

The End of Business as Usual: 3 Tangible Skills for Long-term Success in Audiology

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Disclosures

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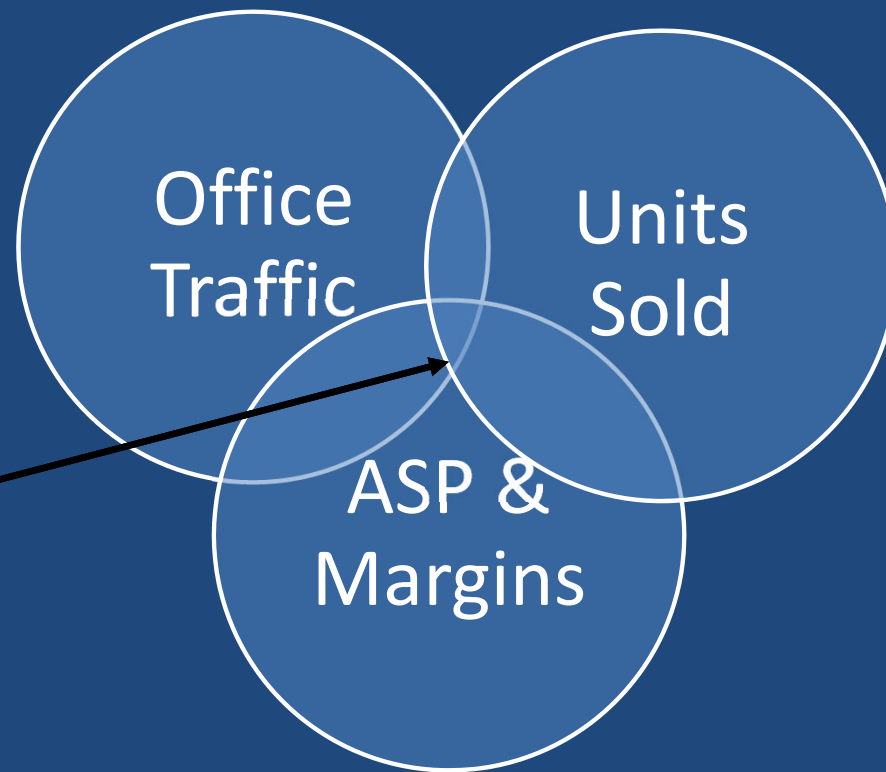


Audiology is moving from a units-based to time-based business

Units-based Business

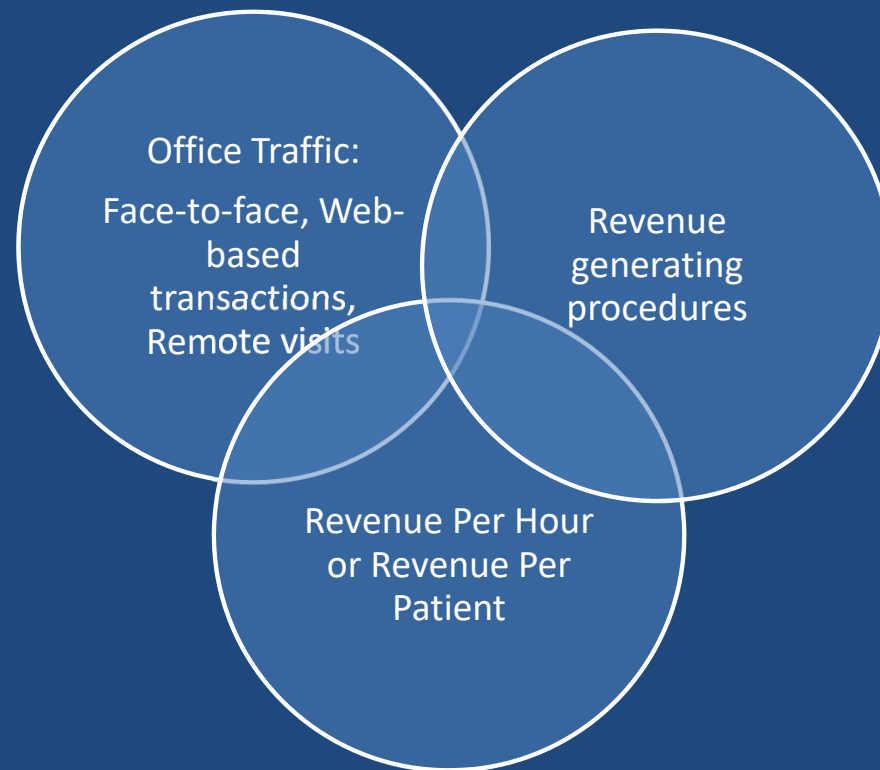


Units-based Business

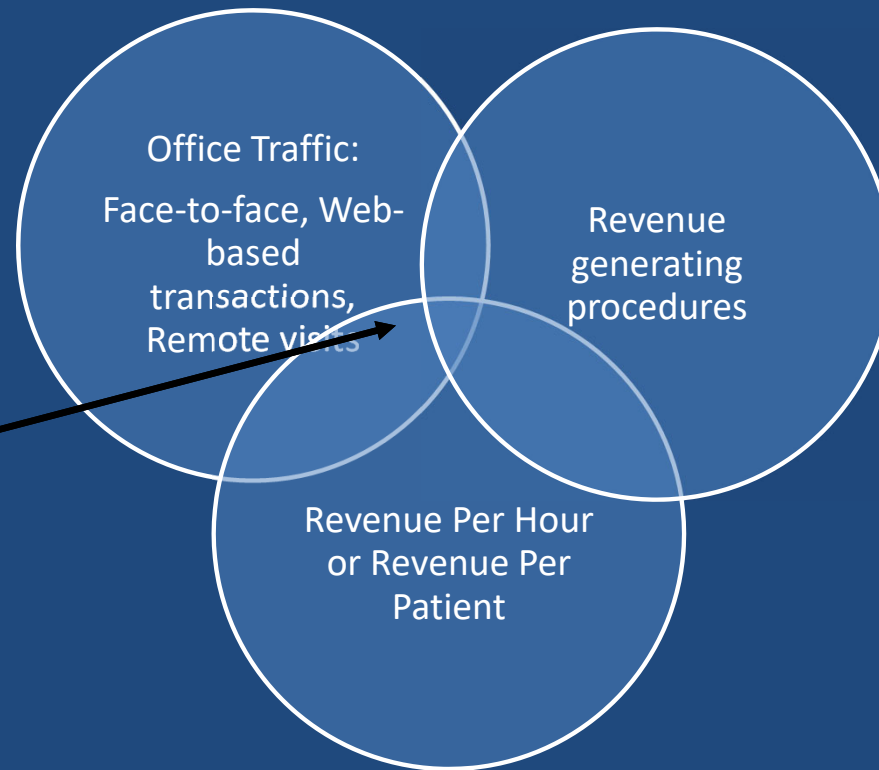


Productivity is
Optimized

Time-based Business



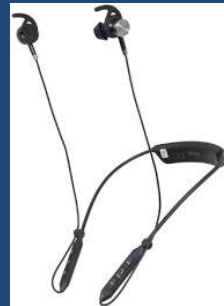
Time-based Business



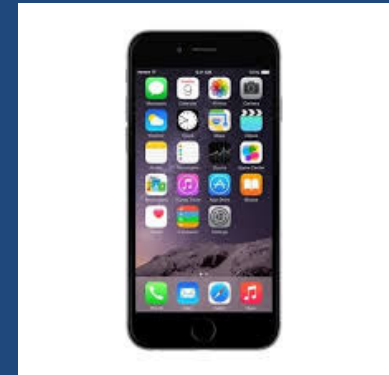
Efficiency is
Optimized

Main Point

Due to the convergence of hearing aids and consumer audio, many aspects of what audiologists routinely do will be placed into the hands of consumers. New skills are needed to flourish in a time-based business



Self-Directed Care



Convergence & Consumerization

Convergence & Consumerization

Several possible implications:

- Broadens marketplace for products and services
- Places a premium on delivering customization and counseling that stands alone from the sale of devices
- Documentation of patient outcomes gains importance
- Move from a units-based to time-based business that requires practices to be more efficient

Goal Today

Customization & Counseling – Tips for Individualizing Care:

