH)
 www.dshs.wa.gov/hrsa/odhh/ 800-422-7930

Washington Sensory Disabilities Services (WSDS)
 www.wsdsonline.org 800-572-7000

Abbreviations

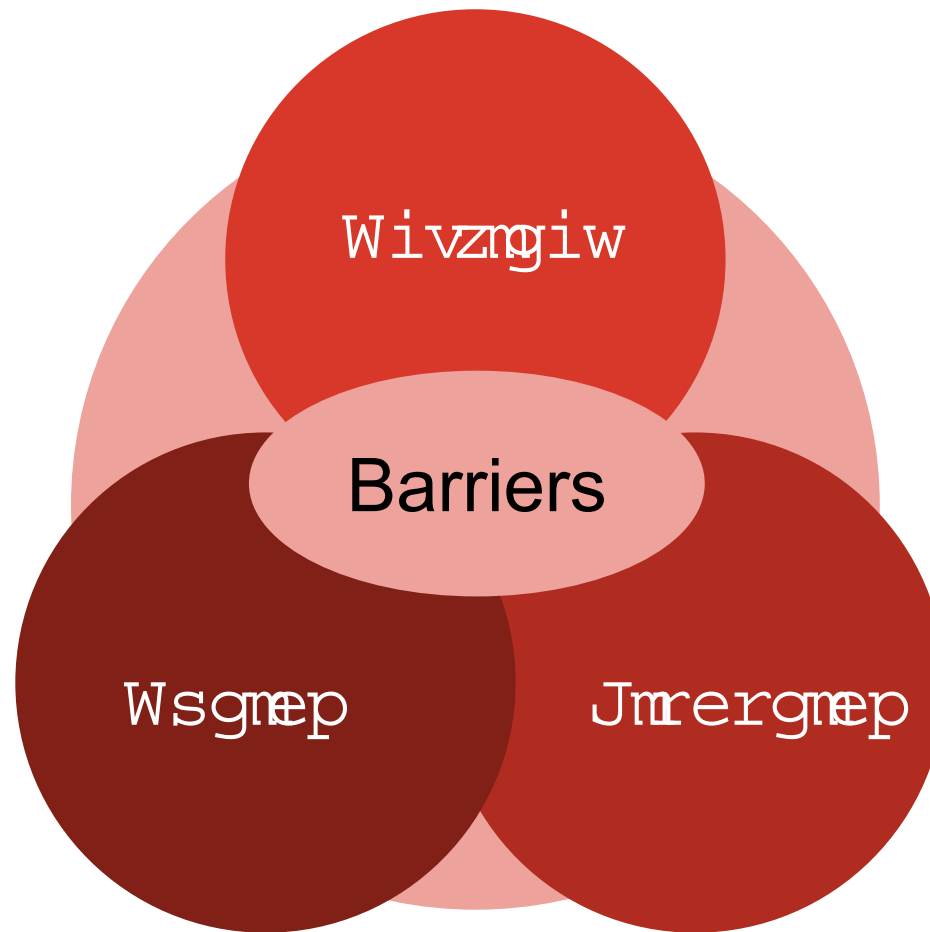
B-3 = Birth to three years of age
 CDHL = Center for Childhood Deafness and Hearing Loss
 CSHCN = Children with Special Health Care Needs
 DHH = Deaf and Hard of Hearing
 DOH = Department of Health
 EI = Early Intervention
 FRC = Family Resources Coordinator
 GBYS = Guide By Your Side™
 IFSP = Individualized Family Service Plan
 ODHH = Office of Deaf/Hard of Hearing
 PCP = Primary Care Provider
 WSDS = Washington Sensory Disabilities Services



Revised 1/24/14



BARRIERS FOR FAMILIES IN RURAL COMMUNITIES





BARRIERS FOR FAMILIES IN RURAL COMMUNITIES

Services	Social	Financial
<ul style="list-style-type: none">● Lack of specialists● Increased travel to appts.● Impact of weather on travel to services● Limited access to interpreters	<ul style="list-style-type: none">● Limited family connections● Limited peer interactions for children● Community sharing home language	<ul style="list-style-type: none">● Missed work● Child-care expenses● Travel expenses



OVERCOMING BARRIERS

Virtual Technology is a Tool!

