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Grand Rounds: Making Appropriate Referrals, presented in partnership with the University of South Dakota

Lindsey E. Jorgensen, AuD, PhD
Jessica J. Messersmith, PhD
Jennifer Phelan, AuD
Liz DeVelder, MA
Gabriella Emme, BS
Samantha Sepulvado, BA

Lindsey E. Jorgensen, PhD, AuD

Lindsey E. Jorgensen is a Professor and serves as Department Chair and Clinic Director in the Communication Sciences and Disorders Department at the University of South Dakota; she also holds a position as a Research Audiologist for the Department of Veterans affairs. At the University of South Dakota Lindsey teaches, conducts research, and provides clinical services in the area of hearing aids and hearing assistive technology. Her research focuses on how to best personalize hearing technologies for patient individual cognitive, psychological, physical, and social needs.

Jessica J. Messersmith, PhD

Jessica J. Messersmith is a Professor at the University of South Dakota where she is the Associate Dean for the College of Arts and Sciences and the Faculty Athletics Representative; she also is an active faculty member in the Department of Communication Sciences and Disorders where she teaches, does research, and sees patients. Her research focuses on clinical practices that hinder or improve outcomes of pediatric patients in the audiology clinic, with a specific focus on cochlear implants and infant hearing detection and intervention. Through her clinical, research, and teaching duties she continually strives to improve access to care for pediatric patients in underserved, rural, and impoverished areas.

Jennifer Phelan, AuD

Jennifer Phelan is an Assistant Professor of Practice and Audiology Clinic Coordinator at the University of South Dakota. Her clinical interests include diagnostics and treatment within pediatric audiology. As clinic coordinator, she strives to continually support the development of graduate clinicians and clinical educators.

Liz DeVelder, MA

Liz DeVelder is a Speech-Language Pathologist who has been practicing for over 20 years. She focuses on language development of pediatric patients.

Gabriella Emme, BS

Gabriella Emme is currently enrolled in the AuD program at the University of South Dakota where she is expected to receive her doctoral degree in 2025. She currently serves as the graduate teaching assistant where she teaches the undergraduate audiology courses.

Samantha Sepulvado, BA

Sami is a 3rd year AuD student. She is interested in working with the pediatric population in a hospital or private practice.

Disclosures

- **Presenter Disclosure**: Financial: Lindsey Jorgensen is employed by the University of South Dakota. Non-financial: Lindsey Jorgensen has various relationships with HA and verification companies for research and product development. Financial: Jessica Messersmith is employed by the University of South Dakota. Non-financial: Jessica Messersmith has served as past president of the South Dakota Speech-Language Hearing Association. She is chair of the AAA Task Force on Cochlear Implant Practices. She provides educational services for several CI companies. Financial: Jennifer Phelan is employed by the University of South Dakota. Non-financial: Jennifer Phelan has no relevant non-financial relationships to disclose. Financial: Liz DeVelder is employed by the University of South Dakota. Non-financial: Liz DeVelder has no relevant non-financial relationships to disclose. Financial: Gabriella Emme has no relevant financial relationships to disclose. Non-financial: Gabriella Emme has no relevant non-financial relationships to disclose. Financial: Samantha Sepulvado has no relevant financial relationships to disclose. Non-financial: Samantha Sepulvado has no relevant non-financial relationships to disclose. AudiologyOnline has made a donation to the audiology program at the University of South Dakota for this presentation.
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- The views expressed here are those of the authors and not:
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Learning Outcomes

After this course, participants will be able to:

- Describe their current network of referrals to send their hearing healthcare patients.
- Identify their hearing healthcare practice specialties they could market to other professionals for referrals.
- Describe three areas where referrals should be made for their individual hearing healthcare practice.

