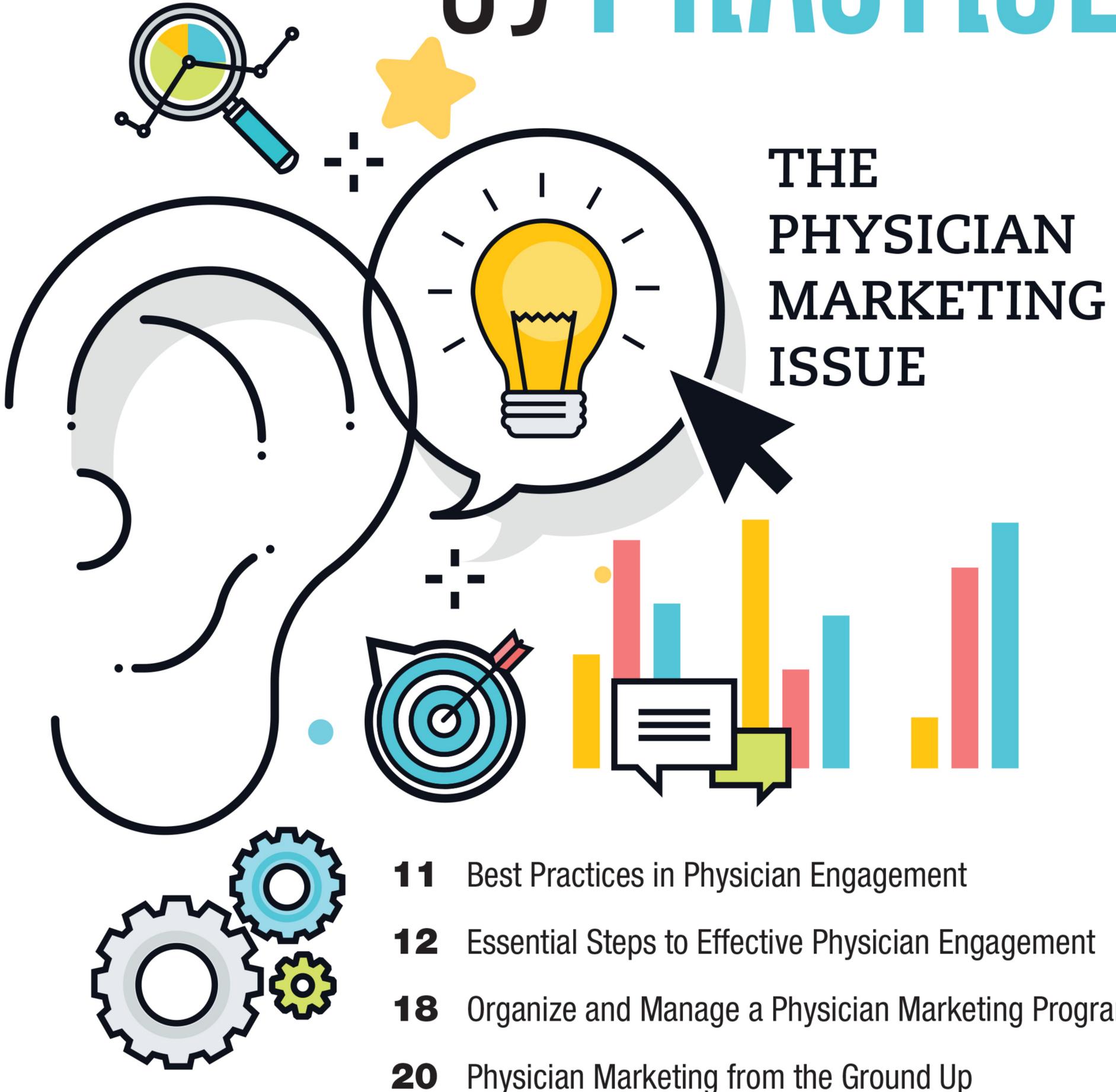


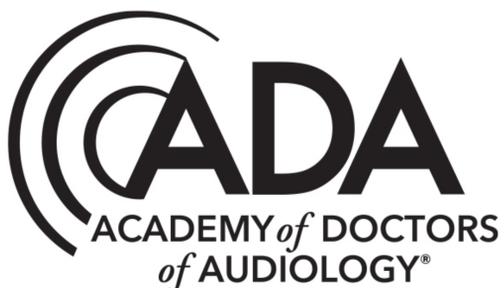
THE OFFICIAL PUBLICATION OF THE ACADEMY OF DOCTORS OF AUDIOLOGY®

Audiology PRACTICES



THE PHYSICIAN MARKETING ISSUE

- 11** Best Practices in Physician Engagement
- 12** Essential Steps to Effective Physician Engagement
- 18** Organize and Manage a Physician Marketing Program
- 20** Physician Marketing from the Ground Up

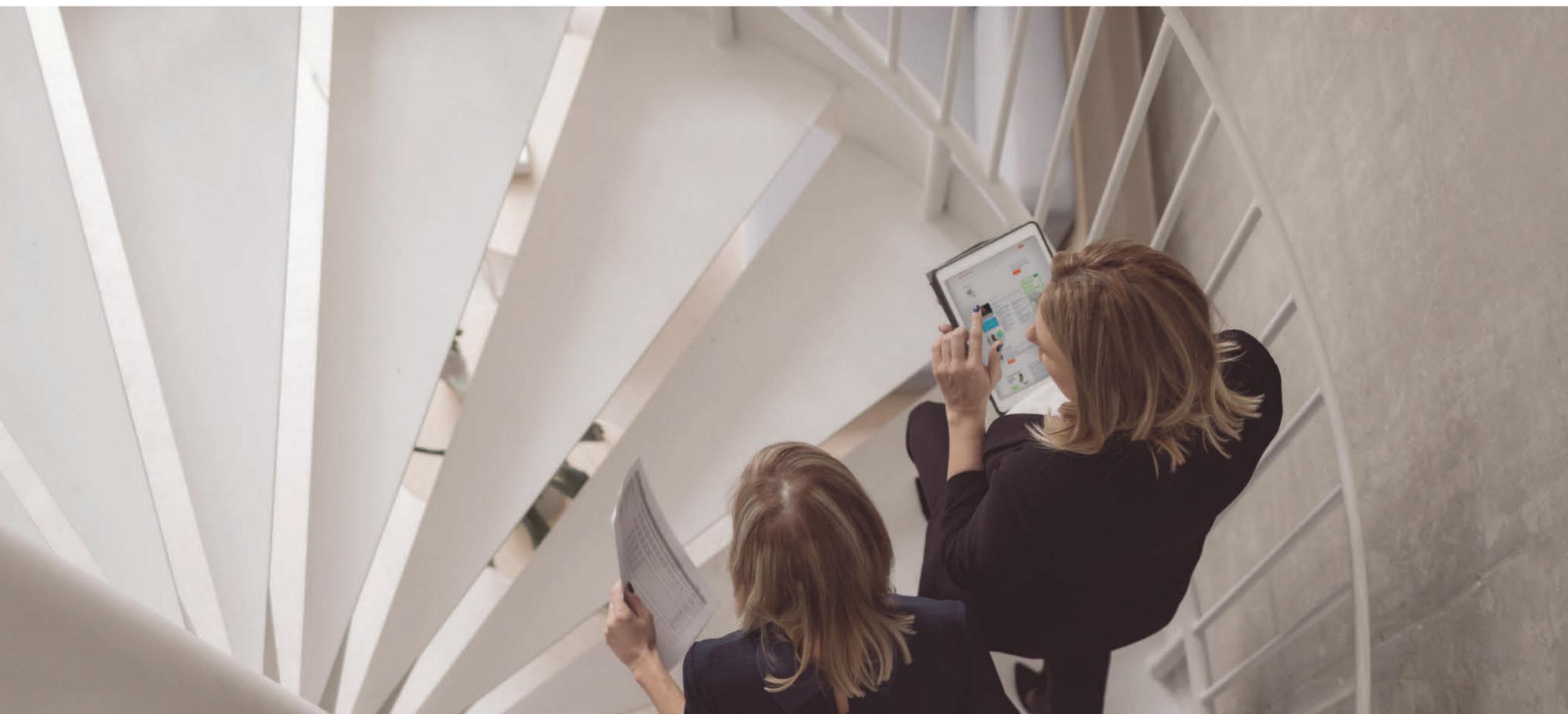


The Power to Practice

ALSO INSIDE

Outcome Measure | Machine Learning | MIPS Update | Accreditation Standards

VOLUME 11, NUMBER 2 ■ APRIL 2019 | WWW.AUDIOLOGIST.ORG



4
RECORDED
WEBINARS

Millennial Matters & Generational Issues in Audiology

Understanding how generational differences affect experiences, interactions, and expectations can enable you to cultivate stronger patient and workplace relationships. Guest editor Yell Inverso, AuD, PhD, curates this four-course series, which covers strategies for improving communication, increasing practice productivity, and working more effectively with people across generations.

Learn more:

AudiologyOnline.com/Generations

UNLIMITED ceu access | \$99 per year

audiologyonline

866-481-2739 | [f](#) [t](#) [in](#)

Features

- 11 Relationships, Referrals, and Resources:
Best Practices in Physician Engagement**
THOMAS J. TEDESCHI, Au.D.
- 12 Relationships, Referrals, and Resources:
The Essential Steps to Effective Physician Engagement**
ROBERT TYSOE
- 18 Relationships, Referrals, and Resources:
How to Organize and Manage a Physician
Marketing Program**
NICOLE PAVOL
- 20 Relationships, Referrals, and Resources:
Physician Marketing from the Ground Up**
MARYANN MCCULLOUGH, Au.D.
- 22 When Research Can't Keep Pace with
Technological Innovation: Trying to Better
Understand How Clinicians Make Decisions**
MELINDA ANDERSON, Ph.D.
- 26 Real Life Hearing and Machine Learning: A Review**
JAMES W. MARTIN, JR, Au.D., WENDY SWITALSKI, Au.D., MBA,
AND JENS BREHM NIELSEN, Ph.D.
- 32 A Sensible Outcome Measure for Busy Audiologists**
BRIAN TAYLOR, Au.D. AND JAMES BENSON

10

22

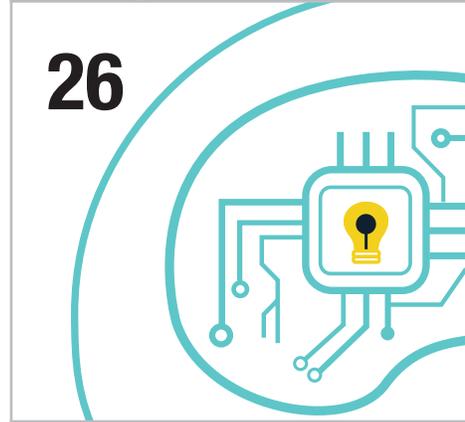
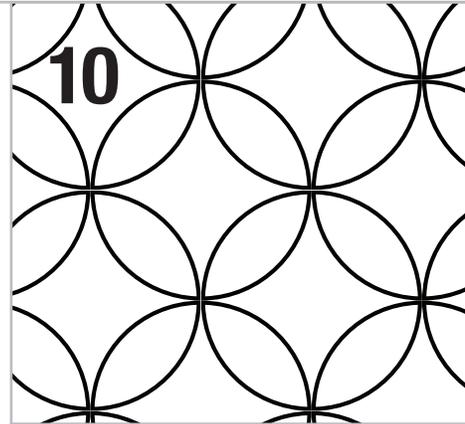
26

32

O U T

M Q

M Q





WIDEX EVOKE: **THE PREFERRED CHOICE**

94% PREFER
WIDEX
IN NOISE

...over non-Widex hearing devices. And the majority prefer Widex in quiet, too!*

80% RECOMMEND
SOUNDSense
LEARN

...to personalize their hearing in the moment with the industry's only real-time machine learning.*

**NOW AVAILABLE WITH ZPOWER®
SECOND GENERATION RECHARGEABLE,**
enhanced specifically for EVOKE for the flexibility
and quality you expect and deserve.

Help your patients experience their
best hearing possible.

1.888.474.5530 | widexPRO.com

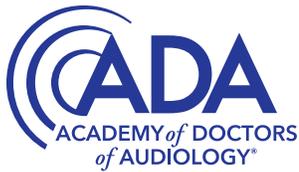
WIDEX EVOKE™

HEARING HAS EVOLVED

INTELLIGENT TODAY. SMARTER TOMORROW.

WIDEX®
HIGH DEFINITION HEARING

*Laura Winther Balling, PhD, Oliver Townend, Wendy Switalski, AuD, MBA (2019, January 28) Real-life Hearing Aid Benefit with Widex EVOKE, *The Hearing Review*.



BOARD OF DIRECTORS

President

Ram Nileshwar, Au.D

President Elect

Deb Abel, Au.D.

Immediate Past President

Alicia D.D. Spoor, Au.D.

Treasurer

Timothy Steele, Ph.D.

Secretary

Larry Schmidbauer, Au.D.

Directors-at-Large

Audra Branham, Au.D.

Kristin Davis, Au.D.

Rachel Magann Faivre, Au.D.

Chair, Student Academy of Doctors of Audiology

Chelsea Montgomery

Executive Director

Stephanie Czuhajewski

EDITOR

Brian Taylor, Au.D.
brian.taylor.aud@gmail.com

MANAGING EDITOR

Stephanie Czuhajewski
sczuhajewski@audiologist.org

GRAPHIC DESIGNER

Julie Loboyko

ADVERTISING

Stephanie Czuhajewski
sczuhajewski@audiologist.org

HOW TO REACH US

ADA Headquarters
446 East High St., Suite 10
Lexington, KY 40507
Phone: 866.493.5544
Fax: 859.271.0607
www.audiologist.org

©2019 *Audiology Practices* unless otherwise noted.
All rights reserved.

Departments

President’s Message Ram Nileshwar, Au.D.	5
Editor’s Message Brian Taylor, Au.D.	7
Headquarter’s Report Stephanie Czuhajewski	9
The Source Merit Based Incentive Payment System (MIPS): UPDATE	34
Up to 11 Have You Heard Insights from the Outside	38

The Academy of Doctors of Audiology is dedicated to leadership in advancing practitioner excellence, high ethical standards, professional autonomy, and sound business practices in the provision of quality audiological care.

Audiology Practices (USPS 025-478) ISSN (21645248) is published quarterly by the Academy of Doctors of Audiology, 446 East High St., Suite 10, Lexington, KY 40507. Periodicals Postage Paid at Lexington KY and at additional mailing offices. Subscriptions are \$25 as part of membership dues. POSTMASTER: Send address changes to *Audiology Practices*, 446 East High St., Suite 10, Lexington, KY 40507.

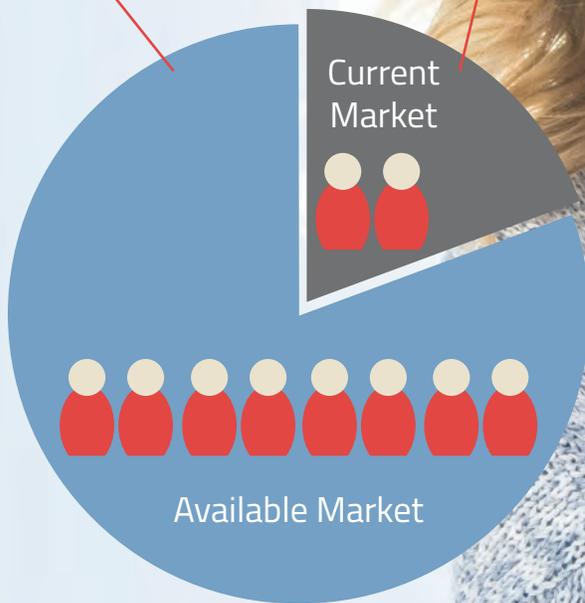
Contributions are welcomed but the Editor reserves the right to accept or reject any material for publication. Articles published in *Audiology Practices* represent solely the individual opinions of the writers and not necessarily those of the Academy of Doctors of Audiology®.

Advertisements sent to *Audiology Practices* and the Academy of Doctors of Audiology (ADA) for publication must comply with all applicable laws and regulations. The appearance of advertisements in *Audiology Practices* is not an endorsement of the advertiser or its products or services. Neither *Audiology Practices* nor ADA investigates the claims made by advertisers and is not responsible for their claims.

Lead the way in a changing market!

Approximately 20% of adults with hearing loss have hearing aids.*

Approximately 80% of adults who could benefit from hearing aids have not sought help; affordability being one factor.*



More and more people are looking for more affordable ways to address their hearing needs. Now, you can provide an option better than PSAPs and over the counter devices! earVenture offers programmable hearing aids that patients must obtain from audiologists because healthy hearing consists of professional care and quality products.

