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Decoupling Professional Audiological Services from the Sale of Hearing Devices
Various innovations in technology and service delivery have resulted in the decoupling of the traditional consumer value chain. Here are some insights into possible future service-delivery models for the management of adult hearing loss.
By Brian Taylor and Vinaya Manchaiah

Our Responsibility to Move Audiology Forward
Spread the good within your own business, community, state, and nation and make sure everyone you connect with knows about audiology.
By Judy Huch

Access and Collaboration with Early Hearing Detection and Intervention Systems
Thanks to Early Hearing Detection and Intervention (EHDI) programs, we are putting children and families in touch with the services they need for success.
By Caitlin Sapp and Wendy Crumley Welsh

Get to Know a New Class of Audiologists
Today, those born in the late 1990s through the early 2000s are reaching toward new educational and career aspirations. Not surprisingly, many children who were identified with hearing loss and received audiological assistance in their early years are pursuing a career in audiology.
By Dayle Paustian

Academy Research Conference 2019: Advances in Amplification
Over the last several decades, some researchers and opinion leaders have suggested a broader view of hearing and hearing aids. Specifically, that we move the field to consider how hearing aids interact with the listener and how the environment affects a listener’s general connection to the world.
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### EDITORIAL MISSION

The American Academy of Audiology publishes *Audiology Today* (AT) as a means of communicating information among its members about all aspects of audiology and related topics.

*AT* provides comprehensive reporting on topics relevant to audiology, including clinical activities and hearing research, current events, news items, professional issues, individual-institutional-organizational announcements, and other areas within the scope of practice of audiology.

Send article ideas, submissions, questions, and concerns to Erin Schafer, editor-in-chief, at dr.erinschafer@gmail.com.

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This is my final column in Audiology Today as president of the Academy. As I write this last entry, I’ve spent the morning watching Brené Brown on Netflix, reflecting on the past year. Brené speaks about leadership and how this quote from Teddy Roosevelt forever changed her.

It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, who comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly.

As we begin a new year with the Academy, Brené’s description of vulnerability and courage have helped me place some things into perspective. I hope, as we begin with new leadership, they help you focus as well.

Brené describes vulnerability as the most accurate way to courage. She further describes Roosevelt’s arena by stating if you’re going to join me in the arena, you will see a unique perspective of other leaders, but if you’re not in the arena being brave on occasion with me, I am not interested in your feedback about my work.

She also states that there are millions of cheap seats in the arena these days full of people who will never once step into the arena. People who make it a full-time job to hurl criticism, judgment, and really hurtful things to those in the arena. Brené states that we must get out of the habit of catching that criticism. She concludes by stating that you cannot take this type of criticism to heart from people who are not being brave with their own lives.

These are very bold and powerful words for the world in general, but I feel they are even more powerful for volunteer leadership. Our Academy leaders are audiologists, mothers, fathers, daughters, sons, friends, and everything in between. We all have professional and personal lives that are juggled on a daily basis because we feel strongly about serving the Academy. I encourage you all to jump in the arena with us, at least occasionally, to gain that perspective.

Thank you all for an amazing year!

Lisa Christensen, AuD
ABA Certified
President
American Academy of Audiology
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Nupur TECHNOLOGIES
Changing Times Will Revitalize Audiology Services

By Dawn Hulthen Koncsol

Audiology services and provisions are changing following the passage of the over-the-counter (OTC) hearing aid legislation. In the end, what that will actually mean is still unclear. Likely, we will see a device that can manage mild hearing loss for patients and give them some options for their hearing health care. Those of us who have practiced for many years are still trying to decide how that will fit into our current practice model and whether to incorporate an OTC product in the clinic.

In an article in *Health Affairs*, Nicholas R. Reed, AuD, a faculty member at the Johns Hopkins Bloomberg School of Public Health and the Johns Hopkins University School of Medicine, discussed what may occur after the Over-the-Counter Hearing Aid Act of 2017 will allow people to buy hearing aids directly from FDA-approved manufacturers (Willink et al, 2019).

“Probably that will make hearing aids more affordable,” Reed said in a statement about the article. “But it won’t affect the barriers to accessing hearing-care services, which generally need to optimize the function of these devices. Most people, if you put two hearing aids in their hand, will have little idea of what to do with them.”

**Looking Toward the Future**

This change in the hearing healthcare landscape has launched a significant number of articles, information, and editorials on what the future of audiology services can and should be. For those whose primary source of practice income is focused on hearing aid dispensation, there is a need to review expanding services and options. For some, this may mean earning a certificate in a new area of specialty, such as tinnitus, to provide more services for patients. For others, it may mean expanding diagnostic services such as auditory-processing testing or electrophysiology.

“Audiologists now have the unique opportunity to place a value on the service component of amplification, regardless of where products are purchased,” Alicia Spoor, AuD, wrote in an October 2018 editorial in *The Hearing Journal*. “The introduction of OTC hearing devices may promote hearing health care across the country in a more meaningful way” (Spoor, 2018).

Earlier this year, CVS announced that it is closing down its hearing centers. “Next year, the FDA will introduce regulations to allow hearing aids to be sold OTC, eliminating the need for CVS to dedicate space in stores for audiologists to conduct hearing tests and fit people for the devices,” according to a report in *Drug Store News* (Levy, 2019). “The company is experimenting with new store formats as its core drugstore business faces pressure from online companies such as Amazon. It’s piloting
The Role of the Audiologist

This is the same concept we need to adopt in our practice. Audiologists have extensive training and can provide a well-rounded diagnostic and rehabilitative experience.

As experts in hearing, balance, tinnitus, cochlear implants, and so much more, we have a unique opportunity to redesign how we provide our services to patients and to strengthen those areas that make our profession unique.

What do patients value that will help us to excel in our services? In a survey completed on HealthyHearing.com, contributors Brande Plotnick, MS, MBA, and Paul Dybala, PhD, noted that consumers reported significant belief that the hearing-care professional is essential to appropriate amplification selection, fitting, and follow up (Plotnick and Dybala, 2017).

In fact, 93.82 percent ranked the hearing-care professional as very or absolutely important for the fitting and selection, and 83.14 percent ranked them absolutely important for follow-up-care visits. Patients felt these factors contributed to a successful hearing aid fitting and long-term-benefit solution.

This indicates the importance of the professional fitting, assistance, and follow-up, or the service end of what we do and why we do it. Providing high-quality, professional hearing health care that translates to happy and successful patients is the art of audiology.

Despite survey results that indicate that audiology professionals are a valuable piece of the overall success, why have we failed to be more successful at reaching the populations that need our assistance? Of the 28.8 million Americans (ages 20 to 69) who could benefit from wearing hearing aids, fewer than 16 percent have ever used them (HLAA, 2017).

Beyond the need for devices are the concerns of patients who have taken the steps but fail to be successful with amplification. How do we provide help to all of the populations that need audiology specialty services?

The emerging audiology practices need to diversify and provide a resource for patients who need good hearing health care for new or existing amplification. Through better public education, referral relationships, and creating the best initial diagnosis and treatment paths, we must reach out to those patients who need amplification but have not committed to that change.

Improving the Clinic

Clinicians must provide the type of clinic environment that promotes professionalism and value for their time and needs. Evidence-based practices for diagnosis and treatment must be firmly established and up to date.

A good clinic should do a routine assessment of the practice from a patient perspective on a regular basis. Is the office warm and inviting? Was the appointment scheduling and check in/check out as efficient and friendly as possible? Were the appropriate diagnostic tests completed, and if appropriate, billed to the correct insurance?

Were patients given adequate time to ask questions and receive information? Did they have the chance to view and listen to the most current hearing aid technologies and accessories?

Hearing aid pricing and services must be clearly defined and transparent to the patient. There must be a charge for services, with or without insurance coverage, for patients to understand the value of the professional.

A practice can establish pricing based on a variety of factors such as reimbursement rates, competitive review, and hourly break-even totals. There are some great articles on how to accomplish this goal, as well as many trained consultants who can help to define what pricing and service packages should look like in a practice appropriate to the size and location of the clinic.

Working with Patients

Those patients who have hearing aids or amplification of some type, but are not succeeding as desired, create a great opportunity for audiologists to provide a second-opinion clinic. This clinic can provide thorough diagnostic assessments beyond just the basic test battery.

Patients may need a more significant case history, tinnitus assessment, speech-in-noise testing, real-ear measures, cognitive screenings, electrophysiologic assessments, and even cochlear implant candidacy review. A patient’s medical insurance can be billed where appropriate.

For those services that are not covered, patients can be offered a fee-for-service option. This approach highlights the benefit of good audiology professional involvement to assess the patient, determine the appropriateness of the amplification selection and fitting, and examine counseling discussions resulting in the greatest successes.

This type of clinic should be open to any and all hearing aid and amplification users to assess a true baseline hearing status, with
recommendations for advanced testing as needed, and to guide the patient on whether what they have is appropriate for their hearing loss and communication needs. There will be devices a clinician cannot program, but they certainly will be able to do various performance checks and real-ear verification to provide feedback to patients and make recommendations.

There is an opportunity to provide information on services, referrals, accessories, current technology, and medical conditions. These are the skills that make audiologists truly unique, and these are the skills that we have trained and honed in our clinical experiences. In the end, the goal of the visit should be to advise the patient on the hearing aid, the programming, or the patient’s overall ability to succeed while taking into account other factors, including potential cognitive, visual, and dexterity changes.

Conversely, the appointment might examine or validate the patient’s success with your recommendations. Either way, audiologists can provide a level of expertise and professionalism through good counseling and honesty that likely will keep a patient returning.

**Technology and Improved Outcomes**

Hearing health care is more than the ear and balance system. Patients must be aware of medical conditions that have a link to hearing loss, and audiologists must address the patient from a whole-health perspective.

Counseling patients on the comorbid conditions that can have a deteriorating effect on the hearing and balance system is a standard of care that, as clinicians, we are responsible to review and provide.

Technology is changing rapidly, providing many options to assist our patients.

Hearing aids today can

- Stream audio for music and phone calls directly to cell phones.
- Connect to a wide array of streaming accessories through Bluetooth.
- Provide biometric-sensor feedback for heart-rate and activity-level tracking.
- Track social and cognitive engagement through hearing aid use.
- Provide a user tap-control for those with dexterity issues.
- Provide translation features.
- Provide voice-to-text transcription.
- Integrate with mobile apps for more features and use.
- Provide hearing aid self-check tests.
- Provide remote programming.

In addition, today’s hearing aids have

- Tinnitus solutions
- Fall alerts for patient-chosen friends or family
- Voice assistants for knowledge-based questions
- Rechargeable batteries
- Geotag locations for sound preference

With all of these technological abilities, fitting a hearing aid is far more than providing hearing-amplification assistance. Today, audiologists have more tools than ever before in
their toolbox to help patients succeed with their overall health goals.

The support and follow-up care that patients find necessary and valuable can be enhanced by providing solutions with a multifunction hearing device that addresses multiple health issues and includes convenience features.

Research is providing links to positive outcomes. The “self-reported use of hearing aids was associated with reducing any visits to the emergency department and hospitalizations,” according to a 2018 report on the association between hearing aid use and health care use and cost among older adults with hearing loss (Mahmoudi et al, 2018).

**Telehealth and Remote Programming**

Among the rewards associated with new hearing technologies, remote hearing aid programming provides a helpful platform to provide services for patients with mobility, transportation, and time-availability issues.

Telehealth is emerging as a preferred method of care for patients. State and local licensure laws are incorporating this practice and insurance is beginning to provide coverage. When a patient has the potential to self-check their hearing devices prior to an office visit and launch a request for programming remotely, both the patient and the caregiver save time in their daily lives.

This convenience is combined with the ability to geotag locations to create custom fits for specific locations. Clinicians can increase hearing benefit in the locations where a patient struggles the most. This remote programming provides a mutual benefit and value to in-office patients who may need more time and attention.

**The Road Ahead**

The outcome of the OTC legislation will soon be defined and will create wonderful opportunities for audiologists to validate and reaffirm their skills and value to patients. This is a chance to expand services; redesign the way a practice can look, feel, and perform; and welcome new and existing users with a vast array of new technology.

There is much work to be done to increase our reach to the substantial number of prospective patients who need our services, to provide hearing and health-care benefits to new patients, and to get all of them to accept and receive intervention earlier.

Perhaps American Academy of Audiology President-Elect Catherine Palmer said it best, during her General Assembly Speech at the Academy’s 2019 Annual Conference:

“We do not do hearing and balance tests.
We do not sell devices.

**WE:**
Change the course of cognitive decline for patients.
Reduce the risk of patients falling.
Start a chain of events for a child that will promote reading, education, and employment.
Prevent social isolation.
In fact, we ensure social participation, which increases life expectancy.

**WE:**
Decrease depression.
Decrease medical adverse events.
Decrease hospitalizations and readmissions.
And we can save the health-care system over $3.3 billion per year” (Palmer, 2019).

Dawn Hulthen Koncsol, AuD, is senior manager of international education and training at Starkey Hearing Technologies.

**References**


The Cochlear Provider Network (CPN) enables independent dispensing audiology/audiology-ENT practices to expand their services to include cochlear implants and become part of a medical network that helps people with hearing loss achieve optimal outcomes.

**Members of the CPN can:**

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- Grow your patient list through networking
- Differentiate your practice in an ever-changing, competitive market by expanding your service offering
- Foster strong relationships with physicians in your area to reach more patients

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¹ Clinical evaluation of the Cochlear Nucleus CI532 Cochlear Implants in Adults Investigator Meeting. 2019 Apr.

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September 18  
**eAudiology Web Seminar**  
Infection Control in the Audiology Clinic  
www.eAudiology.org

September 19–21  
**Meeting**  
Massachusetts Academy of Audiology 2019 Fall Convention  
Natick, Massachusetts  
www.audiology-mass.org/fall-convention

September 19–21  
**Meeting**  
CAA 2019 Annual Conference  
Rohnert Park, California  
www.caaud.org

September 20  
**Meeting**  
2019 LAA Professional Conference  
New Orleans, Louisiana  
www.louisianaaudiology.org

September 26–27  
**Meeting**  
KSHA 2019 Conference  
Topeka, Kansas  
www.ksha.org/convention

October 2–4  
**Meeting**  
PAA 26th Annual Convention  
Lancaster, Pennsylvania  
www.paaudiology.org/

October 3–4  
**Meeting**  
NSLHA Fall Convention  
Omaha, Nebraska  
www.nsliha.org/events/fall-convention

October 3–5  
**Meeting**  
20th Annual Texas Academy of Audiology Conference  
Frisco, Texas  
www.texasaudiology.org

October 10  
**Meeting**  
North Carolina Academy of Audiology Conference  
Raleigh, North Carolina  
www.ncaudiologists.org/events

October 10–11  
**Meeting**  
14th Annual Michigan Audiology Coalition Conference  
Lansing, Michigan  
www.michiganaudiologycoalition.org

October 17–18  
**Meeting**  
2019 Alabama Academy of Audiology Convention  
Miranar, Florida  
www.alaudiology.org

October 17–18  
**Meeting**  
Iowa Speech and Hearing Association Convention  
West Des Moines, Iowa  
www.isha.org

October 18  
**Meeting**  
2019 Alaska Speech and Hearing Association Convention  
Anchorage, Alaska  
www.aksha.org

October 24–25  
**Meeting**  
South Dakota Speech Language and Hearing Association Convention  
Spearfish, South Dakota  
www.sdshla.org

October 27–30  
**Meeting**  
Canadian Academy of Audiology  
Halifax, Nova Scotia  
www.canadianaudiology.ca

November 1–2  
**Meeting**  
Oregon Academy of Audiology Fall Conference  
Corvallis, Oregon  
www.oregonacademyofaudiology.wildapricot.org

November 14–15  
**Meeting**  
British Academy of Audiology Annual Conference 2019  
Liverpool, United Kingdom  
www.baaudiology.org/conference
While shifting the focus from bundled hearing health-care services to stand-alone professional services, audiologists could open underserved segments of the market by promoting patient-centered care.
Decoupling Professional Audiological Services from the Sale of Hearing Devices

Background
Helping adults manage hearing loss is by far the most fundamental aspect of audiology practice, making this the bread and butter of our profession. Hearing instruments play a crucial role in managing hearing loss in adults (Ftouh et al, 2018; Laplante-Lévesque et al, 2010).

