

# Infant Hearing Aid Practices and Experiences in Utah

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# We will cover...

- ◆ JCIH 2007 amplification recommendation
- ◆ Barriers to early amplification
- ◆ Utah agencies
- ◆ Utah surveys:
  - ◆ Pediatric audiologists
  - ◆ Parent hearing aid experiences
- ◆ Results
- ◆ Next steps

# Hearing Aid Fitting Goal

- ◆ Hearing aid fitting within 1 month of diagnosis (JCIH, 2007)
  - ◆ For parents who choose amplification
- ◆ Intervention before 6 months



# Barriers to Early Amplification

- ◆ Risk for loss to follow-up after diagnosis / late hearing aid fitting:
  - ◆ Medicaid
  - ◆ Permanent conductive hearing loss
  - ◆ Unilateral hearing loss
  - ◆ Mild-moderate degree of hearing loss
  - ◆ Distance/geographical access to services

Liu, C., Farrell, J., MacNeil, J., Stone, S., & Barfield, W. (2008). Evaluating loss to follow-up in newborn hearing screening in Massachusetts. *Pediatrics*, *121* (2), e335-43.

Spivak, L., Sokol, H., Auerbach, C., & Gershkovich, S. (2009). Newborn hearing screening follow-up: Factors affecting hearing aid fitting by 6 months of age. *American Journal of Audiology*, *18*, 24-33.

# Best Practice Guidelines

American Academy of Audiology (2003). Pediatric amplification protocol

Guidelines address:

- ◆ Personnel qualifications (e.g., licensure, expertise, equipment)
- ◆ Candidacy
- ◆ Selection considerations and signal processing
- ◆ Fitting considerations (RECD, use of evidence-based target values, verification)
- ◆ Orientation & training
- ◆ Validation of benefit and follow-up/referrals

# Utah System and Resources

- ◆ 0-3 hearing aid application
- ◆ USDB loaners
- ◆ Early Fit Hearing Aid Program
- ◆ Sonic Kids (3-18 years)
- ◆ HARP
- ◆ Primary Pennies
- ◆ Audiological Soundbooth
- ◆ OAE Equipment
- ◆ Mobile Audiological Evaluation

# Our Questions

- ◆ What pediatric hearing aid services are available?
- ◆ What challenges are audiologists and parents experiencing?
- ◆ Is access hearing aids (e.g., cost) a barrier for parents?
- ◆ Is access to a skilled pediatric audiologist (e.g., limited geographical locations) a barrier to parents?
- ◆ Are parents knowledgeable and confident in managing their child's hearing aid use?



# Surveys

- ◆ Two surveys developed
  - ◆ Pediatric audiology hearing aid services
  - ◆ Parent hearing aid experiences
- ◆ Distribution Summer 2010
  - ◆ All Utah audiologists (n = 191)
    - ◆ 41 returned (21%)
  - ◆ All parents of children enrolled in USDB 0-3 program (n = 150)
    - ◆ 40 returned (27%)



# Results: Audiologist Survey

- ◆ Of the 41 respondents:
  - ◆ 25 do not provide pediatric hearing aid services
  - ◆ 16 provide pediatric hearing aid services
- ◆ Of the 16 providers:
  - ◆ During the six month period prior to completing the survey:
    - ◆ 5 audiologist fit children under six months of age
    - ◆ 6 children under six months of age were fit

# Results: Audiologist Survey

For children fit ages birth to 5 years

- ◆ Funding sources used to obtain hearing aids:
  - ◆ Medicaid
  - ◆ Private pay
  - ◆ Donation
  - ◆ Insurance

# Results: Audiologist Survey

- ◆ Estimated typical time between diagnosis of hearing loss and fitting:
  - ◆ <1 month (n = 6)
  - ◆ 1 to 3 months (n = 8)

- ◆ Challenges to fitting infants
  - ◆ Parents ability to pay (n=12)
  - ◆ Middle ear fluid (n=7)
  - ◆ Parent acceptance (n=7)
  - ◆ No show for appt (n=4)
  - ◆ Cancellations (n=4)
  - ◆ Third party payer (n=3)
  - ◆ Other health problems (n=2)
  - ◆ Medical clearance (n=2)
  - ◆ Appt availability (n=1)

# Results: Audiologist Survey

- ◆ Services provided:
  - ◆ Electroacoustic analysis (**11 provide**, 5 do not provide)
  - ◆ Verification of hearing aid settings (16 provide); method used:
    - ◆ 3 sound field testing, 13 real ear; prescriptive formula used:
      - ◆ **11 DSL**
      - ◆ 1 manufacturer's proprietary algorithm
      - ◆ 4 no response

# Results: Audiologist Survey

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Verification completed	N
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Initial fit only	2
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Concern only	1
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Initial fit and monitoring visits	3
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Monitoring visits and concern	1
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Initial fit, monitoring visits, and concern	6
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N = 13

# Results: Audiologist Survey

- ◆ Use RECD (6 do not include, **10 include**); method used:
  - ◆ **2 measured values**
  - ◆ 4 use age-averaged norms
  - ◆ 4 use both age-averaged norms and measured values
- ◆ When RECD is included:
  - ◆ 2 at initial fitting
  - ◆ 2 when new earmolds are fit
  - ◆ 1 when earmold impression is taken
  - ◆ 1 at hearing evaluation
  - ◆ 1 every appointment, if possible

# Results: Audiologist Survey

Earmold replacement by age group: Frequency of audiologists' responses

Replacement months	<1 year	12-18 months	19-35 months	36-60
Every month	3	--	--	--
Every 2 months	1	2	1	--
Every 3 months	3	3	2	1
Every 4 months	--	--	1	--
Every 6 months	2	2	4	6
Every 12 months	1	3	3	8