1. Help Seeking Individuals without Hearing Aids
2. Individuals with Hearing Aids, Seeking Help

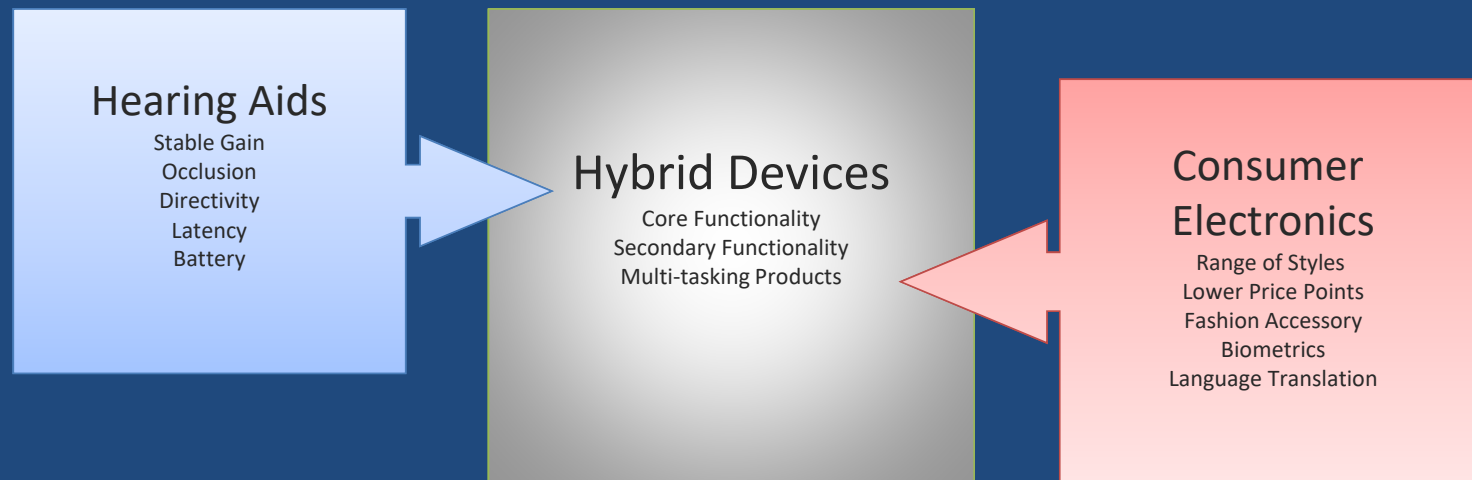


3 New Skills

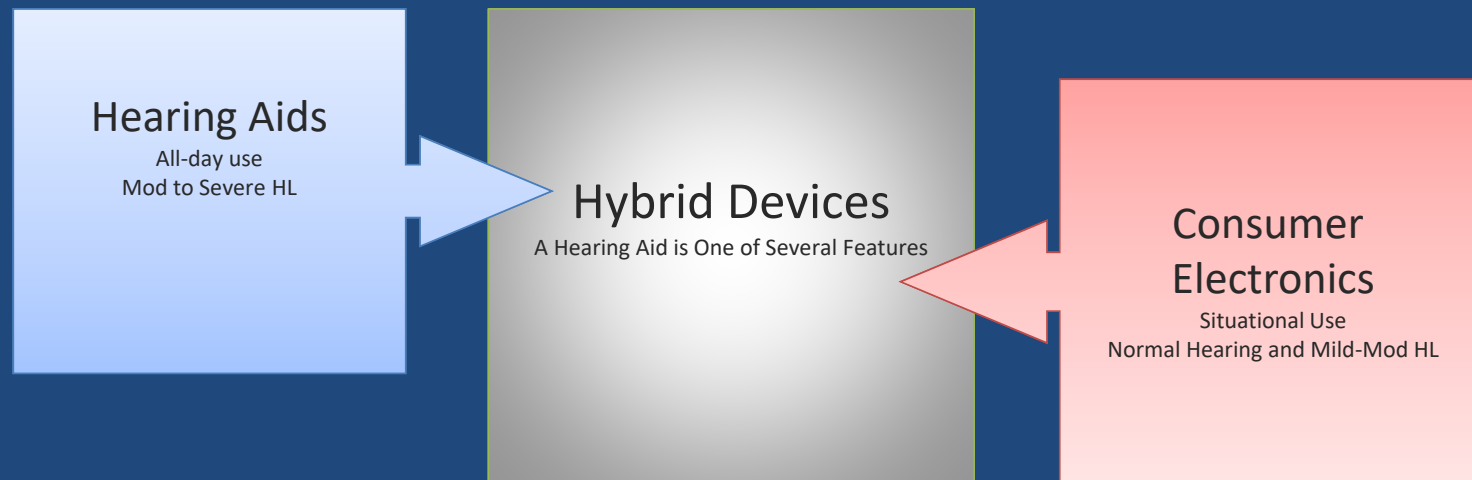
- Separate low importance from high importance
- Triage good candidates for patient-driven SFHAs from those who need audiologist-driven hearing aids
- Sort who needs self-management skills training from those who need hearing aid mastery skills training

I. Convergence and Consumerization

Convergence and Consumerization



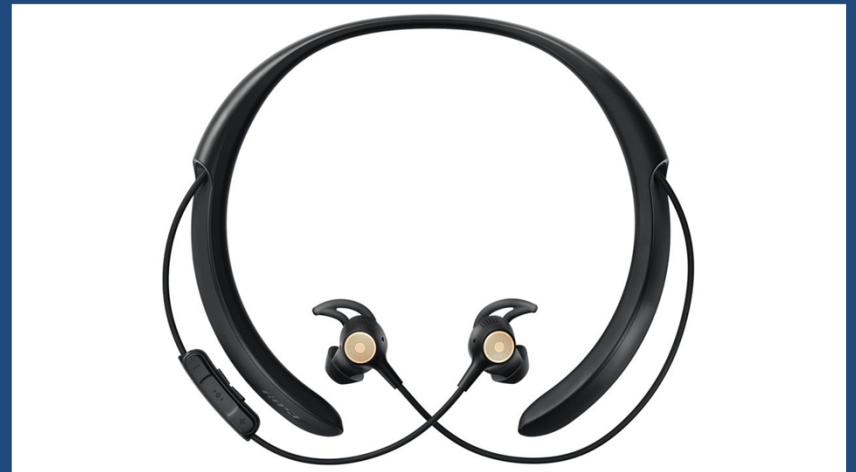
Convergence and Consumerization



Recent Launches from Mainstays



Starkey Livio AI



Bose Hearphone

Recent Launches from Start Ups



Nuheara



Bragi

What's in a name?

- OTC Hearing Aid
- PSAP
- Non-custom Amplifier
- ALD
- Pre-set Hearing Aid
- Hearable
- Wearable
- Starter Hearing Aid
- Self-Fitting Hearing Aid

Current Fitting Process

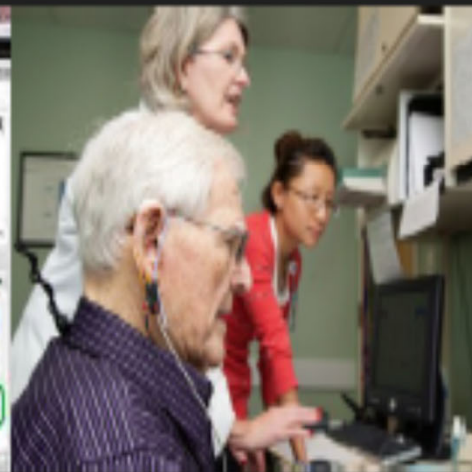
1 | Measure Hearing Loss



2 | Compute Prescriptive Targets



3 | Fit To Targets



4 | Fine Tune

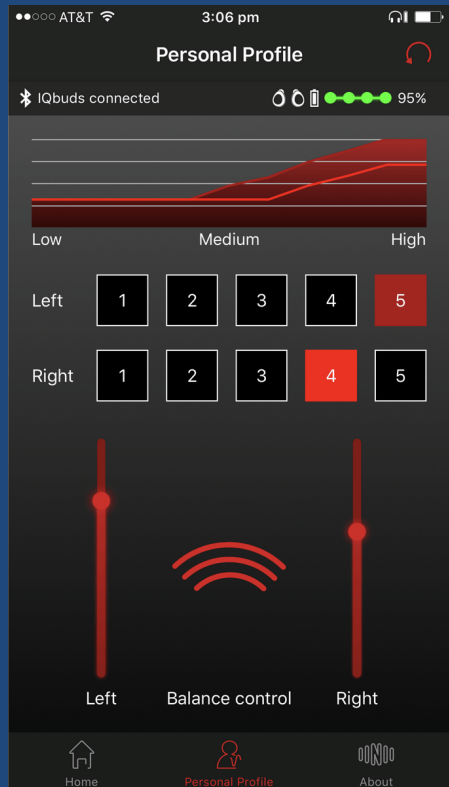


Self-fitting hearing aids



- Tablet PC or Smartphone:
- Hearing test
- Fitting
- Programming
- Adjustments

Audiogram-based Fitting Software



- Nuheara
- Bragi (mimi)
- Sound World Solutions

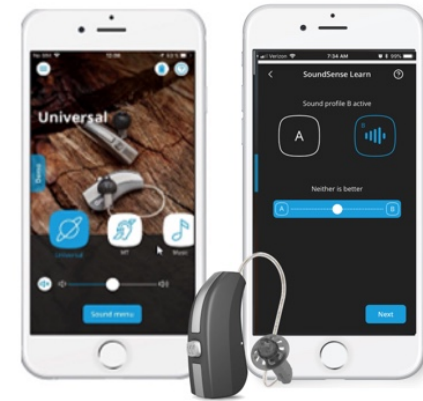
Paired Comparison Approach

2Pi

EVOKE APP – FUSION2 312RIC2.4

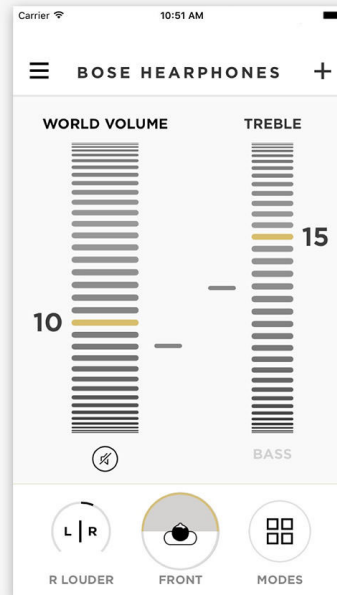
- SoundSense Learn
- Firmware Updates
- Personal Programs
- Find My Hearing Aids
- Equalizer
- Sound Mixer
- SoundSense Adapt
- R/L Preference Control
- Directional Focus
- Program Change
- Mute
- Android and iPhone compatible

**Binaural Streaming Made-for-iPhone
Connectivity with Music and Speech
Templates**



WIDEX EVOKE™
HEARING HAS EVOLVED

Direct Adjustment



CUSTOMIZATION

Amplify or reduce real world sounds.