The traditional service-delivery model has a linear pathway and includes bundled service packages. We use the term linear to describe the traditional model of service provided by an audiologist that progresses from one stage to another in a series of steps, delivered by the same clinic. Like a straight line on a graph, the linear pathway of care, as defined here, is undeviating: All stages of the buying process are conducted by the same business entity, as shown in FIGURE 1.

Given that hearing-care services have been delivered in this sequential manner for decades, it is considered the traditional consumer value chain. However, various innovations in technology and service delivery have resulted in the decoupling of the traditional consumer value chain. In this article, we aim to provide some insights into possible future service-delivery models for the management of adult hearing loss.

The Traditional Linear and Bundled Service-Delivery Model
Audiologists, by virtue of their formal academic training, tend to have a myopic view of their role within the health-care system. Audiologists believe they create value by completing three tasks with each person with hearing loss. (In this article, we define persons with hearing loss as adults, age 18 and older). These three tasks include: (1) a diagnostic hearing assessment; (2) treatment planning focused almost exclusively on hearing aid selection and fitting; and (3) long-term follow-up care and management with hearing aid use as a core component.

The audiologists’ view of service delivery centers on these three main components, delivered in one bundled package and typically paid out-of-pocket by the person receiving the services (ASHA, 2019; Windmill et al, 2016). This provider-centric view of the service-delivery model is not wrong or misguided, but it does not necessarily represent the view of the individuals who receive these services. For that, we turn to a different way of examining the service-delivery model—one that, thanks largely to advances in technology, is evolving rapidly.

Individuals with hearing loss tend to view their condition through a completely different lens. Like the audiology professional’s view, historically, value is created in a linear manner in the eye of the consumer. This means that, once a person with hearing loss is ready to seek help, they tend to receive all services from one professional in the order outlined in FIGURE 1. This sequence of five events or tasks completed by a person with hearing loss is commonly referred to as the traditional consumer value chain.

The five components outlined in FIGURE 1 are not unique to hearing care; the model can be applied to just about any product or service that consumers purchase. Another

FIGURE 1. Linear service-delivery model, also known as the traditional consumer value chain.
Decoupling Professional Audiological Services from the Sale of Hearing Devices

way to think about these five components in the linear service-delivery model is that each component is really a single task that any customer engages in during the buying process. And, importantly, because most consumers are not experts on the products and services they are buying, each of these five tasks comes with risks or pain points.

There are several potential pain points or risks encountered by individuals with hearing loss that may hinder their ability to actively seek care for their condition. Many of these are outlined in TABLE 1. From the perspective of the person with hearing loss, these pain points or risks may hinder their ability to seek appropriate treatment for their hearing loss and likely contribute to the low uptake of hearing aids.

Specific to hearing care, all five phases of the traditional consumer value chain, shown in FIGURE 1, typically occur with the same provider, with payment of services bundled with the purchase of devices. A key attribute of the traditional linear service-delivery model is that, for most individuals with hearing loss, it is inconvenient to switch providers for any one of the five components. Thus, in the traditional model, even if service is subpar, once a person with hearing loss has completed the Evaluate and Choose phases, they are held captive by that provider, at least until it is time to purchase another hearing aid. Notably, however, technological advances are decoupling this linear model, making it easier for those with hearing loss to complete each of these five tasks with a different entity—online, face-to-face, or through a combination of both approaches.

Innovations in Hearing Health Care

Several technological advances and policy changes over the past decade enable individuals with hearing loss to break away from the traditional value chain. In other words, these advances enable those with hearing loss to engage in each of the five elements of service delivery separately from one or more professional entity. Some of these innovations include:

- Easy access to a range of direct-to-consumer hearing devices (DCHDs) that allow individuals with hearing loss and their family members to purchase hearing devices without professional consultation.
- Internet hearing aid review sites (e.g., www.HearingTracker.com) and

### TABLE 1. Common Pain Points at Each Phase

<table>
<thead>
<tr>
<th>Evaluate</th>
<th>Identify a licensed professional that I trust who will serve as an unbiased expert and provide care that meets my changing needs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose</td>
<td>Find a professional or a device that is best for my condition, now and in the future.</td>
</tr>
<tr>
<td>Purchase</td>
<td>Buy a device or service that fits comfortably into my budget.</td>
</tr>
<tr>
<td>Use</td>
<td>Wear devices or use services effectively with minimal stress or hassle. Get the most out of my purchase.</td>
</tr>
<tr>
<td>Ongoing Services</td>
<td>With minimal inconvenience, return for follow-up care when I have a question or problem. Inconveniences could include long wait times and unexpected fees.</td>
</tr>
</tbody>
</table>
Decoupling Professional Audiological Services from the Sale of Hearing Devices

**EXAMPLE 1**

1. **Evaluate and Choose**
   - Evaluate the devices based on reviews from consumer websites (e.g., HearingTracker).

2. **Purchase**
   - Purchase hearing instruments on the Internet (e.g., Eargo).

3. **Professional Services**
   - Seek professional hearing-care services from a local audiologist.

**EXAMPLE 2**

1. **Owning the Device**
   - Friends and family members purchasing hearing device as a gift for person with hearing loss.

2. **Using**
   - Person with hearing loss may use the device and gain some real-life experience.

3. **Professional Services**
   - May seek professional hearing-care services from a local audiologist.

**FIGURE 2.** Examples of a decoupled hearing-health-care service-delivery model.
independent consumer reviews that provide details of features and functions of hearing devices. Such websites allow consumers to quickly price-match, read product/service reviews, and choose a hearing device based on their need and price-point.

- YouTube and social media videos from professional experts who post product reviews for consumers (e.g., the Dr. Cliff YouTube channel online at www.youtube.com/channel/UCpikvbsbLd6tMcu77AEJ-1A).

- Internet sites that sell personal sound-amplification products (PSAPs) and hearing aids (e.g., www.Eargo.com), enabling patients to buy hearing devices while at home.

- The 2017 Over-the-Counter (OTC) Hearing Aid Act (U.S. Congress, 2018) is a manifestation of the decoupling of the traditional linear service-delivery model. This legislation is intended to allow individuals with hearing loss to buy devices without first consulting a licensed professional.

- In addition to the acknowledgment of OTC as an official category of hearing aids, codified by the U.S. Food and Drug Administration, professionals can expect another sub-category of hearing devices, self-fitting hearing aids (Strom, 2018). These hearing aids, programmed and fine-tuned independently of an audiologist, will be available for purchase in the near future.

In addition to the decoupling of evaluating and choosing products and services, other businesses unlink the purchase, use, and ongoing service components of the linear service-delivery model. The examples listed below can reduce the pain points associated with purchasing, using, and receiving ongoing services related to the purchase of hearing devices.

- Third-party insurance contracts, such as TruHearing, that lower costs to the consumer but place constraints on product and clinic choices.

- Hearing aid leasing companies that allow customers to pay a low monthly fee, similar to a mobile phone subscription.

- Start-up companies, such as Lively Hearing Aids and Blamey Saunders Hears, that provide remote counseling and ongoing support to hearing aid users, in addition to the direct-to-consumer sale of OTC-type devices.

“NOTABLY, HOWEVER, TECHNOLOGICAL ADVANCES ARE DECOUPLING THIS LINEAR MODEL, MAKING IT EASIER TO COMPLETE EACH OF THESE FIVE TASKS WITH A DIFFERENT ENTITY—ONLINE, FACE-TO-FACE, OR THROUGH A COMBINATION OF BOTH APPROACHES.”

Benefits of Decoupled Service-Delivery Models

Today, because of these and other innovations, individuals with hearing loss can walk away from the entire value chain and potentially complete each step of hearing health-care service delivery with a different business entity (FIGURE 2. A person with hearing loss may choose this approach for many reasons, including (1) to have
more independence in their hearing care and dabble with hearing devices from the comforts of home, (2) to study or consider dozens of consumer reviews before choosing a device and/or services, (3) to have wider options in terms of features and price points, and (4) to be able to pay only for the specific services they use at that point in time.

While a person with hearing loss may take the first step in seeking help to acquire hearing devices, this may not always be the case. In a recent study, it was noted that many friends and family members of those with hearing loss may purchase a DCHD as a gift for the person with hearing loss (Manchaiah et al, 2019). In such instances, the hearing-care journey of a person with hearing loss may start with owning a device, rather than evaluating and choosing one. Individuals with hearing loss may then decide to seek, or not to seek, professional hearing-care services.

Consequences of Decoupled Service-Delivery Models

The decoupling of professional audiological services from the sale of hearing devices is likely to have several consequences for audiologists, including the following:

- Along with conventional private pay transactions, the audiologist may have to juggle third-party contract business that requires a different set of key business metrics for successful management.

- Product price-matching may result in customers choosing to opt for the lowest available price, even if that product is not advised by the consulting audiologist.

- Easy access to consumer ratings may result in customers choosing the best-rated product and/

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or services. This may compel some audiologists to fit devices or provide services that have high consumer ratings but are not appropriate for the individual requesting them.

- As with the eyeglass model, an individual with hearing loss may obtain an evaluation from an audiologist and then go elsewhere for the purchase of hearing aids.

- The strengths and weaknesses of hearing devices and services may be discussed more openly in online public forums or on consumer-centric websites. A possible consequence of open discussions in public forums is that audiologists must be more transparent in their interactions with consumers, as unethical business practices or poor service are more likely to be exposed.

In addition to these consequences, perhaps the most significant byproduct of a decoupled business model is that an individual with hearing loss will purchase hearing devices online and then seek—when needed—professional services locally.

Given that most hearing aid purchases today are completed in a bundled manner, the advent of OTC and self-fitting hearing devices will present audiologists with the challenges of offering more unbundled professional services to individuals who purchase devices elsewhere, but afterward need counseling or device-management support.

Considering the rapid pace of technological advancements at the core of the decoupled value chain, now is the time to actively consider several dimensions of unbundled service provision, including (1) the identification of individuals with hearing loss in need of comprehensive services; (2) the delivery of specific service packages that offer various types of personal-adjustment counseling, in addition to helping those with hearing loss master the proper use of their devices; (3) using less credentialed staff (e.g., audiology assistants) to deliver some of these services; and (4) the efficient delivery and proper pricing of these services to optimize profits without compromising care.

Effective Ways to Offer Decoupled Audiological Services

Some surveys suggest that many audiologists are already offering unbundled or itemized hearing-care services (ASHA, 2012). This may be an effort to cope with the constantly changing needs of individuals with hearing loss and also to differentiate a practice in an evolving health-care marketplace. Such an approach may bring opportunities for audiologists to increase market share by assisting those with hearing loss who may have purchased hearing devices online without audiological services or support.

Little has been written, however, about the ways in which audiologists can effectively offer decoupled audiological services.

Some surveys suggest that many audiologists are already offering unbundled or itemized hearing-care services.
spent is likely to become more critical in a decoupled audiological service model.

2. Focus on building trust and promoting patient-centered care (Grenness et al, 2014; Preminger et al, 2015).

3. Offer service packages that are valued by individuals with hearing loss who opt to buy online. These service packages could include (a) training for self-management skills focused on skill-building (e.g., communication tactics), (b) device-mastery training, and (c) help sheets. These services can be offered face-to-face, in groups, or online using digital technologies.

Final Note
While audiologists must make considerable modifications to current practice to adjust to future service-delivery pathways, we believe that these innovations in service-delivery models bring many new opportunities. By shifting the focus from the bundled hearing health-care services to stand-alone professional services, audiologists could open underserved segments of the market by promoting patient-centered care.

Brian Taylor, AuD, is director of scientific and product marketing at Signa, a division of WS Audiology. He is the editor of Audiology Practices, the quarterly journal of the Academy of Doctors of Audiology, and an editor-at-large for the Hearing Health and Technology Matters (HHTM) blog. He has written five textbooks and numerous articles and lectures extensively on topics related to clinical practice, hearing aids, and business management.

Vinaya Manchaiah, AuD, MBA, PhD, is the Jo Mayo Endowed Professor and a professor of audiology at the Lamar University Department of Speech and Hearing Sciences in Beaumont, Texas. He has worked in various clinical, teaching, research, and administrative roles. His research focuses on improving the accessibility, affordability, and outcomes of hearing and balance disorders by promoting self-management and the use of digital technologies.

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BY JUDY HUCH
A culture of quality is needed if we are to bring audiology into the spotlight and highlight our expertise in hearing and balance. Ritz-Carlton co-founder and former president Horst Schulze states that we can create transactions every day, but until we place the person next to us as the most important person in the world in that moment, we will never create an experience. No matter which employee you ask in a Ritz-Carlton what their objective is, they will all say, “to keep our guest.” This has helped create the culture and branding of one of the world’s most famous and respected hospitality names. Ritz-Carlton also creates the framework for all of their employees to hold to the gold standard of “We are ladies and gentlemen serving ladies and gentlemen.” The gold standard doesn’t make anyone better, but the way the customer is treated is exceptional.

**Mission and Core Values**

Where does satisfaction start?

What does customer satisfaction look like in a private practice for audiology?

It starts with finding the gifts of our employees and making sure they share the vision of the practice. The mission statement and core values should be more than a phrase in the company handbook. They should be lived every day in the offices they serve in, and yes, all of us need to be reminded of what this mission is on a regular basis. The office, as a group, should pick the core values, which can be changed from year to year.

If there is participation from the team, there will be more buy-in. Working as a team takes time and trust, but working through something as important as core values is a great way to start. In the past, we had employees break that trust, but we were able to come back to the core values to help heal and move on.

**Communication and Appreciation**

We need to consider how each employee gives and receives information. Some are very detailed oriented, and others just want to get to the punchline as quickly as possible. As owners and managers, we need to have a clear idea of where we are headed, what our goals are, and reiterate these goals throughout the year. Also, find a way to say thank you to your employees or those you manage in their “love language,” whether it is praise, gifts, or your time.