Partner with earVenture today to reach an untapped demographic who wants a more affordable option!



Visit www.earVenture.net



*As reported in Hearing Health Care for Adults: Priorities for Improving Access and Affordability National Academies of Sciences Engineering and Medicine



Collaboration to Move the Needle on Education and Advocacy

I would like to begin by thanking Dr. Alicia Spoor, ADA's immediate past-president, for the outstanding work she did as president in 2018. She embodies ADA and its values of integrity, passion, perseverance, and honesty. Thank you, Dr. Spoor, for all you do for ADA and Audiology! Your efforts have set the stage for important collaborative initiatives to benefit ADA members and audiology.

ADA is truly excited to partner with the Maryland Academy of Audiology (MAA) in bringing AuDacity 2019 to members. Mark your calendars for this remarkable educational event to be held November 14 – 16, 2019 at the Gaylord National Resort and Convention Center, National Harbor, Maryland (near Washington D.C.). Early registration is underway, please visit www.audiologist.org to register. The staff and volunteers of ADA and MAA are already working feverishly to Move the Needle and deliver an outstanding convention!

I am also very pleased to report that ADA is working collaboratively with the American Speech-Language Hearing Association (ASHA) and the American Academy of Audiology (AAA) on a legislative initiative that will allow Medicare patients to have better access to audiologists and appropriately classify audiologists, so that they can work autonomously and to their full scope of practice for Medicare-covered services.

ADA members and advocacy donors have worked tirelessly over the past six years to successfully advance the Audiology Patient Choice Act (APCA) in Congress. Your efforts moved the needle within the audiology community, as evidenced by this collaborative legislative initiative, which incorporates the same tenets:

1. Medicare direct access (removal of the physician order requirement)
2. Reimbursement for Medicare-covered diagnostic and treatment services performed by an audiologist, as dictated by his/her state-defined scope of practice
3. Reclassification of audiologists from "suppliers" to "limited license" status

The new initiative includes one important practical change from APCA. The new legislation will seek to reclassify Audiologists from "suppliers" to "Limited License Practitioners" within the Medicare system (whereas APCA sought to reclassify Audiologists from "suppliers" to "Limited License Physicians"). This change will maintain APCA's promise to allow for improved access to audiologic care for patients and improved autonomy and recognition for Audiologists. The new legislation will have an even greater chance of success as it will be introduced to Congress with a unified voice of support from the Audiology community. Thanks to all of you who were able to attend the advocacy town hall meeting in February to vote in support of the multi-organizational collaboration to move the legislation forward.

The staff and leadership of ADA, ASHA and AAA are working together to advance the legislation in the 116th Congress as soon as possible. Together, we will 'move the needle' farther and faster than ever before. Please stay tuned for more details! ■

Sound Strategies for Enhancing Patient Referrals



“ I’ve found the best time to ask for a referral is **when you’ve had a successful delivery of service**. It’s when a patient says ‘I can hear better than ever’. **That’s when you ask for a referral.** ”

Dr. Howard Ong

Insights from the Outside
Participating Healthcare Business Owner

It takes sound strategies to grow and maintain a successful practice. That’s why CareCredit continues to invest in the hearing industry by developing valuable resources like **Insights from the Outside**. This diverse group of practicing clinicians and practice owners was uniquely created to capture and share “best practices” to some of the common challenges shared by all healthcare business owners.

Get your **FREE** copy of their educational paper, *Insights from the Outside: Increasing Referrals from Obvious and Not-So-Obvious Sources* at carecredit.com/referralsuccess.



Not yet enrolled in CareCredit?

Call 800.300.3046 (press 5) to get started at no cost today — and help more patients get the recommended hearing health they need.

 **CareCredit**[®]
Making care possible...today.

www.carecredit.com



Decoupling Service from the Traditional Consumer Value Chain

For as long as hearing aids and their related services have been commercially available, persons with hearing loss have, more or less, followed the same path when seeking care. Known to business managers as the customer value chain, that pathway, which is similar for most other industries, is shown in Figure 1 below.



Figure 1. The hearing care customer value chain

From the customer’s perspective, acquiring treatment for hearing loss involves five stages shown above. Traditionally, persons with hearing loss completed all these activities with the same practice. That is, when they were ready to pursue treatment for a potential hearing loss, these individuals sought the services of a single entity, often an independent practitioner. In addition to receiving the customary comprehensive audiological assessment, once the person with hearing loss decided to pursue amplification as a treatment strategy, that individual stayed with the same practice to evaluate their treatment options, chose the most suitable option to fit their needs, purchased it, used it and continued on with all of the necessary follow-up care, service and support.

Over the past decade, several disrupters have upended the traditional hearing care customer value chain. Besides offering an automated and easy-to-administer self-test of hearing, there are now a host of websites allowing persons with hearing loss to peruse product reviews and, after carefully sifting through these reviews, choose their own hearing devices without input from an audiologist. Further up the chain, there are other web-based businesses selling hearing devices directly to consumers without the person with hearing loss darkening the door of a local clinic.

Perhaps most alarmingly, these disrupters allow persons with hearing loss to spend an hour or more of time with an audiologist conducting the “evaluate” and “choose” segments of the value chain, often at no charge to the individual, and then step outside the traditional chain to purchase the same devices from an online or big-box retailer for a fraction of the cost.

A new book by Harvard Business School professor, Thales Teixeira, offers fresh insights on how traditional brick and mortar businesses, like private practice audiologists, can compete with these disruptive forces. The main message from the book is traditional service providers, which provide customers with all the links in the value chain, cannot compete head-to-head with disruptors on choice or price. However, traditional services providers must find ways to decouple specific products and services from the value chain.

Continued on page 64



AuDACITY

Move the Needle!

November 14-16, 2019

National Harbor, Maryland

Gaylord National Resort & Conference Center

Early registration is now available for AuDacity 2019, the premier educational and networking event for audiologists in private practice!



KEYNOTE SPEAKER: Esther Oh, M.D., Ph.D., is an Associate Professor in the Division of Geriatric Medicine and Gerontology at the Johns Hopkins University School of Medicine. She also holds appointments in the Department of Psychiatry and Behavioral Sciences, and in the Division of Neuropathology. She is also the Associate Director of the Johns Hopkins Memory and Alzheimer's Treatment Center.

Dr. Oh's research is primarily focused on Alzheimer's disease and delirium. Her current projects include: development of biomarkers for detecting early stages of Alzheimer's disease; postoperative outcomes after surgery; and the role of sensory problems (hearing and vestibular function) in Alzheimer's disease.

Visit audiologist.org/2019 to register!





Audiology Practice Accreditation Update

ADA volunteers have been hard at work planning and developing the Audiology Practice Accreditation Program to promote quality and encourage continual performance improvement for participating clinics, through a combination of self-evaluation and external evaluation protocols.

Medical practice accreditation has a rich history of providing for recognition of voluntary activities undertaken by clinics and hospitals, directed at improving the quality of care. The accreditation process often results in improvements to professional services offered to the public over time and serves to elevate not only individual clinics and institutions, but the professions, industries, and patients they serve. The ADA Audiology Practice Accreditation Program is designed to recognize audiology clinics that meet or exceed published accreditation standards (p. 39).

Background

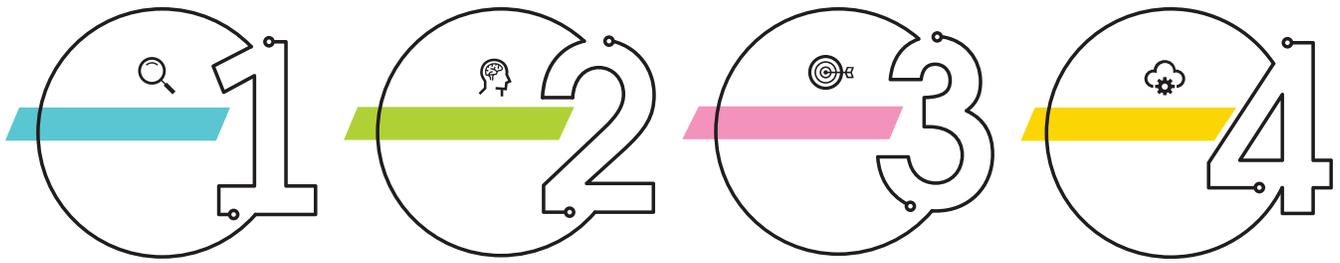
In 2018, a group of 10 audiologists, from different practice settings around the country, convened in Atlanta where they were shut in a room for two days and tasked with putting together the bones of the ADA Audiology Practice Accreditation Program. In the first 48 hours, initial research was conducted, debate and discussion ensued, and the first outline for the standards was developed. Over the next several months, volunteers refined the outline into a formal standards document draft. Once the draft was finalized, a different set of approximately two-dozen audiologists and practice managers engaged in peer review and provided consultation to the working group.

The audiology practice standards were revised to incorporate recommendations submitted during the peer-review process and the next draft of the standards was produced. The refined draft was disseminated to ADA members, along with a call for comments. The comment period remained open for 45 days.

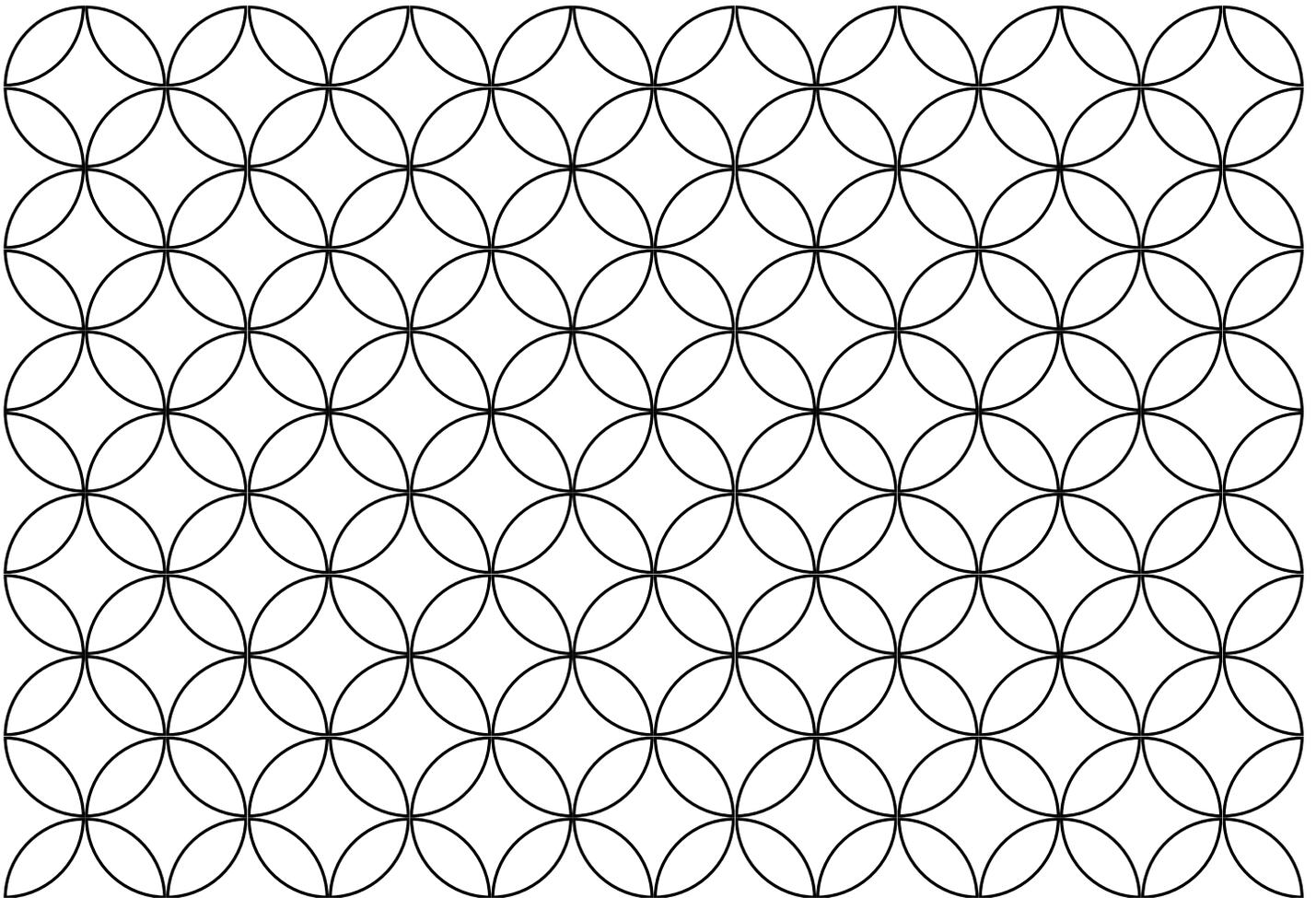
Armed with thoughtful feedback and suggestions from ADA members, the working group carried out a subsequent review and completed final revisions to the ADA Audiology Practice Accreditation Standards. The standards were approved by the working group, and the ADA Board of Directors in October 2018, and were officially presented to ADA members at the 2018 AuDacity conference in Orlando, Florida.

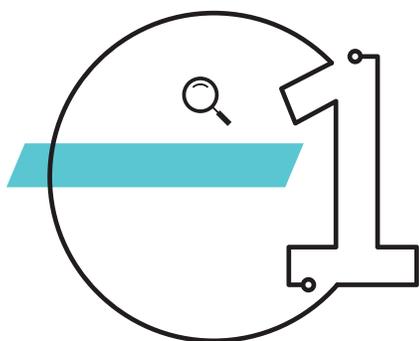
Coming soon...

Using the approved standards, the working group is now focused on building the accreditation program. Members of the working group are currently working to identify proposed criteria that can be used by auditors to verify that the standards have been met, putting together resources for audiology practices to use, adopt, modify, and consider as they prepare for accreditation, and evaluating options for recruiting and training the auditors who will be tasked with auditing practices. Stay tuned! ■



RELATIONSHIPS, REFERRALS, AND RESOURCES





BEST PRACTICES IN PHYSICIAN ENGAGEMENT

By Thomas J. Tedeschi, Au.D.

In 2018, the Academy of Doctors of Audiology (ADA) established the Physician Outreach Committee. The committee consists of a cross section of the Audiology community, including private practice, manufacturers, and management groups. The committee's charge was to develop materials that ADA members could draw upon to develop or supplement physician marketing for their practices. Over the past year, the committee has developed numerous materials and links which are available on the ADA's website.

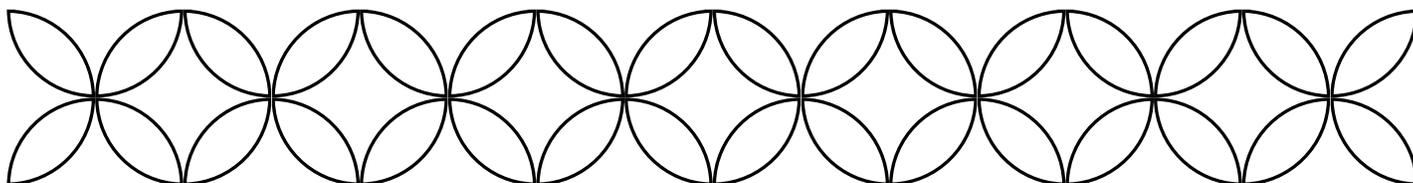
The committee was also asked to conduct an educational panel at the AuDacity meeting held in Orlando, Florida in October 2018. Several articles in this issue of *Audiology Practices* consist of material that was presented at the meeting by individuals who are members of the Physician Outreach Committee. In addition to these articles, which resulted from the 2018 panel, the Physician Outreach Committee is currently working on plans to develop a short course for AuDacity 2019.

Unquestionably, survey data shows that physician referrals to an audiology practice can be very beneficial. For example, MarkeTrak IX results indicate physicians have an influence on a sizable proportion of today's hearing healthcare market. The vast majority of consumers think of hearing aids as medical devices, and many consider a positive recommendation from a physician to be a key motivator in their pursuit of amplification.

What is of interest from the MarkeTrak IX survey, is that while 73% of individuals surveyed had a conversation with their physician concerning hearing difficulties that they have encountered, just 25% of them were referred to hearing care professionals (ENT, audiologist or hearing instrument dispenser) for an assessment or consultation. Upon an even deeper analysis of this survey data, it was determined that when the primary care physician referred an individual to an audiologist or dispenser, 70% of those individuals complied, and when referred to an ENT 80% of them complied. As one can plainly see, having an outreach relationship with physicians can lead to several referrals.