Q1 Which of the following is a self-fitting strategy

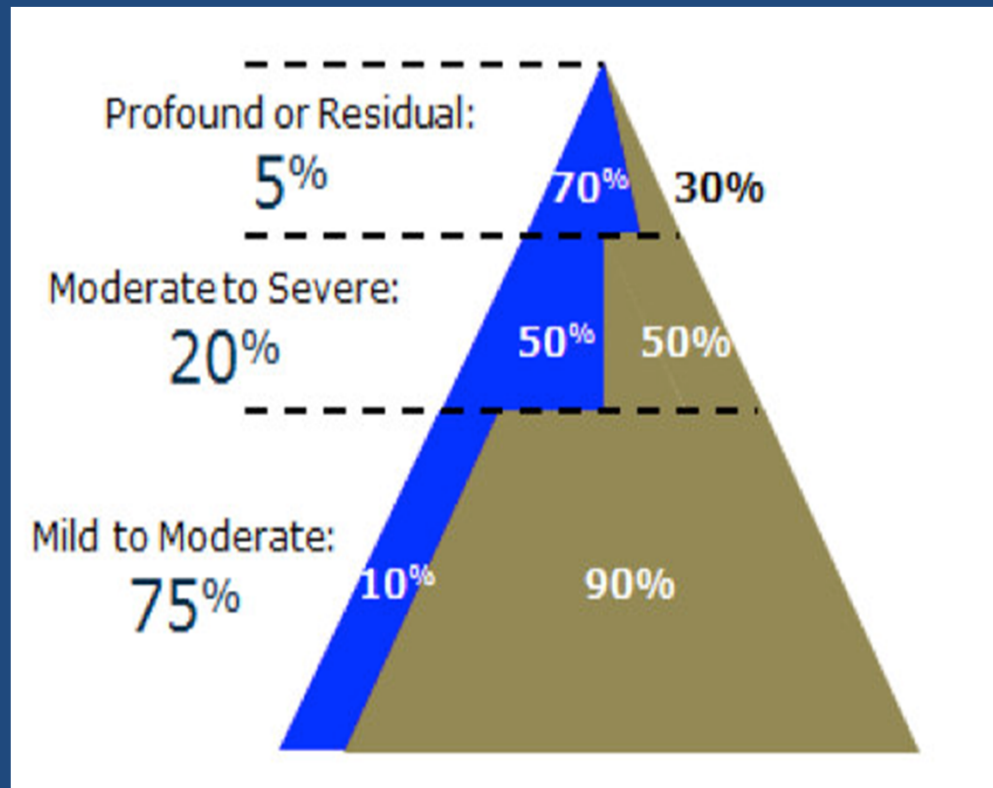
- A. audiogram-based
- B. Paired comparison
- C. Direct adjustment
- D. All of the above

Convergence and Consumerization

- For the right candidate, a patient-driven hearing aid fitting will probably lead to successful outcomes.
- But...who is the right candidate?

II. Persons with Hearing Loss is a Diverse Population

Segmentation of Market by Hearing Loss



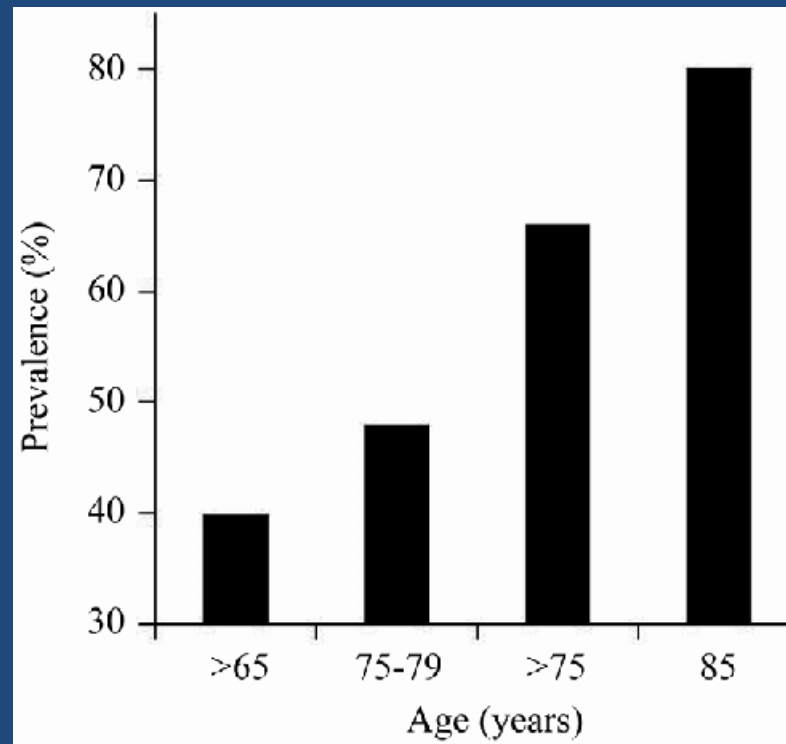
Q2 What are the two potential markets comprised of adults with hearing loss?

- A. Medical channel desiring direct interaction with a professional
- B. Retail channel desiring more of an anonymous transaction
- C. Both A and B
- D. All degrees of hearing loss desire the same type of care and service

Normal Hearing with Self-Identified Communication Deficits (CD)

- 12% of adults with normal hearing report CD (Tremblay, 2015)
- 29% of older adults who passed pure-tone tests self-reported a CD (Saunders & Haggard)
- 51% of their subjects (49+ years of age) reported CD, yet only half of those had hearing loss based on standard audiometry (Chia, et al).
- 25 million Americans

K h d u b j # 0 r v v # \$ u h y d o q f h



Nh | #7w0w7w7fv

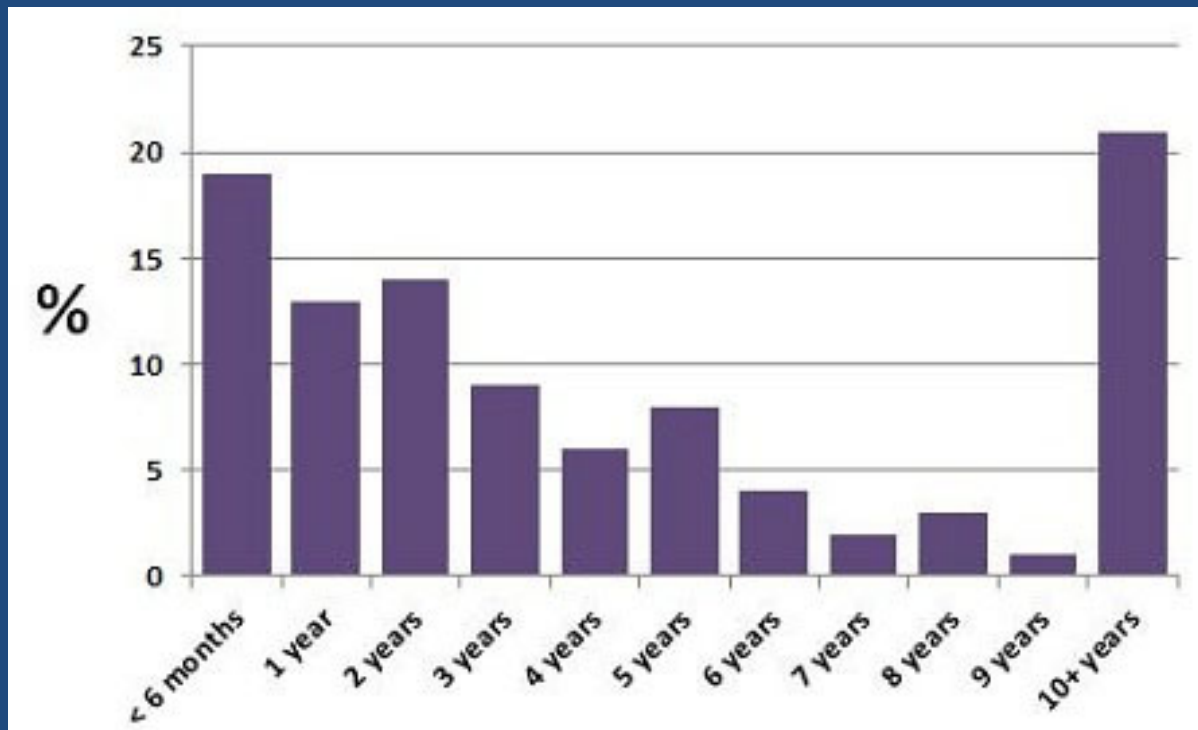
- 80% or more of the Older-Old have hearing loss
- 26.5% use hearing aids
- Older adults with moderate to profound hearing loss have 59% greater odds of lower levels of physical activity compared to those older adults with normal to mild HL.