It can be challenging to do this if you don’t speak the same language. For example, the way I like to receive praise or help is by acts of service. If someone does something for me, I am overjoyed! They don’t have to say any words of affirmation, just doing the extra work is what I appreciate the most.

Many that work for me have wanted praise, which is difficult for me. Why would I keep saying great job on something the employee is supposed to do? Just because it doesn’t make sense to me doesn’t mean I,
Our Responsibility to Move Audiology Forward

as a manager, shouldn’t stretch and meet the needs of my team members.

Encourage Loyalty
After we have accomplished how to best work with our team, we must encourage customer loyalty. Horst Schulze reminds us that a loyal customer will spend more, willingly. It is also essential to obtain new patients (customers), keep them loyal, and be efficient about it. He never brings up his competition, ever. As stated previously, he focuses on how to keep people loyal and happy. Customers want to feel like they are the most important person in the world in that moment.

Some ideas are so simple, such as sending a card for a special moment or keeping favorite candies in stock. Employees can hand the patients a handful of candy after their appointment.

I had a patient who worked with General McCarthy and was Irish like myself. I would send him notes on the anniversary of certain events, such as WWII and St Patrick’s Day. His son still talks to me about how special I made his parents feel—and they died over 10 years ago.

Finding Tools to Make it Work
We have programs to train audiology assistants to schedule more efficiently. I know of several in the industry; we have used Audiology Academy. Nova Southeasten University also has a program and there are other consultants in the field, such as Decibels 180, that cover a variety of audiology topics.

We have database-management systems that allow us to market to each patient at least four times a year. When we send reminders for hearing exams or other follow-up appointments, there are rules to follow. On the American Academy of Audiology website, under Practice Management and Compliance, there are many items of which we need to be aware. For example, our patient reminders need to follow Medicare guidelines, which do not allow us to solicit for hearing exams and then bill the patient.

We have our audiology organizations that provide us with ideas to implement. I belong to two national organizations, and I am on their websites quite often to see what is available. I am continually working to get local audiologists to band together to make a bigger impact, but this is something that will take some time!

There are independent groups, such as “Think Audiology,” that are sharing information from change makers in our industry and offer materials for us to use at no charge. We must talk about hearing assistance technologies (HAT) to our patients routinely (see relevant article in Audiology Today by John Greer Clark and Britany Gilb, March/April 2019).

We must take up the mantel ourselves and not wait for the next brilliant audiologist to do it! I find most change-makers in audiology want to share their knowledge and bring the entire industry up. Be thankful and show gratitude, even if you do not agree.

Connect with Other Medical Professionals
The audiologist has the responsibility to educate other medical professionals on how audiology must be part of the medical team for our patients. David Fabry and Don Nielsen presented on this topic at the 2019 AAA Annual Conference and also in the Audiology Today March/April 2019 issue (Nielson and Fabry, 2019). There are ideas everywhere on how to connect with other medical professionals. An additional resource is The Audiology Project, which has created a portal to educate health professionals about the connection of hearing loss, diabetes, and other health conditions.

Spread the good within your own business, community, state, and nation, and make sure everyone you connect with knows about audiology. In every patient encounter, remember that the patient is the most important person in the world, and you are the lady or gentleman who will serve them the gold standard.

Judy Huch, AuD, is an audiologist in private practice in Tucson, Arizona, a member of the Academy’s Public Awareness Committee, the Arizona Mentor for the Student Academy of Audiology, and humanitarian chairperson for Arizona Audiology Coalition. She owns and runs Oro Valley Audiology and Grace Hearing Center.

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HOW TO EFFECTIVELY ACCESS AND COLLABORATE WITH

Early Hearing Detection and Intervention Systems
The Early Hearing Detection and Intervention (EHDI) program and its information system (EHDI-IS) can play a pivotal role in improving patient outcomes, regardless of the type of intervention a family chooses.

Public health agencies, in conjunction with Early Hearing Detection and Intervention (EHDI) programs, monitor the results of newborn screening outcomes, newborns with risk factors for the late onset of hearing loss, the prevalence of confirmed hearing loss, the type and degree of these losses, and the number of babies enrolled in services. A public health system is the best way for all of the parties providing hearing care to a child to have access to the results of the provided care.

The system is only as good as the data entered, however. A child’s history is critical to providing proper care. We all know that relying on parental reporting alone can create gaps in a case history. As an audiologist, you have an ethical obligation to adhere to appropriate screening and follow-up protocols for every infant, every time.

Hearing loss is considered a developmental emergency (AAP, 2019; Wycoff, 2013). That is why providing timely guidance, therapy, and psychosocial support are critical. Loss-to-follow-up and loss-to-documentation are barriers that prevent EHDI programs from achieving their mission.

Public health systems work daily to increase the number of infants who receive timely care. It takes a village to manage a child’s hearing care. The goal of every Department of Health is to ensure that babies in need are provided with all of the services to which they are entitled.

Based on research, the Centers for Disease Control and Prevention (CDC) recommends EHDI programs implement the “1-3-6 timeline,” which aims for all infants to receive a hearing screening by one month of age, diagnosis by three months of age, and enrollment in early intervention by six months of age (Yoshinaga-Itano et al, 1998). The EHDI program and its information system (EHDI-IS) can play a pivotal role in improving patient outcomes, regardless of the type of intervention a family chooses.

Before the Infant Enters Your Office

KNOW THE NEWBORN HEARING SCREENING RESULTS.
A parental or caregiver report is not always accurate. EHDI-IS store the results of the newborn screening. Care delivered in accordance with the Joint Committee on Infant Hearing (JCIH) position...
statement requires that an audiologist have some pre-existing information about the infant they are seeing (JCIH, 2007).

MAKE SURE YOU ARE TAKING THE NEXT CORRECT STEP IN THE INFANT’S HEARING CARE.

Having access to an infant’s newborn hearing-screening record is indispensable to schedule the correct appointment type and not lose valuable time in the EHDI process. Access to accurate records is crucial. The EHDI-IS allows

- A review of the type of screening technology that was used: otoacoustic emissions (OAE) or automated auditory brainstem response (AABR)
- An assessment of the number of screenings received
- A review of the pattern of pass/refer responses for both ears

It is important to track down results and understand the full picture of an infant’s hearing history. You must have information about a child’s birth screen to effectively rescreen. It is important to know how many times an infant has been screened and the method of screening used.

- If an infant has already been screened at two facilities, the next step should be a diagnostic evaluation. If the infant was only screened as an inpatient in the hospital, it may be reasonable to perform a rescreen.
- If an infant was referred on an AABR screening, the recommendation is typically not to rescreen with OAE but rescreen using AABR or perform a diagnostic evaluation.
- Best practice tells us that no infant should receive more than three total screens, regardless of type (AAP, 2014).
- An infant who was in the neonatal intensive care unit (NICU) should never receive an outpatient rescreen, but instead should be seen for a diagnostic evaluation.

HAVE A FULL UNDERSTANDING OF THE INFANT’S MEDICAL HISTORY.

A careful review of an infant’s prior record can help the audiologist build a full picture of their risk profile for hearing loss. Are risk factors present? Was this infant admitted to the NICU?

The audiologist will need to confirm this information with the family during the appointment because it may have significant implications for follow-up recommendations, regardless of the findings on diagnostic assessment. Again, relying on only a parental or caregiver report does not always provide the most accurate data. The audiologist should report any new risk factors for late onset or progressive hearing loss that may have come to light, such as a new diagnosis of congenital cytomegalovirus (CMV) or identification of a syndrome associated with hearing loss.
How to Effectively Access and Collaborate with Early Hearing Detection and Intervention Systems

REVIEW BENEFICIAL INFORMATION FROM THE CASE NOTES.
Case notes reveal qualitative information needed to deliver family-centered or culturally-appropriate care. Families’ preferences and values differ. Taking the time to read a child’s case notes prior to his or her appointment helps communicate respect for the family. An important consideration noted here may be their preferred language, which will determine if a translator is needed. This information may not be marked clearly on the physician referral form, but can have huge implications for the success of the diagnostic appointment.

CONFIRM THE PEDIATRICIAN.
Often, when babies are discharged, they are assigned the attending pediatrician in the hospital. The family may not have selected their final pediatrician when they are discharged. This is an area where the audiologist can assist the EHDI program by entering the current pediatrician of choice into the EHDI-IS. In some states, legislation makes the pediatrician accountable for the child’s hearing care. Therefore, the correct pediatrician must be able to access the child’s hearing results.

During the Appointment

CLARIFY INFORMATION THAT IS CRITICAL TO THE INFANT RECEIVING THE BEST HEARING CARE.
By using the EHDI-IS, you are informed. Taking the time to read a child’s case notes prior to his or her appointment helps communicate respect for the family and the time they have taken to attend a diagnostic appointment. At the beginning of the appointment, if possible, clarify information from the EHDI-IS with the family and collect details that may need to be added or updated, for various reasons:

- A pediatrician may have changed.
- In the intervening period, the family may have been seen by another ear, nose, and throat (ENT) doctor or audiologist, whose results have not been noted in the record.
- New risk factors for late onset or progressive hearing loss may have come to light, such as a new diagnosis of congenital CMV or identification of a syndrome associated with hearing loss.

- If an inaccuracy is present in the original record, this is the time to amend it.

REDUCE DUPLICATION OF SERVICES.
There are times when the careful use of the EHDI-IS can prevent a duplication of services and may help families avoid unnecessary exposure to sedation. Many infants who enter the foster care system may not come with their original birth records with them and, as a result, may be sent on for a baseline hearing assessment. If enough birth information can be gathered, it is often possible to find an infant’s newborn hearing-screening record. If the result was a passing score for hearing, we are able to document that status for his or her new care team and avoid unnecessary testing. This reiterates our commitment to the right level of care at the right time.

DIFFERENTIATE BETWEEN LATE ONSET OF HEARING LOSS, PROGRESSIVE HEARING LOSS, AND HEARING LOSS MISSED AT BIRTH DUE TO LOSS-TO-FOLLOW-UP.
Because these situations will have very different developmental implications, it is important to find and document newborn hearing-screening status for a first identification of hearing loss at any age.
This information may be difficult to obtain if the family has moved to a new city/state or changed health-care
providers. Additionally, it can be difficult to access hospital birth records directly from hospitals or stand-alone audiology practices.

The EHDI-IS provides a secure link to track a child’s early hearing health-care experience, regardless of the clinical practice site. Often, states will work together to assist in tracking down this information.

The EHDI-IS provides a secure link to track a child’s early hearing health-care experience, regardless of the clinical practice site. Often, states will work together to assist in tracking down this information.

We have unearthed newborn hearing-screening results for children as old as 12 years of age who were just receiving their first formal diagnosis of hearing loss. These children were screened multiple times in their infancy, with no formal diagnosis or proper follow-up.

Conversely, access to birth records has helped to corroborate a family's impression that a child seemed to hear normally just after birth, with records of a passed newborn hearing screening they could not otherwise remember.

No screening algorithm is perfect and each will result in false negatives and false positives from time to time. However, they remain the best tool to distinguish hearing loss from hearing within normal limits.

After the Appointment

ENSURE THE INFANT IS RECEIVING THE SERVICES THEY ARE ENTITLED TO BY COMMUNICATING THE RESULTS.

Following a diagnostic or hearing aid appointment for a child younger than age three, a pediatric audiologist should enter the following results into the EHDI-IS:

- ABR or behavioral thresholds, including bone conduction when available
- OAE findings
- Tympanometry results, including probe frequency
- A brief overview of the findings, including otoscopy
- Recommendations and any testing notes that might be important. For example, was the ABR in conjunction with pressure equalization (PE) tube placement or was the infant’s sleep state very light?
- If the family is being referred to other providers, add those providers to the child’s record.

Sometimes, the gathered hearing data does not provide sufficient information to reliably determine the type or degree of the hearing loss. Not yet determined should only be used when very limited information is obtained, for example, tympanometry results only.

If the child has been identified as having a hearing loss, but the audiologist is unsure of the exact degree and type, it is better to have him or her enrolled in services than it is to classify the child as not yet determined. A child with a transient conductive hearing loss is still at risk.

The concern of ruling the hearing loss out is not the best reason to prohibit the
How to Effectively Access and Collaborate with Early Hearing Detection and Intervention Systems

child from the services provided by the state. That floating classification in the EHDI-IS must be a call to further action, not a reason to delay care.

ENSURE THAT EVERYONE INVOLVED IN THE INFANT’S HEARING CARE IS UP TO DATE.

For an infant with normal hearing, entering data into the EHDI-IS is as simple as entering results and checking the record is up to date. This gives other providers the information needed to discharge the infant from their caseload.

CONTINUE ONGOING MONITORING AND SURVEILLANCE FOR THE LATE ONSET OF HEARING LOSS.

Please do not forget that hearing loss can occur at any time. Ongoing monitoring and surveillance are warranted if an infant exhibits hearing within normal limits, but risk factors for hearing loss exist. Learn all of the risk factors and especially monitor the set of JCIH-identified risks requiring heightened attention. When you are seeing older children, check the EHDI-IS for risk factors.

REVIEW FOR REFERRAL TO EARLY CHILDHOOD INTERVENTION.

The EHDI-IS may reveal if the family has already been referred for early intervention, or if needed, direct you to the correct agency for referral. The goal of comprehensive reporting is prompt and appropriate intervention services to prevent developmental delays in vocabulary, communication, and cognitive skills.

The Good News

Thanks to EHDI programs, we are putting children and families in touch with the services they need for success. The American Speech-Language-Hearing Association (ASHA) recently conducted a survey of school-based audiologists, asking where they ranked Individuals with Disabilities Education Act (IDEA) issues by importance (ASHA, 2018). Early intervention was ranked as the most important, followed by early childhood connection with the EHDI program.

Accurate and timely contact with the state EHDI-IS is paramount. We are only as good as the audiologists who make up our EHDI systems.

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How to Effectively Access and Collaborate with Early Hearing Detection and Intervention Systems

Caitlin Sapp, AuD, is a pediatric audiologist and clinical supervisor at the University of Iowa Wendell Johnson Speech and Hearing Clinic in Iowa City, Iowa. She was trained at the University of Iowa in a pediatric-hospital-based environment.

Wendy Crumley Welsh, MS, is an audiologist and director of marketing at OZ Systems in Arlington, Texas. In 1997, she worked on the Sounds of Texas Project (the pilot study for universal newborn screening in the state of Texas). As a pediatric audiologist, she worked at the University of Texas at Dallas Callier Center performing diagnostic assessments.

References


WHAT INFORMATION DOES THE DEPARTMENT OF HEALTH NEED FROM THE AUDIOLOGIST?