- Families access highly trained providers
- Reduces/Eliminates negative impact of travel
- Ability to connect with families that share experiences with hearing loss in the family's home language/culture





VIRTUAL EXPERIENCE AT LISTEN AND TALK

- Virtual service delivery offered for the past 8 years.
- Virtual services combined with in-home visits.
- Used for direct service delivery, team collaboration and provider support.
- HIPPA/FERPA Compliant
 - Following established guidelines
 - Relying on IT expertise to confirm compliance

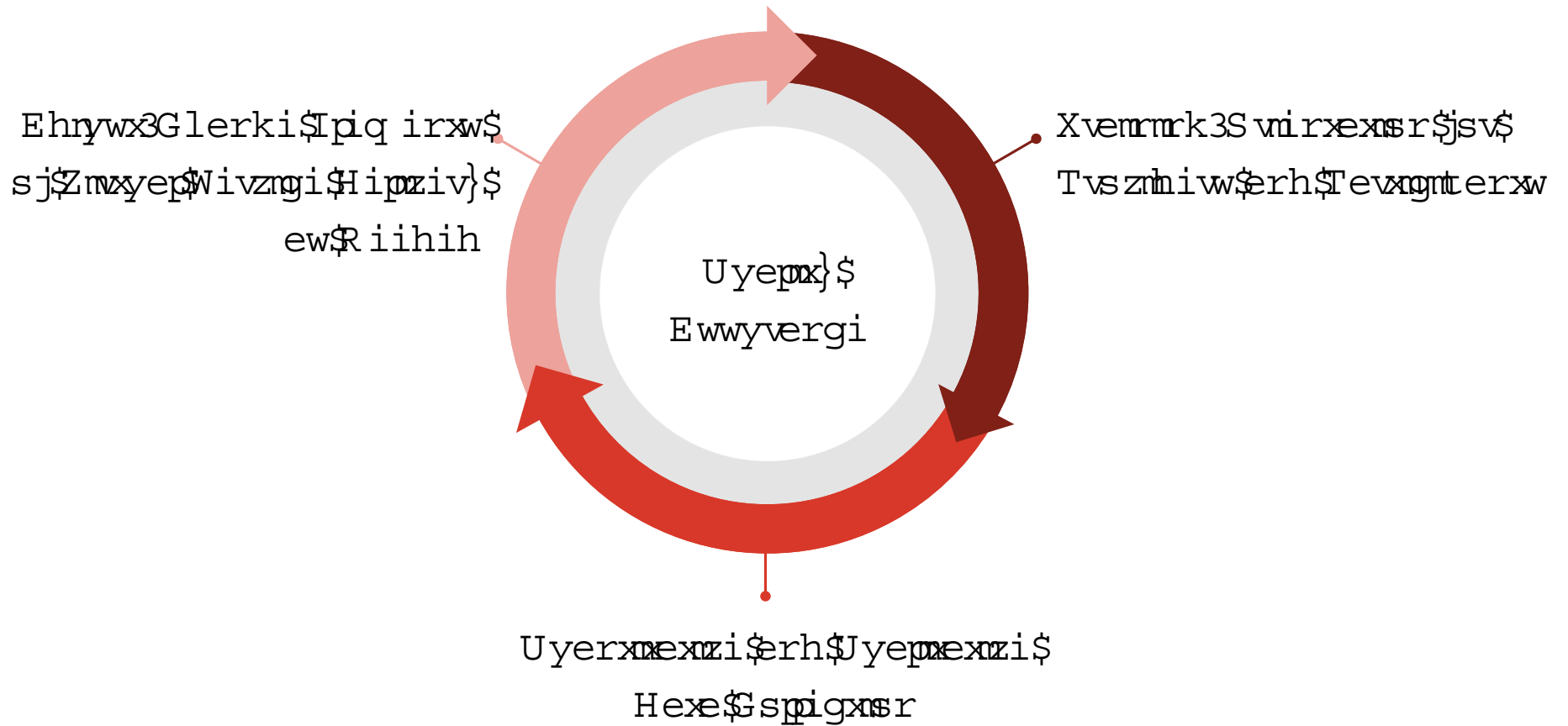


CHALLENGES WITH VIRTUAL SERVICES

- Setting up equipment/technology
- Unexpected connectivity issues
- Voice cancellation can affect pace of interactions
- Perceived by some as impersonal and less collaborative



RESPONSE TO CHALLENGES





OUTCOMES FOR CHILDREN AND FAMILIES VIRTUAL

- Evidence base is growing and pointing to same-to-better outcomes for families involved in virtual service delivery when compared to traditional service delivery.
- Blaiser, et al (2013) Results:
 - The tele-intervention (TI) group scored statistically significantly higher on the expressive language measure than the in-person group ($p = .03$).
 - TI group scored statistically significantly better on the Parent Engagement subscale of the Home Visit Rating Scales-Adapted & Extended (HOVRS-A+; Roggman et al., 2012).
 - Cost savings associated with providing services via TI increased as the intensity of service delivery increased.
 - General feedback was positive about TI, but there was great variability in perceptions.