Lindsey E. Jorgensen AuD PhD

Jessica J. Messersmith PhD

Jennifer M. Phelan AuD

Elizabeth (Liz) DeVelder, MA MS (SLP)

Gabriella (Gabby) Emme, BS (AuD Extern)

Samantha (Sami) Sepulvado, BA (3rd year AuD)

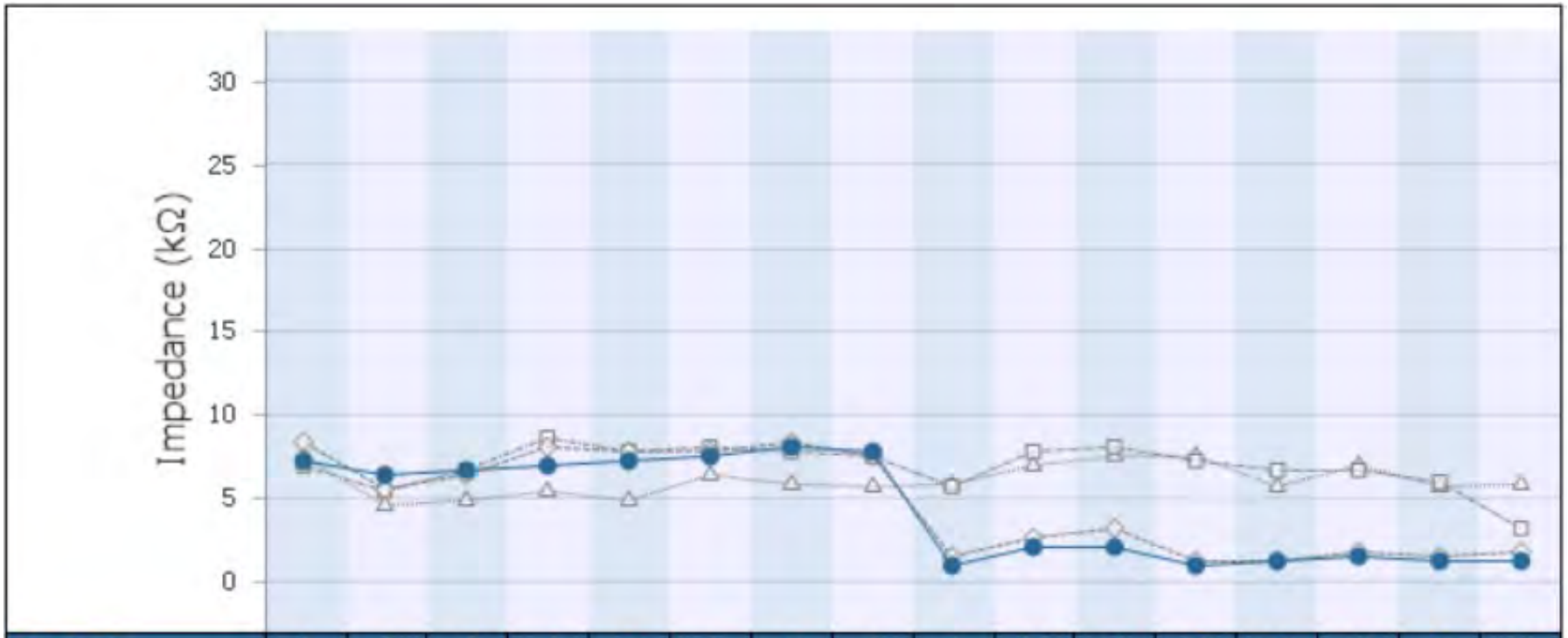
Declining – Jessica Messersmith

Background

- 8 years old at time of report
- Bilateral CI user
  - Advanced Bionics
    - Internal: HiRes Ultra 3D
    - External: Naida Q90
  - Implanted sequentially
    - 3 years 7 months Ad
    - 3 years 8 months As
  - Optimized fitting based on ESRT, and CI thresholds, auditory, speech and language development
- Returned to our clinic after a temporary relocation