In order for the Department of Health to assist the child, their family, and the audiologist, the following information is needed:

- The infant’s current name (names can change after delivery)
- The caregivers’ current contact information (sometimes even the family member who cares for the child has changed since delivery)
- Known risk factors
- The primary care provider (often this is not determined before discharge from the hospital)
- The child’s hearing status per ear, based on Centers for Disease Control reporting requirements
  - Appointment date
  - Audiologist name
  - Audiology facility name and phone
  - Hearing confirmation
    - Within normal limits, hard of hearing/deaf, not yet classified
    - Working diagnosis
      - Type: Transient conductive, permanent conductive, mixed, sensorineural, auditory neuropathy spectrum disorder (ANSD), not yet determined
      - Degree: Slight, mild, moderate, moderately severe, severe, profound, not yet determined
    - Test battery used for hearing confirmation
      - ABR, auditory steady state response (ASSR), OAE, tympanometry, acoustic reflex thresholds
  - Recommendations
    - No further evaluation required, monitor for late onset, return for further evaluation

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GET TO KNOW A NEW CLASS OF AUDIOLOGISTS

BY DAYLE PAUSTIAN
Eight students with hearing loss are part of the first- and second-year cohort currently studying at Salus University to become doctors of audiology. Unlike many of our classmates, some of us were driven toward this field from a very early age, knowing this profession to be our calling.

It is estimated that two to three of every 1,000 children in the United States are born with some degree of hearing loss and that more will acquire hearing loss later in childhood, according to the National Institutes of Health. The passage of the Newborn and Infant Hearing Screening Act of 1999 and the adoption of universal newborn hearing screenings in many states, in conjunction with early-intervention services, changed lives and outcomes for many children.

Today, those born in the late 1990s through the early 2000s are reaching toward new educational and career aspirations. Not surprisingly, many children who were identified with hearing loss and received audiological assistance in their early years are now pursuing a career in audiology.

MEET THE STUDENTS

Eight students with hearing loss are part of the first- and second-year cohort currently studying at Salus University to become doctors of audiology. I am one of them.

Unlike many of our classmates, some of us were driven toward this field from a very early age, knowing
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*Ng 2017, Oticon Whitepaper
Get to Know a New Class of Audiologists

This profession to be our calling. We have personally benefited as patients from technological advances in audiology and are hopeful that these experiences can be applied to our professional life as well.

At a time where we focus so much on what will happen in the future, it is often important to look back and admire how much audiology has advanced and, above all, improved the quality of life for many. I have the privilege of sharing some personal stories from student audiologists with you here. Through this information, we hope to increase our personal connections with patients and strengthen relationships with our current and future colleagues.

MEGHAN

Born and raised in Sayville, New York, Meghan W. contracted pneumococcal meningitis at the age of 18 months. As a lifesaving agent, extremely ototoxic gentamicin was administered. As a result, Meghan was left with a profound bilateral hearing impairment. She received a cochlear implant at the age of two and was enrolled in intensive speech therapy while studying in mainstream classrooms.

Like many other school-aged children, Meghan found hobbies to enjoy. For her—and for many of us—these hobbies help us to forget about the hardships we are encountering.

Meghan rowed for her crew team in high school. At the time, she was wearing the Freedom by Cochlear processor. This was the first processor that was water resistant, but it was not waterproof. Meghan had to be careful on the water, due to sudden splashes by the oars or the chance that the boat could flip. If that happened, those processors were done. While Meghan understood the risks, she—and her parents—did not let them stop her from rowing.

Now flash forward to 2019. All three cochlear implant manufacturers offer waterproof options for the external processor that can be worn in water, enabling individuals to enjoy swimming in a pool, taking part in water sports, or enjoying the ocean.

For Meghan, it has been amazing to see how much technology has advanced throughout her hearing journey. She remembers being so excited to join her friends in running through sprinklers with the Cochlear Freedom processor.

Today, children and adults can enjoy all types of water activities without fear of device failure.

This is what eventually led Meghan to decide that audiology was her future. Initially, at SUNY Cortland, she was an elementary education major, but something did not seem right. After switching to the study of speech pathology and enjoying the sciences related to the field, she was reintroduced to audiology, which felt like the right fit.

Meghan is part of the Salus class of 2022, where six students out of 32 are living with hearing impairment. She hopes to see more advances in audiological technology for people in the workforce and better workplace accommodations in the future. Currently, there is a demand to find better stethoscopes for nurses and medical doctors who wear hearing aids or cochlear implants. Meghan hopes to help find better solutions for all working people, especially young workers.
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REBECCA

At first, Rebecca S. from Seekonk, Massachusetts, was not believed to have hearing loss. Due to her mother’s persistence, however, she eventually was diagnosed at Boston Children’s Hospital with a bilateral hearing loss and fitted with hearing aids when she was 18 months old.

As early as fifth grade, Rebecca knew that audiology was meant for her. When she received her third set of hearing aids at the age of 10, she heard the /sh/ sound for the first time in the word distinguished and, overwhelmed with happiness, she started to cry.

For 10 years, she had never known the phonetic cue that lies so heavily in the higher frequencies even existed. Thanks to ongoing improvements in technology, specifically frequency lowering, Rebecca was able to experience a simple sound that gave so much meaning. Eventually, she shadowed her audiologist at work and saw reactions in patients that reminded her of her own experiences. Audiology as a career choice was solidified for her at those moments.

Rebecca currently wears Oticon’s Opn 2, which offers the ability to connect to her iPhone. It helped her hear music and phone calls clearly for the first time and with increased ease. She hopes to help others experience the benefits of hearing technology, just as she has.

CHANTAL

Suffering from chronic ear infections as a child, Chantal S. endured multiple surgeries in early childhood, including a mastoidectomy, during attempts to reconstruct her eardrum. She had little improvement in hearing after these surgeries and, by age 15, had a moderately severe conductive hearing loss in the left ear.

After having been able to “get by” in school, she was fit with hearing amplification at age 17. She had been using her right ear to hear, as her brain had learned to compensate for the hearing loss on the left side. She often became fatigued, however, and had decided to look for a better solution after deciding to pursue higher education.

Chantal realized how much she really was missing when she was finally fit with a hearing aid. The moment her hearing aid was turned on and she heard that jingle, all sounds were so much louder. Hearing the water

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running, or car tires driving on the road, or the true quality of people’s voices were new experiences for Chantal—at the age of 17.

Now as an AuD student, Chantal appreciates what her patients are experiencing during their first fittings and empathizes with their initial perceptions. That is what originally drove her to choose the profession of audiology—and she enjoys all of the hands-on clinic experience. She has no doubt the profession is bound for even greater things in the future, in terms of technology advancements, and she is happy to be a part of the journey.

**ASHLEY**

Similar to Rebecca’s story, in Ashley Z.’s infancy, there was no suspected hearing loss. However, Ashley’s mother was persistent, and Ashley was diagnosed with a profound hearing loss and received an implant by age two. She currently wears Cochlear’s Nucleus 6 system and, like her student colleagues, is continually impressed with, and has benefited from, the strides audiological technology has made over the years.

Ashley was even able to play the trumpet, which she studied for four or five years, which is impressive. Often with cochlear implants, musical appreciation is limited, as acoustic nuances are sometimes lost with electrical stimulation. It was difficult for Ashley to detect the differences in sharps and flats. She also had to be very careful with playing the right notes and staying in key.

Ashley’s dedication to little details and her motivation led her to play soccer at Eastern University while juggling academics. Originally set on a major in physical therapy, and then on psychology, Ashley did not feel like either were her true calling. One day, she realized her true passion had been right in front of her for her entire life. Audiology was something that felt right immediately.

Ashley looks forward to patient care and relating to her patients, especially in pediatrics. She hopes that, while working with parents of children with severe hearing loss, they will see her success with her cochlear implant and they will feel reassured that their child is going to be okay. Ashley hopes to spread more awareness of what cochlear implantation can do, focusing on outcomes and technology.

**SAAHII**

Saahi K., from Ontario, Canada, was born with normal hearing. Growing up, her hearing remained normal until she was about 14 years old, when she was diagnosed with a severe-to-profound hearing loss in the right ear and a mild hearing loss in the left ear. Saahi was fitted with hearing aids and received benefit from amplification.

While attending the University of Guelph in Ontario, Saahi was playing badminton with her friends one night during her freshman year. Suddenly, the hearing loss in her left ear went from mild to profound within hours. She was rushed to the ER with the hope that steroidal injections would alleviate the fast-changing hearing loss.
Get to Know a New Class of Audiologists

Saahi’s hearing journey always kept her involved in the audiology community. She became a mentor for Cochlear America during her undergraduate studies, mentoring future cochlear implant recipients and volunteering to educate people in local chapter meetings in Canada.

Saahi decided to pursue a career in audiology after six years of going to various audiologists and clinical professionals. She figured it was about time she saw herself sitting in one of the audiologist’s chairs and being the one who provides the counseling to those afraid to undergo cochlear implantation or try amplification. She believes her experiences will help her empathize with her own patients.

She is personally very grateful for the Cochlear Phone Clip that wirelessly connects to her phone, enabling her to answer calls hands-free and listen to music. She uses the Cochlear Mini-Microphone and Roger Pen, which relay the real-time voice of her professors straight into her ears. Saahi hopes that she can truly educate others on the benefits of hearing aids, cochlear implants, and all assistive technologies and innovations.

DAYLE

As for myself, the only cochlear implant wearer in the class of 2021, it is great to see a number of doctorate students who are deaf/hard of hearing choosing audiology as a profession. Unlike some of my younger colleagues, who were identified and received audiological intervention early on, I did not receive a cochlear implant until I was seven years old.

My hearing journey has come a long way. I started out with a body-worn cochlear implant, wearing colorful fanny packs to school to hold the processor in place. Fortunately, my mother ordered many colorful, patterned designs to make my fanny packs cute and fun to wear.

I have always been an active person who loves to play sports and run around. I was ashamed to have to wear a fanny pack to hold the processor, with a long coil running up my back to my external earpiece and magnet. And I always had to be cautious, due to the expensive piece of equipment attached to my upper torso.
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Now, at age 24, I have a new Nucleus 7s that I just got in May of 2019. I am amazed at what I can do with this technology. I am able to access my N7s through an app, adjust the volume, switch among different programs, and even stream music into my cochlear implants, without anyone ever noticing something out of the ordinary.

I will never forget the joy I felt walking the streets of New York City, truly enjoying my streamed music, with nothing on my head except my cochlear implants and my new black Ray Bans. It was great to be able to pick up phone calls hands-free and have the binaural advantage, while my peers whose hearing was within normal limits only can use one ear for the phone.

I can’t wait to go out on weekends and not struggle to use the phone, even in noisy settings. I know it sounds so simple, but to me and many others with hearing loss, this freedom and return to normalcy means so much.

I am happy that universities are accepting students who understand hearing loss and want to work in this rewarding profession because we know we can take our own experience and pay it forward.

ON THE JOB

I know many people wonder what the day-to-day clinical tasks, such as diagnostic testing and hearing aid checks, are like for those of us with hearing impairments. Fortunately, we are not the first hearing-impaired audiologists and we have a growing network of mentors in the field who help us learn how to provide care using best practices with accommodations specific to our needs.

For me, memorizing word lists and using the monitor speaker on the audiometer has worked so far. I am able to perform listening checks via a modified listening scope. We can also incorporate apps with speech-to-text in the diagnostic exam, as a closed-captioning of sorts. I am hopeful and curious to see what technology has in store for us as clinicians.

THANK YOU, AUDIOLOGISTS!

In conclusion, and on behalf of my fellow AuD students with hearing impairment, I would like to thank all of the audiologists who advocated on our behalf as children with hearing loss. I look forward to working side by side with you and continuing to advocate for my future patients and for myself as a young professional. From my unique perspective, audiology has come a long way in a short period of time—and will continue to evolve in the decades to come.

Dayle Paustian is an audiology doctorate student in her third year at The Osborne College of Audiology at Salus University in Elkins Park, Pennsylvania.

The author would like to thank her fellow students who consented to share their stories in this article.

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5:00–7:00 pm  
**Celebrate Audiology**—Opening Reception and Activities

**Thursday, April 2**
10:00–10:15 am  
Academy Sound Bites
10:15–11:00 am  
HEAR Talks with Industry Thought Leaders
11:00 am–2:30 pm  
Academy Education
12:30–2:30 pm  
Industry Updates
2:30–4:00 pm  
Conversations with Industry CEOs
4:00–5:00 pm  
Panel on the Future of Hearing Health Care
5:00–6:00 pm  
Happy Hour

**Friday, April 3**
9:00–9:15 am  
Academy Sound Bites
9:15–10:00 am  
HEAR Talks with Industry Thought Leaders
10:00–11:30 am  
Conversations with Industry CEOs
11:30 am–2:00 pm  
Academy Education
12:00–2:00 pm  
Industry Updates
2:30–3:00 pm  
Exhibit Hall Last Call/Best AAA 2020 Tech Innovation Announcement/Raffle Drawings

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The Academy Research Conference (ARC) 2019 focused on advances in amplification. Over the last several decades, some researchers and opinion leaders have suggested a broader view of hearing and hearing aids. Specifically, that we move the field to consider how hearing aids interact with the listener and how the environment affects a listener’s general connection to the world.

BY TODD RICKETTS
Hearing aid processing no longer operates under the assumption that the real-world listening environments are represented by simple laboratory test conditions, such as the talker of interest is in front with noise behind, or even that there is only a single talker of interest. In addition, the driving philosophy has shifted from treating a single complaint (e.g., understanding in noise) to holistically treating individuals across the full range of their real environments and experiences (e.g., connecting to an auditory world). While improving speech recognition is still the primary goal of amplification, research is moving to include considerations from personal relationships to general health and well-being.

In addition to advances in hearing aid technologies and how hearing loss impacts the patient as a whole, there are also ongoing advances in how we assess patient outcomes in the real world. This recent research has reinforced the breadth of potential amplification benefits which, in turn, has renewed interest in increased accessibility to hearing health care. We considered these general themes when recruiting the organizing committee and this year’s speakers. We were able to line up an exceptionally qualified group of speakers who addressed current and future directions in amplification.

From considering hearing loss from a public health perspective to new advances in technology, service delivery, and assessing patients’ needs and outcomes, our six expert speakers for ARC 2019 brought an unmatched and forward-thinking perspective. Not surprisingly, the feedback we have received thus far has been incredibly positive.

ARC 2019 truly had something for everyone with an interest in adult hearing aid candidates. In addition to our exceptional speakers, ARC 2019 also included a lunch-time poster session with several interesting posters from hearing aid researchers and students. An associated student poster competition provided travel support for several students to attend ARC, further enhancing the experience for all. ARC 2019 provided the most up-to-date and cutting-edge information in amplification. These exceptional thought leaders also provided insight into the future, in an area for which rapid change continues to be expected. The following abstracts summarize their presentations.
Hearing Loss in the Third Era of Public Health—From Epidemiology to Public Policy

FRANK LIN, MD, PHD, Professor of Otolaryngology, Johns Hopkins University

Research over the past several years has demonstrated the broad implications of hearing loss for public health and the functioning of older adults, particularly with respect to cognitive functioning, brain aging, and dementia. This epidemiologic research has directly led to current national initiatives in the United States focused on hearing loss and public health. These initiatives include the Aging and Cognitive Health Evaluation in Elders (ACHIEVE) randomized controlled trial and recent passage of the bipartisan Over-the-Counter Hearing Aid Act in 2017. This federal law overturns over 40 years of regulatory precedent around hearing aids in the United States in order to directly improve the accessibility and affordability of hearing care for older adults. This session reviewed hearing loss and amplification from a public policy perspective and described how this view has the potential to shape not only events to date, but also the future of hearing health care.
Real-World Hearing Aid Benefits Are More Apparent in Real Time: Ecological Momentary Assessment

YU-HSIANG WU, PHD, Associate Professor, Department of Communication Sciences and Disorders, University of Iowa

Retrospective self-reports (e.g., standardized questionnaires completed by patients) have been widely used in audiology research, as well as clinical settings. Despite their proven value in quantifying behavioral change and rehabilitative planning, retrospective self-reports often have low context resolution and are subject to recall bias. Likely due to these disadvantages, retrospective self-reports often fail to detect the outcome difference between different hearing aid technologies in the real world.