FAMILY FEEDBACK

“I really think that virtual services is really awesome because sometimes for one reason or another we are not able to be face to face on the appointment and with virtual services is great at least with me because a lot of time



I couldn't keep the date and time off my appointment with you and with virtual services we can do it any day and anytime that we are available, and we don't lose the appointment that we had. we keep our appointments most of the time by virtual services which was really helpful for me because we could keep track of all what was going on with [our child]. Or even if it was only information that needed to be given from you.....”

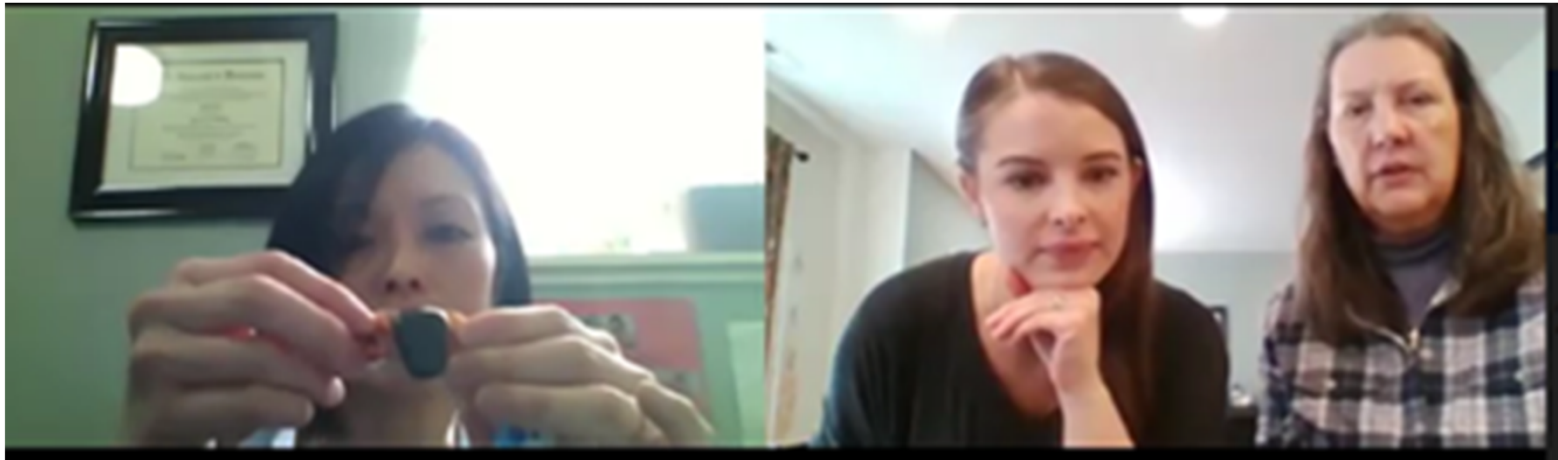


VIRTUAL TECHNOLOGY AUDIOLOGY

- Rescreening
- Diagnostic Testing
- Hearing aid programming
- Cochlear implant mapping
- Consultation/Support
 - Families
 - Professionals
- Training of screeners



OUR TELE AUDIOLOGY PRACTICE



- **Provide clarity on:**
 - Diagnosis/Etiology/Prognosis
 - Clinical process
 - Audiology follow-up schedule
 - Amplification technology timeline
- **Support the use of amplification technology:**
 - What to expect
 - Maintenance skills
 - Troubleshooting skills



FAMILY FEEDBACK

- Convenience (no lost time for travel)
- Comfort of being at home
- One-on-one time to ask questions
- Felt supported for:
 - clinical process
 - setting expectation
 - planning for the next step
- Childcare challenge



THE FUTURE



RESOURCES / REFERENCES



<http://www.infanthearing.org/telehealth/index.html>



<http://listeningandspokenlanguage.org>



<http://www.listentalk.org/>



<http://www.asha.org/>



BIBLIOGRAPHY RESOURCES

- Blaiser, K. M., Behl, D., Callow-Heusser, C., & White, K. R. (2013). Measuring costs and outcomes of teleintervention when serving families who are deaf/hard of hearing. *International Journal of Telerehabilitation*, 5(2), 3-10.
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- Wolfe, J., & Joanna, S. (2016). Lessons from LOCHI. *The Hearing Journal*, 60(6), 18-23.



Thank You

For more information, please visit our website at

www.listentalk.org



CONTACT INFORMATION

Kim Hamren

kimh@listentalk.org



Yoko Ishii

yokoi@listentalk.org



Maura Berndsen

maurab@listentalk.org