Traditionally, audiologists are not trained in developing physician outreach skills or materials. However, the information presented within this issue of *Audiology Practices* is from audiologists who have very effective physician outreach programs within their practices.

Thomas J. Tedeschi, Au.D. is Chief of Audiology of Amplifon Americas. He can be reached at thomas.tedeschi@amplifon.com.





THE ESSENTIAL STEPS TO EFFECTIVE PHYSICIAN ENGAGEMENT

By Robert Tysoe

FIRST, DEFINE THE PROBLEM

In 2008, the World Health Organization, based upon the “Global Burden of Disease: 2004 Update,” stated that hearing loss is the third leading cause of years lost to disability worldwide. An estimated 299 million men and 239 million women globally have moderate or worse hearing loss.

Hearing loss in the United States (U.S.) represents a major public health concern. It is the third most common chronic condition in older Americans after hypertension and arthritis, and it is strongly associated with functional cognitive decline and depression. However, age-related hearing loss is substantially under-detected and under-treated.¹

The U.S. Census Bureau estimates there are in excess of 320 million U.S. citizens. Approximately 48.1 million, or 20.3% of the population, have some type of hearing loss.

Overall, the prevalence of hearing loss increases with every age decade. The prevalence of hearing loss is lower in women than in men and lower in Black vs White individuals across nearly all age decades. To date an estimated 20% to 25% of hearing-impaired Americans have been treated for hearing loss.²

ATTRIBUTES OF IMPORTANCE TO THE PATIENT PURCHASING A HEARING AID – NON USERS

81%	Nearly Invisible
79%	Fitting and Follow-up
78%	Affordable
74%	Good Reputation
73%	Physician Recommended
71%	Professional on Staff
70%	Extended Warranty
69%	Take care of Insurance/Paperwork

Despite the fact that nearly three-quarters of MarkeTrak IX survey respondents asked their primary care physician or ENT first about their hearing loss, audiology practices self-reporting a US average gross revenue of \$450,000.00 per annum, estimate only 15% of their income is derived from physician referrals.³ Additional information about how non-users of hearing aids view their condition is summarized in Box 1.

Box 1. Attributes of Importance to the Patient Purchasing a hearing aid – Non Users

DEFINE THE SOLUTION

This begs the question, why the discrepancy between the patient requesting a physician's opinion, consult, and guidance about hearing impairment and the low incidence of subsequent professional audiological care?

Hypothetically, the already large course loads at medical teaching institutions have caused pared curriculums, which may result in limited time and training devoted to the condition of hearing impairment. The educational focus is frequently limited to basic anatomy and physiology of the hearing and balance organs. Few medical programs offer a rotation through an audiology clinic, thus reducing the physician's ability to gain additional knowledge that would help provide effective risk versus benefit patient counseling. Audiology's educational marketing role may facilitate increased patient access to hearing health care, more effective treatment, improved quality of life, and a potential lower cost of overall care may result.^{4,5}

Marketing research, in the form of benchmark studies, conducted by Siemens-Sivantos, Phonak, and Unitron have verified that physician outreach marketing, which prioritizes the strategic use of relationship marketing, science-based, evidence-based research marketing and services marketing, increases physician referrals, and shows a proven share of the audiology practice's gross revenue ranging between 20 – 30%, when implemented with commitment and consistency.^{6,7}

A GLIMPSE AT THE PAST

One way to predict the future of audiology is to look to the past in medicine. In 1910, Professor Paul Ehrlich M.D., Ph.D. (Germany) and Sahachiro Hata M.D. (Japan) jointly researched and developed the first antibiotic shown to be effective for the treatment of syphilis (Salvarsan). This landmark discovery was called a "silver bullet", a chemo-therapeutic breakthrough that provided relief for millions of afflicted men, women, and children worldwide.

This could not have happened without the role of the German pharmaceutical company Hoechst AG Pharmaceuticals, that sponsored Dr. Ehrlich and Hata's research project. Hoechst AG Pharma subsequently patented and mass-produced the antibiotic and then launched the foundations of large-scale disease state marketing, evidence-based marketing, and relationship-marketing strategies. Salvarsan (arsphenamine) was effective in treating syphilis, yet it was extremely toxic, and an inappropriate dose could cause dangerous side effects, up to, and including, death.

Hoeschst AG Pharmaceuticals set about building relationships of respect, trust, and integrity with physicians and nurses with teams of trained pharmaceutical representatives spanning the globe. The need for a comprehensive, sophisticated physician education program that provided doctors with the reasons why it made sense to make the diagnosis of syphilis and treat the patient effectively and safely with Salvarsan (arsphenamine) was vital for public health. Medicine had just taken "a giant leap for mankind."⁸

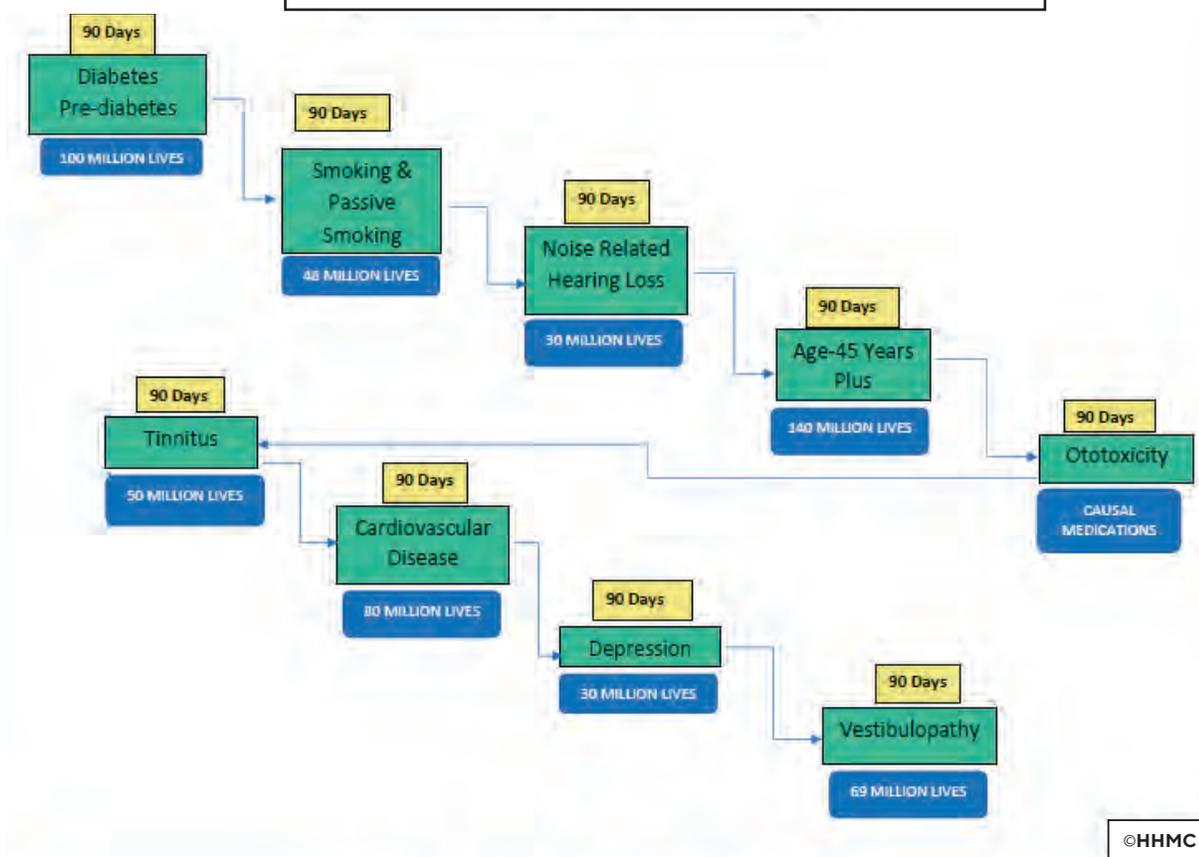
LOOKING AHEAD: "EDUCATE TO OBLIGATE"TM

U.S. Audiology professionals have begun to replicate similar steps to implement best practices in physician engagement that result in a collaborative, team approach to patient care that minimizes the disability and handicap of hearing loss while maximizing daily function and quality of life for the patient.

Audiology may invest in the future of the industry by adding business development, marketing, and evidence-based research education programs to university audiology training curriculums, with an added emphasis on understanding co-morbidities, lifestyle-related behaviors, and their associated links to hearing loss. Sharing audiology's resources, such as published research on the disease state of hearing impairment, tinnitus, dizziness and balance disorders, the audiology specialist's qualifications, range of services and treatment plans with physicians is an imperative in 2019.

Box 2 outlines a disease state marketing timeline that can be used by audiology practices to build stronger relationships with primary care physicians and other front-line healthcare professionals such as diabetes educators, physician assistants, and nurses.

A DISEASE STATE MARKETING SCHEDULE



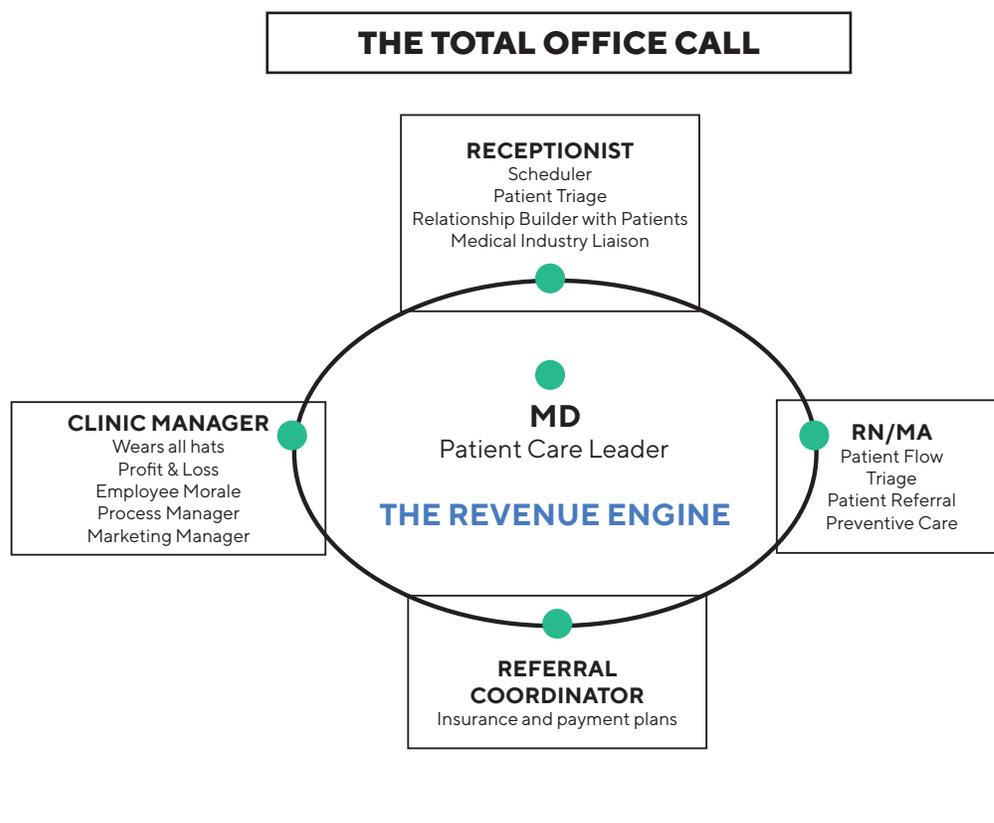
Box 2. An example of a disease state marketing schedule and time line¹⁶

Acquiring no-fee patient education materials from the National Institutes of Health (NIH), that can be distributed by nurses to patients, and providing insurance and payment plan details for newly diagnosed patients all may result in a successful referral of a suffering patient to an audiology practice.

HOW DOES THE PHYSICIAN BENEFIT FROM AN INTER-DISCIPLINARY CARE RELATIONSHIP WITH AUDIOLOGY?

Both hearing loss and depression are proven barriers to efficacy, and improved quality of life. Recently published evidence from Johns Hopkins University by Reed, Lin et al. in an article titled, *Trends in Health Care Costs with Untreated Hearing Loss*, published in the November 2018 issue of *JAMA Otolaryngology-Head & Neck Surgery* shows “untreated hearing loss increases the cost of care in older adults, compared to adults without hearing loss. The present study suggests that hearing loss is associated with increased healthcare care expenditures and resource utilization. Notably, hearing loss was associated with an average 46.5% increase in health costs and a 44% increase in risk of 30-day hospital readmission over a 10 year period. Awareness of the burden that hearing loss places on individuals, insurers, and hospitals contributes to the growing evidence of hearing loss as a public health concern.”

Untreated hearing loss also can result in a 12% incidence of associated depression.¹⁰ Further, the World Health Organization (WHO) reports that unipolar depression occupies first place for years lost to disability world-wide by chronic disease states. Patients suffering from depression are three times more likely to not be engaged in their care, further compromising the physician’s best efforts in caring for the patient. Audiology can certainly make a difference here, which may result in an elevated and appreciated role for audiologists in the public health arena, and in medicine while serving the greater good.



Box 3. Key roles in The Total Office Call. Each of these players in the medical practice needs to be targeted and educated by the audiology practice physician liaison.

BEST PRACTICES IN PHYSICIAN ENGAGEMENT: WHAT SHOULD I DO FIRST?

Once the decision is made to commit to the implementation of a physician outreach program, the first priority is to recruit, hire, and train a mature, personable, results-oriented, problem-solving person. This person must be able to develop long-term relationships of respect and trust with receptionists, nurses, and medical assistants, referral coordinators, office managers, physicians, and effectively make “The Total Office Call” with altruism and integrity to all staff members within the physician’s office. Box 3 outlines the roles of all key players in a disease state marketing program.

“Reach and Frequency” is the next step is to create a database of primary care physicians and staff within a five- to ten-mile radius of the audiology practice. This is the audience for your monthly outreach efforts. It is necessary to provide them with previously published, classic, and new peer-reviewed research articles related to hearing impairment, tinnitus, and balance disorders (for physicians), as well as patient education literature from the NIH for nurses and insurance and payment plan information for referral coordinators and office managers.

The third step is to mail out a “hand-addressed, lumpy letter of introduction” to the primary care physician database, two to three weeks prior to making a first face-to-face visit with promised literature. Include a clinic brochure with your list of services, a map of your practice location, a published research article about hearing loss, ten business cards, a patient education brochure, some ear plugs, and Reese’s Peanut Butter Cups to surprise and delight the recipient.

The next step is to follow up in-person every 30 – 60 days and provide a continuing stream of published research articles related to hearing loss, co-morbidities, tinnitus, balance disorders, cochlear implants, ear wax removal, hearing aid technology, and a current comprehensive list of your services.

It is now apparent that physician referrals to audiology are the largest untapped source of new audiology patients in the United States and world-wide.¹¹

Persuading physicians to think differently, while waiting for a means to act differently is not easy. Reminding them of an unmet urgent need, on behalf of the patient, without offending them, requires patience and skill. Hearing aid manufacturer-sponsored benchmark studies have received extensive feedback from thousands of audiology practices that have had substantial success in developing new patient referrals from physicians, who have begun requesting hearing evaluations for their patients. These are the challenges and rewards for the hearing-impaired patient awareness campaigns that are a must-have for those who seek to influence the treatment strategies used by physicians who are responsible for deciding which product or service to choose, and which one is in the best interest of the patient's hearing care".¹²

Standard practice by medical industry sales representatives is to make a routine call to a physician's practice every 30 – 60 days. Consistent and routine office visits build awareness, loyalty, and demonstrates your consistent commitment to bringing value to the physician's practice and his/her patients.

An additional step is the use of multi-channel marketing. This step may include direct mail every 90 days, an email marketing program, telemarketing, webinars with CEU's, promotional videos in the physicians' waiting rooms that drive self-referrals to the audiology practice, co-sponsored displays at health fairs, and other activities. As long as the content comes from scientific journals and other trustworthy sources, and aims to educate, rather than convince or directly influence physicians, the material will be perceived to be credible.

When you wish to implement an interdisciplinary care approach to your physician marketing plan, it helps to choose physicians who have both "patients in common" and "patient types" in common with your own practice. Examples of these specialists are: endocrinologists, cardiologists, internal medicine specialists, nephrologists, podiatrists, ophthalmologists, neurologists, geriatricians, and otolaryngologists.¹⁴ These medical specialties share a common bond with audiologists, as a plurality of their patient workload are often adults over the age of 50 years.