# Results: Audiologist Survey

Recommended age for directional microphone use: Frequency of audiologists' response

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Recommended Age	N
From birth	3
4 years	1
5 years	2
6 years	1
10 years	2
12 years	1

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# Results: Audiologist Survey

- ◆ Provide parent with a hearing aid care kit
  - ◆ 12 provide; 4 do not provide
- ◆ Teach parents how to use a listening stethoscope to check hearing aid function
  - ◆ 14 provide instruction; 2 do not
    - ◆ Advice regarding frequency of doing a listening check
      - ◆ 9 (daily)
      - ◆ 1 (2-3 times per week)
      - ◆ 1 (weekly)

# Results: Audiologist Survey

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Monitor Hearing months	< 18 months	19-35 months	36-60
Once per month	1	--	--
Every 2 months	1	--	--
Every 3 months	5	1	1
Every 4 months	1	1	--
Every 6 months	1	8	4
Every 12 months	--	1	10

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# Results: Audiologist Survey

- ◆ Recommend use of personal FM systems for children under 5 years of age
  - ◆ 6 recommend
  - ◆ 7 do not recommend
    - ◆ Need more information
    - ◆ Cost
    - ◆ Cumbersome

# Results: Parent Survey

Of the 40 respondents, 35 were fit with hearing aids

	Mean	Median	Range
Age at Diagnosis (n=40)	3	2	0-25
Age at Fitting (n=35)	8	6	2-26
Interval between Dx/Fitting	4	--	0-21

# Results: Parent Survey

Hearing aid funding source ( $n = 31$ )

Funding Source	$n$	%
Self-pay	10	32
Medicaid	9	29
Insurance	3	10
Donation	2	6
Selected more than 1	3	10
Other	4	13

# Results: Parent Survey

Challenges in obtaining hearing aids	#	%
Paying for hearing aids	12	34
Feeling confident in the skills of the audiologist	10	29
Other health challenges	10	29
Middle ear fluid	10	29
Paying for earmolds	9	26
Finding audiologist who works with young children	8	23
Delay in appointment availability	7	20
Accepting the need for hearing aids	6	17
Obtaining medical clearance	5	14



# Results: Parent Survey

Hearing use: Hours per day ( $n = 35$ )

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Hours per day	$n$	%
1-3	6	17
4-6	5	14
7-9	11	31
>10	13	37

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# Results: Parent Survey

Parent level of agreement with statements ( $n = 34$ )

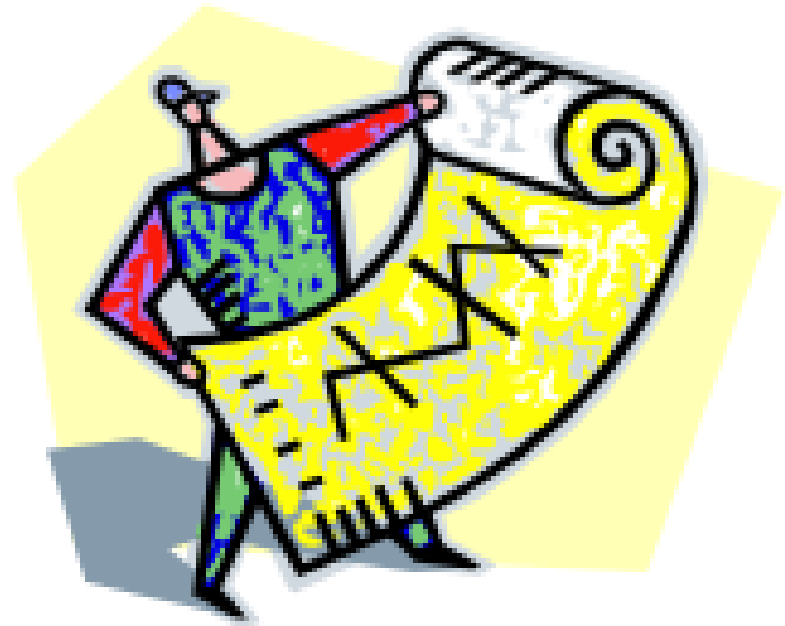
Statement	NA	SD	D	NS	A	SA
I listen to my child's hearing aids every morning	0	5	5	9	9	6
I can tell when my child's hearing aids are not working correctly	0	3	1	4	19	7
I can tell when my child needs new earmolds <sup>a</sup>	1	0	1	12	9	9
I am confident in how to manage my child's hearing aid use	9	0	0	0	15	10
I am confident that my child's hearing aids are programmed correctly	0	1	1	15	7	10

<sup>a</sup> $n = 32$

NA = not applicable; SD = strongly disagree; D = disagree; NS = not sure; A = agree; SA = strongly agree

# Next Steps in Utah

- ◆ Utah Department of Health  
EHDI Program



# Next Steps in Utah

- ◆ Utah School for the Deaf
  - ◆ Mapping Professionals
  - ◆ Parent Audiological Consultations
  - ◆ Early Intervention Assessment
  - ◆ Rural Hearing Screening
  - ◆ On-site School Age Programming
  - ◆ Implant Mapping Collaboration

# Next Steps NCHAM

- ◆ National study to learn more about parent experiences with hearing aids
  - ◆ Distribution Feb-May 2011
  - ◆ Parent Support Organizations
    - ◆ Hands & Voices
    - ◆ ASDC
    - ◆ AG Bell



# Early Amplification

What challenges are you facing  
in your area?

What strategies/resources have  
been helpful?