Sources Lin et al (2011) Archives of Neurology 62, 1186-1187; Gispén, et al (2014) JAGS 62, 1427-1433.

Hearing Loss Affects People of Working Age

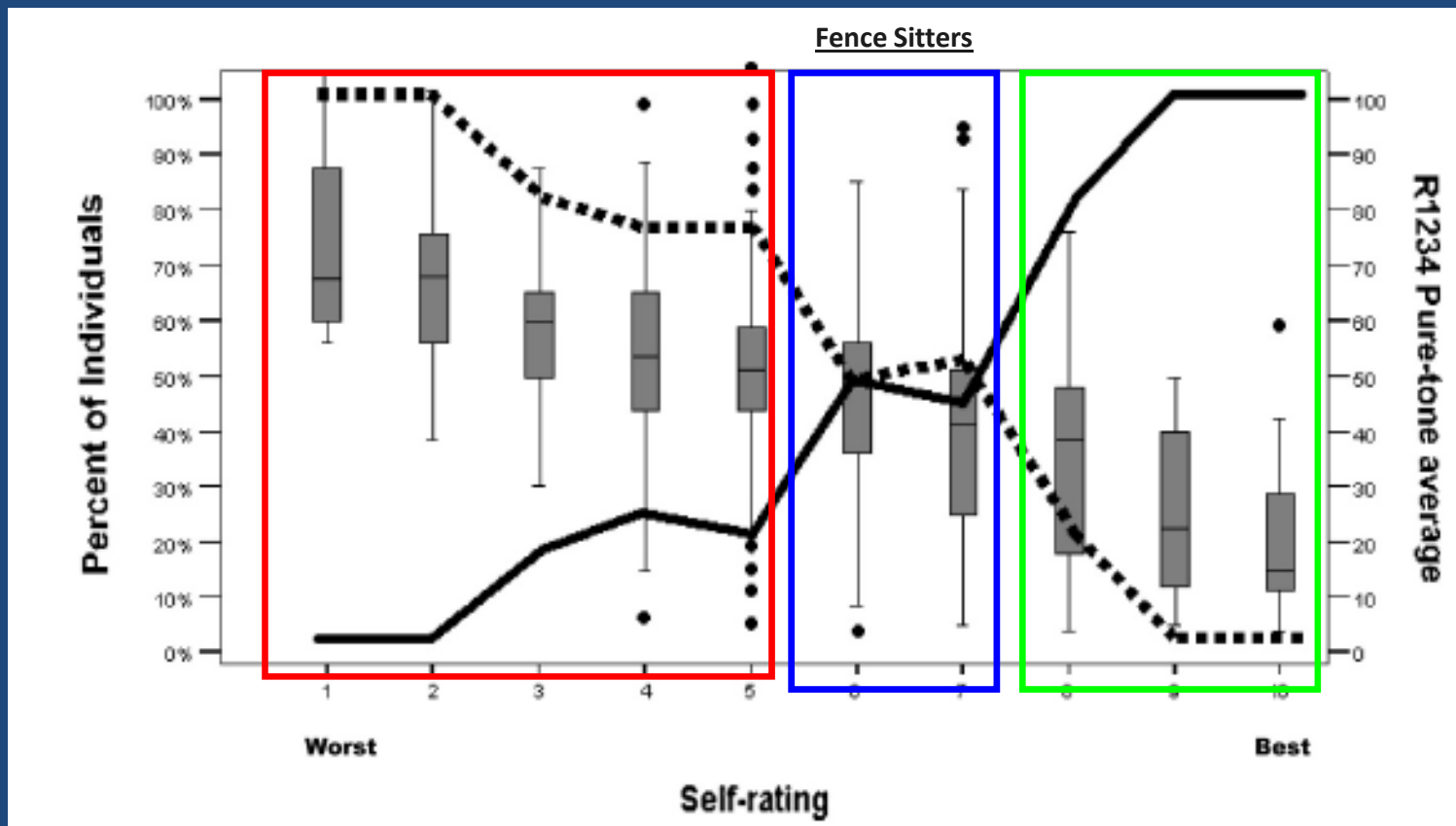
- Americans are living longer and are delaying retirement
- 40+ million Americans aged 65 and over, and 25% (and growing) are in the workforce
- 1/3 of older workers have hearing loss

Delay in Seeking Help



Schum, 2012, Figure 1. Distribution, based on an Oticon Web survey, of the time frame in which those individuals sought treatment after they first noticed a hearing problem

Self-Perceived Hearing Problem



Q3. Although more than 80% of adults aged 80 years and above have hearing loss, about ____ use hearing aids

- a) 16%
- b) 26%
- c) 38%
- d) 50%

Summary

- Persons with hearing loss are extremely diverse:
 - All ages, including 1/3 of all workers
 - Degree of HL
 - Help Seeking Time
 - Perception of Handicapping Condition
 - <20% of adults seek help for their condition (NIH data)

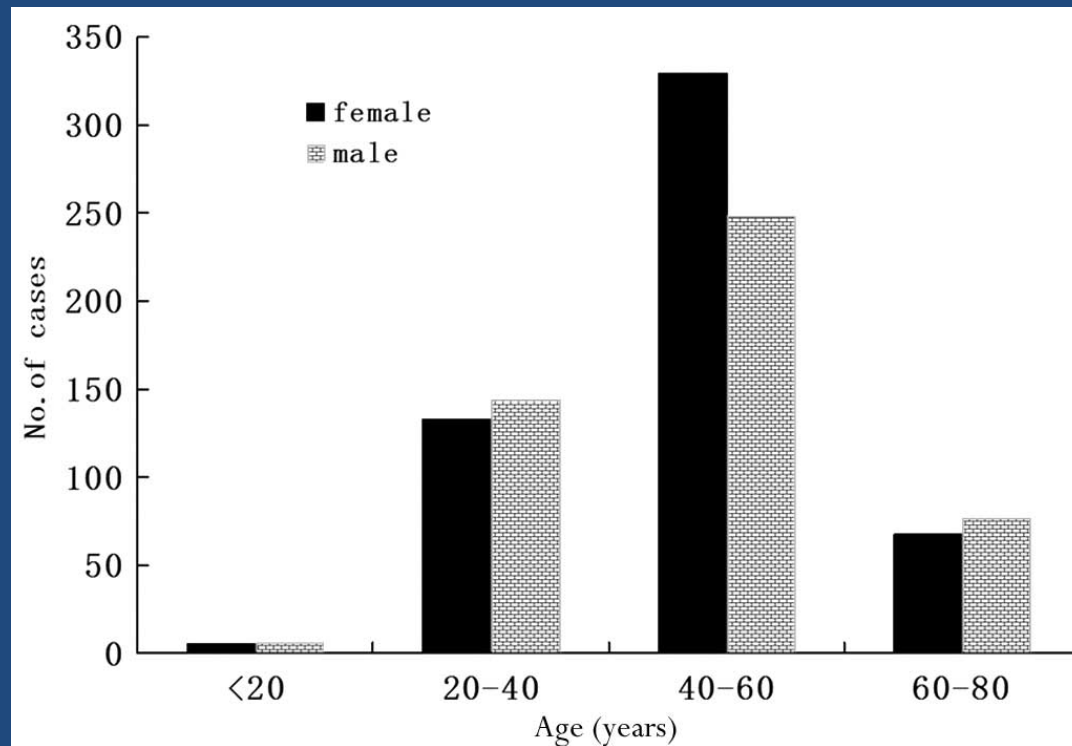
How do we meet the needs of a diverse population?

- Offer several treatment choices
- Practice within our full scope (medical and chronic care)