LOOKING AHEAD: SERVICES MARKETING

Build a pipeline of knowledge-based products, and new services-based products that increase your practice's value to potential customers and allow you to effectively differentiate your specialty from online and category-specialty retailers

of audiology products. Comprehensive services that can differentiate audiologists from other providers include offering pediatric-to-geriatric evaluations, tinnitus treatment, balance and dizziness treatment, cochlear implant mapping, and quick and comfortable ear wax removal services.

Audiologists in private practice may consider instituting a 24/7 answering service so they are the go-to emergency care audiology specialist in their community. Collaborate with four other audiologists in a "audiologist on call" service in your community so that patients always have a professional specialist to guide them in their hearing care issues, whether it is a chronic or an urgent care situation. This sets you and your profession apart from others and allows you to be more aligned with the medical community, while earning the professional respect of physicians in your area.

Finally, independent stand-alone audiologists need to collaborate with ENT/Audiology medical centers rather than avoiding them or treating them as competitors. The benefits can be startlingly beneficial for the ENT, the independent audiologists, and the patients. Suggest to the ENT medical practices that you become their "Plan B Option," should they require additional staffing coverage due to an absence, or in the event of an off-hours or urgent situation (sudden hearing loss, broken hearing aid etc.). Offer to accept difficult patients that may not be a good fit for the ENT practice.

Do all of this while respecting each other's existing patients, and watch both of your practices grow, all because you promoted what is in the best interests of improved patient care and collaboration, not competition.

AUDIOLOGY'S CALLS TO ACTION

As a profession that should be viewed as an essential part of the medical community, it is imperative for audiologists to become more visible to their colleagues that practice other specialties under the broad tent of healthcare services. Increased efforts to strengthen cross-disciplinary training of professionals in the hearing sciences and public health are needed to advance research, and to support broad-based public information campaigns that educate consumers. According to Dr. Frank Lin, "...developing strategies to promote core competencies among primary care physicians in how to address hearing loss is critical; so that patient concerns about hearing deficits that are expressed at primary care visits can be acted upon. As a society with a rapidly aging population, implementing innovative strategies to promote successful aging in older adults is a public health, economic, and moral imperative. Concerted and

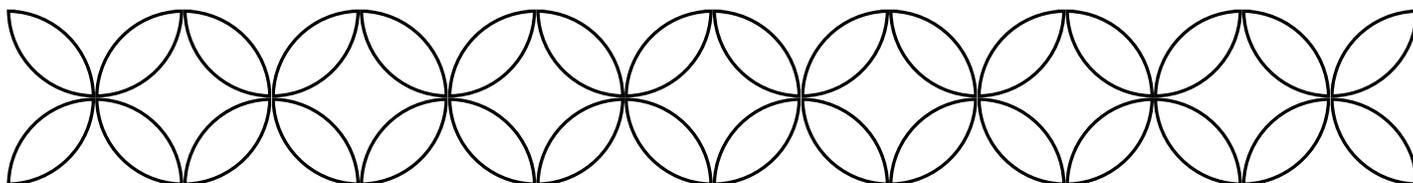
interdisciplinary public health and research initiatives joining physicians, audiologists, gerontologists, public health researchers, and community advocates to study and treat hearing loss in older adults could potentially have substantial implications for society and the health of older adults – a message to which everyone needs to listen.”¹⁵

Using a systematic approach, like the one outlined here, is a proven strategy for ethically and responsibly educating front-line healthcare professionals, including primary care physicians so that they are obliged to refer patients at-risk for hearing loss to an audiologist for assessment and treatment. In turn, it is the responsibility of the audiologist to provide evidence-based, comprehensive care in a manner that doesn't pressure the patient to buy hearing aids, but instead focuses on providing care that puts the wants and needs of the patient first.

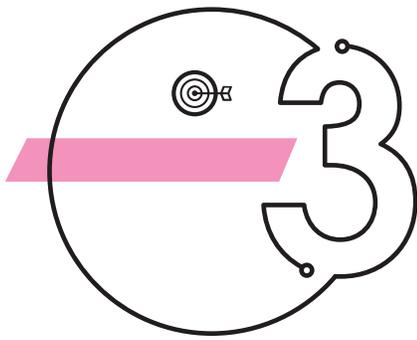
Robert Tysoe is the Owner of Marketing & Training at Hearing Healthcare Marketing Co., Portland OR. His contact information can be found at www.audiologypracticemarketing.com

REFERENCES

1. S.T. Bogardus M.D. et al “Screening and Management of Hearing Loss in Primary Care”. *JAMA* April 16th, 2003, Vol 289 No. 15.
2. F. Lin, M.D. et al. Johns Hopkins University. *Arch Intern Med*/Vol. 171 (NO. 20). Nov 14, 2011.
3. Dan Quall, Fuel Medical. Market Trak; Data on File.
4. Catherine M. McMahon et al. Center for Language Sciences, MacQuarie Univ. April 8 2013.
5. Nicholas N. Reed AuD, Frank R. Lin, MD PhD et al Dept Otolaryngology, Johns Hopkins School of Medicine. *JAMA Otolaryng Head Neck Surg*. Published November 8, 2008.
6. Phonak “PD Conference 2013 Industry Benchmark Survey”.
7. Siemens. “American Opinion Research Practice Management Benchmark Study, VOL 3. 2014”.
8. Arsphenamine, Wikipedia.org/wiki/Arsphenamine, 2018.
9. Neil Armstrong Astronaut, NASA Gemini Mission, July 20, 1969.
10. Chaun-Ming Li MD PhD et al NHANES 2005-2010 *JAMA Oto Head Neck Surg* 2014;140(4):293-302; NIHD “Untangling the Link Between Hearing Loss and Depression”.
11. J. N. Bakke M.D. MBA. Senior Healthcare Consultant, Zolo Healthcare Solutions Co. 2019. Data on File.
12. Robert Tysoe, Dip. Bus Admin. “Disease State Marketing”, *Audiology Practices* Vol 4. No. 1. 2012.
13. Data on file with Robert Tysoe
14. Robert Tysoe, Dip. Mktg HHMC, Data on File, 2019.
15. Frank Lin MD PhD et al, Dept of Otolaryngology – Head and Neck Surgery and Epidemiology, The Johns Hopkins Univ. School of Medicine and Bloomberg School of Public Health. *JAMA*, March 21, 2012 – Vol 307, No 11.



RELATIONSHIPS, REFERRALS AND RESOURCES



HOW TO ORGANIZE AND MANAGE A PHYSICIAN MARKETING PROGRAM

By Nicole Pavol

I am the marketing manager with Atlantic Hearing, Balance, & Tinnitus Center in Port Orange, Florida. I started this journey with physician marketing almost two years ago. I had already been working in the front office at our practice and when Dr. Stacey O'Brien expressed that she thought I could be taught to do physician marketing, I thought it sounded wonderful. It took a little while. I was working in both positions, but I loved being able to do creative work and engage with the patients. The program took off so fast and now here I am.

I have had so much fun creating a physician-outreach marketing plan that fits for our practice. With the help from an outside consultant, Mr. Bob Tysoe, I was able to feel confident in getting things started. Our mission is "To honor God by helping as many people as possible, through life-changing education, gold-standard hearing, balance, and tinnitus care, while providing an excellent patient experience." Knowing this, it was easy to make the transition into spreading the good word of gold-standard audiology care to Volusia County. I made folders, including articles supporting the educational information I would provide, as well as information about our practice. I also brought token gifts, thanking physicians for their referrals, and for considering Atlantic as a quality care resource for their patients. These gifts included a mason jar cup--something unique that had our logo on it that they can use frequently to store candy, hearing protection, or even cocoa! We like to get festive during the holidays and make our gifts specific for the season. For example, during the fall we gave away pumpkins or s'mores with notes that said, "Thank you for letting us get to know you S'more!"

LUNCH AND LEARNS

Once we have all our materials, the next step was to split up our territories. I split mine up into four different sections around Volusia County. From those four, I work from the closest to the furthest and I cycle back around every four quarters with new material in my folders. The goal at these visits is to educate the physicians' offices not only about who Atlantic is, but also to share information about the gold-standard audiology care their patients will receive and why it makes a difference for them.

Ofentimes, I offer to bring the medical practice lunch and talk to their physicians a little bit more about all of the information we just provided them. Some key things to keep in mind when planning a lunch and learn are:

- Try to take the first available lunch that they provide you,
- Find out if they have any allergies/food restrictions,
- Determine how many people they have on staff, and what times they break for lunch (many offices with a large staff take block lunches).
- I always bring more information to the Lunch and Learns (I bring more folders, more articles, and I also bring hearing screeners with instructions as I know I will now be meeting directly with the physician to hand them my information).

COMMUNITY OUTREACH

One of the most important things you can do, is to reach out to your community. Become members of your local Chamber of Commerce, Rotary, and any other organization that you view as an asset in your community. Attend health fairs and other lifestyle events. Get involved in assisted living facilities (ALF) to help facilitate their hearing, balance, and tinnitus needs. Many physicians are in these ALFs as well, and you can make connections. Promote healthy hearing through outlets like social media platforms, such as Facebook and Instagram, and through your website, radio, the newspaper, the yellow pages, and, of course, by word of mouth and testimonials.

In July 2018, after systematically working this program for less than a year, our physician referrals sky rocketed. Since this program started, 81% of our hearing aid fittings are physician-referral driven. Since July 2018 that number has increased even further! As a bonus, we have had a lot of fun creating this program for our practice, as well as building relationships with physicians and ALFs in the community.

The absolute most important thing is to be yourself, and to have fun with it. Other medical practices and ALFs will see your passion for the patients and, consequently, entrust their patients with you!

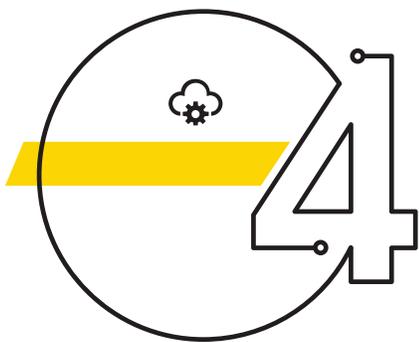
Nicole Pavol is the Marketing Manager at Atlantic Hearing, Balance, & Tinnitus Center in Port Orange, FL.

ADA's Practice Resource Catalog: The Tools You Need for Your Practice



ADA's Practice Resource Catalog offers a comprehensive library of off-the-shelf forms, office forms, bills of sale, HIPAA compliance documents, and guidance materials. These materials can assist audiologists and their staffs with practice operations, compliance, and patient management.

Visit audiologist.org/prc for more information!



PHYSICIAN MARKETING FROM THE GROUND UP

By Maryann McCullough, Au.D.

Like many audiologists in private practice, I find it easy to see the value of physician marketing. But, like many audiologists, I also realize that taking the time to market the practice effectively and properly takes planning.

When we started our practice 11 years ago, we had every intention of marketing ourselves to the local community through community and physician outreach. We spoke at health fairs, community events, and local retirement communities. We never really reached out formally to local physicians, however.

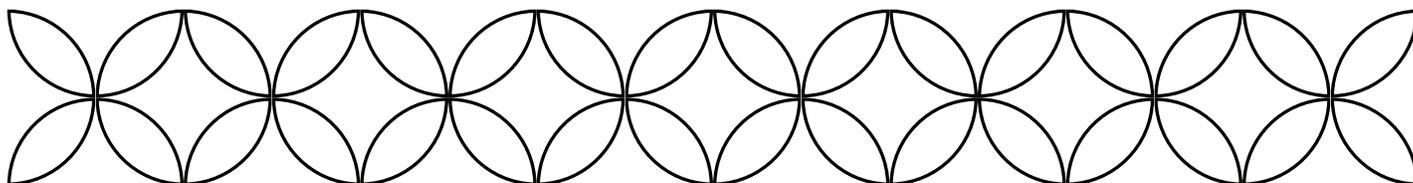
We did, always, send a detailed audiologic report and any follow up reports to every patient's physician, but that was the extent of our physician marketing...until we were slow...then we would gather material to "drop" off at local physician offices.

We did physician marketing without any specific plan and without much organization. We have started and stopped our physician marketing plan many times over the years, depending upon how busy or slow our practice was at the time. We have learned the hard way that we were not consistently marketing ourselves by using this ad hoc approach to physician outreach.

Recently, we have started to follow a dedicated plan with goals, specific materials and messages in an organized fashion. We have a physician liaison within our practice that represents our office and articulates our mission to provide the best hearing healthcare. Our liaison is well informed on the quarterly topics that we are highlighting for our physician audience to be aware of, which may be relevant to their patients. This includes articles and white papers on diabetes, cardiovascular issues, dementia, and their interrelationships with hearing loss. Our liaison schedules luncheons on a quarterly basis with our audiologists and the physicians and their staff, so that we can provide any information needed on insurance plans, hearing loss and communication needs.

Our ultimate goal is to have the local physicians think of us whenever they have a patient that requires excellent hearing healthcare. We have learned the hard way that a working physician marketing plan must be organized and consistent, to be effective.

Maryann McCullough, Au.D. is the Owner, Audiology and Hearing Aid Center, LLC.





complete OMS

One Solution.
Infinite Possibilities.

- Intuitive & Flexible Scheduling
- Appointment Email & Text Reminders
- Virtual Claims Assistant
- Paperless Superbills & Claims
- Advanced Business Reporting
- QuickBooks™ Integration
- Noah Ready - Standalone & Cloud
- To Do List & Pop-Up Alerts
- Device & Inventory Tracking
- Call Tracking
- Online & HIPAA Compliant
- Unlimited Document Storage

- Unlimited Faxing
- Seamless Data Conversion

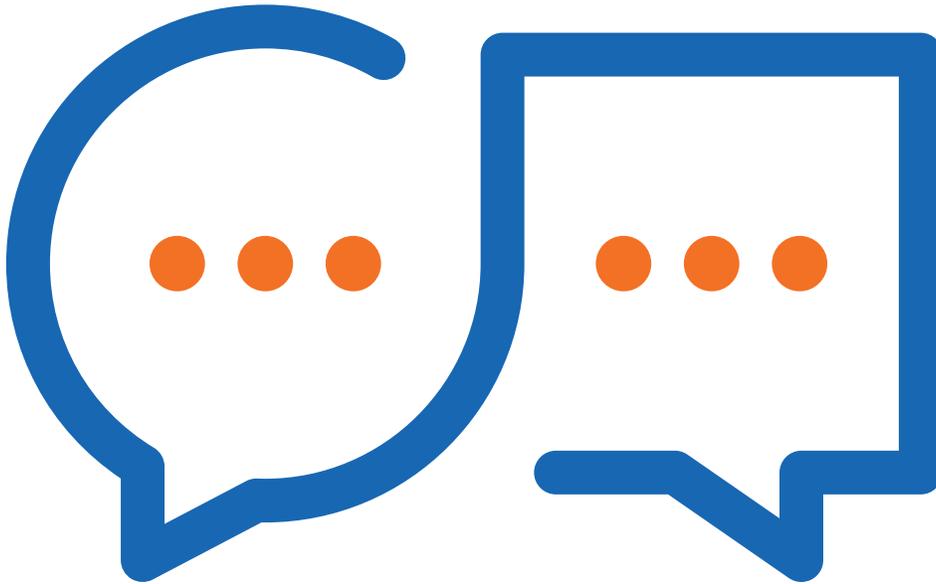
PLUS CounselEAR Connect

- Professional Reports
- Patient Counseling Summaries
- Chart Notes

All for One, Low Monthly Fee

COUNSELEAR
PRACTICE MANAGEMENT SOLUTIONS

Visit www.CounselEAR.com for more information!



When Research Can't Keep Pace with Technological Innovation

Trying to Better Understand How Clinicians Make Decisions

An Interview with Melinda Anderson, Ph.D.

Most audiologists have some knowledge of evidence-based decision making and its application to the construction of best-practice clinical protocols, but their awareness of these principles does not equate to implementation. To compound the problem, the most often cited published clinical guidelines, such as the American Academy of Audiology's Clinical Guidelines for Adult Amplification were written more than a decade ago, before the advent of many modern hearing aid features such as frequency lowering and wireless streaming.

To better understand how audiologists make decisions in their clinic today – in a era when technology is changing more rapidly than ever – and how potential blind spots in their decision-making process could have a detrimental effect on patient outcomes, Dr. Brian Taylor sat down with Dr. Melinda Anderson of the University of Colorado School of Medicine in Aurora, Colorado. Dr. Anderson is a clinical audiologist and an associate professor there. She received her master's degree in Audiology from Vanderbilt University in 2002 and her Ph.D. in Hearing Science from the University of Colorado-Boulder in 2010.

Our goal with the survey ... was to identify the techniques used by clinical audiologists to fit adult hearing aids

BT ... Dr. Anderson, thank you so much for agreeing to sit down with me and talk about audiologist's attitudes and behaviors toward the use of evidence-based decision making in a world of disruptive and rapidly changing hearing aid technology.