One technique that has been developed to overcome the disadvantages of retrospective self-reports is Ecological Momentary Assessment (EMA). EMA is a methodology involving repeated assessments/surveys to collect data describing respondents’ current or very recent (i.e., momentary) experiences and related contexts in their natural (i.e., ecological) environments. Because detailed contextual information can be collected in each assessment, EMA has high context resolution. Also, because experiences are recorded almost immediately in each assessment, EMA is considered to be less affected by recall bias.

In the past few years, the Hearing Aid and Aging Research (HAAR) laboratory at the University of Iowa has been using EMA in hearing aid outcome research. The collected EMA data suggest that the effects of hearing aid technologies (e.g., directional microphones and noise reduction algorithms) in the real world are often context-dependent. That is, greater hearing aid benefits can be realized in certain real-world contexts, but not in all listening situations. By comparing hearing aid outcome data collected using EMA and retrospective self-reports, the data collected in the HAAR further indicate that hearing aid benefits experienced by listeners in real time are more apparent than what is conveyed in retrospective self-reports. In other words, users may experience more benefits from hearing aids than what they remember. Therefore, the benefits of hearing aid technologies in the real world could be larger than what has been reported in previous studies that asked research participants to recall and integrate their experiences across various contexts over weeks and months in retrospective self-reports.

Technology Trends Shaping the Future of Hearing Health Care

BRENT EDWARDS, PHD, Director of the National Acoustic Laboratories, Sydney, Australia

The pace of innovation in hearing health care is faster than it has ever been, with changes to technology, services, and delivery channels that will forever impact people with hearing loss and the professionals who provide hearing care. These advances span the hearing landscape from the medical domain across to the consumer domain, from implantable devices to OTC to self-diagnostic apps.

This lecture provided the context for which telemedicine, machine learning, new delivery models, and other advances will shape who will be the new consumers of hearing health care, how they will receive treatment, and what that treatment may look like.
Emotion plays an important role in our daily lives. We respond emotionally to many daily experiences, such as listening to music or a baby crying. Although we might not always recognize these emotional responses, they do influence our attention, cognition, and feelings of well-being. Emotional responses are often described using two dimensions, valence (pleasant versus unpleasant) and arousal (exciting versus calming). Pleasant emotions include happiness, contentment, and joy, whereas unpleasant emotions include misery, depression, and sadness. Pleasant emotions motivate us to approach positive experiences and broaden attention. Unpleasant emotions prepare people to handle potentially undesirable situations and focus attention. Thus, a full range of emotions is normal and desirable, as all types of emotional responses serve a distinct purpose.

Recent research has shown that adults with acquired, mild to moderately severe, sensorineural hearing loss demonstrate a reduced range of emotional responses to sounds (e.g., laughter, crying, music). That is, they feel less pleasant in response to pleasant sounds and less unpleasant in response to unpleasant sounds, relative to their peers with normal hearing. We have also found that disrupted emotion perception associated with hearing loss is evident in emotional responses to television viewing, a very common leisure activity for older adults. Interestingly, the effects of hearing loss on emotional responses are not related to advancing age, and instead are associated with aspects of hearing loss, specifically reduced intelligibility and reduced high frequency audibility.

Unfortunately, current research has shown that increasing the overall level to compensate for reduced audibility can have adverse effects on emotion perception, rather than restorative effects. Hearing aids fit to prescriptive targets with no active advanced features increase overall level and also improve high frequency audibility. However, the combined effect for most listeners with hearing loss is further disrupted emotion perception. Conversely, use of non-linear frequency compression improves emotion perception relative to conventional processing, likely as a result of improved high frequency audibility without additional loudness. Emotion perception in hearing loss is an emerging field with potential to affect listeners across a range of listening experiences. However, more work is necessary to fully understand the intervention strategies that can optimize emotion perception and offset the negative effects observed to be associated with sensorineural hearing loss.
A Novel Treatment for Hyperacusis: Overcoming the Limits of Traditional Hearing Aids

DAVID EDDINS, PHD, Professor, Departments of Communication Sciences and Disorders and Chemical and Biomedical Engineering, University of South Florida, and Co-Director of the Auditory and Speech Science Laboratory

Patients who suffer a debilitating intolerance to the loudness of everyday sounds, a condition known as hyperacusis, present a unique treatment challenge. Such patients often present in the clinic engaged in a form of self-treatment involving wearing earplugs (EPs) to limit offending sound exposures. We and others have shown chronic use of EPs increases auditory gain and exacerbates the hyperacusis condition, rendering the EP wearer even more sensitive to loud sounds. Despite this common result, effective clinician-driven treatment protocols for hyperacusis do exist.

Formby and colleagues completed an NIH-sponsored clinical trial of unaided sound therapy that demonstrated the effectiveness and efficacy of the sound generator (SG) component of sound therapy targeting hyperacusis (Formby et al, 2015; Sem Hear 36(2):77–109). The result was objective and subjective improved sound tolerance. This result is consistent with several reports published by Formby reporting the outcomes of patients engaged in sound therapy with SGs as part of tinnitus retraining therapy (TRT; Formby et al, 2007; Sem Hear 28(4):276–294). These results are consistent with research demonstrating that chronic use of ear-level SGs, even by listeners with normal hearing and normal sound tolerance, results in increasing tolerance for loud sounds.

The dilemma then is to figure out how to wean the typical hyperacusis patient off of their maladaptive, sound-attenuating devices that provide comfort and reduce anxiety and transition them into ear-level treatment devices that include SGs to produce low-level therapy noise. This presentation described a novel transitional device incorporating both EPs and SGs and an associated fitting protocol for treating the severely hyperacusis patient.

To meet the patient’s pre-treatment needs, a deeply seated and acoustically sealed in-the-ear mold offers maximum sound attenuation. The ear mold contains a heat-activated stent that expands at body temperature to augment the normal seal, functioning as a high-quality, custom EP. A miniature behind-the-ear hearing device is connected to the earmold through a slim tube. The device has an on-board SG to create the therapeutic low-level, spectrally-shaped noise. As the SG induces loudness tolerance change, amplification approaches unity gain over time to overcome the maladaptive plasticity associated with earplugging. Simultaneously, output limiting (loudness suppression) reduces the exposure to loud, offending sounds. If the patient has aidable hearing loss, the device can function as a fully-featured hearing aid.

The associated fitting protocol and custom fitting software establishes real-ear aided gain, real-ear occluded gain, real-ear aided (unity) gain, and real-ear noise response. Output limiting, based on loudness discomfort levels and imposed under conditions of unity gain, minimizes exposure to loud sounds while providing access to soft and comfortably loud sounds typically attenuated by an EP that otherwise exacerbates hyperacusis. The patient undergoes counseling on use, care, goals, and expectations that the low-level noise will enhance sound tolerance. On subsequent visits, the resulting SG-induced increases in loudness tolerance determine the release of loudness suppression and the transition of the patient from EPs to normal, device-free audition, ultimately offering an effective treatment for debilitating hyperacusis.

Work Supported by NIDCD R21 DC015054.
Nothing Stays Still: Physical and Attentional Movement as Essential Components of Listening and of Future Hearing Aids

GRAHAM NAYLOR, PHD, Scientific Program Leader, Faculty of Medicine and Health Sciences, The University of Nottingham, Glasgow, U.K.

For decades, research into listening performance has been almost exclusively based on static situations, where neither the sound sources nor the listener move. Likewise, listening tasks have mostly been highly constrained and artificial. These limitations have been made deliberately, in order to maintain close control and exclude ‘random’ effects, so that basic mechanisms of perception could be observed and described. The result has been an impressive understanding of how auditory perception works under such conditions, which has helped to advance the development of hearing devices from basic amplifiers toward the sophisticated environment-aware systems we see today.

Recently, a wave of research has begun that goes beyond the old paradigm and acknowledges that our sensory systems have evolved to be exquisitely sensitive to change, that the attentional networks in our brains are constantly in flux, and that the real world is full of motion and change. This unlocks a Pandora’s box of natural behavior, where a huge amount of important phenomena are to be found, with massive potential for the understanding of hearing disability and the development of future hearing devices.

When they are immobile, normal-hearing listeners are highly sensitive to the movement of sound sources. However, when the listener moves their head, in order for a sound source to be perceived as immobile, it actually has to move slightly too—with or against the direction of the head movement, depending on whether the sound source is in front or to the side. Thus, even at the level of basic perception, introducing movement fundamentally changes the shape of the auditory world.

Moving from basic psychoacoustics toward natural behavior, substantial work has been done concerning changes in speaking and listening behaviors as environmental conditions (e.g., noise, reverberation) change. These studies have shown changes in speaking rate, intensity, pitch, and pause count, and in listener head orientation, distance to source, and reliance on visual cues. However, almost all previous work has used speakers and listeners in isolation.

Real conversation is fundamentally different, because (1) it requires speech planning while listening, (2) the contributions of participants are not independent, and (3) social norms place constraints on acceptable behavior. Lab measurements on freely conversing pairs of hearing-impaired participants have extended the previous results to include changes in turn-taking as evidence of conversational repair/breakdown in adverse levels of noise. Ongoing studies of three-way conversations indicate that movement patterns may be affected by the type of background noise, which might have implications for optimal settings in directional microphone systems.

Future hearing devices will attempt to apply knowledge of attentional and behavioral dynamics in order to optimize communication performance. As devices incorporate more and more extra sensors, such as motion detectors or in-ear electroencephalogram (EEG) electrodes, they will become capable of obtaining continuous estimates of the wearer’s behavioral or attentional state. How such data will be put to good use remains an open question for now; certainly, there are big technical and use-case challenges. Whether such systems will be beneficial will depend on good design and deep understanding of user behavior.

The real world is messy, and we have only just started to mine natural behavior for insights that can drive future hearing-device development. However, it is clear that, by regarding dynamic aspects of environments and behavior as essential components of real-life listening, we will gradually reveal new ways in which devices can help people with hearing difficulties.
Conclusion

The theme of next year’s Academy Research Conference will be auditory neuropathy spectrum disorder (ANSD). This disorder is a unique condition that occurs in individuals with normal cochlear outer hair cell function and disordered afferent neural activity at the level of inner hair cell synapses, the auditory nerve, and/or brainstem. While the incidence rate is unknown, ANSD can affect individuals across the lifespan. Scientists do not fully understand the pathogenic mechanisms that underlie this condition, which can make diagnosis and management a difficult clinical challenge.

With conference chair Linda Hood, PhD, next year’s event will present the latest translational research as it relates to examination of the etiology of ANSD, evaluation, and management. ARC 2020 will be held on April 1 in New Orleans, Louisiana.

Todd Ricketts, PhD, served as chair of ARC 2019. He is a professor and vice chair of the Hearing and Speech Sciences, Graduate Studies at Vanderbilt University.

Recordings of the ARC 2019 presentations can be found at eAudiology.org/ARC19

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Abstracts due October 1, 2019.
An account of the events leading up to the formation of our Academy and the trials encountered during the first year of its existence.

The Birth of Our Professional Home

BY JAMES JERGER AND BRAD STACH
As our Academy reached its 30th birthday in 2018 and our 30th annual conference just this past March (2019), it may be instructive to the younger members to recount the events leading to the founding of our professional home.

It all began at the 1987 convention of the American Speech-Language-Hearing Association (ASHA) in New Orleans. Before this event, the professional home of all audiologists in the United States was ASHA. But there was growing discontent among audiologists throughout the 1970s and 1980s, a feeling that since speech pathologists far outnumbered audiologists in the ASHA membership, the wants and needs of audiologists would always be subordinate to the wants and needs of the much larger group.

In reality, the two professions already had split from a single discipline of communication disorders into distinctly different practices. Audiology had branched into a diagnostic and treatment profession in health-care settings and private practices, while speech pathology remained a therapy practice primarily in the schools. Some of us had, for years, urged ASHA to form special interest groups in the hope that audiology might, in such an atmosphere, exercise at least some separate autonomy. ASHA steadfastly opposed all such concepts. This led to increasing frustration among audiologists, who came to the growing realization that they would always be junior members, forever existing under the domination of the larger body. How strong and widespread this feeling was would soon become apparent to all who attended the 1987 ASHA convention.

Rick Talbott, a member of the ASHA program committee, had organized a session on future trends in audiology. There were five participants; George Osborne, Lucille Beck, James Hall III, Charles Berlin, and James Jerger. \textbf{FIGURE 1} shows this group of speakers. Of the
five, I (Jerger) was last to speak. I simply said that I thought it was time to declare the independence of audiology from speech-language pathology and to form our own separate professional home. The roar of approval from the audience was deafening. I was frankly astounded: I had not expected such an overwhelming response. I had supposed that there might be a few other dissidents like myself lurking in the background, but this was a fairly large audience, and their virtually unanimous support for the idea of separating ourselves from ASHA quite surprised me.

Back in Houston, Texas, I shared this observation with colleague Brad Stach (FIGURE 2). Together we decided that it was time to act, to invite leaders of the profession to a meeting to explore the feasibility of autonomy for the profession, perhaps by forming our own professional organization. We put together a list of 38 names and sent each an invitation to come to Houston for a two-day meeting to explore the idea of creating an independent professional home for audiologists. Thirty-two individuals accepted; Lucille Beck, Fred Bess, Tomi Browne, David Citron, Michael Dennis, Leo Doerfler, David Goldstein, James Hall III, Maureen Hanley, Robert Harrison, Linda Hood, John Jacobson, James Jerger, Susan Jerger, Robert Keith, Paul Kilony, Vernon Larson, H. Gus Mueller, Frank Musiek, Jerry Northern, Wayne Olsen, George Osborn, Anita Pikus, Ross Roeper, Roger Ruth, Daniel Schwartz, Brad Stach, Laszlo Stein, Roy Sullivan, Richard Talbott, Laura Wilbur, and Don Worthington. These were the founding members of what became the American Academy of Audiology.

The First Year
We immediately set to work launching the fledgling academy. We set up the first national office in our offices in The Methodist Hospital in Houston. The board of directors of the new organization elected me (Jerger) as president and me (Stach) as secretary-treasurer, and we both got to work.