III. Dual Role of Audiology

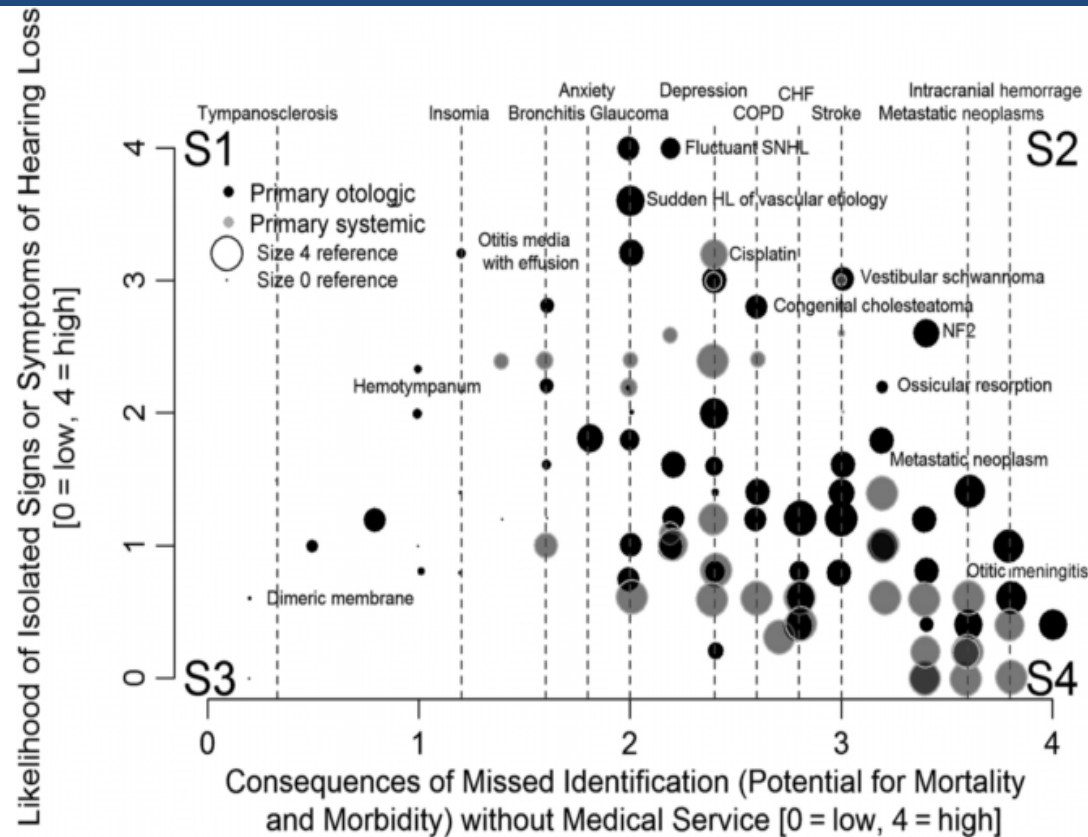


Age and sex distribution of intracranial vestibular schwannomas

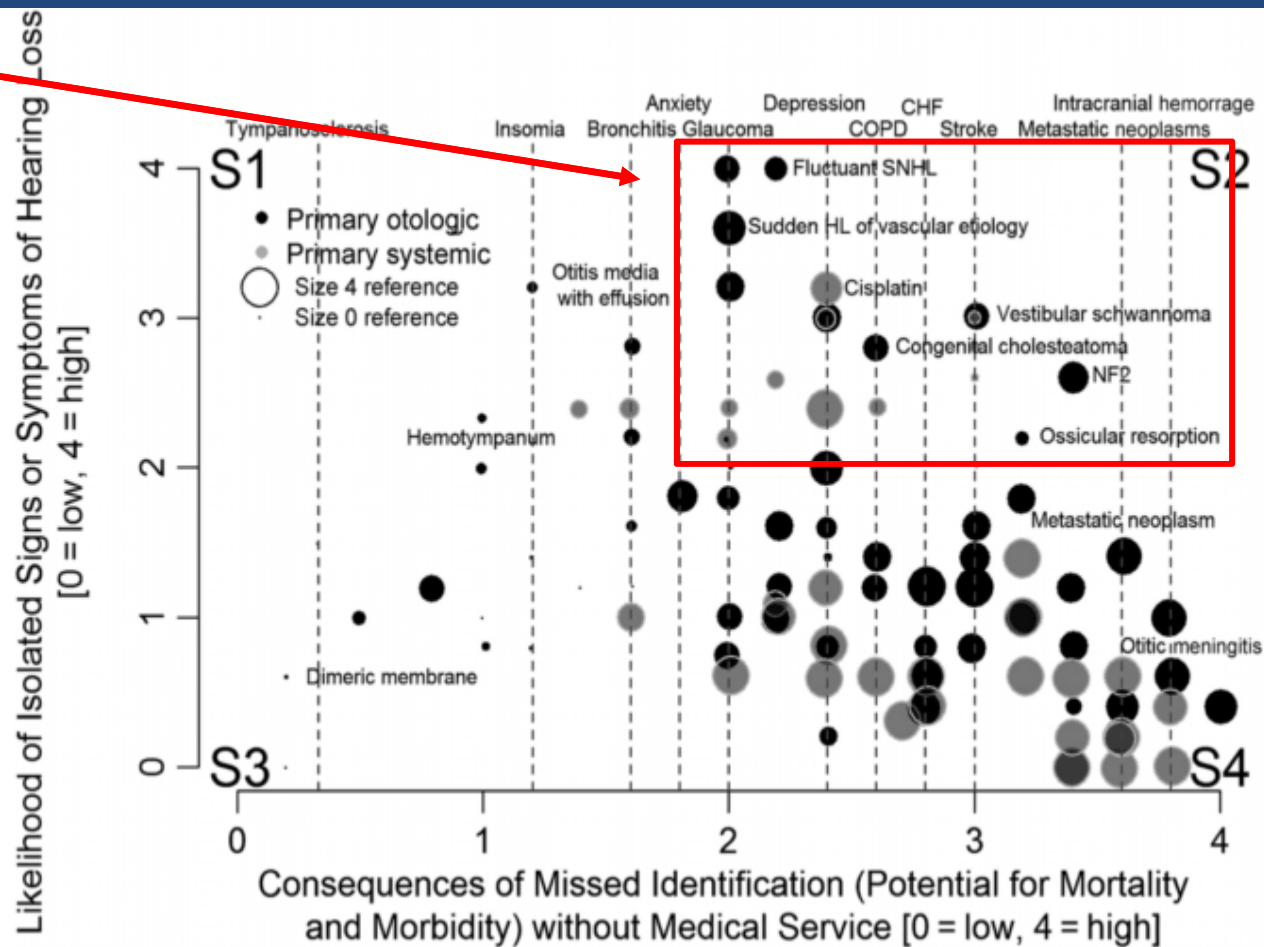


Diagnosis Requires Accuracy and Precision

104 otologic conditions to be identified prior to hearing aid fitting



Highest consequence of missed diagnosis with HL as primary symptom





Skills useful in diagnostic work are ineffective in work with chronic care patients

“Audiogram-Centered Behavior”

- Audiologist tends to control the interaction
- Less than 5% of utterances addressed an emotionally-related topic
- Most of the talk is about audiogram results and technology options

Grenness, et al 2014

“Product-centered Behavior”

- When emotional topics are raised audiologists fail to address them and instead focus on hearing aids
- Audiologists tend to be perceived as emotionally distant and overly focused on technological solutions

4. What best describes “audiogram-centered behavior demonstrated by many audiologists, according to one study?

- A. Audiologist tends to control the interaction
- B. Less than 5% of utterances addressed an emotionally-related topic
- C. Most of the talk is about audiogram results and technology options
- D. All of the above