MA ... Great to spend some time with you between patients.

BT ... In a recent paper, published about a year ago in the Journal of the American Academy of Audiology, you surveyed approximately 250 audiologists about their fitting practices. Could you explain the motivation behind your survey?

MA ... Our goal with the survey, which was co-authored by Pam Souza of Northwestern University and Kathyn Arehart of the University of Colorado, was to identify the techniques used by clinical audiologists to fit adult hearing aids. As clinical and research audiologists, we place a high value on evidence-based practice. But as any clinician can tell you, the evidence base is far behind what is commercially available. Given this gap, we wanted to identify how clinicians were making decisions when the evidence base did not provide guidance.

BT ... The results of that survey are eye-opening. For example, 81% of respondents said specific signal-processing features are very important, yet beyond the audiogram and speech testing scores, few audiologists utilize other clinical strategies and tools in the initial fitting process to gain a better understanding of who might benefit from these specific features. What does this disconnect say about how audiologists make clinical decisions with respect to selecting hearing aid features?

MA ... From our perspective, the results show that the current literature does not provide enough guidance in how to use additional resources and tools to make good clinical decisions. The survey findings also show that what evidence is available hasn't persuaded many audiologists to adopt additional testing tools (such as speech in noise assessments). One contributing factor may be the fact that much of the research and development on signal processing algorithms focuses on algorithms in isolation rather than in combination. But commercial hearing aids combine many types of processing to the end-user, so the effects of algorithms really need to take into account how one algorithm interacts with others. An additional factor may also be the disconnect between laboratory measures and clinically-feasible measures. As the director of a very busy multi-site clinical practice, I value tools that can provide good usable information in short periods of time. In my laboratory, I've got the freedom to spend longer amounts of time with individuals to very explicitly examine their responses to signal processing changes. Each of these factors may pose a barrier to the adoption of new clinical testing tools.

BT ... When it comes to the fine-tuning process, it seems like 100% of the audiologists rely on patient reports (i.e., base their decision to adjust the hearing aid on what the patient tells them), yet other tools and strategies are "often used" 50% or less of the time, according to your survey? What is driving the relatively low use of these other more scientifically-derived tools like speech in noise testing?

By design,
the frequency
compression
characteristics
in the strong
condition had
very distinct
acoustic
differences
compared to the
mild condition

MA ... Based on the responses to the survey, and from ongoing discussions with clinical audiologists, I believe there are perceived time constraints and limited understanding of how to apply the evidence base to daily clinical practice. Audiologists ask questions like: What do I do with the information collected? How can I apply the results of this test to this patient? If there is not an obvious way to use the information, providers are unlikely to be willing to spend the clinical time capturing the data. One long-term goal of our work is to provide a roadmap for clinicians on how to apply test results to clinical fittings.

BT ... Last November, you co-authored another article with those same colleagues in the International Journal of Audiology (IJA). In that IJA article, in which you evaluated two different types of signal processing found in hearing aids, could you explain the study design and the difference between mild and strong signal processing that you employed in the study?

MA ... Using a randomized, double-blind crossover trial design, adults with mild-to-moderate symmetrical sensorineural loss were fit with behind-the-ear hearing aids. To make sure there was effective blinding, the clinical audiologists completing the fitting were not involved in the experimental data collection. The experimenters collecting data were not informed of the processing condition. Participants were kept blind about the specifics of the processing conditions until the end of the study, although participants could hear there had been a change in signal processing at the transition time point. The devices were programmed for strong signal modification (fast-acting wide dynamic range compression (WDRC) plus frequency compression) or mild signal modification (slow-acting WDRC, with no frequency compression). Each processing condition was worn for an average of 5 weeks, during which adherence data were collected to ensure consistent use of the devices. The order of processing conditions was randomized across participants.

BT ... Let's talk about the results of this study. It seems that participants perceived a difference in those two signal processing strategies on both the EAR and SSQ (two different measures of self-reported benefit). However, it seems that, for some patients seen in a busy clinic, participants reported results that were poorer in the aided condition than the baseline unaided condition, especially for the strong signal processing. Do I have that right? What are the clinical implications of this finding?

MA ... By design, the frequency compression characteristics in the strong condition had very distinct acoustic differences compared to the mild condition. The consequence of our parameter-selection is that the amount of frequency compression was stronger than might typically be used in a clinical setting. For clinical fittings, frequency compression should be set based on the needs of the individual listener and should be based on assessment of audibility of high-frequency sounds, using probe microphone measures as well as assessment of speech perception abilities. In this study, all participants received the same amount of frequency compression regardless of audibility of high frequency sounds without frequency compression. However, even with this constraint, there are implications for clinical practice. For example, this study shows that is possible to use the EAR and SSQ scales for documentation of perceived performance with hearing aids, and that perceived performance does change as a function of signal processing modifications.

BT ... What are your recommendations for clinicians when making decisions about selecting a signal processing strategy. How might you go about making those decisions based on your two papers?

MA ... In our clinic, we routinely complete standard audiometric evaluations, probe microphone measures, speech-in-noise assessments, and measures of patient benefit and satisfaction. Each of these tools plays a role in the determination of signal processing strategies. In clinical fittings, you aren't selecting a single strategy. We must be aware of the interactions of the many types of signal processing implemented in commercial devices and consider how the output of a hearing aid with all signal processing in combination may impact a listener.

Also, in our clinic, we use speech-in-noise assessments to guide decision making regarding directional microphones and coupling systems. We use probe microphone measures and speech assessments to determine the gain-frequency response, compression ratios, and use of frequency lowering. Pre and post measures of perceived performance can help guide the decisions regarding noise management. We use each of these tools to consider how an individual is responding to the device as a whole in the context of their primary listening environments. In clinical practice, we seek to document and justify the decisions we make for patients.

Without the use of evidence-based tools, like the speech in noise tests or validated self-reports of patient outcome such as the SSQ, it is difficult to provide justification for the use of amplification. Ongoing collaborative laboratory and clinical work at the University of Colorado Health Hearing and Balance Clinics, the University of Colorado Boulder, and Northwestern University continues to explore how clinical practice may benefit from understanding the impacts of combined signal processing on hearing aid outcomes. Be looking for that work over the next few years!

BT ... Thanks for your insights, Dr. Anderson.

MA ... My pleasure. ■

Melinda Anderson, Ph.D. is Assistant Professor in the Department of Otolaryngology at the University of Colorado School of Medicine in Aurora, CO. She can be contacted at melinda.anderson@ucdenver.edu.

Citations

Anderson, M. C., Arehart, K. H., & Souza, P. E. (2018). Survey of current practice in the fitting and fine-tuning of common signal-processing features in hearing AIDS for adults. *Journal of the American Academy of Audiology*, 29(2), 118-124.

Anderson M, Rallapalli V, Schoof T, Souza P, Arehart K. (2018) The use of self-report measures to examine changes in perception in response to fittings using different signal processing parameters. *Int J Audiol*. 57(11), 809-815. Epub 2018 Jul 27.



In the opening scene of the first in the *Lord of the Rings* movie series the movie an angelic voice speaks these words, “the world is changed. I feel it in the water. I feel it in the earth. I smell it in the air (Jackson, 2001).” I’d just read another book on machine learning, and I was pondering how this message speaks to what is happening in hearing aid manufacturing today. Technology has influenced almost every aspect of our lives from how we buy paper towels to allowing paralyzed individuals to walk again. An example of how technology has changed the automotive industry is how car manufacturers like BMW and Mercedes are pairing humans with machines to accomplish tasks that in the past would have been impossible when performed in isolation (Paul R. Daugherty, 2018). This man-machine collaboration has enabled flexible human-machine teams to work with an almost a symbiotic relationship, and these same advances are now becoming a part of the hearing amplification landscape for providers worldwide.

To take a step back, the 1980’s and 1990’s ushered in the modern digital hearing aid, and since then the world of hearing aids has changed significantly (Oliver Townend, 2018). Today, audiologists have access to remote controls, remote microphones, hearing aids that speak in multiple languages, hearing aids that connect to your smartphone or tablet, and hearing aids that play music to help patients manage their tinnitus.

Because of these advancements, we are pushing the envelope in what is possible with hearing aids and it has created a new era where we are moving research outside the lab/clinic to focus on real-life hearing. We realized that, unfortunately, having great technology in the lab/clinic isn’t enough. Even when audiologists utilize the right compression ratio, gain, sound pressure level, and signal to noise ratio, it doesn’t always meet the expectations of our patients when they are listening in the real world. We needed to look at what was happening outside the clinic. So, we have begun a journey to understand the preferences and intentions of our patients by incorporating auditory ecology into how we look at sound.

So, what is auditory ecology? Auditory ecology is the relationship between perceptual demands of people and their acoustic environments (Gatehouse, 2016). The listening intention of what our patients want to hear is incredibly important and often unrealized in the lab. How do we cross the threshold of incorporating this new technology into our clinics and practices?

We start by understanding that hearing technology is based on assumptions. These assumptions are incorporated into the hardware and software within the hearing aid. The assumptions dictate the hearing aid settings in order to optimize the patient’s hearing in challenging listening environments. Using this assumption-based approach, we can move our patients even closer to satisfaction. Even at this high level of performance, there will still be listening situations that continue to pose challenges for our patients. To help us predict and proactively address those environments, we often attempt to recreate these challenging listening conditions in our offices by setting up speakers that play an array of sampled/recorded environments. While this process allows us to put the patient in a simulated acoustic scene, we still do not understand the intentions of the patient in these environments.

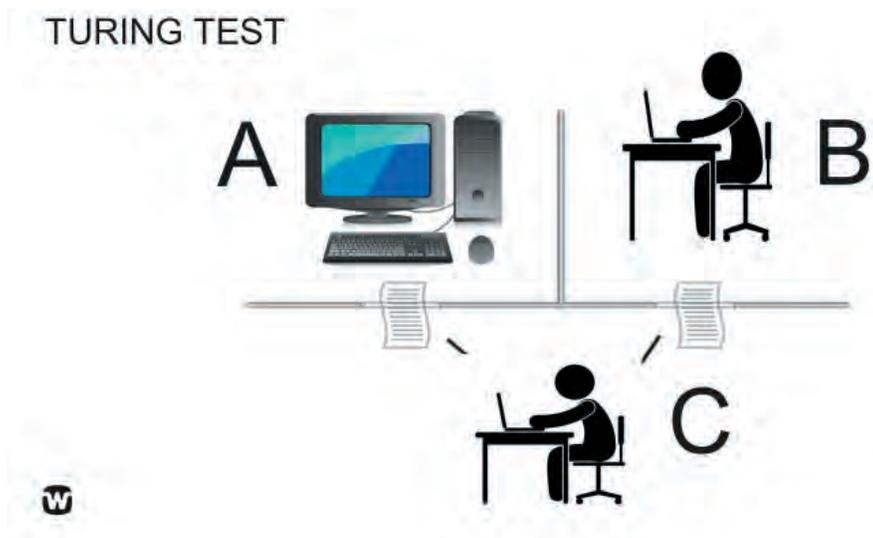
What if we could give the patient the ability to improve their listening ability, based on their preferences and intentions in the listening environments where they are struggling? By doing this, we could allow for real-time customization. In addition, by sharing the information electronically through the cloud, we could learn from each situation and build better algorithms that could potentially help all patients in similar challenging listening environments across the planet.

So, what are the concerns we need to address clinically to move into this new evolution of technology? First, we need to acknowledge and understand that people still struggle to hear, even with the best technology, because their intentions in different environments may not align; with general assumptions. Second, we need to recognize the challenge with reporting perception; and acknowledge that if a patient cannot articulate what challenges they experience in their environments, it will be difficult for the audiologist to know what fine-tuning adjustments are needed. Finally, even when patients can articulate what they are experiencing, it can still be difficult for clinicians to know exactly what to adjust, given the all of the advanced software controls. These scenarios pose opportunities for the new technology within the framework of real-time machine learning found in some modern hearing aids.

As humans, we are constantly influenced by our environment. Exposure to unique environments creates experiences that change the way we learn to react to the world. Learning can be viewed as a change, which is influenced by previous

experience. Learning is the key to how we adapt to different environments (John Paul Mueller, 2018). And this type of learning is now being accomplished by machines. Let's look at a brief history of how we got to where we are now in artificial intelligence and machine learning.

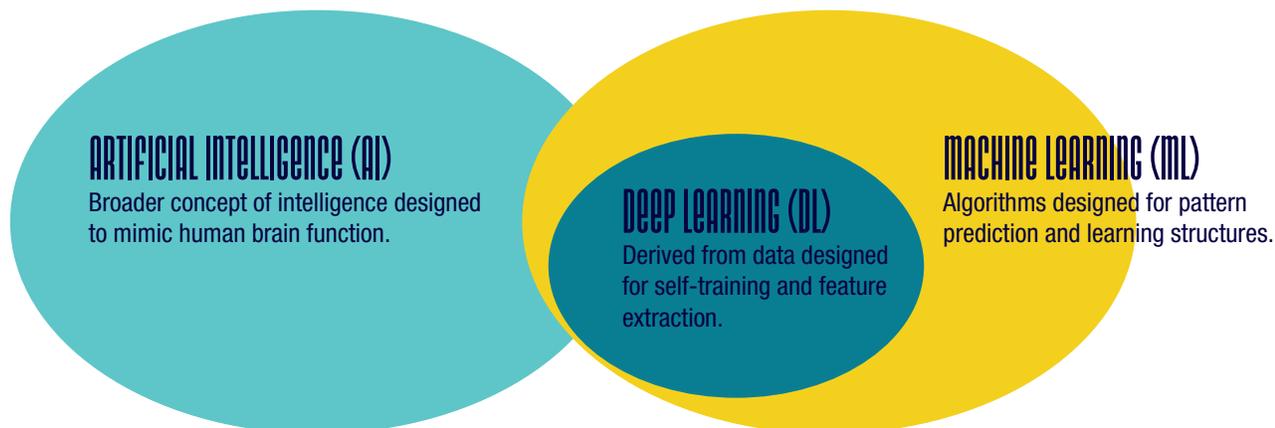
In 1950, Alan Turing published a paper called "Computing Machinery and Intelligence" and proposed a test criterion for Artificial Intelligence (AI) that he called the Turing Test (Mueller, 2016). The goal of the test was to see if a computer could communicate so well that a human would fail to realize that they were not communicating with another human, but with a computer instead.



In 1956, John McCarthy coined the phrase 'Artificial Intelligence' at a Dartmouth academic conference, and a new field in computer science was born (John Paul Mueller, 2018). Artificial intelligence research flourished but was ineffective until around 1980. Then, between 1980 and 2000, integrated circuits transformed artificial intelligence, and machine learning from science fiction to science fact.

These technologies can be broken up into three categories:

1. Artificial Intelligence
2. Machine Learning
3. Deep Learning



The goal of artificial intelligence is to make computers that mimic the way the human brain works. IBM has been exploring using the phrase “cognitive thinking” instead of artificial intelligence, because it sounds less threatening to consumers (Theobald, 2017). Machine learning is a tool that can surpass human intelligence in its speed and ability to suggest exact matches for listening situations in just a couple of seconds. No human can ascertain the myriad of listening options in an environment in such a short time. In essence, AI identifies the problems but machine learning and deep learning (aka neural networks) work together to find solutions for obstacles and challenges.

It is important to realize that just saying that a technology has artificial intelligence does not tell you anything specific about that technology or resolve challenges. As humans, we define intelligence in many ways. There are nine different types of intelligence (Tri, 2018):

- 1. Naturalistic Intelligence.** Individuals with a green thumb who can grow anything.
- 2. Musical Intelligence.** Individuals who can recognize tone, rhythm, timber and pitch and are usually more aware of sound than others are simply not aware of. They can detect, reproduce, generate, compose music with ease.
- 3. Logical-Mathematical Intelligence.** Individuals who can carry out complex mathematical calculations and operations with ease.
- 4. Existential Intelligence.** Individuals who are deep thinkers and contemplate the “why’s” and “how’s” of life.
- 5. Interpersonal Intelligence.** Individuals who can understand and communicate with others well. They can sense the moods and temperament of others.
- 6. Body-Kinesthetic Intelligence.** Individuals who possess, and almost perfect sense of time and their body-mind coordination is excellent.
- 7. Linguistic Intelligence.** Individuals who can convey complex meanings and concepts and express them using language that is easy for others to understand.
- 8. Intra-Personal Intelligence.** -Individuals who know and are very aware of themselves, their thoughts, and their emotions, and also help others understand themselves better.
- 9. Spatial Intelligence.** Individuals who can essentially see things in three dimensions. These are usually artists, painters, and sculptors.