Results

- Left ear impedances



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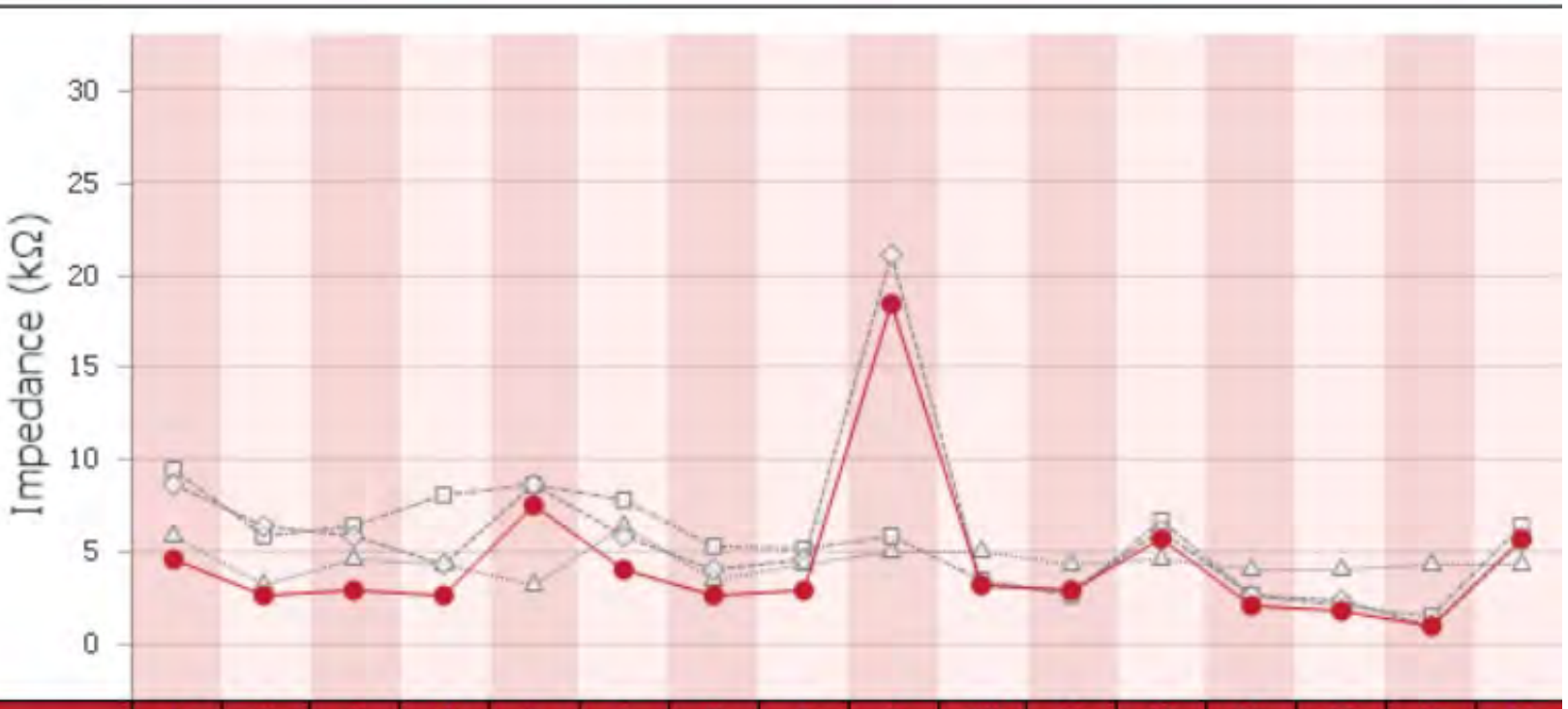
05/31/22 09:02:55 AM	8.4	5.7	6.5	8.1	7.8	7.8	8.4	7.6	1.6	2.7	3.2	1.4	1.4	1.9	1.6	1.9
07/22/21 01:20:03 PM	7.1	5.4	6.8	8.7	7.9	8.2	7.9	7.6	5.7	7.9	8.2	7.3	6.8	6.8	6.0	3.3
11/14/19 04:00:28 PM	7.6	4.6	4.9	5.4	4.9	6.5	6.0	5.7	6.0	7.1	7.6	7.6	5.7	7.1	5.7	6.0

