Active Hearing Protection
Active hearing protectors use electronics to amplify signals, voices, and warning signals while suppressing harmful noise levels. Hearing protection products have a Noise Reduction Rating (NRR), which is the measure, in decibels, of how well a hearing protector reduces noise; the higher the number, the greater the noise reduction. For example, a rating of NRR 31 provides greater noise reduction than NRR 24.

Alerting Device
An alerting device can be used to notify a person with hearing loss about sounds in the environment. An individual can be alerted to sounds like a telephone ringing, a doorbell or an emergency alarm, through vibration or a light signal. A transmitter detects certain sounds and then sends a signal to a receiver that vibrates or blinks a light.

Amplification/Clarity Technology
Amplification makes it possible for people with hearing loss to benefit from increased volume when using landline and cellular telephones. Amplification can be achieved by using an in-line amplifier that is connected between the handset and the base unit of the phone; by using a portable amplifier that can be placed over the handset; by using an assistive listening device, neck loop, or hearing aid compatible headset; or by adjusting the sound level buttons on a telephone unit. The level of amplification required depends on the individual’s specific needs, but the amplification available from most telephone technology can range from about a 23 decibel (dB) gain to up to a 50 dB gain above normal conversation level. dB is a measurement of sound intensity. For example, normal conversation occurs at about 60 dB and the sound of a car horn falls at about the 110 dB range.

Clarity technology enables individuals with sensory neural hearing loss, or high frequency loss, to receive enhanced sound clarity. This technology digitally alters tones, shapes sound, removes distortions, and amplifies desired sounds to make speech clearer and easier to understand. For example, clarity technology makes it possible to hear the difference between high frequency sounds like "ch" and "st."

Assistive Listening Device or System (ALD/S)
An ALD is a type of assistive technology that enables an individual who benefits from amplification to focus directly on the sound source, reducing distractions from background noises that can make it difficult to concentrate during a conversation. ALD types include personal assistive listening devices, small and large area FM systems, infrared, and induction loop technologies. The speaker talks into a microphone or transmitter and the listener either uses the T-switch on his/her hearing aid or wears a receiver designed to work with the specific assistive listening device.

Augmentative and Alternative Communication Device (AAC)
AAC devices enable individuals with speech and language limitations to communicate. Dynamic display speech-output solutions allow users to select the words or phrases they want to say from a series of customized pages on a touch screen. Type and talk devices allow users with some
literacy skills and motor function to generate electronic speech by typing words on a keyboard. Handheld speech-output devices give users a portable communication option.

**Bluetooth**
Bluetooth technology provides wireless communication between hearing aid wearers and Bluetooth enabled phones or other devices and allows the hearing aid and wireless device to connect digitally, thus avoiding interference common with other types of wireless transmission.

**Captioned Telephone**
A captioned phone works like any other telephone but it displays live captions of the conversation. The phone automatically connects to a captioning service where a trained operator transcribes what is being said using voice recognition technology. This same service is also available over the Internet. The person makes or receives phone calls using any phone, while viewing captions of the call in the Internet browser window on his or her computer.

**Cochlear Implant Patch Cord**
For people with cochlear implants, there are cochlear patch cords that can be used with telephones. A cochlear implant patch cord is a short wire that enables a connection between a cochlear implant (CI) speech processor and the jack of the equipment the CI user is listening to.

**Communication Access Technology**
Communication access technology is assistive technology that is uniquely designed to be used by and with individuals who are deaf or hard of hearing. This type of equipment offers such features as speech to text, speech to video sign language, speech to computer-generated voice, text to computer-generated voice or video sign language, and face-to-face text communication solutions.

**Directional Worker Alert System**
A directional worker alert system alerts pedestrians and other drivers that a forklift is coming. This wall mounted device employs a photo-sensor that sends out a red light beam to detect a reflective strip mounted on the forklift. The warning is activated when a forklift or other vehicle passes the alert system.