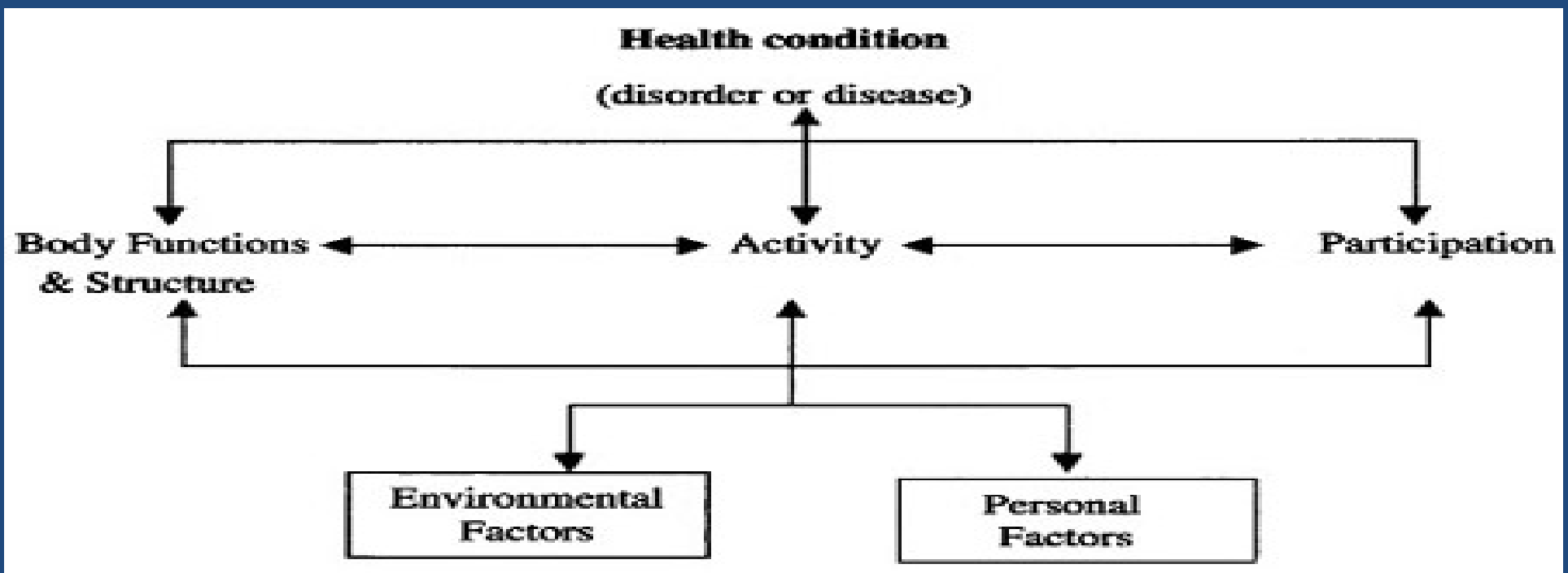
Dual Role of Audiology



IV. Managing Chronic Conditions

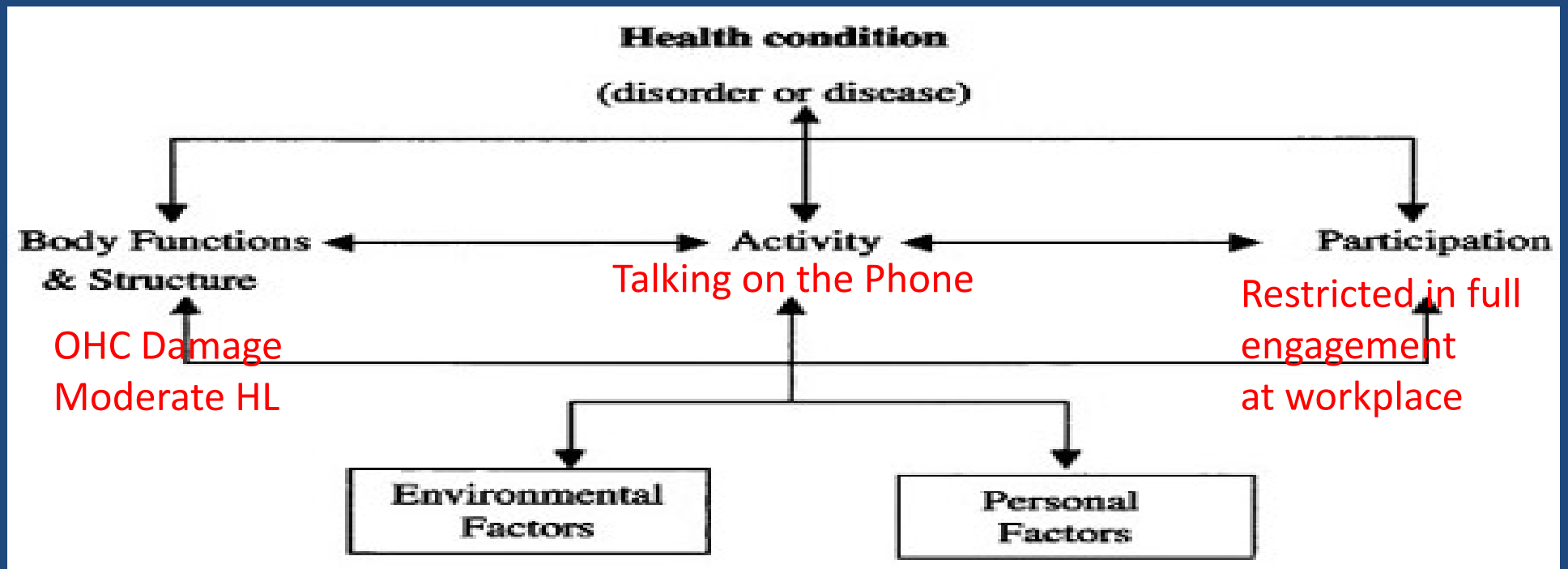
Chronic Conditions Extend Beyond the Condition Itself

ICF Framework



Chronic Conditions Extend Beyond the Condition Itself

ICF Framework



Contextual Factors

- Emotions Associated with Not Hearing Well
- Motivation & Outlook
- Self-Perception of Problem
- Family Support
- Cognitive Ability
- Physical Ability
- Self-Confidence
- Listening Demands
- Ability to Self-Manage Condition
- Healthcare Literacy
- Age
- Income

Self-Managing a Condition

1. Participate in decision making of treatment options
2. Adhere to a treatment plan
3. Ability to recognize and manage changes in condition
4. Coping strategies



Why are self-managing skills important

1. Improves patient outcomes, including improved QofL
2. Fewer missed appointments
3. Fewer unplanned visits
4. Decreased costs to healthcare system
5. Better efficiency for practices

A Primary Role of Audiology is to Improve Self-
Management Skills

A Primary Role of Audiology is to Improve Self-
Management Skills

Identify factors that might be barriers or facilitators of effective self-management strategies

Think about



The Role of Audiology in Self-Management

1. Information Gathering / Exploratory Dialogue
2. Goal Setting / Treatment Planning
3. Monitoring Progress / Assessing Outcomes

2 Patient Types

- Help Seeking Individuals
- Individuals with Hearing Aids, Seeking Help

Help Seekers without Devices

Appt Type	Purpose of Appt	Average Appt Time	CPT Code
Comprehensive Audio: Air, Bone, Speech, Tymps, Reflexes, OAEs	Detect possible medical problem requiring a referral to MD	30 minutes	92557, 92550, 92587
Communication Needs Assessment, Routine	Raise awareness and impact of condition on self and others	30 minutes	92626
Communication Needs Assessment (HAE), Complex	Set goals, determine treatment plan	1 hour	92590 or 92591

Skill #1

- Separate help seekers into two categories:
- Low importance or high importance to treat

Three Phases of Needs Assessment Appointment

Rapport Building

- Agenda Setting

Information Gathering

- Ability to Self-Manage
- Cognition
- Physical Ability
- Confidence
- Motivation
- Family Support
- Expectations
- Social & Emotional Impact
- Audiological Variables

Shared Decision Making

- Goal Setting
- Choice Talk
- Decision Talk

Communication Needs Assessment, Routine

- Help seeking individual
- Seeking treatment



Information Gathering & Exploratory Dialogue

- “How bad is the problem?”

Information Gathering & Exploratory Dialogue

- “How bad is the problem?”
- “How convinced are you that it’s important to treat?”

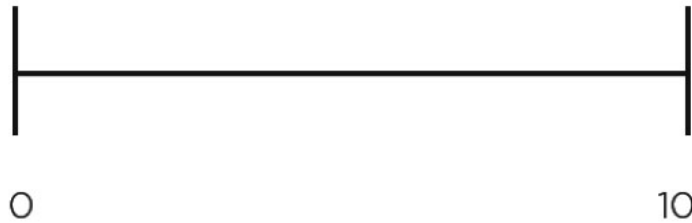
Information Gathering & Exploratory Dialogue

- “How bad is the problem?”
- “How convinced are you that it’s important to treat?”

Scaling Questions

1

How important is it for you to improve your hearing right now?



The lines go from: *0 = not at all* to *10 = very*

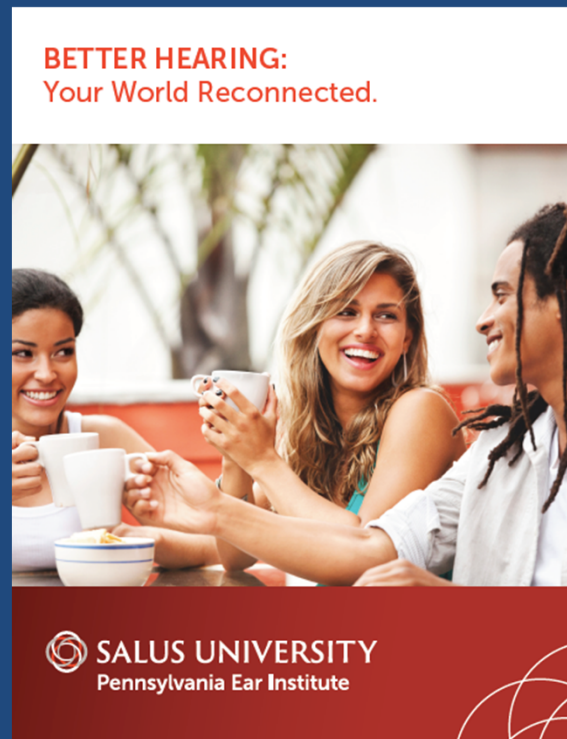
Follow-up Questions & Actively Listening

- “What made you rate it a ##?”
- “Why did you say ##, instead of ##?”
- “What would it take to move from a ## to a ##?”

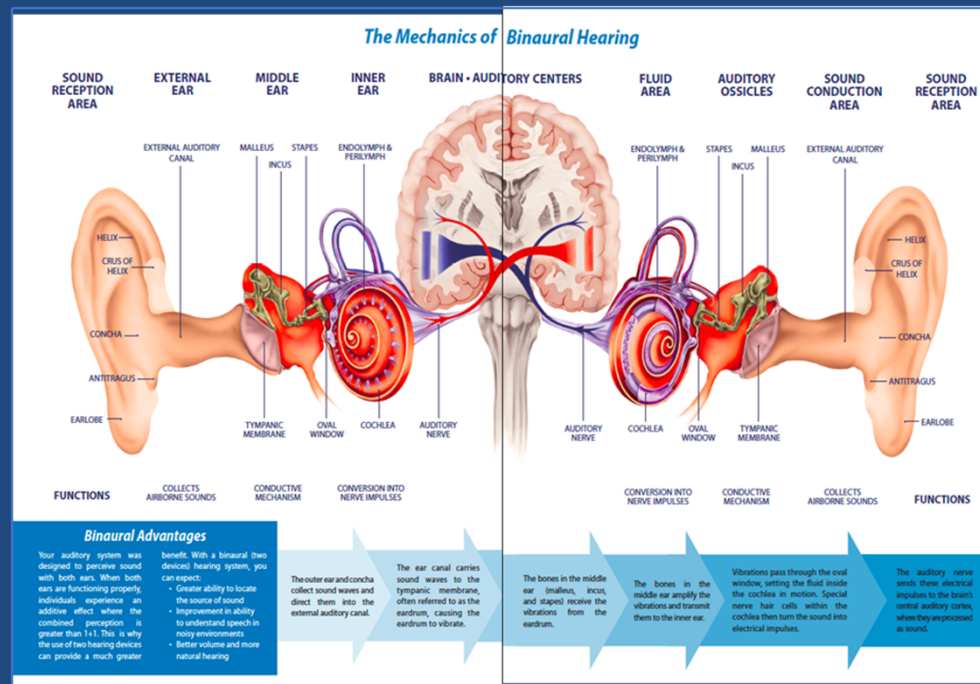
Low Importance

- Accept the situation without judgment
- Provide information
- Raise awareness - Encourage keeping of a diary

Branded Patient Education Materials



Branded Patient Education Materials



Communication Needs Assessment, Complex

- If patient displays high importance.....