Machine learning is all about systems that can solve problems that, as yet, have not been solved satisfactorily. These systems can recognize complex patterns and make intelligent decisions, based on data. The advancements in machine learning technology have brought us cars that can tell the distance between other vehicles and can adjust their speed accordingly. These machine learning-assisted cars can stop themselves to avoid crashes, identify animals in the road and avoid them, and in some cases, even drive and navigate themselves with little interaction from the human driver.

Machine learning is already impacting our lives in ways we probably don’t realize. For example, your smart phone can be unlocked using facial recognition because it has learned to recognize your face. Netflix uses machine learning to track the movies that you watch and then recommends movies to you that fit similar criteria.

This same machine learning technology has influenced the strategies we are using in today’s hearing aid technology. For example, last year, Widex introduced the world’s first hearing aid, using machine learning to empower patients to make real-time adjustments based on their preferences and intentions in different environments. To achieve this new technological innovation, Widex takes advantage of the Evoke chipset that uses distributed computing that increases processing power by almost 30 percent, while still providing battery efficiency. This chipset enables faster assessments of acoustic environments to be achieved, in order to implement improved algorithms and strategies.

Using this distributed computing approach, along with 2.4 GBps Bluetooth processing, the power of the hearing aid and a smartphone can be leveraged to incorporate machine learning in real time. Information can then be shared in the cloud so that the algorithms can be continuously improved and sent to the hearing aid via firmware updates.

Combining machine learning with a simple user interface provides the patient the power to focus on improving the comfort and quality of the sound without having to manipulate numerous adjustment parameters. Using a simple A/B comparison through a smartphone application, the system can automatically learn and improve the patient’s listening comfort and quality of sound experiences, based on the patient’s preferences and intentions.

Machine learning systems like this are now possible because smartphones have the processing power of laptop computers. That allows them to increase the available algorithms and theories that can be developed by machine scientists.

To better understand the power and application of machine learning in hearing aids, let's turn our attention to how humans learn.

There are four human learning modalities:

- 1. Visual Learners.** Individuals who learn best through demonstration. Sixty percent of people are visual learners. They take in information better if they see it.
- 2. Auditory Learners.** Individuals who learn best through listening and by modeling what is heard.
- 3. Tactile Learners.** Individuals who learn best when they take notes during lectures or when reading something new or difficult. They learn readily with hands-on activities, including writing notes during a lecture.
- 4. Kinesthetic Learners.** Individuals who learn best when they are involved--when they are doing, rather than just watching or listening (although they do learn from those modalities pulled together).

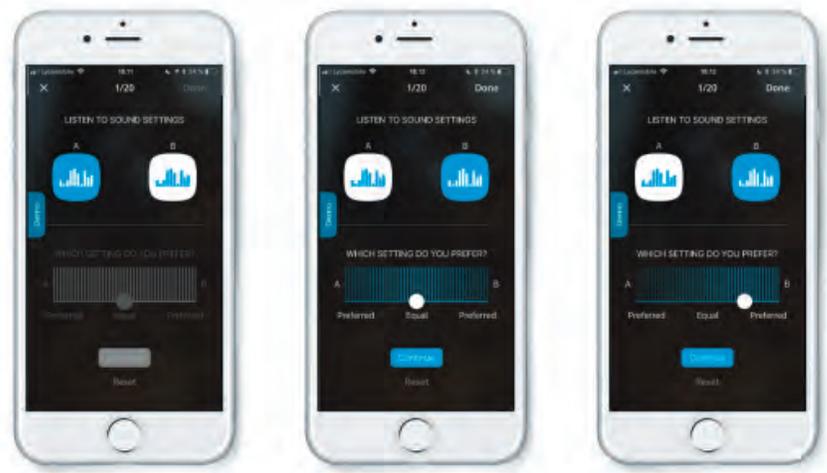
Now let's look at the three mechanisms for machine learning.

- 1. Supervised learning** is guided by human observation and feedback, like an instructor teaching a student to play the piano or a musical instrument. The instructor makes sure that the student understands what the instrument is and how to use it. Over time, the student can expand what they have learned and continue to advance to more difficult musical challenges. Supervised learning is essence getting the system to learn to learn. Over time, the system takes learned information and uses it to continue learning.
- 2. Unsupervised learning** relies more on cluster data and modifying algorithms based on its initial findings, without any kind of external feedback from humans. This is like a student learning to play the piano by themselves. Eventually, they learn, but it may take them longer than if they were supervised by an instructor.
- 3. Reinforced learning** is established over time using trial and error. Video game developers use reinforced learning as they build their games. The game scenario is reinforced, and the player remembers it to advance further the next time. For example, if a player is learning to play the game and they are (virtually) walking in a maze, they may have three different directions that they can go. If they choose to go to the left and fall off a cliff, the next time they get to that point in the maze, they will have learned by trial and error to choose a direction other than left.

Machine learning can comprise one or all the above approaches. The incredible advantage about this technology is that it allows clinicians to collaborate with machines in unique ways that are now integrated into hearing aid technology. Audiologists will not be replaced by technology. However, providers who don't understand, use, and incorporate technology into their practices will be outperformed by those who do.

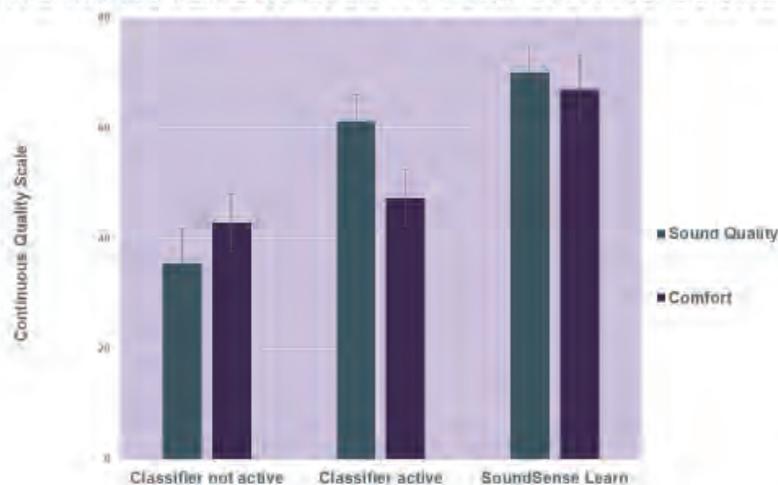
LISTENING INTENTION

In real-life, a patient's listening intention varies by the minute, depending on the auditory scenario at the time. Sometimes the patient focuses on overall sound quality. In other cases, they focus on listening comfort. They may focus on lowering the conversation level around them if they are sitting in a coffee shop. If they are listening to music, they may want to accentuate a particular element within the music. The ability to focus on achieving this auditory-related task or to experience an event with a certain level of fidelity is called the listening intention.



PROOF OF BENEFIT

SUBJECTIVE IMPROVEMENT IN BOTH COMFORT AND SOUND QUALITY



Using machine learning allows the hearing aid to achieve this auditory intention, because it is driven by the patient and their preference in that moment. The hearing aid learns to adapt quickly using its dynamic and incredibly advanced features. Hearing aid machine learning uses a technique for comparing settings and collecting user input using a form of paired A/B comparison. For example, if there are three parameters for frequencies (low, mid, and high), and each one of these parameters has 13 level adjustments that can be manipulated, we get a total of 2197 combinations of settings that can be manipulated. If we use that and add it to a paired comparison scenario, to sample the space in its full entirety, we get over 2 million possible comparisons--an impossible number of samplings for a patient to experience.

However, because machine learning integrates within this process, SoundSense learn can reach the same outcome in 20 steps in a short amount of time (Townsend & Jens Brehm Nielsen, 2018). The Widex Evoke has only just begun to harness the power, using the equalizer settings for immediate listening gratification, without altering the work and programming that the dedicated audiologists have put into the fitting. So, while the permanent programming of the hearing aid is not altered, the patient still has the power, in real time, to easily refine their acoustic need and intention.

An additional learning application, that Evoke offers, is the SoundSense Adapt feature. This feature learns from the adjustments that the patient makes in different listening environments via what we call the preference control. The preference control adjusts multiple settings to give the patient more audibility or comfort, instead of just making sounds louder like a traditional volume control. As new users adapt

to their hearing technology, they can make multiple adjustments to teach SoundSense Adapt their preferences within a specific sound environment. SoundSense Adapt always ensures that, when a patient makes changes to increase or decrease the sensitivity of the devices, it is kept in a range that still provides audibility and comfort.

To test our machine learning applications, Widex conducted a research project, using 19 patients with mild-to-moderate hearing loss. The patients were put through a double-blind test, using nine different sound samples. Each patient was assigned an auditory intention focus task to optimize sound quality, or increase listening comfort, or speech intelligibility. The recording soundscapes included a hearing aid with no classifier, a hearing aid with active classifier, and a hearing aid with Sound Sense Learn.

We discovered that Sound Sense Adapt increased listener comfort and that listeners preferred the hearing aid parameters achieved by Sound Sense learn over the hearing aid with active classifier alone by as much as 84%. When evaluating sound quality using music samples, 89% of the participants preferred the settings based on Sound Sense learn.

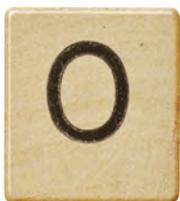
The Widex study showed that SoundSense Learn helped patients increase sound quality and listening comfort in dynamic environments, based on individual auditory intentions. Ultimately – and most importantly, SoundSense learn helped patients in environments that previously were a challenge for them.

Continued on page 62



A SENSIBLE OUTCOME MEASURE FOR BUSY AUDIOLOGISTS

By Brian Taylor, Au.D. and James Benson



Over the past several decades, research audiologists have created and validated an abundance of self-reports that measure a variety of patient-related outcomes, including hearing aid use time, benefit, satisfaction, and quality of life improvements that may be impacted by recommended interventions. Although the use of outcome measures has been recommended by opinion leaders for decades, their popularity among rank and file audiologists is low. According to survey data¹, less than 20% of clinicians routinely (“always” or “almost always”) administer any type of self-report of outcome. Why have outcome measures not been a part of audiology practices? Often, established outcome tools are too long or do not capture the audiologist’s needs at the practice or individual patient level. At the same time, the amount of operational effort to continue to engage patients is also seen as barrier.

Yet, as value-based care takes center stage, along with the move to over-the-counter hearing aids, there has never been a more important time to document patient outcomes and the audiologist’s role in achieving those outcomes. Broadly defined, outcome measures, now commonly known and PROM (Patient Reported Outcomes Measures) enable audiologists to quantify the effectiveness of their treatments. Different from verification procedures, which attempt to ensure that hearing aids are meeting a prescribed performance standard, a validated outcome measure answers the following questions:

- How did the recommended intervention affect the patient and their communication partners?
- How much did the recommended intervention improve the communication abilities of the individual?
- Were the goals, identified at the initial assessment appointment, successfully met?

As all healthcare professionals become more cognizant of increasing access to care, lowering costs of care, and improving the overall quality of care, it is imperative for audiologists to identify ways to systematically and routinely measure a broad range of outcomes. Specifically, there are at least three reasons for popularizing the use of outcome measures within the profession of audiology:

- As healthcare becomes more consumer-driven, there is added emphasis on the individual's point of view across time and across different modes of service delivery (e.g., face-to-face, telehealth, over-the-counter, etc.).
- Traditional lab measures, like soundfield audiometry, don't capture everyday experiences. Real-world experiences cannot be accurately measured in the test booth or clinic.
- In an evidence-based practice model of care, the perceptions of the individual are the gold standard, and the use of well-designed self-reports allow for a comparison of outcomes across similar demographics.

The outcome of audiological intervention is multi-faceted and complex. No single self-report captures the wide array of possible outcomes of the patient experience. It is simply not feasible to measure all the dimensions of patient outcome with a short, easy to administer questionnaire. However, audiologists must not let the perfect be the enemy of the good. Outcome metrics experts recommend a short self-report, comprised of fewer than ten questions, that pulls questions from several existing outcome measures already used by researchers in the field.

It is common for audiologists to encounter patients, with similar degrees of hearing loss, who are impacted differently by their condition. Persons with hearing loss experience their condition differently depending on the types of activities they engage in, their overall health, their role in society, and the environment in which they communicate.² Thus, outcome measures need to account for and respect these individual differences across patient populations.

These are among the main reasons some outcome metrics experts have chosen self-reports that attempt to go beyond hearing aid benefit and performance metrics to measure the impact that hearing loss (and treatment of it) has on the individual's participation in daily activities, including the limitations hearing loss may place on daily living.

Accompanying this brief article is a self-report (Figure 1) that has taken four questions from the International Classification of Functioning (ICF) Measure of Participation and Activities Screener³, two questions from the International Outcome Inventory for Hearing Aids (IOI-HA)⁴ and two additional questions that measure overall quality of support and the patient's willingness to recommend hearing aids (and other similar treatment options) to family and friends.

As tele-audiology services and over-the-counter hearing aid sales become a part of the audiology landscape, this outcome measure can be adapted to reflect these new modes of service delivery. Our goal is to encourage all audiologists to adopt this tool as a pre- and post-intervention metric for measuring the impact their treatment recommendations have on daily communication. By operationalizing this tool, audiologists can quickly and easily compare the results of each individual patient to similar demographics. Thus, using data collected in their clinics to make better, more effective treatment decisions, which is a cornerstone of patient-centered care. ■

James Benson is the president and founder of QM2 Solutions, 900 Elm St, Peshtigo, WI 54157. He can be contacted at jbenson@qm2solutions.com.

REFERENCES

- Kirkwood, D. (2010) Survey probes dispensers' views on key issues raised by Consumer Reports. *Hearing Journal*, 63(5): 17-26.
- International Classification of Functioning, Health and Disability: A potential service delivery model for audiological practice. *Seminars in Hearing*. Guest Editor; Mridula Sharma, August 2016
- Meyer, C., Grenness, C., Scarinci, N., & Hickson, L. (2016). What Is the International Classification of Functioning, Disability and Health and Why Is It Relevant to Audiology?. *Seminars in Hearing*, 37(3), 163-86.
- Cox RM., Alexander, GC. and Beyer CM.. (2003) Norms for the International Outcome Inventory for Hearing Aids. *Journal of the American Academy of Audiology*, 14(8): 403-413.

Continued on page 63

Merit Based Incentive Payment System (MIPS): UPDATE

BY KIM CAVITT, Au.D.

Merit Based Incentive Payment System (MIPS) Implementation for Audiologists (2019)

STEP #1: DETERMINE IF YOU ARE REQUIRED TO PARTICIPATE IN THE MIPS PROGRAM.

- Go to qpp.cms.gov/participation-lookup link.
- Insert your National Provider Identifier in the box provided.
 - **Click on the PY2019 link.**
 - The link will tell you if you are eligible to report, based upon your Medicare data, as an individual or a group. **IF YOU ARE INELIGIBLE TO REPORT AS AN INDIVIDUAL, GROUP REPORTING IS OPTIONAL EVEN THOUGH IT INDICATES YOU ARE ELIGIBLE TO REPORT AS A GROUP.**
 - If it indicates that you are eligible to report because of participation in an Alternative Payment Model (APM), please *immediately* reach out to the practice manager of your facility to determine your specific reporting requirements and mechanisms (as the claims-based reporting option might not be available to you).
 - Typically, APMs only exist in large hospitals, medical centers, and multi-disciplinary clinics.

Audiologists are MIPS EXEMPT for participating in the MIPS program if, individually, they:

1. **Have \$90,000 or less in Medicare Part B allowed charges for covered professional services; OR**
2. **Provide care to 200 or fewer Medicare beneficiaries; OR**
3. **Provide 200 or fewer covered professional services under the Medicare Physician Fee Schedule (PFS).**

These exemptions are collectively called the *low volume threshold*.

99% of individual audiologists in the United States, whose practice is not enrolled in an Alternative Payment Model (APM), will be exempt from MIPS reporting in 2019.

STEP #2: DETERMINE IF YOU WANT TO VOLUNTARILY REPORT MIPS MEASURES OR OPT IN TO THE MIPS REPORTING SYSTEM.