**Hearing Dog (or Hearing-Ear Dog)**
A hearing dog is trained to alert the person with hearing loss to sounds such as a fire/smoke alarm, telephone ringing, door knock, doorbell, ringing timer or alarm clock, and a name call.

**Relay Conference Captioning (RCC)**
Relay Conference Captioning (RCC) is a service that provides functional equivalency to deaf and hard-of-hearing participants in conference calls and/or multi-party calls. The service uses captioners that deliver realtime text streamed to an Internet-connected computer. During captioned conference calls, participants can follow along with the dialogue by reading realtime captions.
Sign Language Interpreter (Interpreter)
Sign Language/spoken English interpreters are highly skilled professionals that facilitate communication between hearing individuals and individuals who are deaf or hard-of-hearing (RID, 2008).

Telecommunications Relay Service (TRS)
Telecommunications Relay Service (TRS) is a telephone service that allows persons with hearing or speech disabilities to place and receive telephone calls. TRS is available in all 50 states, the District of Columbia, Puerto Rico, and the U.S. territories for local and/or long distance calls. Dial 711 to connect to certain forms of TRS anywhere in the United States.

TRS uses operators, called communications assistants (CAs), to facilitate telephone calls between people with hearing and speech disabilities and other individuals. A TRS call may be initiated by either a person with a hearing or speech disability, or a person without such disability. When a person with a hearing or speech disability initiates a TRS call, the person uses a TTY or other text input device to call the TRS relay center, and gives a CA the number of the party that he or she wants to call. The CA in turn places an outbound traditional voice call to that person. The CA then serves as a link for the call, relaying the text of the calling party in voice to the called party, and converting to text what the called party voices back to the calling party. For further information, visit the Federal Communications Commission Consumer Fact Sheet found at http://www.fcc.gov/cgb/consumerfacts/trs.html.

TTY
A TTY is a text telephone device that enables individuals who are deaf, hard of hearing, or who have a speech impairment, to make and receive telephone calls through interactive text based transmission of coded signals across a telephone network. TTY calls can be made using internet-based relay services. Using a PC or wireless device, a text call can be made over the Internet using the relay service without a TTY.

Vehicle Rear Vision System
A video-camera system that provides rear, side, and forward views on a monitor located inside a moving vehicle.

Vibrating Personal Pager
A wireless alerting system used to summon help or get a person’s attention by simply pushing the button on the pager transmitter. The portable pager receiver chimes or vibrates in response to receiving a signal from the transmitter.

Video Relay Service (VRS)
VRS is a form of Telecommunications Relay Service (TRS) that enables persons with hearing disabilities who use American Sign Language (ASL) to communicate with voice telephone users through video equipment, rather than through typed text. Video relay calls are made using a high-speed or broadband Internet connection (i.e., DSL, cable, or T1 line) and a videophone connected to a TV, or through a personal computer equipped with a Web camera and video relay software.
The person who is deaf signs to a video interpreter who then communicates with a hearing person via a standard phone line by relaying the conversation between the two parties. For information, visit Video Relay Services FCC Consumer Facts found at http://www.fcc.gov/cgb/consumerfacts/videorelay.html.

**Video Remote Interpreter/Interpreting Services (VRI)**

Video interpreting is a service that uses web-based technology for on-demand access to remote sign language interpreting services. Using video interpreting, an individual who signs can access interpreting services using a computer, webcam, and a high-speed broadband connection.

**Voice Carry Over (VCO)**

VCO is a telephone option for a person who uses his or her own voice, but cannot hear. The phone receives TTY messages, but the caller with hearing loss responds to the message using voice. Using VCO, the person who is deaf places a call to the Telecommunications Relay Service. The relay operator types messages to the VCO user, and the VCO user responds to the voice caller with his or her own voice instead of using a TTY.

**References**


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CSD Works develops and delivers innovative solutions to connect Deaf people to job opportunities. Our Workplace Solutions offer employers consulting and training services to support diversity initiatives and improve overall organizational effectiveness. Contact us for a free assessment today at works@csd.org.