Moving Toward Goal Setting

- Collect additional audiological information
- “I’d like to better understand how you’re coping with hearing loss...”
- “Let’s talk about how we can together to address those problems....”

Hearing Handicap Inventory for the Elderly Screening Version (HHIE-S)

Instructions: Please check "yes," "no," or "sometimes" in response to each of the following items. Do not skip a question if you avoid a situation because of a hearing problem. If you use a hearing aid, please answer the way you hear without the aid.

	Item	Yes (4 pts)	Sometimes (2 pts)	No (0 pts)
E	Does a hearing problem cause you to feel embarrassed when meeting new people?	_____	_____	_____
E	Does a hearing problem cause you to feel frustrated when talking to members of your family?	_____	_____	_____
S	Do you have difficulty hearing when someone speaks in a whisper?	_____	_____	_____
E	Do you feel handicapped by a hearing problem?	_____	_____	_____
S	Does a hearing problem cause you difficulty when visiting friends, relatives, or neighbors?	_____	_____	_____
S	Does a hearing problem cause you to attend religious services less often than you would like?	_____	_____	_____
E	Does a hearing problem cause you to have arguments with family members?	_____	_____	_____
S	Does a hearing problem cause you difficulty when listening to TV or radio?	_____	_____	_____
E	Do you feel that any difficulty with your hearing limits or hampers your personal or social life?	_____	_____	_____
S	Does a hearing problem cause you difficulty when in a restaurant with relatives or friends?	_____	_____	_____
TOTAL SCORE = _____ (sum of the points assigned to each of the items)				

E = Emotional; S = Social

Interpretation of score:

0-8 suggests no hearing handicap

10-24 suggests mild-moderate hearing handicap

26-40 suggests significant hearing handicap

E-1 Does your hearing problem cause you to feel embarrassed when meeting new people? Yes Sometimes No

IF PATIENT SAYS YES THAN ASK IN WHAT WAYS

E-2 Does a hearing problem cause you to feel frustrated when talking to members of your family? Yes Sometimes No

IF YES HOW DO YOU DEAL WITH YOUR FRUSTRATION?

S-3 Does a hearing problem cause you difficulty understanding co-workers, clients, or customers? Yes Sometimes No

How do you respond to this difficulty? For example, do you ask them to face you when speaking and try to convene meetings in environments free of noise and distractions?

Solutions:

Goal Setting & Treatment Planning

PEW – post-treatment

I am successful in this situation...

Goal (list in order of priority)	Hardly Ever	Occasionally	Half the Time	Most of the Time	Almost Always
1. To hear my adult children on the telephone.		C		E I ✓	
2. To enjoy television while I m sitting at my table.	C				✓ E I
3.					
4.					
5.					

C = how the patient functions currently (pretreatment or with current technology/strategies)

E = how the patient expects to function postintervention (HA, ALD, strategies, etc.)

✓ = level of success that the audiologist realistically targets





I = how the patient actually perceives level of success postintervention

Option Talk

- “It’s important to know that you have many options.....you could decide to do nothing, or
- “Each option has its own benefits and risks”

Decision Aids

GENERIC ENT **Hearing Healthcare Treatment Options**
 Communication Ability Scale and Corresponding Treatment Options

Low Difficulty	Moderate Difficulty	Moderate to High Difficulty	High Difficulty
			
High Quality PSAPs*	Hearing Aids	Hearing Systems	Cochlear Implants
Benefits Include:** <ul style="list-style-type: none"> Improved Audibility in Quiet Improved Speech Understanding in Quiet Limited Improvement in Noise 	Benefits Include:** <ul style="list-style-type: none"> Improved Ability in Noise Improved Comfort in Noise Improved Speech Understanding in Noise Localizing of Sounds Telephone Use Listening to Music 	Benefits Include:** <ul style="list-style-type: none"> ALL THE BENEFITS OF HEARING AIDS PLUS Streaming TV Audio Streaming Directly from Phone Remote Companion Microphone Remote Adjustments and Programming 	Benefits Include:** <ul style="list-style-type: none"> ALL THE BENEFITS OF HEARING SYSTEMS PLUS Direct Stimulation of the Inner Ear Optimizes Speech Understanding in Quiet and Noise

*Personal Sound Amplification Products
 **Benefits are achieved when devices are properly fitted by a professional.

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Decision Talk

- “Based on your goals, this is what I recommend.”
- “What is the most important thing for you in making this decision?”
 - Cost
 - Easy to use
 - Performance/Sound Quality
 - Cosmetics

Treatment Placemat

WHAT BEST DESCRIBES **YOUR HEARING LIFESTYLE?**

PRIVATE MINIMAL BACKGROUND NOISE	QUIET OCCASIONAL BACKGROUND NOISE	ACTIVE MODERATE BACKGROUND NOISE	DYNAMIC FREQUENT BACKGROUND NOISE
<ul style="list-style-type: none"> • Quiet Conversation • Doorbell • Phone Ringing • Alarms (Clock, Security, Timers, etc.) 	<ul style="list-style-type: none"> • Home Telephone • Driving • Religious Services • Adult Conversations • Small Family Gatherings • Quiet Restaurants 	<ul style="list-style-type: none"> • Cell Phones • Shopping • Movie Theaters • Health Clubs • Small Group Meetings • Conversations with Children • Television • Open/Reverberant Home • iPod®/Personal Music Players 	<ul style="list-style-type: none"> • Outdoor Activities • Entertainment Venues (Casinos, Exhibit Halls, etc.) • Busy Restaurants • Frequent Social Gatherings • Smartphones • Conference Calls • Multimedia Connectivity (Home Theater, Computer, Phone, etc.) • Travel & Airports • Concerts & Arts • Group Presentations

SALUS UNIVERSITY
Pennsylvania Ear Institute

SalusUhealth.com/PEI

SALUS UNIVERSITY
Pennsylvania Ear Institute

CHOOSE THE RIGHT **TREATMENT PLAN**

PRIVATE LIFESTYLE Treatment Plan	QUIET LIFESTYLE Treatment Plan	ACTIVE LIFESTYLE Treatment Plan	DYNAMIC LIFESTYLE Treatment Plan
<p>Designed for very calm lifestyles, a private treatment plan provides appropriate performance for communication in mostly quiet, less demanding listening situations.</p> <p>\$3,200 price includes two devices*</p>	<p>Designed for someone who is social and around environments with minimal background noise. Ideal for those who prefer to mostly relax at home with occasional social outings in a quieter environment.</p> <p>\$4,200 price includes two devices*</p>	<p>Designed for active lifestyles to provide excellent flexibility and performance in a variety of listening environments. An active treatment plan is perfectly suited for those who enjoy many activities in less crowded environments with only moderate levels of background noise.</p> <p>\$5,200 price includes two devices*</p>	<p>Designed for dynamic lifestyles, providing optimum flexibility and performance in a broad range of demanding listening environments. From attending meetings and social events to relaxing and reading a book, a dynamic treatment plan is designed for use in a much wider variety of listening environments, including those with higher levels of background noise.</p> <p>\$6,200 price includes two devices*</p>

*Prices subject to change.

Concluding the Appointment

- Agree on a treatment plan and price
- Charge a fee for a 1 hour appointment

Skill #2

- Triage good candidates for patient-driven SFHAs from those who are good candidates for audiologist-driven hearing aids

Audiologist vs Patient Driven Approaches

Who's Driving?

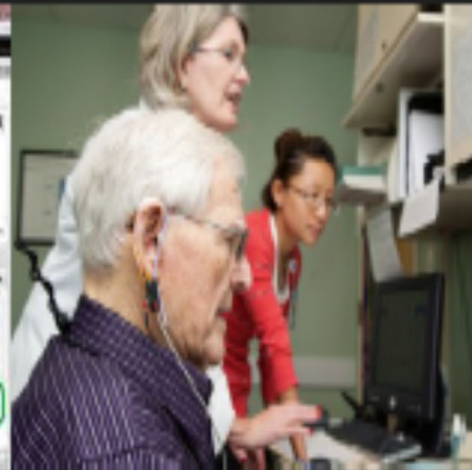
1 | Measure Hearing Loss



2 | Compute Prescriptive Targets



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4 | Fine Tune



Something to Think About



- What factors make someone a good candidate for SFHAs?