Results

- Right ear impedances



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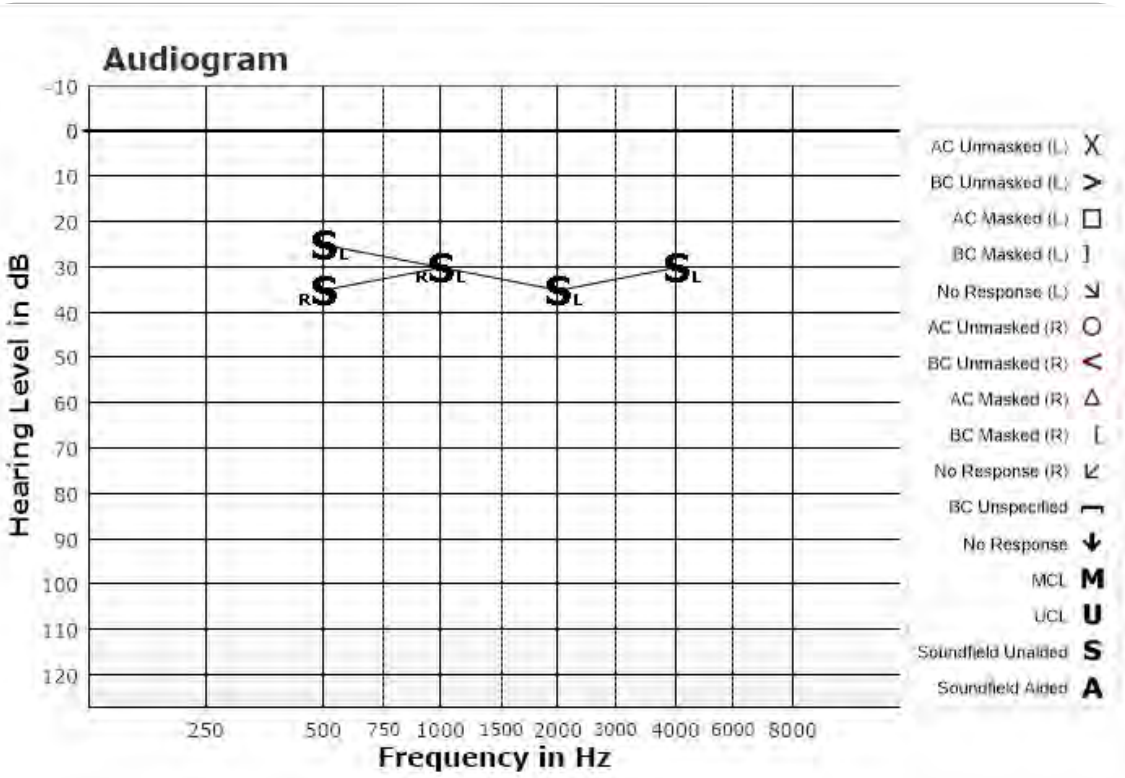
09/29/22 01:26:09 PM	8.6	6.5	5.9	4.3	8.6	5.9	4.0	4.6	21.0	3.2	3.0	6.2	2.7	2.4	1.1	5.7
07/22/21 01:20:03 PM	9.5	5.9	6.5	8.1	8.7	7.8	5.4	5.1	5.9	3.5	2.7	6.8	2.7	2.2	1.6	6.5
11/14/19 04:10:29 PM	5.9	3.2	4.6	4.3	3.2	6.5	3.5	4.3	5.1	5.1	4.3	4.6	4.1	4.1	4.3	4.3

Results



- CI sound field thresholds
- No response Ad at 2 k & 4k

Houston, we have a problem

- Device failure Au confirmed via integrity testing

- What are the red flags?
  - Impedance levels reduce by more than half from the previous measure, with no other explanation (e.g. meaningful change in wear time)
  - Aided sound field thresholds with the cochlear implant are greatly elevated or absent
  - Patient reports a “pop” sound followed by no sound
  - Internal device is not identified by programming software (confirmed function of all external equipment including sound processor and programming interface)

Solution

- Explant and re-implantation Au scheduled (expedited)
- Internal device is under warranty
- AB's Cochlear Care Team will assist with additional expenses as able

- Goal: To reactivate this summer to allow time to adjust before school starts in the fall.