Stach enlisted the help of audiologists from The Methodist Hospital and Baylor College of Medicine to build a membership organization from scratch. Audiologist Louise Loiselle oversaw the first task, a letter-stuffing party to send membership invitation letters to the audiologists on the ASHA mailing list. The letter informed them of the recent action the founding committee had taken and invited them to become members by filling out and mailing in a membership application form along with the first year’s dues. This provided much needed operating funds. The chairman of the Otolaryngology Department at the Baylor College of Medicine, Dr. Bobby Alford, generously provided $500 in seed money to get underway, but much more was needed as mailing costs rapidly mounted.

FIGURE 2. Brad Stach, then head of the audiology clinic at the Methodist Hospital in Houston. As first secretary-treasurer of the fledgling Academy, Stach did most of the hard work necessary to launch the Academy in its first year of existence.

FIGURE 3. Gus Mueller, who created and piloted the membership standards committee and successfully processed all membership applications during that first trying year.
We initially assumed that a couple of hundred of our best friends would want to join and that administrative tasks would be manageable. But the response was rapid and overwhelmingly positive; it required a shift to an all-hands-on-deck approach.

That first conference successfully launched the Academy as we now know it.

Audiologist Jeanine Pruitt was appointed assistant secretary-treasurer and helped with meeting planning and other professional activities. We also enlisted our secretarial staff, especially Marlene Moore and Mary Lou Ginandt, to organize our early office functions. We quickly realized that we needed paid staff to handle database development, phone calls, banking, and so on. We first hired a part-time employee, Branda Machart, and then our first full-time employee, Charlotte Howard, to help manage all aspects of the booming small business that we suddenly created.

As the applications arrived, we soon realized that, to keep the organization “of, by, and for audiologists,” we needed some basis for screening the applications. It was clear that we needed to create a membership standards committee and to appoint a chair to supervise the task. Gus Mueller (FIGURE 3) accepted the post and quickly learned that it was an overwhelming responsibility, but he plunged into it with determination. He faced the daunting task of applying abstract definitions of membership to the credentials of actual applicants. In the first year alone, Gus...
processed more than 1,500 applications. His dedication to the task was inspiring.

Academy Publications
During that first year, we created the two now familiar publications. *Audiology Today* (AT) and the *Journal of the American Academy of Audiology* (JAAA). Terrey Oliver Penn (FIGURE 4) created AT as a desktop publishing venture in her office in The Methodist Hospital. As the membership grew and our financial situation improved, we were able to produce, under the direction of John Jacobson, and later by Jerry Northern (FIGURE 5), a more polished publication. We visualized JAAA as the scholarly publication of the Academy. I (Jerger) became the first editor-in-chief and set to work assembling an editorial staff and a stable of reviewers.

First Conference
I was succeeded as president by Fred Bess (FIGURE 6). Fred and Verne Larson organized the first annual conference of the Academy at a resort on Kiawah Island, South Carolina. By the time the first conference opened, the Academy already had 2,000 members, seemingly all of whom wanted to attend, overwhelming the tiny resort island. Exhibits were simply tabletops lining the hallways. The theme was “A New Beginning.” I could not attend that first conference due to medical issues, but made a videotape of the first presidential address. That first event successfully launched the Academy as we now know it. Just over 30 years later, we can all be proud of what we have since accomplished. We all owe a debt of gratitude to those hardy individuals whose dedication to the task, in the face of strong opposition, made our professional home possible.

James Jerger, PhD, is a founding member of the Academy. He mentors doctoral candidates in audiology as Distinguished Scholar-in-Residence at the School of Behavioral and Brain Sciences of the University of Texas at Dallas.

Brad Stach, PhD, is a founding member of the Academy and a member of the current Academy Board of Directors. He is the director of the Division of Audiology, Department of Otolaryngology–Head and Neck Surgery at the Henry Ford Hospital in Detroit, Michigan.

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¹Independent third-party professional certification required.

Ready to Go Mobile?

By Renée Lefrançois

Today’s world is mobile; your hearing clinic could be as well. Taking your clinic mobile could help you significantly expand your patient care offering.

For a good number of patients, making a trip into the clinic could prove difficult. Ease-of-access is one of the contributing factors why many individuals put off getting help for upward of seven years after they first notice hearing issues.

Many of us are moving toward increasingly patient-focused health care. Connecting with patients in places they gather—such as community events, health fairs, or long-term care facilities—can make services more accessible. Diversifying the locations where you are able to effectively treat your patients can be good for patients, and good for business.

Tablet-based audiometers optimized for testing outside of the booth help make mobile clinics a reality. This recently came from an audiologist now using SHOEBOX Audiometry:

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It’s hard to describe how much convenience SHOEBOX Audiometry brings to a traveling clinic like mine. I’m very excited to continue testing and watch how it can help sales growth.

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Renée Lefrançois, MSc, Reg. CASLPO, CAOHC PS/A, is the director of audiology with SHOEBOX Inc., in Ottawa, Ontario, Canada.
In 1968, artist Andy Warhol coined the expression “15 minutes of fame,” when he said “In the future, everyone will be world-famous for 15 minutes.” Since that time, people who are lucky enough to be interviewed or have their story in the news often joke that they received their “15 minutes.”

The truth is, that with media moving 24/7, you’re lucky if someone gives you 15 minutes. Most broadcast news stories are two to three minutes and readers rarely read 15 minutes worth of copy. This is why it’s important, when you place a story, that you have a great call to action or a worthwhile activity taking place (including legislation, a petition, etc.) that readers and/or viewers can respond to.

Recently, the American Academy of Audiology was featured on Good Morning America (GMA) in a news story about states mandating insurance coverage for hearing health care and hearing aids for children. The story featured the Academy’s Senior Director of Government Relations, Susan Pilch. While the story garnered more than 3.5 million viewers and resulted in millions of dollars of coverage, the story has a longer shelf life and value through social media. By sharing the story on all of the American Academy of Audiology social media channels and boosting those shares so that they go to people who are specifically interested in audiology, hearing health, and hearing aids, the story will receive placement with an audience that is interested—and likely ready to act.

Often individuals, companies, and organizations receive coverage, bask in the glow for 24 hours, and then move on. They’ve missed a golden opportunity to keep the story alive for as long as possible by sending it to as many stakeholders as possible through reposting and sharing.

When you, your practice, or company receives coverage, don’t assume that all of your co-workers and patients saw it. Sharing positive media coverage boosts employee morale. Sharing positive media with patients reinforces the fact that
they’ve made a great choice in selecting you and your practice.

While many people are afraid that sharing the news appears to be bragging—it’s really more about sharing a positive news story and will help to elevate the profession. Still, also feel free to brag. It may be a long time before you have another shot at a great story. Positive news is the best type of marketing for you and your practice/company. It’s a third-party endorsement by an unbiased party—something very valuable and often difficult to get. It provides great credibility.

Positive news coverage also helps to minimize negative reviews or a future communications crisis. While negative news cannot be minimized, having positive news is a type of inoculation if anything negative should come up. Readers/viewers will have established a positive outlook on you and your practice or company that will help to reduce damage.

With some news stories, you can get permission from the media outlet to use the coverage in advertising as well. When you repost coverage, always be sure that you either are posting from an online link from the media outlet or you have permission to use the story. There are copyright laws that allow you to use any stories placed online that are available to the general public with a link that goes directly back to the story on the outlet’s website.

The law does not allow you to obtain the story from another source. For instance, you can’t scan in a Wall Street Journal article about you or your company and then send it out or post it. That’s copyright infringement. You can go to the Wall Street Journal website, find the link to your article, and post it. Some outlets (such as the Wall Street Journal) are available for subscribers only and there will be a firewall stopping others trying to log into the clip. In this case, you can often purchase the use of the link from the outlet.

Place articles and stories prominently on your website. They do not belong in the press room; that’s where media go when they’re working on articles and stories. Instead, your coverage belongs up front on your website, where your patients and prospects can easily see it.

Depending on the subject of the story, there are opportunities to reach out and update the reporter as time goes by. For instance, with the American Academy of Audiology GMA story, we’ll contact the producer as more states come on board with insurance coverage for children and/or if we come across any human-interest stories that are good follow-up for the initial story.

American Academy of Audiology members should also use the GMA story on their social media platforms. You can have a lead that says, “We are a proud member of the American Academy of Audiology.”

Often, when there’s a national story on a network, the local affiliates will easily take a local story on the same topic. For example, following the GMA Academy story, if you have patients with children who have hearing aids, and they’re willing to talk with media, you can pitch them to your local ABC television affiliate. You’d want to do this the same day that the GMA story airs or the following day.

Or, you can resurrect the entire story and see if the local ABC television affiliate consumer affairs reporter will do a similar story of their own based on your practice and patients. This will include the specific laws and coverage for your state. You may want to confer with the Academy governmental affairs office if you’re not certain where your state currently stands on this. You can also keep the story alive by continuing to post updates on your social media channels.

Following the story and interest from GMA, we created a press release with updated information to pitch to other national outlets. As more states jump in, we’ll continue to reach out to outlets with the story and we’ll have ongoing social media content to leverage in securing more followers.

Vicki Bendure is president of Bendure Communications, Inc. If you have questions or need additional information, please e-mail Vicki Bendure at Vicki@bendurepr.com.

You can also find several resources including a Public Relations Tool Kit, press release templates, and more on the Academy’s website (www.audiology.org/get-involved/public-awareness/reaching-media).
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Billing modifiers were created to provide additional information to the payer about the performed procedure(s) and help describe and/or qualify the services provided. There are common modifiers used by commercial payers and the Centers for Medicare and Medicaid Services (CMS), that indicate to the payer that the services provided have been altered in a way that is different than the ascribed definition of the billing code. For example, a modifier should be used when all of the tests in a bundled code were not performed or when only one ear was tested. Additionally, modifiers are also used to indicate how non-covered services are handled for a specific claim.

Coding requirements for current procedural terminology (CPT) modifiers can vary among payers, whereas some may not recognize certain modifiers. For tracking purposes and billing compliance, it is still necessary to supplement a billing code with a modifier when there is a change to the overall definition of the procedure or if procedures are considered non-covered services by CMS. The information in the tables provided is applicable to Medicare claims. Persons involved in submitting claims to Medicaid or payers other than CMS should gather state- or payer-specific information on the use of modifiers. The following tables and Q&As will provide guidance on when and why to use the different ascribed modifiers.

### MEDICARE MODIFIERS

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<th>MODIFIER</th>
<th>WHEN TO USE THE MODIFIER</th>
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<tr>
<td><strong>GA</strong> Waiver of Liability Statement Issued as Required by Payer Policy, Individual Case</td>
<td>Report when you issue a mandatory advance beneficiary notice of noncoverage (ABN) for a service as required and keep it on file. You do not need to submit a copy of the ABN, but you must have it available on request.</td>
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<tr>
<td><strong>GX</strong> Notice of Liability Issued, Voluntary Under Payer Policy</td>
<td>Report when you issue a voluntary ABN for a service Medicare never covers because it is statutorily excluded or is not a Medicare benefit. You may use this modifier in combination with modifier <strong>GY</strong>.</td>
</tr>
<tr>
<td><strong>GY</strong> Item or Service Statutorily Included, Does Not Meet the Definition of a Medicare Benefit</td>
<td>Report when Medicare statutorily excludes the item or service, or the item or service does not meet the definition of any Medicare benefit. This modifier helps generate an auto-denial, which is helpful when the patient has a secondary insurance that may cover the service. This modifier may be used without administering an ABN. If an ABN is provided, you could submit this modifier in combination with <strong>GX</strong>.</td>
</tr>
<tr>
<td><strong>GZ</strong> Item or Service Expected to Be Denied as Not Reasonable and Necessary</td>
<td>Report when you expect Medicare to deny payment of the item or service due to a lack of medical necessity and no ABN was issued. This should be a rare occurrence if referrals are reviewed before providing a service.</td>
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<tr>
<td>MODIFIER</td>
<td>WHEN TO USE THE MODIFIER</td>
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<td>-22</td>
<td>Increased Procedural Services&lt;br&gt;Report when additional testing, resulting in increased time and complexity of procedure is required to perform the evaluation.</td>
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<tr>
<td>-26</td>
<td>Professional Component (PC)&lt;br&gt;Report when only the interpretation and report are performed for a code that has both a professional component (PC) and a technical component (TC) (e.g., 92540-92542, 92544-92546, 92548, 92585, 92587, and 92588). For detailed guidance on PC/TC split, visit <a href="http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/MM6447.pdf">www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/MM6447.pdf</a>. Regarding hospital outpatient payment, a hospital bills for the TC and the audiologist bills for the PC (-26). The hospital may bill for the TC using a UB-92 form and the audiologist would bill for the PC alone using the CMS-1500 form. The key factor is whether or not the hospital provides the equipment, room space, hospital personnel, etc. If they do, then they bill for the TC. The modifier reflects whether it is the TC or PC (-26); reporting the code without a modifier indicates the global value (both TC and PC).</td>
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<tr>
<td>-33</td>
<td>Preventive Service&lt;br&gt;This modifier identifies preventive services such as newborn hearing screening or rescreening procedures. In some cases, these services are mandated by the Patient Protection and Affordable Care Act (ACA) and should not be subject to a patient cost share (i.e., co-pay, deductible, etc.). As the use of modifiers varies widely between payers, it is recommended that you consult your payers to determine the recommended use for the -33 modifier for newborn hearing screening or rescreening procedures.</td>
</tr>
<tr>
<td>-52</td>
<td>Reduced Services&lt;br&gt;Report when only one ear is tested or if all components of a procedure were not performed (e.g., if one or more of the required test conditions for acoustic reflexes were not performed). This modifier cannot be used for time-based codes (e.g., 92626).</td>
</tr>
<tr>
<td>-59</td>
<td>Distinct Procedural Service&lt;br&gt;Report when two or more procedure codes are not normally reported together, but are appropriate under the circumstances (e.g., if not all four tests of 92540-Basic Vestibular Evaluation were performed, bill 1 to 3 of the following codes with modifier depending on procedures performed: 92546-59, 92548-59, 92587-59, 92588-59).</td>
</tr>
<tr>
<td>TC</td>
<td>Technical Component (TC)&lt;br&gt;Report when only the technical portion of a procedure is performed (e.g., 92540-92542, 92544-92546, 92548, 92585, 92587, and 92588). For detailed guidance on PC/TC split, visit <a href="http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/MM6447.pdf">www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/MM6447.pdf</a>. Regarding hospital outpatient payment, a hospital bills for the TC and the audiologist bills for the PC (-26). The hospital may bill for the TC using a UB-92 form and the audiologist would bill for the PC alone using the CMS-1500 form. The key factor is whether or not the hospital provides the equipment, room space, hospital personnel, etc. If they do, then they bill for the TC. The modifier reflects whether it is the TC or PC (-26); reporting the code without a modifier indicates the global value (both TC and PC).</td>
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As a reminder, modifiers are not used on time-based codes such as 92626-Evaluation of Auditory Rehabilitation Status.
Q: How do I obtain a denial from Medicare for a claim when the secondary payer requires one?