Possible Factors

- Cognitive ability
- Physical (fine motor) ability
- Motivation & Outlook
- Health Literacy
- Family Support
- Confidence
- Locus of Control
- Problem Solving Ability
- Age
- Degree of Hearing Loss
- Type of Hearing Loss
- Speech Understanding Ability
- Intelligence (IQ)
- LDL Levels (Dynamic Range)
- Smartphone Ownership
- Previous Hearing Aid Experience

Recent Studies

- Humes et al (2017)
 - 3 groups: OTC-like, audiologist-driven (AD) & placebo controlled
 - Similar outcomes for OTC and AD groups
 - 20% of OTC group needed help from audiologist
 - 55% of this group (n=28) chose to keep hearing aids after intervention from audiologist

Recent Studies

- Nelson et al (2018)
 - 30 participants, aged 59 to 78 with mild to moderate hearing loss
 - Simulated hearing aids (iPod + earphones)
 - Compared NAL prescriptive fit to self-fit using Ear Machine app
 - Compared “benefit” between these two fittings types
 - Self-fit preferred setting varied as much as 24 dB in the LFs and 37 dB in the HFs
 - Preferred settings has no impact on aided speech intelligibility scores

Recent Studies

- Convery et al (2018)
 - 60 middle-aged to older adults, followed a 9-step task
 - 68% successfully completed 9-step self-fitting process
 - 37% completed tasks with no outside help
 - 63% needed help on 1 or more of tasks from a non-audiologist

Possible Factors

- Cognitive ability
 - Physical (fine motor) ability
 - Motivation & Outlook
 - Health Literacy
 - Family Support
 - Confidence
 - Locus of Control
 - Problem Solving Ability
- Age
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 - Smartphone Ownership
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Summary

- For help seekers without hearing devices:
 - Triage based on self-perceived importance to treat
 - Develop mechanism to separate candidates for SFHAs
 - Charge for services: Know your RPH, develop fee schedule for these services

Individuals with Hearing Aids, Seeking Help

Individuals with Hearing Aids, Seeking Help

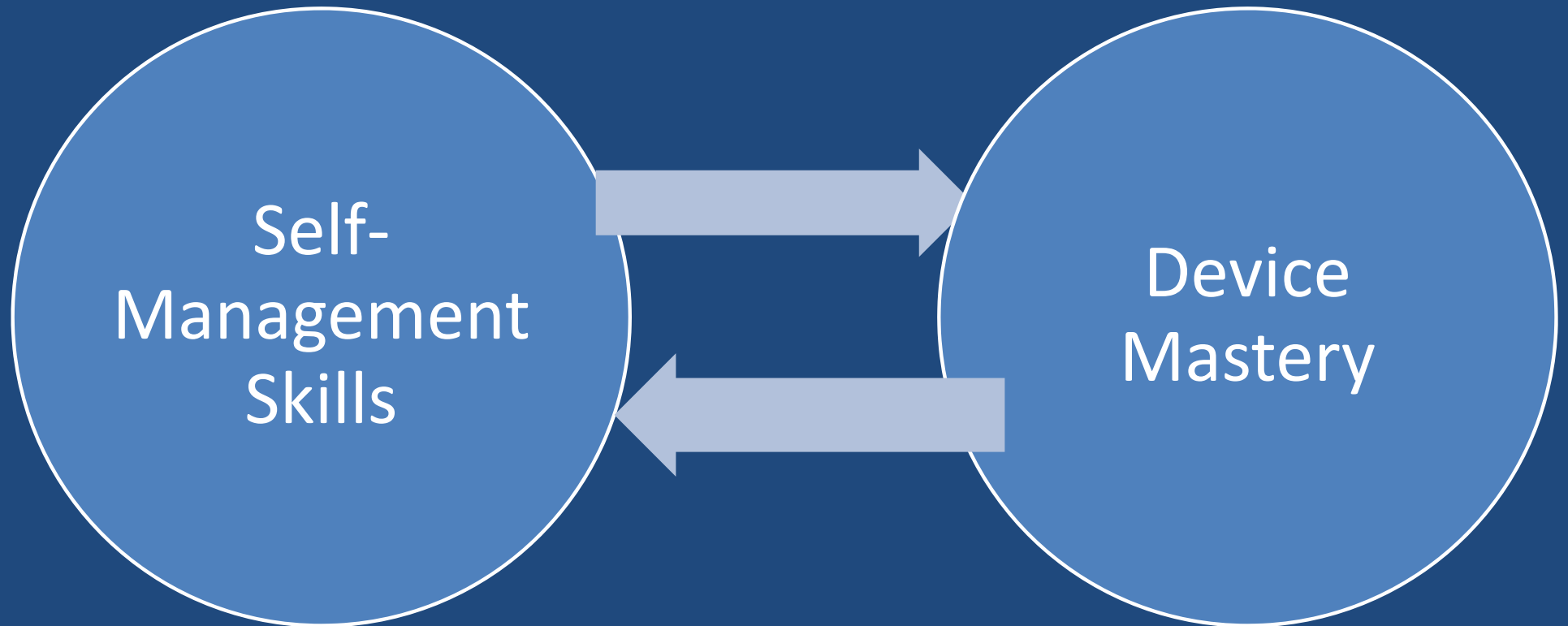
Skill #3

- Sort who needs self-management skills training from those who need hearing aid mastery skills training

2013 UK Study

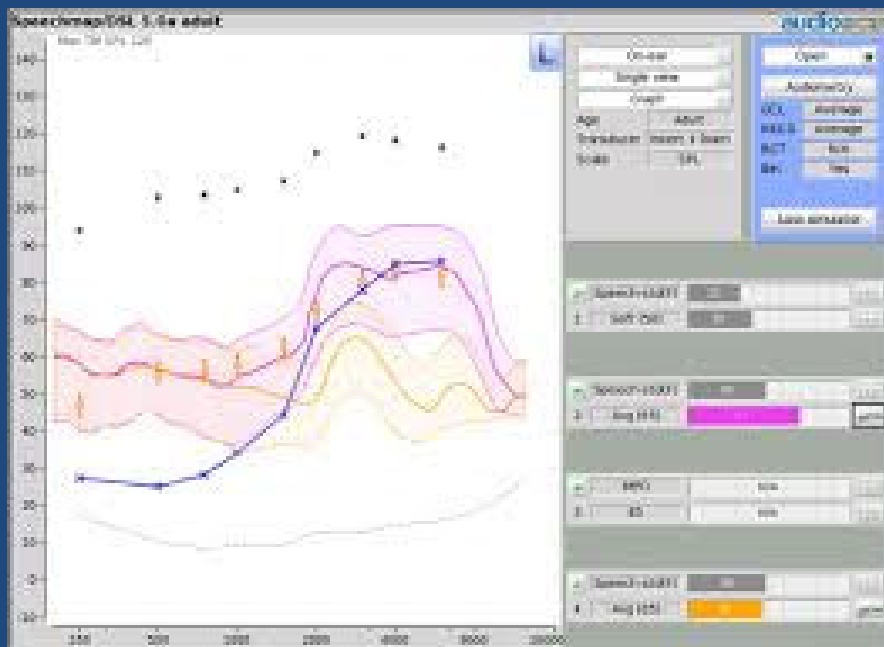
- 154 older hearing aid users
- 48% reported they did not receive enough help learning how to use and adjust to their hearing aids
- 40% reported they lacked confidence in their use of hearing aids
- 80% desired more information both before and after their hearing aid fitting

Components of Follow-up Care



Device Mastery

- Ensure a performance standard is being met



Device Mastery

- Insert & removal of hearing aids from ears
- How to use features and accessories
- Care and maintenance
- Expectations of initial use



Device Mastery

- Aural rehab and auditory training



Self-Managing a Condition

1. Participate in decision making of treatment options
2. Adhere to a treatment plan
3. Ability to recognize and manage changes in condition
4. Coping skills



Self-Management Skills Assessment

- Knowledge of condition
- Actions that improve condition
- Psychosocial issues

Self-Management Skills Assessment

Knowledge Questions:

1. Overall, what do you know about your hearing loss?
2. In general, what do you know about your treatment/management options?

Self-Management Skills Assessment

Actions that improve condition:

How likely am I....

3. To manage my hearing loss as asked by my hearing care provider?

4. To attend appointments as asked by my hearing care provider?

Self-Management Skills Assessment

Actions that improve condition:

How likely am I....

5. To keep track of changes in my condition (e.g., sudden change in hearing, pain, hearing aids stop working)

6. To work with my hearing care provider to get the services I need

Self-Management Skills Assessment

Psychosocial Questions

How do I ...

7. Manage the effect of my hearing loss on how I feel (e.g., emotions, wellbeing)

8. Manage the effects of my hearing loss on my social life (e.g., participate in activities, mix with other people)

Self-Management Skills Assessment

Psychosocial Questions

9. How confident are you that you can self-manage your condition?

Self-Management “Treatment Plan”

1. Focus on gaps

- Knowledge
- Motivation/confidence
- Coping strategies

A Path Forward

- Time-based aural rehab code 92626 (full hour) and 92627 (15 minute increments)
- Speech pathology code for AR 92507 could be used to bill Medicare
- Proposal from Reed et al September 13, 2018 *JAMA*

What does an audiologist bring to the table?

- Customization
 - Acoustic Fit
 - Physical Fit
 - Treatment Planning

- Counseling
 - Exploring ambivalence
 - Self-management skills

Thanks for your attention

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