Looking back and looking forward

- Don't discount changes in results
- If things don't add up, question why!
- Understand the honor and responsibility that is part of being a pediatric audiologist

Questioning - Samantha Sepulvado

Background

- Mister Sensitive
  - Seen at an offsite clinic for an audiologic evaluation
  - 8-year-old boy
  - Nonverbal
  - Failed OAE screening
  - As tymps bilaterally

Results

- Attempted to do CPA
  - Felt like the patient wasn't conditioned to the task
  - Could only get results in one ear
  - Did not like having the headphones on
- Got thresholds at 20 dB
  - Do not believe those are the actual thresholds
  - Unreliable

Problem

- The audiologist didn't want to listen to my opinion when I thought the patient wasn't conditioned and that we should move onto an ABR to give the parent results.
- As a new professional or student how do you approach the professional who is not using current evidence?
- How does a new professional or student know if the practice is doing something not using current evidence?

Problem

- Mom came with lots of questions, but left with no answers

What would I do differently?

- Push to at least give resources
- Talk with supervisor afterwards about sending information
- Talk with supervisor about results and attempt to learn about their clinical judgement

Investigating- Jennifer Phelan

Background

- 2 year old child referred by their pediatrician
  - Referral to rule out hearing loss due to concerns for development
- Intake reported
  - Passed newborn hearing screening
  - No history of chronic otitis media
  - Unremarkable pregnancy and delivery
- Parent report
  - No concerns for child's hearing
  - No concerns for child's delay in speech
    - "My husband didn't talk until he was 5 years old and he's okay."

Results

- **Otoscopy:**
  - Unremarkable bilaterally
- **Tympanometry:**
  - ECV, TPP, SC within normal limits bilaterally
- **Otoacoustic Emissions:**
  - Present 2k-8k Hz bilaterally
- **Audiogram:**
  - 500Hz-1k Hz within the normal hearing range in both ears
    - No frequency lower than 15dB HL with inserts via VRA
    - Fair reliability
  - SRT 15dB bilaterally pointing to body parts

What do we know?

- Physician has concerns
  - Likely based from questions asked or a questionnaire given to the family at a well visit
- Parents do not report concerns
  - Family attended the appointment based on the referral, but did not have concerns for their child's development
- Audiologic testing was within the normal range for all assessments

So...What's the problem??

Problem

- Observations
  - Discussed with family concerns regarding expressive language
- Parent was indifferent to pediatrician's concerns
- Referred back to pediatrician
- Professional responsibility?

What could I have done differently?

- Screening
  - Language screening
    - PLS 5 Screening
    - CELF and CELF 5
  - Developmental screening
    - Ages and Stages Questionnaires
    - Modified Checklist for Autism in Toddlers, Revised (M-CHAT)
- Additional referrals based on screening

Supporting – Liz DeVelder

Background

Jessie - 5 months

- Didn't pass newborn hearing screen.
- Didn't pass follow up at 1 month and dx with bilateral hearing thresholds in the moderately -severe range.
- At 3 months appropriately fit with hearing aids that were verified for audiobility. May be candidate for CI.
- Referral made to state's Birth to Three Program.
- Follow up appointments made with audiologist.

Points to Ponder

You made the referral to Birth to Three but

- What happens then?
- What do they need to qualify for services?
- What other resources could you put them in contact with?

Things to Think About

You are in a very influential position. What messages did you leave them with?

- Information about the hearing aid and wear time
- What did you say about the importance of early intervention?
- What did you say about their speech and language development skills?
  - Nothing – because they have hearing aids. ---- > wrong!
  - Nothing – because they are only 4 months old. ---> wrong!