A. The GY modifier should be appended to the CPT code to indicate an item or service is statutorily excluded or does not meet the definition of any Medicare benefit. This modifier is used when seeking a denial for secondary payer purposes. If a voluntary Advance Beneficiary Notice of Noncoverage (ABN) is given to the patient for the non-covered service, the provider would also use the GX modifier along with the GY modifier. However, an ABN is not required in order to use the GY modifier and it may be submitted alone when a voluntary ABN is not provided.

Q. Where can I find information regarding the appropriate use of Medicaid modifiers?

A. Guidelines vary by state and providers should consult with each state’s guidelines prior to billing.

The accurate use of billing codes and modifiers is not only an instrument for obtaining payment but also helps the profession of audiology on a national level. As trends are identified by CMS tracking, policies and guidelines are regularly revisited and/or updated to reflect changes in current practices and code usage. It is important to remember that outliers to these trends—providers who bill differently than their peers for the same services—may be audited because of a divergence from common coding practices.

Accurate billing and coding practices keep providers within compliance, and they also provide useful information and statistical data for conducting research, evaluating health-care use, and developing practice guidelines. For more information on Medicare billing and appropriate modifier use, consult the following website addresses:


- Advanced Beneficiary Notice of Noncoverage Use: Mandatory or Voluntary?: www.audiology.org/sites/default/files/PracticeManagement/AT_201803cr_1.pdf


Jennifer Frank, AuD, is a pediatric audiologist at the Children’s Hospital of San Antonio in San Antonio, Texas.

Anna Marie Jilla, PhD, AuD, is a research audiologist at the University of Oklahoma Health Sciences Center in Oklahoma City, Oklahoma.
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The Foundation is committed to supporting students as they continue their academic careers, learning exceptional clinical skills, and exploring many different avenues through research in hearing and balance. The Foundation currently offers a number of scholarships for audiology students. We want to congratulate the 2019 winners of the Empowering Students Scholarships, Sadanand Singh Memorial Scholarship, Judith Blumsack Scholarship, and the Continued Achievement Scholarships.

Empowering Students Scholarship
The Empowering Students Scholarship program recognizes students who show exceptional promise as clinical audiologists. Funded by Oticon, Inc., this program provides five students with a $5,000 award each year.

“Oticon is delighted to partner with the American Academy of Audiology Foundation to empower students who represent the future of audiology,” said Gary Rosenblum, president of Oticon, Inc. “At a time of change and challenge in hearing health care, we are proud to once again support the education of qualified hearing-care professionals who will play an essential role in the delivery of excellent hearing health care.”

Here are this year’s recipients:

- Tiffany Mitchell from the University of Washington is an AuD student who wrote in her essay about the importance of listening and connecting with patients for optimal care.

- Sarah Delaney, from the University of Cincinnati, is an AuD student with the goal of providing the highest level of care with genuineness, acceptance, and empathy.

- J. Riley DeBacker, an AuD/PhD student at Ohio State University, has the goal of becoming a clinical professor so he can also teach students to provide outstanding care to patients.

- Kristen Punturiero, from the University of Iowa, is an AuD with aspirations of serving patients with additional disabilities and will be beginning her externship in the Iowa LEND program.

- Alina Lasrado is an AuD student at Arizona State University. Her goal is to provide evidence-based care for all of her patients.

Sadanand Singh Memorial Scholarship
This scholarship is awarded to a minority or international student who shows exceptional promise in audiology research. This scholarship is dedicated to the respected Dr. Sadanand Singh, an educator, scientist, publisher, and philanthropist. Dr. Singh passed in 2010, but he has left a great legacy in the audiology community.

The award of $500 was presented to Bryan Wong from the University of Arizona. Bryan is an AuD/PhD student whose area of interest is a combination of audiolologic rehabilitation and the neurophysiologic changes, electrophysiology, and cognition.
FOCUS ON FOUNDATION

Judith Blumsack Scholarship
This scholarship is awarded to students who demonstrate outstanding clinical skills and show promise in clinical research and service to the professional community or the community at large. Dr. Blumsack was faculty at Auburn University and retired in 2014, at which time students, colleagues, family, and friends came together to create a $500 scholarship in her name. She was also a former member of the Foundation Board of Trustees.

This year’s Judith Blumsack Scholarship winner is Soumya Venkitakrishnan from the University of Iowa. Soumya is an AuD/PhD student whose interest is clinical research. She is particularly interested in the area of amplification, listening-effort, and hearing aid effectiveness.

Continued Achievement Scholarship
The Continued Achievement Scholarships, funded by Audiology Online, are awarded to students who show exceptional promise in providing outstanding patient care as a clinical audiologist. This scholarship provides a $2,000 award for two students each year.

This year’s scholarships were awarded to Joshua Caldwell from the University of North Texas and Eileen Lancaster from the University of Iowa. Joshua is an AuD/PhD student who has an interest in auditory-evoked potentials in patients with and without tinnitus. Eileen is an AuD student whose goal is to provide compassionate care for both children and adults with physical and mental disabilities.

Conclusion
Congratulations to all of our scholarship winners; these students are deserving of the awards. Please make a donation to the Foundation so that we may continue to provide students financial support, as they are the future of the profession.

If you are faculty or work with students, encourage them to visit www.audiologyfoundation.org/scholarships-grants.

Patricia Gaffney, AuD, is a member of the AAA Foundation Board of Trustees.
A Second Look at the Data on Audiology Education

By Sarah Camera, Jessica Lewis, and J. Riley DeBacker

Introduction and Methods
In September 2018, the Student Academy of Audiology (SAA) conducted a national survey of current graduate students, externs, and recent graduates in order to evaluate the state of audiology education. With more than 1,000 responses, the results from the SAA 2018 Education and Externship Survey provide a good look at a number of the strengths and the potential areas for improvement in audiology training.

Part 1 of this article, published in the July/August 2019 issue of Audiology Today, presents results from the SAA survey and discusses disparities in the AuD externship. This article, a continuation of that piece, provides an examination of the current state of AuD education, excluding the externship.

Content of Education
The audiological scope of practice requires the teaching of a variety of topics in graduate education programs. Standard content in audiology curricula includes education and experience with diagnostics (including for adult, pediatric, vestibular, tinnitus, electrophysiology, and central auditory processing disorder (CAPD) testing) and rehabilitation (including aural rehabilitation, assistive listening devices, hearing aids, osseointegrated devices, cochlear implants, verification, tinnitus and cerumen management, vestibular rehabilitation, educational audiology, and CAPD intervention).

While this is not an exhaustive list, the survey results revealed that students reported differences across programs in the amount of experience received in areas such as assistive listening devices, tinnitus diagnostics and management, and pediatric diagnostics.

These results suggest that the dissimilarities across programs could lead to inconsistently trained audiology graduates, as well as graduates who are inadequately prepared to provide the full scope of practice.

In addition to topic areas considered standard, other areas such as cognitive decline, medical imaging, and pharmacology have recently gained attention. According to the survey findings, students’ satisfaction with their knowledge in these areas depended on their AuD program. For each of the above-mentioned topics, students whose AuD programs have dedicated classes in those areas reported having more knowledge than students from AuD programs that do not have those classes, even if the subject was addressed in other coursework.

This result again emphasizes that graduates are unequally prepared, even in areas related to the expanding scope of audiology. Knowledge of cognitive decline, medical imaging, and pharmacology will prove useful...
as health care continues to become more collaborative.

**Length of Education**
The length of the AuD education program has been an ongoing conversation since the unveiling of the doctoral degree, with many pros and cons identified. Three-year, or accelerated, programs may be attractive to undergraduates who are concerned for social and financial reasons about committing four years to graduate education.

While comparing academic performance, clinical hours, and assessments of content mastery is outside of this survey’s scope, the responses about preparedness and experiences among students in three-year and traditional four-year programs were evaluated. Students in three-year programs felt as prepared for their externships as those in four-year programs, though students from three-year programs were less likely to report knowledge and experience in niche areas such as cochlear implants, pediatric diagnostics, and educational audiology than students in four-year programs.

**Feedback to AuD Programs**
Feedback from students directly to their school programs serves as an important means to elicit beneficial changes for future students. The ASHA Council on Academic Accreditation requires programs to “systematically collect evaluations of the academic and clinical aspects of the program from students...” (ASHA, 2017). However, it remains unclear what specific mechanisms colleges and universities use to collect feedback, how many hold exit interviews, and how this requirement is enforced.

The SAA survey focused on a national sample of audiology graduate students. When asked if they would feel comfortable providing feedback to their AuD programs, the survey respondents overall agreed that they would. On-campus students more strongly agreed that they feel comfortable providing feedback to their programs than externs and recent graduates.

According to the survey results, first-year students were the most comfortable in providing feedback. The level of comfort declined each year in graduate school, with recent graduates being the least comfortable in providing feedback.

These results may be due to inherent challenges for externs and recent graduates in providing genuine feedback, including a perceived lack of anonymity due to small cohort sizes, skepticism that the program will act based on their feedback, or apathy once they have left the university. This perception of feedback is of particular concern because externs and recent graduates can provide valuable feedback based on real-world experiences outside of their own universities.

Future work should investigate how to best motivate AuD programs, externship sites, and AuD students to actively engage in this evaluation process and how to mitigate the specific barriers that exist in current systems.

**Conclusions**
As mentioned in the previous *Audiology Today* article, “Say the Word ‘Survey’: Inspiring Data-Driven Change for Externships” (Lewis, Camera, DeBacker, 2019), audiology students indicate that addressing differences in education among AuD programs is a top priority to many SAA members. The perceived lack of uniformity in AuD education, despite similar accreditation standards, suggests that there is an urgent need to examine the differences between academic curricula and pedagogical foci among accredited AuD programs. Additionally, future efforts should focus on how the audiology community can help externs and recent graduates feel more comfortable
providing program feedback. SAA hopes to work together with the American Academy of Audiology and the Accreditation Commission for Audiology Education (ACAE) in these pressing endeavors.

Sarah Camera is the SAA Education Committee Research Subcommittee Chair. She is a fifth-year AuD/PhD student at the University of Connecticut.

Jessica Lewis is the secretary of the Student Academy of Audiology and the past chair of the Education and Externship Task Force. She is a fourth-year AuD/PhD student at The Ohio State University.

J. Riley DeBacker is the president of the Student Academy of Audiology and an AuD/PhD student at The Ohio State University. Riley is completing his externship at the James A. Haley Veteran’s Hospital in Tampa, Florida.

References


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<td>Student Investigator Grants</td>
<td>Up to $5,000</td>
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<tr>
<td>• General Audiology/Hearing Science</td>
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<tr>
<td>• Vestibular and Balance Science</td>
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<tr>
<td>Student Summer Fellowship</td>
<td>Up to $2,500</td>
</tr>
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KEYWORDS: RESEARCH GRANTS
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The Skinny on the Tier 1 Continuing Education Requirement for ABA Certification

By Dennis Van Vliet and Alison Grimes

Tier 1 continuing education units (CEUs) were conceived to be one of the rigorous requirements of American Board of Audiology (ABA) certification programs. ABA Certification awardees were required to earn 15 hours of Tier 1 CE credits per three-year certification cycle. The original requirements for Tier 1 offerings called for three-hour, in-depth classes with interactive learning opportunities.

As a part of the Academy and ABA review of the ABA Certification programs and ways to make them more accessible to Academy members, changes have been made to the American Board of Audiology Certified (formerly Board Certified in Audiology) Program so that it now requires certification renewal annually with five hours of Tier 1 CEUs.

Note: The holders of the Pediatric Audiology and Cochlear Implant Specialty Certifications remain in three-year certification cycles with a 15-hour Tier 1 CEU requirement at each renewal.

In planning the implementation of the changes to the ABA Certified Program, the ABA Board concluded that the minimum three-hour length for Tier 1 programs was an obstacle to availability. The time length of the courses was not necessarily related to the rigor and quality of the educational content and interactivity, and often did not fit into CE event agendas easily. Following extensive review and discussion, the ABA Board revised the criteria for Tier 1 to increase availability while maintaining rigor.

Tier 1 CE hours are interactive, continuing education activities that are:

- A minimum duration of one (1) hour.
- Focused on one subject area or various aspects of one subject.
- Designated as having an instructional level of content that is intermediate or advanced.
  - Intermediate: Developed for participants seeking review of fundamentals with emphasis placed on new knowledge in application, skills, and/or procedures. Reviews current literature and practices for those with working knowledge and experience in the content area.
  - Advanced: Developed for participants seeking in-depth discourse of a practice area or topic. Emphasis placed on application and review of current techniques, research findings, and future directions. Participants with substantial experience in the content area will update and expand their current domain knowledge.
- Include interactivity to make CE activities focused and active, rather than passive, and incorporate learning assessment(s) in real time. The presenter can immediately evaluate a learner’s knowledge of the material throughout the presentation. Examples of interactivity may include, but are not limited to, audience polling (hand raising/Poll Everywhere), demonstration or explanation of technique (clinical/hands-on), online programmable instructional activities, or a Tier 1 assessment.
Program formats eligible for Tier 1 designation include the following:

- Live interactive presentations presented either in person or online.
- Online recordings of live, in-person presentations with interactive components (the learner participates and benefits from the exchange of the information).
- Online, on-demand presentations with an interactive component.

The ABA goal for all of the changes this year is to make the ABA Certified program more accessible to Academy members and to enable more Tier 1 opportunities to all ABA certificants. ABA wants to maintain rigorous credentialing programs that elevate professional practice and advance patient care with ABA credentials earned by all leading audiologists, respected by other health-care providers, and trusted by patients.

Dennis Van Vliet, AuD, ABA Certified, is an audiology care provider in Dana Point, California. A founding member of the ABA, he is the chair of the American Board of Audiology.

Alison Grimes, AuD, ABA Certified, is the director of audiology and newborn hearing at UCLA Health and an assistant clinical professor in head and neck surgery at the David Geffen School of Medicine at UCLA. She serves on the American Board of Audiology Board of Governors and is a past president of the American Academy of Audiology.
Hello Dr. Hall,

I am an incoming junior at a small university (enrollment of about 2000 students) in Hawaii studying cell and molecular biology and am very interested in pursuing a career in audiology. I would love to talk with you about audiology as a career, your experiences in the field, and the education needed to pursue this profession. I look forward to hearing back from you soon and if you have any questions please feel free to ask.

Sincerely,
Prospective Audiologist

I received the above e-mail message while preparing the manuscript for this article. A colleague at the University of Hawaii referred this undergraduate student to me after she had initially inquired about audiology from a family medicine physician at the university. As a permanent part-time professor at the University of Hawaii (living in Maine and Florida), I teach three online prerequisite courses for academically, geographically, and culturally diverse cohorts of undergraduates interested in applying to a graduate program in audiology or speech pathology.

In one of the courses, Introduction to Audiology and Auditory Disorders, I unabashedly strive to recruit the best and brightest students into our profession, although, not surprisingly, most are already committed to speech pathology as a career.

I immediately responded enthusiastically to this student, providing her with a link to the Student Academy of Audiology (SAA) portion of the Academy website, reprints of ACAE Corners pertaining to doctor of audiology education, and also an electronic copy of Chapter 1 ("Audiology Yesterday and Today") from my 2014 textbook Introduction to Audiology Today.