Exempt individual audiologists (audiologists who do not meet the low volume threshold) may decide to voluntarily participate in the MIPS program. This can be accomplished by several means:

- When eligible, Group Participation:
 - Most audiologists (in practices of 25 providers or less) can participate via the same mechanism they reported Physician Quality Reporting Systems (PQRS) Measures.
 - Reporting G-Codes via Medicare Part B claims.
 - Audiologists will also “attest” to the Improvement Activities (IA).
 - **Groups would be eligible for payment incentives and payment reductions, based upon their overall MIPS score and performance.**
- Voluntary Participation:
 - Audiologists will not formally sign up/enroll in this type of reporting.
 - Audiologists can participate via the same mechanism they reported Physician Quality Reporting Systems (PQRS) Measures.
 - Reporting G-Codes via Medicare Part B claims.
 - Audiologists will also “attest” to the Improvement Activities (IA).
- Opt-In Participation:
 - Audiologists will officially and formally “opt in” (the form or process is not yet available).
 - Audiologists can participate via the same mechanism they reported Physician Quality Reporting Systems (PQRS) Measures.
 - Reporting G-Codes via Medicare Part B claims.
 - Audiologists will also “attest” to the Improvement Activities (IA).
 - **Audiologists would be eligible for payment incentives and payment reductions, based upon their overall MIPS score and performance.**

The Academy of Doctors of Audiology is not recommending that its members participate as a Group or “opt in” to the MIPS program in 2019. Instead, we are advocating that our members voluntarily participate in the MIPS program in 2019. For more information on voluntary participation, please review the Voluntary MIPS Participation Guide on the next page.

Resources

<https://qpp.cms.gov/>

<https://qpp.cms.gov/about/resource-library>

For questions, please contact Kim Cavitt at kim.cavitt@audiologyresources.com or 773-960-6625.

Merit Based Incentive Payment System (MIPS) Voluntary Reporting for 2019

STEP #1: REGISTER FOR A QPP HCQIS ACCESS ROLES AND PROFILE (HARP) ACCOUNT

- This account system is new and replaces the old QPP and EIDM accounts.
- This account will allow you to track your Quality Payment Program (QPP) performance and score.
- You can register (or login to an existing account) at <https://qpp.cms.gov/login?page=register>.

DO NOT INADVERTENTLY REGISTER AS A GROUP OR OPT IN TO THE MIPS PROGRAM AS PART OF HARP REGISTRATION PROCESS

STEP # 2: COMPLETE AND REPORT MIPS QUALITY MEASURES

- FOR PRACTICES UNDER 15 PROVIDERS MIPS Quality Measures are reported *EXACTLY* the same way by which your practice reported for the Physician Quality Reporting System (PQRS) from 2012-2016.
 - The six quality measures are the *EXACT* same six quality measures that audiologists reported for PQRS is 2016. They are:
 - Documentation and verification of current medications in the medical record.
 - Screening for clinical depression and follow-up plan.
 - Falls Risk Assessment
 - Falls Risk Plan of Care
 - Screening for Tobacco Use/Cessation
 - Referral for otologic evaluation for patients with acute or chronic dizziness.
- Audiologists must complete quality measures and report on their outcomes for at least 50% of all eligible patients.
- Audiologists can get a refresher on “what” and “how” to report these measures at:
 - <https://audiologyquality.org/measures/>
 - <https://audiologyquality.org/reporting-pqrs-measures/>
 - <https://qpp.cms.gov/mips/quality-measures?py=2019>
- Audiologists who are voluntarily reporting MIPS Measures will report via their CMS 1500 claim form or 837 formatted electronic claims using the PQRS Measure codes (just as they did PQRS).

STEP #3: COMPLETE AND ATTEST TO IMPROVEMENT ACTIVITIES

- MIPS also has a category known as Improvement Activities.
- Improvement activities are activities designed to improve clinical practice.
- Some improvement activity options that are applicable to an audiology practice include:
 - Collection and follow-up on patient experience and satisfaction data on beneficiary engagement.
 - Collection and use of patient experience and satisfaction data on access.
 - Completion of an Accredited Safety or Quality Improvement Program.
 - Completion of the AMA STEPS Forward program.
 - Depression screening.

- Engage Patients and Families to Guide Improvement in the System of Care.
- Engagement of New Medicaid Patients and Follow-up.
- Evidenced-based techniques to promote self-management into usual care.
- Implementation of condition-specific chronic disease self-management support programs.
- Implementation of documentation improvements for practice/process improvements.
- Implementation of episodic care management practice improvements.
- Implementation of fall screening and assessment programs.
- Implementation of formal quality improvement methods, practice changes, or other practice improvement processes.
- Implementation of improvements that contribute to more timely communication of test results.
- Implementation of practices/processes for developing regular individual care plans.
- Implementation of Use of Specialist Reports Back to Referring Clinician or Group to Close Referral Loop.
- Improved Practices that Disseminate Appropriate Self-Management Materials.
- Improved Practices that Engage Patients Pre-Visit.
- Integration of patient coaching practices between visits.
- Leadership engagement in regular guidance and demonstrated commitment for implementing practice improvement changes.
- Participation in a 60-day or greater effort to support domestic or international humanitarian needs.
- Participation in Joint Commission Evaluation Initiative.
- Participation in Population Health Research.
- Participation in private payer clinical improvement activities.
- Participation in User Testing of the Quality Payment Program Website (<https://qpp.cms.gov/>).
- Practice Improvements that Engage Community Resources to Support Patient Health Goals.
- Promote Use of Patient-Reported Outcome Tools.
- Provide Clinical-Community Linkages.
- Provide Education Opportunities for New Clinicians.
- Provide peer-led support for self-management.
- Regular training in care coordination.
- Regularly assess the patient experience of care through surveys, advisory councils and/or other mechanisms.
- Tobacco use.
- Unhealthy alcohol use.
- Use evidence-based decision aids to support shared decision-making.
- Use of telehealth services that expand practice access.
- Each audiologist must complete at least four of these activities listed above and each activity must be performed for 90 days or more during 2019.
- Audiologists will attest to their performance of these improvement activities at the HARP site AT <https://qpp.cms.gov/login>.
- Audiologists can learn more about improvement activities at <https://qpp.cms.gov/mips/improvement-activities?py=2019>.

For questions, please contact Kim Cavitt at kim.cavitt@audiologyresources.com or 773-960-6625.



HAVE YOU HEARD?

Cochlear Americas to Present 2-Part Webinar Series on Audiologic Treatment for Patients with Implantable Hearing Devices in a Private Practice Setting

Thursday April 18, 2019 (Part 1) and Thursday, April 25 (Part 2) at 12:00 p.m.–1:00 p.m. Eastern time, and on-demand thereafter.

Course Leader: Ginger Grant, Au.D.

Register or download the courses at www.audiologist.org.

Course Description: The U.S. Food and Drug Administration first approved the cochlear implant for use in adults in 1984 with pediatric approval approximately 5 years later. Over the last 35 years we have witnessed an evolution in the technology, candidacy criteria, patient profile, and clinical care approach. Implants are now designed for ease of insertion and reduced trauma to the cochlear structures. Candidacy has expanded to include those with some residual hearing. Although patients often get some benefit from hearing aids, they are dissatisfied with performance, especially in challenging listening situations. Hearing aid benefit is limited for some patients, creating dissatisfaction with overall performance. Programming software has become more refined with built in objective measures, validated default settings, and troubleshooting assistance.

With this evolution is an opportunity to expand the traditional service model into the private practice setting to differentiate your practice and increase awareness and access to those who might benefit. The goals of this first of a two-session series is to provide an overview of the technology, candidacy, and outcomes with a cochlear implant.

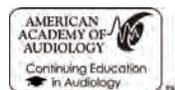
Learning Outcomes (Part1), April 18, 2019 at 12:00 p.m. Eastern

1. Identify appropriate candidates for implantable hearing technology based on FDA and Medicare criteria.
2. Describe the evaluation process for determining candidacy
3. Compare the benefits of electric, hybrid, and bimodal stimulation

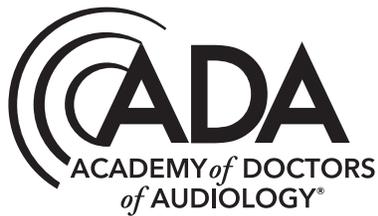
Learning Outcomes (Part2), April 25, 2019 at 12:00 p.m. Eastern

1. Describe a sample protocol for adult cochlear implant evaluation and treatment
2. Identify considerations for billing, coding, and reimbursement
3. Summarize ways to grow your practice with implantable hearing devices

About Dr. Grant: Ginger Grant currently works on the Clinical Studies team at Cochlear Americas as a Principal Clinical Project Manager. She first developed an interest in implantable hearing technology and the people for whom it is intended during her clinical fellowship year (CFY) at Johns Hopkins. During her time at Cochlear, she has served in a variety of roles including clinical support specialist, surgical trainer, sales representative, and clinical/technical manager. Dr. Grant received her Au.D from Central Michigan University in Mount Pleasant, MI.



Continuing Education Statement: The Academy of Doctors of Audiology is approved by the American Academy of Audiology to offer Academy CEUs for this activity. The program is worth a maximum of 0.1 CEUs (for each session). Academy approval of this continuing education activity is based on course content only and does not imply endorsement of course content, specific products, or clinical procedure, or adherence of the event to the Academy's Code of Ethics. Any views that are presented are those of the presenter/CE Provider and not necessarily of the American Academy of Audiology.



Audiology Practice Accreditation Standards

October 2018

Purpose: ADA is committed to the advancement of audiology practice excellence, high ethical standards, professional autonomy and sound business practices in the provision of quality, evidence-based, audiologic care to encourage practice facilities to deliver care in a consistent and standardized process.

Methods: Evidence-based best clinical and business practices are essential to the delivery of exceptional audiology patient care. ADA Audiology Practice Accreditation Standards were assembled by consensus, using research as the basis for decision-making.

ADA Audiology Practice Accreditation Standards when incorporated into the clinic will demonstrate a commitment to ethical, legal, clinical, operational, and relational excellence.

Acknowledgements: ADA would like to thank the following authors for their contributions to the development of the ADA Audiology Practice Accreditation Standards:

Angela Morris, Au.D., Accreditation Task Force Chair

Debra Abel, Au.D.

Stephanie Czuhajewski, CAE

Tricia Dabrowski, Au.D.

Jiovanne Hughart, Au.D.

Julie Link, Au.D.

Ram Nileswhar, Au.D.

Stephanie Sjoblad, Au.D.

Susan Terry, Au.D.

Section 1: Rights and Needs of the Patient

- 1.1 Commitment to Patient-centered Care:** The practice through its audiologists and support staff shall integrate a patient-centered approach in the provision of services, and all aspects of hearing and balance health care delivery.
- 1.1.1** Audiologists and support staff shall provide patients with timely, transparent, and complete information about the benefits, risks, and side effects regarding the proposed care and services.
 - 1.1.2** Audiologists and support staff shall seek out patient perspectives, goals, and values, and they shall provide information and services that are responsive to individual patient preferences, respect patient autonomy, and empower patients to make informed decisions.
 - 1.1.3** Audiologists and support staff shall foster an inclusive environment that maximizes participation from patients, family members and/or communication partners throughout the delivery of care.
 - 1.1.4** Audiologists and support staff shall use effective written and oral communications to foster patient comprehension, inquiry, and to reinforce an informed and shared decision-making process.
 - 1.1.5** The practice shall adopt and publish a formal statement outlining its commitment to high ethical, clinical, and operational standards, including its adherence to federal, state, and local laws.
 - 1.1.6** The practice shall demonstrate adherence to Americans with Disabilities Act (ADA)¹ requirements for the provision of sign language interpreters, as requested by the patient, to facilitate successful communication.
- 1.2 Patient Safety:** Patients shall be treated in a manner that promotes health, well-being, and safety, and is free from violence, neglect, exploitation, verbal, mental, physical, and sexual abuse.
- 1.2.1** The practice environment shall support and foster the health, safety, well-being, and comfort of patients and the public.
 - 1.2.2** The practice shall publish and maintain a zero-tolerance policy for violence, neglect, exploitation, verbal, mental, physical, and sexual abuse.
 - 1.2.3** The practice shall adopt processes and procedures for patients to report patient safety issues, and to address patient grievances and concerns.
 - 1.2.4** Audiologists and support staff shall be able to identify and implement proper hygiene and infection control procedures.²
 - 1.2.5** The practice shall adopt, implement, and maintain an emergency action plan (EAP) to address medical emergencies, fire, and other foreseen emergencies that may occur at the practice location.³

1.3 Protection from Discrimination and Harassment: The practice shall maintain an environment free from discrimination and harassment.

1.3.1 The practice shall develop, publish, and enforce written anti-discrimination and anti-harassment policies that meet or exceed federal, state, and local laws.⁴

1.3.2 The practice shall establish and maintain mechanisms and procedures for addressing patient complaints regarding discrimination and/or harassment in the practice.

1.4 Access to Medical Records: The practice shall provide access for patients to inspect, review, receive, and/or transfer their medical records, in accordance with federal, state, and local laws.^{5,6}

1.4.1 Upon request of the patient, the practice shall deliver medical records, including billing records, case management, insurance claims processing information, and other records containing protected health information (PHI) in a format that is consistent with federal, state, and local laws.

1.4.2 The practice shall adopt, publish, and disseminate the procedures by which patients may access their medical records, even if there should be a change of practice ownership or practice closure, so that patients have a clear understanding of the process, timeline, and fees.

1.5 Commitment to Transparency Regarding Fees, Costs, and Coverage of Care: The practice shall operate in a manner that promotes transparency in the cost and coverage of audiologic and vestibular services to empower patients to make informed decisions regarding their care.

1.5.1 The practice shall provide a written bill listing services and corresponding fees to each patient, which clearly outlines the goods and services necessary for the provision of high quality audiologic care regardless of being a bundled or itemized/unbundled model.

1.5.2 The practice shall establish, maintain, execute, and document communication protocols and activities to inform patients about financial information necessary to their treatment decision-making process, including but not limited to, the status of their insurance claims, the need for insurance waivers, notices of non-coverage (including Medicare Advance Beneficiary Notices), required out-of-pocket costs, and alternative financing options.

1.5.3 The practice shall adopt and enforce a conflict of interest (COI) policy that guarantees and protects the independent judgment of providers for any advice or treatment offered to patients.

1.5.3.1 Conflicts of interest include but are not limited to loans, incentives, minimum purchase agreements, stock ownership, and/or the acceptance of gifts or items of value which exceed "nominal value" as defined by the U.S. Department of Health and Human Services Office of Inspector General (OIG).⁷

1.5.3.2 The COI policy shall require that a conflict of interest, which may compromise the practice's or provider's primary duty to the patient will either be resolved in the best interest of the patient or will be disclosed to the patient.

1.5.4 The practice and its providers adhere to truth in advertising laws, and ethically present their education and credentials to patients, as consistent with professional organizational guidelines.^{8,9,10,11}

Section 2: Clinical Services

2.1 Commitment to Preventive Care within the Community. The practice shall engage in concerted education, outreach, hearing conservation, and falls risk prevention activities.

- 2.1.1** The practice shall promote a variety of hearing healthcare initiatives to educate and increase public awareness for the prevention of audiologic and vestibular disorders.
- 2.1.2** The practice shall educate colleagues in other health disciplines to promote timely referral for audiologic and vestibular issues.
- 2.1.3** The practice shall provide a range of information to individuals regarding factors that may cause temporary or permanent damage to the auditory/vestibular system.
- 2.1.4** The practice shall offer hearing screening tools for the determination of hearing health status. (e.g. questionnaires, screening programs, web-based screen, etc.).
- 2.1.5** The practice shall provide a range of information and/or screening tools to educate individuals on factors which may increase falls risk.

2.2 Process of Diagnosis. The practice shall use and document systematic, evidence-based protocols throughout the diagnostic process.

- 2.2.1** The practice shall utilize a detailed case history process (not limited to the cochlear and vestibular systems) to document patients' symptoms, medical, and pharmacological history to formulate the test battery in support of a comprehensive assessment of each patient's auditory and/or vestibular system.
- 2.2.2** The practice shall seek, critically evaluate, and provide diagnostic protocols, which comprehensively assess the differential diagnosis of the auditory and/or vestibular systems including audiologic assessments, vestibular assessments, and other services as required.

2.3 Process of Treatment. The practice shall develop specific and measurable goals outlined within patient treatment plans, which recognize and support the unique needs of each patient.

- 2.3.1** Communication needs assessment: The practice shall complete a communication needs assessment, which includes a battery of both objective and subjective measures intended to assess residual auditory function beyond what can be determined by pure-tone and monosyllabic word-recognition-in-quiet testing.^{12,13}
- 2.3.2** Non-auditory assessment: The practice shall investigate associated non-auditory function as a part of the development of the treatment plan (such as, cognitive, visual, dexterity screenings, discussion of support system, environmental characteristics, etc.).^{12,13,14}
- 2.3.3** The practice shall offer a wide range of technological and aural rehabilitation training options to demonstrate a range of cost options and provide accessibility to patients from all socio-economic populations.

