HEARING LOSS TECHNOLOGY

Leveling The Playing Field

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Wisconsin Department of Health Services
Objectives

• Demonstrate three technology advances with hearing aids.
• Demonstrate at least one accessibility solution for each of the following: school, work, home, and community access.
• Demonstrate three apps that create access for hearing loss on mobile technology devices.
Hearing Aid Sizes
Hearing Aid Basics

Diagram showing the components of a hearing aid:
- Microphone
- Microprocessor & Amplifier
- Battery
- Receiver (Speaker)
- Telecoil
Features and Functions

- Telecoil
- Programs
- Directional microphones
- Bluetooth
- Connectivity
- Fall detection
- Health and body data
Telecoils

- Telecoil: small coil of wire inside a hearing aid that is designed to pick up a magnetic signal.
- T-Coil
- T-Switch
- Telephone Switch

- Telecoil (T) only
  No other sounds

- Telecoil/Microphone (T/M)
  Telecoil and Microphone sound combined
Telecoil FAQ

• Position matters
• Size matters
• Fits in most aids and implants
• Activated by switch or program button
• “Doubles” what the hearing aid can do
Telecoils Work with

- Telephones
- Neckloops
- FM systems
- Looped facilities

Telecoil must be in "manual" mode not automatic mode
Telecoil Mishaps

- Not installed in the hearing aid
- Not activated by the audiologist or hearing instrument specialist
- Automatic setting
- No training on what it can do
- Provider bias
Bluetooth

- An option for some hearing aids
- Requires a “streamer” (in most cases)
- Pairs the streamer to phones and audio devices
- Does not replace the need for a telecoil
Streamers

- Remote control
- A “go between” device
- Proprietary connection to the hearing aid
Phones as Streamers

- Smartphone app becomes the “streamer” for remote control functions and Bluetooth communication
- Apple Accessibility (Live Listen, Mono Audio, Closed Captions)
App Example
Assistive Listening Devices (ALDs)

- Personal amplifiers
- FM systems
- Loop systems
- Streamer ad-ons
Ear Pieces
Neckloops
Personal Sound Amplifiers

• Components: single or dual ear
• Amplification: 15-28dB amplification
• Options: telecoil and bluetooth (BT) models
• Considered: over-the-counter hearing aids
• Costs: $25-$800
ALDs: Hard Wired

- Components: single unit with ear piece
- Operation: hard wire connection between speaker and listener
- Uses: one-to-one, car conversations, and television
- Cost: $15 - $450
ALDs: Personal FM

- Components: transmitter, receiver, ear piece
- Operation: wireless, through walls, distance
- Uses: school, church, and community
- Costs: $200-1500
Loop Systems

- Components: room or area
- Operation: wire creates area and telecoil picks up the sound signal from PA system or mic
- Uses: churches, meeting spaces, counters, theaters, and schools
ALDs: Infrared Systems

- Components: transmitter and receiver
- Uses: television or movie theaters
- Operation: direct line of sight
- Costs: $100-$300
ALD Apps
Telephone Access Options

• In-Line amplification
• Amplified telephones
• Voice Carry Over (VCO)
• Phone line extenders
• Captioned phone services
• Large print caption phone services
• Web and mobile caption phone services
• TeleBraille
• Cellular options
<table>
<thead>
<tr>
<th>Telephone FAQ</th>
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</thead>
<tbody>
<tr>
<td>• Landline phones must be hearing aid compatible</td>
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<tr>
<td>• Some need an added magnet to make the telecoil signal stronger (rare)</td>
</tr>
<tr>
<td>• Neckloops can be plugged into landlines or cellphones</td>
</tr>
<tr>
<td>• Bluetooth neckloops can be paired with cell phones and landlines (with hub)</td>
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</tbody>
</table>
Telephone Devices
Captioned Telephones

- Analog only
- Analog and data combo
Caption Services

- Web based captions
- Caption apps
Relay Services

- Phone or internet based services
- Video Relay (VRS)
- Free

- Video Remote Interpreting (VRI)
- Fee based sign language interpreting
How Relay Works

1. Deaf user signs to the interpreter
2. Interpreter speaks to the hearing user
3. Hearing user speaks to interpreter
4. Interpreter signs to deaf user
## VRS vs. VRI

<table>
<thead>
<tr>
<th>Video Relay Services</th>
<th>Video Remote Interpreting</th>
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</thead>
<tbody>
<tr>
<td>TELECOMMUNICATION</td>
<td>INTERPRETING</td>
</tr>
<tr>
<td>No cost to users</td>
<td>Fee Based</td>
</tr>
<tr>
<td>Videophones, computers, smartphone and tablets</td>
<td>Videophones, computers, smartphone and tablets</td>
</tr>
<tr>
<td>Used to make or receive telecommunication from one location to another</td>
<td>Used for remote interpreting between one or more</td>
</tr>
</tbody>
</table>
Electronic Communication

- Text messaging
- Instant messaging (Skype or Hangouts)
- Apps (Glide or Convo)
- Video Relay
- Video Interpreting
Captions and Text Interpreting

• Remote or Live?
• Transcription or Translation?
• C-Print
• Typewell
• Automatic
Communications Access Real-Time Translation

Friday, July 8, 2016.
1:15 p.m. - 2:30 p.m.
#eventssowhite.
(If an assistive listening device is needed, please see an NAD volunteer.)
CART Captioning provided by: Alternative Communication Services (ACS)
Speech to Text Considerations

- Technology
- Connectivity
- Environmental
- Experience
- Language or reading skills
Communication Options Summary

- Handwritten notes
- Typed notes (laptop, Ubiduo, iPad)
- Text Messages
- Instant Messaging
- Email
- Fax
- Apps
- Text translation

- Sign Language Interpreting
- CART (Communication Access Realtime Translation)
- Relay services
- Video Interpreting
- Video Relay
Signaling

• Central Alert
• Silent Call
• Sonic Alert
• Alertmaster

• Telephones, doors, babies, motion, smoke, carbon monoxide, weather alerts, emergency vehicles, and room noise
Signaling Devices
Smart Technology
# Computer Access

## Microsoft Access
- Visual Alerts and notifications
- Captions (instructions)
- Sound settings
- Hearing loss tech resources

* [Microsoft Accessibility Guide](#)

## Apple Access
- Facetime
- iMessage
- Captions
- Screen flash
- Sound settings

* [Apple Accessibility Guide](#)
# Computer Access and Apps

<table>
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<tr>
<th>Google Access</th>
<th>Apps</th>
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<tbody>
<tr>
<td>• Browser extensions</td>
<td>• Outreach Apps Handout</td>
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<tr>
<td>• Captions</td>
<td>• APPS for iOS Handout</td>
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<tr>
<td>• Alerts and notifications</td>
<td>• APPS forAndroid Handout</td>
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<td>• Hangouts</td>
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<tr>
<td>• <a href="#">Google Accessibility Guide</a></td>
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Apps
Non Techy Tech
RESOURCES

- Hearingloss.org
- Harris Communications (vendor site)
- Hear Wisconsin (vendor site)
- Hearing Loops
- Hearing Loss Association of America
QUESTIONS?

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