An undergraduate student considering audiology as a career predictably and logically will want to know what prerequisite courses are required for admission to a doctor of audiology program. At this time, there is no well-defined or well-accepted “pre-audiology” curriculum. In the early 1970s, undergraduate students with diverse majors stumbled mostly by chance upon audiology as a career option.

My story is probably typical. I completed a pre-optometry undergraduate program at a small liberal arts college in New England. My father and grandfather were practicing optometrists. Although I was predestined from childhood to follow in their professional footsteps, I elected to go in another career direction. I had never heard about audiology or laid eyes on an audiologist until I took a mandatory Introduction to Audiology course from the late Earl Harford, during my master’s degree program in speech pathology at Northwestern University. Then and there I knew what I wanted to do for the rest of my life.

Fortunately, my biology undergraduate major and the pre-optometry curriculum, which also included multiple courses in physics, chemistry, and mathematics through calculus, was perfect for graduate study in audiology.

These days, as a result of audiology awareness efforts by the American Academy of Audiology, the SAA, and other groups, current undergraduate students, and even high school students, are more likely to hear about audiology well before they seriously consider career
options. But we haven’t made much progress in defining an appropriate pre-audiology undergraduate curriculum.

An Internet search of the prerequisite undergraduate curriculum for most health-science professions reveals numerous resources that clearly describe the courses expected of applicants. As an example, on one website (https://optometriceducation.org/wp-content/uploads/2017/06/ASCO-Prerequisites-April-2017-updated-6-17.pdf), general and school-specific requirements for each of 23 optometry programs in the United States are clearly laid out in a neat table. All of the programs require or strongly recommend coursework in physical and biological sciences (e.g., organic and biochemistry, microbiology, physiology, and anatomy), calculus, statistics, and psychology. None of them require courses more relevant to another health profession.

In contrast, there is no consistency in recommendations for prerequisite coursework among the 70-plus AuD programs in the United States. According to information available on university websites, there are three general categories for prerequisite undergraduate coursework required for admission to AuD programs. One rather common category could be referred to as the traditional “communication sciences and disorders (CSD) approach” with a strong preference and often a requirement that applicants complete an undergraduate major in CSD.

The following statement from the website for a major public land grant university in the southeastern United States typifies this approach: “Students with bachelor’s degrees in communication sciences and disorders, or equivalent, receive preference. Highly qualified students from any discipline are considered. Foundation courses in language development, phonetics, and speech anatomy will be added to the curriculum.” One might question the rationale for requiring students interested in one profession—audiology—to take undergraduate courses required for another profession—speech pathology.

The second category offers much more flexibility in undergraduate coursework. Information available online for admission to the doctor of audiology program at Northwestern University is a good example of this approach. Applicants must have a good undergraduate cumulative grade point average (minimum of 3.0 on 4.0 scale) plus GRE scores and letters of recommendation. In other words, the emphasis is on the quality of undergraduate educational performance and the likelihood of success in an AuD program, rather than the completion of specific courses, including CSD courses.

An AuD program at a major state university in Ohio is a good representative of the third option. Quoting from the admission page of the program’s website: “The audiology program requires prerequisite content in the following areas: At least one course in college-level algebra and trigonometry; at least one course in college-level physical sciences; a course in phonetics; a course in normal language development; an introductory course in audiology.”

Among AuD programs in this category, the most common prerequisite in CSD-related content is a course in language development and an introduction to audiology course.

The highly varied requirements for admission to AuD programs reflect in large part the longstanding influence of academics in speech pathology on undergraduate prerequisites for the entirely separate profession of audiology. This is in distinct contrast to admission requirements for graduate study in other health professions such as dentistry, optometry, and medicine. Imagine the controversy and furor that would ensue if audiologists tried to impose audiology-specific undergraduate course requirements for entry into a master’s degree program in speech pathology?

It’s past time for the development of a reasonably consistent “pre-audiology curriculum” for all doctor of audiology programs in the United States. Consider for a moment the impact of this new admissions approach on expanding the pool of undergraduate students from which audiology students are selected, on the diversity of audiology backgrounds, and perhaps on the quality of audiology services.

James W. Hall III, PhD, ABA Certified, has 40 years of experience in audiology as a clinician, administrator, teacher, and researcher. A founder of the Academy and chair of the ACAE Board, Dr. Hall is a professor in the Osborne College of Audiology at Salus University in Elkins Park, Pennsylvania, and a professor in the Department of Communication Sciences and Disorders at the University of Hawaii in Honolulu, Hawaii.
Clinical Practice Guidelines for Cochlear Implants Now Available

By Jessica Messersmith

Cochlear implants are auditory sensory devices designed to provide auditory perception for individuals with significant hearing loss. A majority of individuals who use a cochlear implant have the ability to understand speech in quiet and complex listening environments, and children who were born with hearing loss are now able to develop excellent auditory and spoken language skills with the device.

Much of a cochlear implant user’s success is dependent on the appropriate selection of a recipient, optimized programming, auditory therapy, and routine follow-up care. Since receiving Food and Drug Administration (FDA) approval in 1984, audiologists have played a critical role in the clinical management of both pediatric and adult cochlear implant recipients. The audiologists’ responsibilities include a range of services, beginning with pre-implant candidacy assessment and extending to long-term post-implantation care. While clinical management is a known primary factor that contributes to success with cochlear implants, there have been no published guidelines to standardize cochlear implant care in their 35 years of clinical practice.

Due to this critical need for evidence-based standardized cochlear implant care, the Academy Task Force on Guidelines for Cochlear Implants was established in 2015, with the goal of developing a document of guidelines for cochlear implant clinical practice. Statements and recommendations were evidence-based when possible, developed by a review of existing scientific evidence published in both peer-reviewed and non-peer-reviewed journals. When direct evidence was not available, both indirect evidence and consensus practice were considered.

The guideline addresses cochlear implant signal processing, candidacy, surgical considerations, device programming, outcomes assessment and validation, follow-up management, and care beyond programming. This document is designed to serve as a guide in clinical decision-making regarding pre- and post-operative audiological management of cochlear implant recipients.

Among the greatest challenges in developing these guidelines, as is the case with cochlear implant research, were the limitations in generalizing the recommendations needed for individuals who receive cochlear implants. Cochlear implant outcomes are characterized by wide variabilities that are attributed to many factors outside of clinical control. Therefore, the authors acknowledge the inherent limitations of these guidelines and encourage those who use them to incorporate best clinical knowledge and interpretation of evidence-based practice when working with individual patients.

Additionally, while the authors acknowledge the importance of emerging research in progressing the field and clinical adoption of new evidence-based approaches to care, it is not within the scope of this document to explore experimental clinical practices related to future directions in cochlear implants.

To access the new guideline, visit www.audiology.org, and click on the Publications/Guidelines and Standards from the home page navigation, then look under Cochlear Implants.

Jessica Messersmith, PhD, is the department chair, clinic director, and associate professor in the Department of Communication Sciences and Disorders at the University of South Dakota in Vermillion, South Dakota. She is the chair of the Academy Task Force for Cochlear Implant Guidelines.

(Continued on page 83)
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**DECEMBER**
Safe Toys and Gifts Month
Acknowledgment

The guidelines document originated as an extensive review of literature prepared by the American Academy of Audiology Task Force on Guidelines for Cochlear Implants. Multiple individuals contributed to the creation of this document. The original task force initiated work on the document in 2015. The members of the 2015 Task Force included Holly Teagle, AuD (Co-Chair); William Shapiro, AuD (Co-Chair); Anne Beiter, MS; Laurie Eisenberg, PhD; Jill Firszt, PhD; Michelle Hughes, PhD; Geoff Plant; Amy Robbins; Tom Walsh; and Terry Zwolan, PhD.

In 2017, the composition of the task force changed. The members of the 2018 Task Force included Jessica Messersmith, PhD (Chair); Lavin Entwisie, AuD; Sarah Warren, AuD, PhD, and Michael Scott, AuD. The final document, while informed by the document created by the 2015 task force, represents an updated review of the evidence, which allowed for a comprehensive compilation of current knowledge in a format consistent with other Academy guidelines documents.

The task force gratefully acknowledges the contributions of all members.

Welcome, Academy Board!

The Academy is proud to announce the board as they take office on October 1, 2019. Visit www.audiology.org (About Us), to read more about your board online including their short bios and conflict of interest disclosures.

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With the 116th Congress already over a quarter under way, the Government Relations Committee (GRC) urges Academy members to get involved. It is an exciting time for audiology, with the Academy actively working and collaborating with other organizations on new policy initiatives. The audiology voice in numbers is critical for the profession in advancing these initiatives.

The GRC developed the Grassroots Network (GRN) for the purpose of having a group of members ready to rally when needed to advance policy initiatives related to audiology. The GRN receives regular updates on current legislative and regulatory priorities for the Academy, with requests for action.

Actionable items may include reaching out to members of Congress about specific legislation, submitting comments on proposed rules, providing input into policy development, and monitoring other activities that require the perspective of the audiologist. Sometimes, the action item may be to simply raise public awareness about audiology at the policy level.

In an ideal world, every single member of the Academy would be a member of the GRN, as communication from many individuals is helpful to complement messaging from the national organization.

The GRC developed, and will soon share, resources to equip members of the GRN to be ambassadors of audiology. New videos offer guidance on how to initiate outreach and develop relationships with congressional representatives and engage in advocacy outreach, among other things. Our legislative action center offers contact information and sample letters for legislative priorities. The GRC also has an advocacy tool kit available to offer tips on how to guide your own grassroots efforts.

Current Priorities: 116th Congress
The GRN has several legislative bills to support. A significant focus is on supporting The Medicare Audiologist Access and Services Act, a joint bill developed by the Academy, the Academy of Doctors of Audiology (ADA), and the American Speech-Language-Hearing Association (ASHA).

The legislation, H.R. 4056, was introduced July 25, 2019, by Representatives Tom Rice (R-SC), Matt Cartwright (D-PA), Mark Meadows (R-NC), Ralph Norman (R-SC), Mike Kelly (R-PA), Jan Shakowsky (D-IL), Brad Schneider (D-IL), Ann Kuster (D-NH), Gus Bilirakis (R-FL), and Lisa Blunt Rochester (D-DE). Senators Elizabeth Warren (D-MA) and Rand Paul (R-KY) plan to introduce a companion bill in the Senate.

As introduced in the House, this bill would:

- Give audiologists additional opportunities under Medicare with reclassification as “practitioners,”
- Allow for direct access by Medicare patients to audiologists, and
- Expand covered audiological services beyond diagnosis to include treatment.

This major legislative initiative will help align audiologists with other doctoral-level health professionals under the Medicare program. Being classified as a practitioner under the Medicare program also grants audiologists the ability to opt-out of Medicare should they so choose.

Another bill of interest to the Academy is The Allied Health Workforce Diversity Act of 2019, which was amended into H.R. 2781, a measure approved July 17 by the full House Energy and Commerce Committee. The next step for the bill is consideration by the full House of Representatives.

This measure, originally sponsored by Reps. Bobby Rush (D-IL) and Cathy McMorris Rodgers (R-WA), would:

- Authorize the HHS Secretary to issue grants to eligible entities (university education programs) to increase educational opportunities in the form of scholarships and stipends for eligible students in the professions of audiology, speech-language pathology, occupational therapy, and physical therapy;
- Define eligible students as those “underrepresented in the professions of audiology, speech-language pathology, occupational therapy and physical therapy” (including those who are...
racial or ethnic minorities, or are from disadvantaged backgrounds), have a financial need for a scholarship or stipend, and are enrolled in one of the listed professional programs at an eligible entity;

- Require the HHS Secretary to take into consideration the recommendations of national organizations representing these professions—including the American Academy of Audiology; and

- Recognize the Accreditation Commission for Audiology Education (ACAE) in the list of eligible entities for accreditation of education programs.

The GRC also anticipates reintroduction of the Access to Frontline Care Act, which would provide student loan repayment for audiologists that serve in health-care shortage areas, and the Medicare Telehealth Parity Act, which would authorize audiologists as telehealth providers eligible to be reimbursed for these services in Medicare.

The GRC plans to maintain support for both bills and include them in the Academy’s advocacy efforts. Additional information about legislation the Academy supports is available in the Advocacy section of www.audiology.org.

**Get Involved**

The Academy also serves as a resource in mobilizing members to address state legislation that can impact the profession. The GRC will target members of the GRN to step up as necessary to be advocates.

Updated and expanded resources in the State portion of the Advocacy section of the website can assist the GRN—and all members—in state-level activities.

Additionally, the GRN helps to influence federal regulations related to audiology practice. Examples include the Physician Fee Schedule issued each year that impacts audiologist reimbursement in Medicare and also the forthcoming FDA regulations on over-the-counter (OTC) hearing aids.

The time is now to expand the GRN and the GRC welcomes you. To join the GRN, simply go to the GRN webpage (www.audiology.org/advocacy/grassroots-advocacy-network) and sign up. This volunteer opportunity is available year-round to members.

Encourage your colleagues to join as well, and together we can ensure that audiology is prominent in the 116th Congress!

Jodi Baxter, AuD, is chair of the Academy’s Government Relations Committee.

Susan Pilch, JD, is the Academy’s senior director of government relations.
Patricia (Pat) B. Kricos, PhD, 71, Sarasota, Florida, passed away on July 5, 2019. Pat was a nationally and internationally respected scholar and educational leader, who was loved by all who knew her, particularly her colleagues and students.

She served on the Board of Directors of the American Academy of Audiology from 2007 to 2012 and was its president from 2010 to 2011. She also served as editor of the Journal of the Academy of Rehabilitative Audiology from 1993 to 1998 and the president of the Academy of Rehabilitative Audiology from 2008 to 2009.

A main goal of her involvement in audiological societies at the national level focused on ensuring academic and clinical consistency among the many doctorate programs in audiology that were being developed in the late 1990s. Throughout her career, she published and presented widely on audiological rehabilitation for children and adults, with particular emphasis on adult hearing loss and professional issues in audiology education.

After graduating from The Ohio State University, Pat began her career as an audiologist in the Sarasota County Public School System, followed in 1976 by a faculty position at the University of Akron, Department of Speech Pathology and Audiology. In 1981, she moved to the University of Florida (UF), Department of Communication Sciences and Disorders, from which she retired as an emeritus professor in 2012.

While at UF, Pat led the development of the doctor of audiology degree (AuD), which she directed from 1999 to 2003, and which was among the first AuD programs in the United States. She then worked with her colleagues at UF to launch one of the first distance-learning AuD programs in the country.

Pat was an exceptional leader with incredible interpersonal skills and an extraordinary ability to get people to work together. We owe her our gratitude for her vision and tireless efforts on behalf of the profession.

As well as being the consummate academic and exceptional researcher and administrator, she was a widely admired and valued friend to those of us in the profession. Possessing an exceptional humor and a warm and gracious personality, she will be remembered as a treasured friend and colleague by all who knew her.

We have lost her wisdom, but gained from her influence through many students and friends. Her influence lives on.

Linda J. Lombardino, PhD, professor of speech-language pathology and special education, School of Special Education, School Psychology, and Early Childhood Studies, University of Florida.
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