Start EI before 6 months

Joint Committee on Infant Hearing 2019 Position Statement

- Infants identified early and receiving early interventions --> better linguistic outcomes.
- Earliest possible start is best practice

Ohio Dept. of Developmental Disabilities, Cincinnati Children's, J. Neinzen-Derr

- Children enrolled in EI before 6 months of age have higher literacy scores than those after 6 months. Shown in preschool and 3rd grade.

But these babies aren't even talking yet!

Early skills

- Joint Attention
- Emotional Reciprocity
- Joint Referencing
- Turn Taking
- Vocalizations

They need language stimuli!

- Train parents
- Enriching environment
- Continuous monitoring

So...

- Know what your state process is and what happens next.
- Make and SUPPORT appropriate referrals.
  - Birth to Three
  - Deaf Education Programs
  - Speech-Language Pathologist
  - Parent Support Programs
- Every time that child comes in check on milestones and make those referrals again if needed.

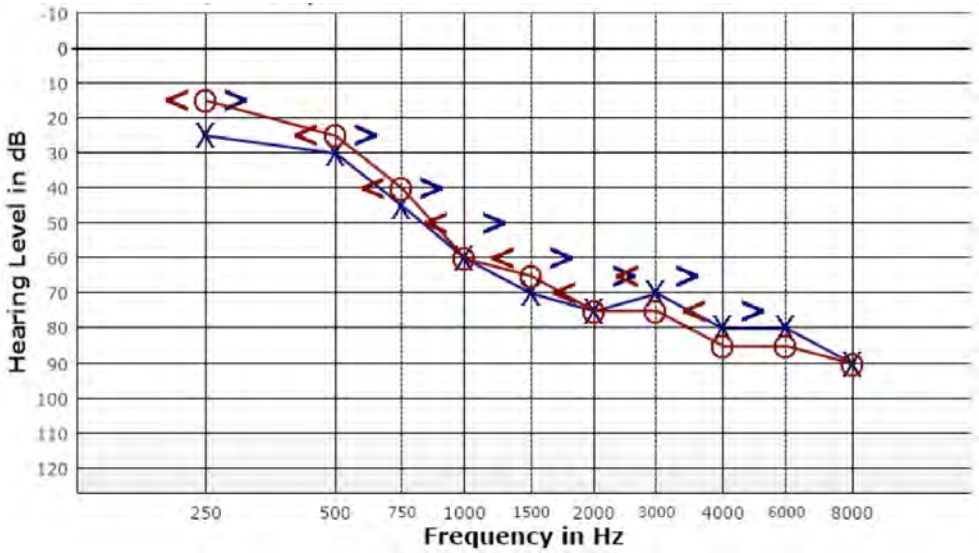
Resting – Gabriella Emme

Background

- Mr. Brightside
  - Seen at a VA rotation for an audiologic evaluation
  - Male in his 70s accompanied by his wife of over 50 years at today's appointment
- History:
  - Last seen prior to 2020
  - Currently wears Oticon OPN RICs with domes
  - Primary caretaker to his wife who has advanced dementia

Audiologic Evaluation

- Wife and Veteran were in the sound booth together
- Results:
  - Normal sloping to profound SNHL
- Discussed hearing aid options, but also...
  - But does he have the support he needs?



Problem

- Primary caregiver has hospital appointments but has no care for their loved one
- Completing an audiologic evaluation with ear mold impressions while caregiving
- Difficult factors
  - Doesn't qualify for Medicare
  - The rising costs of assistive living facilities

Respite Care

- "Short-term relief for primary caregivers" (National Institute on Aging, nd)
- Where?
  - At home, in a health care facility, or an adult day care center
- Example of services
  - Meal preparation
  - Minor Chores
  - Minor Personal care
  - Companionship
- When to refer?

Resources

- Lifespan Respite Care Programs
  - Provide respite vouchers, grant or stipend programs, especially for those caregivers who don't qualify for other public funded programs
- Medicaid Waivers
- Medicaid State Plan
  - Offered in: AR, CA, CT, DE, DC, ID, IN, IA, MI, MS, NV, OH, and TX.
- Veterans
  - All enrolled Veterans are eligible if they meet the clinical criteria for service and it is available

Spiraling – Lindsey Jorgensen

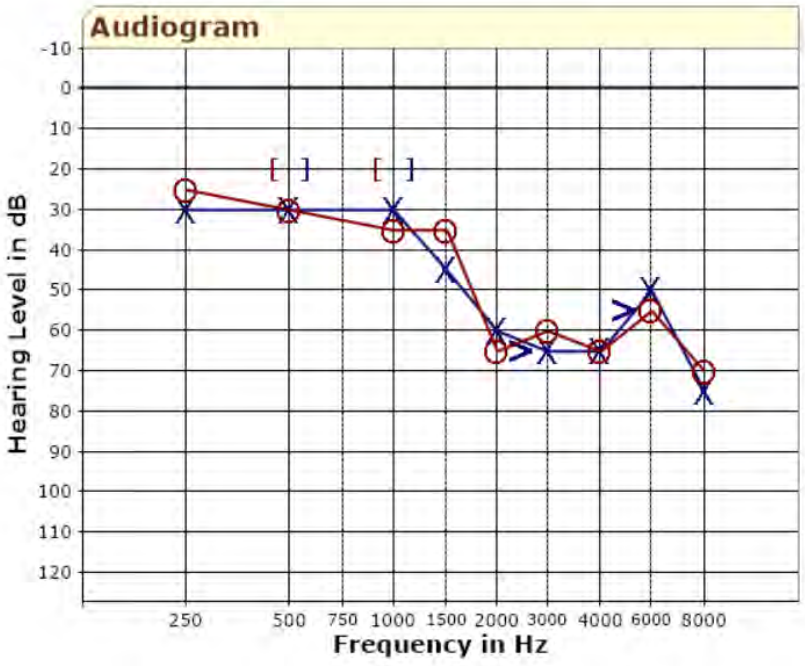
- Disclaimer – discussion of suicidal thoughts

Background

- Mr. Bing
  - Audiologic Eval referral from PCP
  - PCP mentioned tinnitus
- History:
  - Noise exposure at work
  - Some difficulty in noise
    - R-HHI = 10/40
  - Primary difficulty with tinnitus – Pinging
    - Impacts speech understanding
    - Impacts sleep
    - THI = 60

Results

- Switched to Audio and Tinnitus Conversation
- Always ask the question:
  - Have you considered suicide?
- Audio:
  - WRS: 100% AU
  - SNR:
    - Mild SNR Loss AU



- CNA/Tinnitus discussion scheduled

Appointment plan – CNA/Tinnitus

- The plan:
  - What is tinnitus
  - Models of tinnitus
  - Methods of decreasing tinnitus perception
  - CNA / hearing aid needs

- Always ask the question:
  - Have you considered suicide?

Problem

- Came in for appt
- Asked suicide question – said yes
- No resources to walk them to
- Came alone
- Stopped appointment as suicidal ideations were imminent
- Called police (in police car)
- Taken to local ER
- Called patient's emergency contact & PCP

What would I have done differently?

- Left without a definitive plan from 1st appt
- Did not know they may put in handcuffs
- Taken in the police car
- Taken to ER not Psych Hospital
- AuD cannot direct admit in SD

- Now relationship with local hospital providers for admission to psych

Info

- If you or someone you know is considering suicide:
  - Suicide & Crisis Hotline (call or text) – 988
    - Deaf, Hard of Hearing, Hearing Loss - 988 Suicide & Crisis Lifeline (988lifeline.org)
  - Veteran CrisisLine – 988 press1 or text 838255
  - Trevor Project – 866-488-7386 or text 678678

Wrap up

- Referral resources
- We can't know everything
- Get back to the patients if you need to collect resources
- Asking other audiologists - we are all trying to be better!

- You are amazing and doing what you can – but know your limit

Thank you!

- Lindsey.Jorgensen@usd.edu
- Jessica.Messersmith@usd.edu
- Jennifer.Phelan@usd.edu
- Liz.DeVelder@usd.edu

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