2.4 Treatment with Amplification. The practice shall adhere to rigorous and consistent measures of quality control in the dispensing of amplification products.

- 2.4.1** The practice conducts an electroacoustic analysis to correlate and confirm device function with current ANSI standards of tolerances prior to dispensing a new, repaired, and/or reconditioned products.¹⁵
- 2.4.2** The practice shall use the most reliable evidence-based method for gain verification to measure audibility of soft and average speech input signals across the speech spectrum,

as well as to determine maximum output levels to avoid exceeding a patient's loudness discomfort level (LDL). (i.e. Real-Ear measures, Real Ear to Coupler Differences)¹⁶

2.4.3 The practice shall use alternative conformity assessments, such as sound field measures for functional gain, aided speech in noise testing, and questionnaires. Alternative assessments may be used if and when the technology or patient characteristics do not allow for real-ear protocols (deep insertion devices, implantable technology, etc.).¹⁷

2.4.4 The practice shall have an established process of technology orientation and counseling support to ensure appropriate information has been provided and the patient and/or caregiver no longer requires further post-fitting care.

2.4.5 The practice shall perform outcome measures to ensure intervention has made a difference and provides benefit to the patient. The test battery shall include assessment of objective benefit, subjective benefit, satisfaction, and pattern of usage.¹⁷

2.5 Other Services. If additional clinical services are provided by the practice, the practice shall establish a plan of pre- and post-treatment measures to evaluate the effectiveness of services.

2.5.1 Treatment services may include, but are not limited to: Vestibular rehabilitation, tinnitus, aural rehabilitation, counseling, (central) auditory processing disorder (CAPD), and implantable technology.

2.6 Referral Capabilities. The practice shall have access to an established professional network to support timely referral when the patient's needs fall outside of practice services. The referral network may include outside audiology practices, primary care providers, and specialty providers such as otologists, neurologists, physical therapists, psychologists and other related specialties, when needed.

2.6.1 The practice shall use appropriate interprofessional and intra-professional communications when collaborative care is needed.

Section 3: Instrumentation, Equipment & Facilities

3.1 Recognition of Impact and Importance of Instrumentation and Equipment on Standard of Care.
The practice shall house and maintain instruments and equipment to assure safety and efficacy in treatment, as dictated by the services provided.

3.1.1 Infection control equipment is mandatory for the provision of care, and includes the following:

Infection Control Equipment & Supplies	Requirements	Additional Considerations
Disposable Equipment	Disposable ear specula, eartips, earmold impression syringe tips, insert receivers, REM/PMM probe tubes, earphone covers, gloves, and/or other one-time-use equipment; Must meet OSHA and CDC guidelines. ^{18,19}	
Personal Protective Equipment	Safety eye goggles, glasses, face masks, gloves, smocks, and/or other personal protective apparel and equipment; Must meet OSHA and CDC guidelines. ^{18,19}	
Cleaning and Disinfecting Products	Cleaning supplies and applicators; sterilization/antiseptic/antimicrobial/disinfectant agents, soaps, and cleansers; Must meet OSHA and CDC guidelines. ^{18,19}	
Waste Capture and Storage	Paper towels, wipes, storage containers, and/or waste receptacles; Must meet OSHA and CDC guidelines. ^{18,19}	

3.1.2 Audiologic diagnostic equipment includes the following (note: all required equipment is dependent upon services provided):

Audiologic Diagnostic Equipment	Requirements	Additional Considerations
Otoscopic Equipment	Must meet U.S. Food and Drug Administration requirements outlined in 21 CFR 874.4770 ²⁰	
Sound-treated Enclosure	Must meet ANSI standards ²¹	
Audiometer	Minimum 1.5 channel, capable of Air-conduction and Bone-conduction audiometry, live and recorded speech (recorded material available e.g. recorded word lists, Quick SIN), and both inserts, and headphones are available. Must meet U.S. Food and Drug Administration requirements outlined in 21 CFR 874.1050 ²⁰	Include considerations for special populations (e.g. high-frequency audiometer and headphones, visual reinforcement audiometry etc.)
Acoustic Immittance Instrumentation	Tympanometry, Acoustic Reflex Thresholds, Acoustic Reflex Decay and Eustachian Tube Function testing. Must meet U.S. Food and Drug Administration requirements outlined in 21 CFR 874.1090 ²⁰	Include considerations for special populations (e.g. high-frequency probe tone, wide-band, reflectance)
Diagnostic Otoacoustic Emissions Instrumentation	Must meet U.S. Food and Drug Administration requirements outlined in 21 CFR 874.1050 ²⁰	Include considerations for special populations (e.g. auditory brainstem response (ABR) instrumentation, (central) auditory processing disorder (CAPD) test materials)

3.1.3 Audiologic treatment and management equipment includes the following (note: all required equipment is dependent on services provided):

Audiologic Treatment and Management Equipment	Requirements	Additional Considerations
Amplification and programming instrumentation and software appropriate to patient needs	All tools, software, and equipment needed for dispensing, modifying, and maintaining hearing devices (daily wear and extended wear).	Hearing aids, implantable devices, sound generators, alternative amplification devices, and hearing assistive technologies
Hearing instrument electroacoustic test box	Calibrated annually, or as required by state law.	
Real ear measurement instrumentation	Calibrated annually, or as required by state law. Must meet U.S. Food and Drug Administration requirements outlined in 21 CFR 874.3310 for "Calibrator, Hearing Aid/ Earphone & Analysis Systems" ²⁰	
Audiometer with soundfield equipment	Calibrated annually, or as required by state law. Must meet U.S. Food and Drug Administration requirements outlined in 21 CFR 874.1050 ²⁰	
Cerumen management tools and instrumentation	Curettes, alligator forceps, suction tools and equipment, magnification and illumination instrumentation, and lavage equipment and instrumentation. Must meet U.S. Food and Drug Administration requirements outlined in 21 CFR 874.4420 ²⁰	
Telehealth equipment and interfaces, consistent with patient needs	*Secure and dependable internet connection. Hardware including computers, tablets, telephones, cameras and other equipment, and associated software specific to telehealth	Compliant with federal and state laws and insurance requirements

3.1.4 Vestibular Diagnostic equipment includes the following (note: all required equipment is dependent upon services provided):

Vestibular Diagnostic Equipment	Requirements	Additional Considerations
Otosopic equipment		
Video nystagmograph with goggles and TV/Projector for stimulus	Calibrated annually or as required by state law. Must meet Food and Drug Administration requirements outlined in 21 CFR 882.1460 ²²	
Caloric irrigator/stimulator	Must meet Food and Drug Administration requirements outlined in 21 CFR 874.1800 ²⁰	
Plinth Table/Exam table	Must meet Food and Drug Administration requirements outlined in 21 CFR 890.3520 ²³	
Advanced diagnostic equipment, potentially including the following: Rotary chair, video head impulse test (VHIT) equipment, vestibular evoked myogenic potential equipment, auditory brainstem response instrumentation, computerized dynamic posturography equipment, dynamic visual acuity test equipment, vestibular autorotational test equipment. Subjective Visual Vertical equipment	Advanced diagnostic equipment must meet applicable Food and Drug Administration requirements outlined in 21 CFR 882.1460, 21 CFR 882.1900, 21 CFR 882.1870, 21 CFR 882.1890, 21 CFR 874.1820, and other sections of the Code of Federal Regulations as applicable. ^{20,22}	
Electrophysiology Equipment	Must meet Food and Drug Administration requirements outlined in 21 CFR 890.1175 ²³	

3.1.5 Vestibular Treatment and Management includes the following (note: all required equipment is dependent upon services provided):

Vestibular Rehabilitative Equipment	Requirements	Additional Considerations
Plinth Table/Exam Table	Must meet Food and Drug Administration requirements outlined in 21 CFR 890.3520 ²³	
Video goggles	Recording capability	

3.2 Facilities Management. The practice shall use and maintain facilities that promote patient safety, security, access and mobility.

- 3.2.1** The practice shall provide waiting, treatment, and office areas which adhere to Americans with Disabilities Act (ADA) regulations.¹
- 3.2.2** The practice shall house, manage, and store patient records in a manner that complies with Health Insurance Portability and Accountability Act (HIPAA) regulations.⁵
- 3.2.3** The practice facilities shall be clean, well-maintained, well-lit, and free from hazards.
- 3.2.4** The practice facilities shall meet or exceed zoning, fire, and occupancy requirements as determined by local, state, and federal law.

Section 4: Practice Administration

- 4.1 Mission and Vision.** The practice shall develop a mission statement or formal statement of purpose that clearly outlines its purpose, services offered, and how and by whom services are rendered.
- 4.1.1** The practice shall develop a written statement of its commitment to operate in a manner that ensures the rights of its patients.
 - 4.1.2** Practice staff members shall be able to describe the mission and core philosophies of the practice.
 - 4.1.3** The practice mission statement and supporting information shall be readily accessible to staff and patients.
- 4.2 Human Resources.** The practice shall establish and maintain standards for the recruitment, administration, management, training, and separation of employees. For the purpose of this document, the term "staff" may include students, independent contractors, volunteers, owners, and full-time and part-time employees.
- 4.2.1** The practice's employment policies shall be regularly evaluated against federal, state, and local laws, and meet or exceed those requirements. All staff, including students and observers, shall sign a confidentiality agreement to protect patients' Personal Health Information (PHI) and non-disclosure of said information outside of the office.
 - 4.2.2** The practice shall provide each staff member with a current job description for their role in the practice.
 - 4.2.3** The practice shall ensure that all staff has the appropriate credentials, licensure, and documentation for employment and the delivery of assigned services.
 - 4.2.3.1** The practice shall collect and record all required documentation for immigration, licensure, credentialing, insurance, education/training, and such documentation shall be kept in a manner and format which complies with federal, state, and local laws.
 - 4.2.4** The practice shall provide staff with an employee handbook containing information concerning employment policies, expected practice etiquette, related guidelines, and a process by which to ask questions or seek clarification on matters that are not clear.
 - 4.2.4.1** The practice employee handbook shall minimally include information regarding roles, responsibilities, employment evaluations, anti-discrimination, benefits, training, conflict-resolution, sick and vacation policies, hiring, discipline, dismissal policies, emergency/evacuation planning and training, infection control policies, general conduct, and OSHA safety standards.
 - 4.2.4.2** The practice employee handbook shall include an organizational chart, job descriptions, and other information that clearly delineate the responsibilities of all personnel.
- 4.3 Policies & Procedures.** The practice shall provide written guidelines, processes and procedures to staff covering office and business management procedures, and clinical and safety protocols for staff and patients.
- 4.3.1** The practice shall establish and document a clinical protocol for all diagnostic, rehabilitative, and preventive services as described in Standards 2.2, 2.3, 2.4 and 2.5.
 - 4.3.2** The practice shall implement a regular process and format for staff coaching, and feedback, which includes both verbal and written communications.
 - 4.3.3** The practice shall establish and hold regular meetings to discuss practice operations, and modifications to or questions regarding established practice requirements, processes, procedures, and patient management.

4.4 Accounting and Financial Management. The practice shall establish and adhere to legal and ethical procedures for fiscal management

- 4.4.1 The practice shall rely upon a system of checks and balances to ensure compliance with generally acceptable accounting procedures for cash management, banking, billing and receipting of patients' transactions.
- 4.4.2 The practice has a system to manage insurance claims and other forms of payments, along with a policy for accounts receivable collections.
- 4.4.3 The practice has a system for documentation and payment of salaries and other payroll benefits to staff, which ensures accuracy, and compliance with required federal, state, and local tax laws.
- 4.4.4 The practice shall have policies that ensure payments are made in a timely fashion, and a system for payment of accounts payable.
- 4.4.5 The practice shall have the ability to produce financial statements and a policy of regularly providing profit and loss, balance sheet, cash flow, and other reports to owners and designated managers at minimum on a quarterly schedule.
- 4.4.6 The practice shall prepare and implement a budget on an annual basis.
- 4.4.7 The practice shall establish and maintain systems and mechanisms to deter or prevent theft, fraud, or waste.

4.5 Insurance Contracting & Reimbursement. The practice shall establish and maintain policies, procedures, and documentation that demonstrate conformity with current accepted coding practices, and compliance with federal, state, and local laws including HIPAA, Stark, anti-kickback, false claims, truth-in-advertising, and other laws related to the commercial delivery of health care services.^{5,7,8,24,25}

- 4.5.1 The practice shall have contracts in place and on file for every third-party payer for which they are contracted.
- 4.5.2 All applicable CPT, ICD and HCPCS codes utilized for each patient shall be listed on the itemized bill of services.^{26,27}
- 4.5.3 Third party waivers shall be given to the patient when applicable to apprise and educate the patient of their financial obligations and those of their payer(s)
- 4.5.4 For Medicare Part B patients, Advanced Beneficiary Notices (ABNs) should be given prior to service delivery for mandatory or voluntary use. Mandatory use is when the provider questions whether they will meet the Medicare definition of medical necessity. Voluntary use can be offered, but is not required, for those services that are statutorily excluded.
- 4.5.5 For Medicare Part C patients, a pre-authorization for non-covered services should be given by each specific Medicare Advantage plan and should be obtained from that payer.
- 4.5.6 Services provided by students must be supervised 100% of the time for diagnostic services billed to Medicare Part B and for other payers who require supervision by the supervisor.
- 4.5.7 For commercial insurance, waivers shall be given when the patient chooses to upgrade their technology from a basic (covered) item or service to a more sophisticated (non-covered) item or service, with the approval by the payer. Providers may offer their own waiver if permitted by the payer.
- 4.5.8 For Third Party Administrators, waivers may not be applicable and need to be verified by the payer; when signing the contract, you have agreed to all fixed terms of the contract.

4.6 Patient sales contracts and purchase agreements. State licensure laws often offer requirements of what is to be included in the purchase agreement when devices are purchased. Practices must demonstrate adherence to these requirements.

4.6.1 At a minimum sales agreements must include the name and address of the practice, the name and license number of the provider, name of patient, the date of the purchase agreement, the terms of the purchase agreement that includes the length of time for the device's evaluation and adjustment period, the amounts due and when, the process for return for credit and the amount of funds to be retained by the practice when the device(s) are returned in good condition, the terms if they are not returned in good condition, the serial number of the devices and for which ear and the time and coverage of the warranty period.

4.7 Marketing and Communication Plan. The practice shall create and implement a marketing and communications plan that is consistent with its vision, mission, and best business and clinical practices.

4.7.1 The practice shall advertise and promote services in a manner that is complies with legal requirements and professional code(s) of ethics for audiology.^{8,9,10,11}

4.7.2 Marketing strategies employed by the practice may include research, traditional media, interactive media, community outreach, physician/provider outreach, patient recall, public relations, and other methods as needed to support practice objectives.

4.7.3 The practice shall create and adopt a crisis communications plan.

4.8 Records Management and Retention. The practice shall establish and maintain a records retention policy that assures electronic, paper and multi-media data and records are maintained in a manner that protects them from theft, harm, or destruction, and that is compliant with federal, state, and local laws.

4.8.1 The practice shall record and implement a records retention schedule that addresses the following types of records: Patient, financial, equipment/instrument ownership and calibration, corporate and insurance contracts, corporate filings, tax, safety, vendor, and employment records as required to comply with state, federal, and law.^{29,30}

4.9 Vendor Management. The practice shall establish and follow policies and for engaging and maintaining relationships with product and service providers, creditors and industry partners.

4.9.1 The practice shall establish a process for evaluating and selecting vendors.

4.9.2 The practice shall maintain contracts with vendors whenever feasible.

4.9.3 The practice shall have Business Associate Agreements (BA) in place with vendors who will have access to patient personal health information (PHI) as defined under HIPAA.⁵

Section 5: Quality Assurance and Performance Improvement

- 5.1 Training & Education: Audiologists.** The practice shall demonstrate a commitment to training and education for audiologists as a means of quality assurance and exceptional performance.
- 5.1.1** The practice shall assure that audiologists providing direct patient care acquire and maintain a license in the appropriate state and/or federal jurisdiction to legally provide clinical services on behalf of the practice. Liability insurance must be maintained on an annual basis for all providers.
 - 5.1.2** The practice shall assure that its practicing audiologists obtain a minimum of 15 hours of continuing education credit annually, or the state licensure requirement, whichever is greater.
- 5.2 Training & Education: Support Staff.** The practice shall demonstrate a commitment to training and education for support staff as a means of quality assurance and exceptional performance.
- 5.2.1** At a minimum, support staff and facility-employed hearing instrument specialists, audiologist's assistants, and other clinical staff must acquire and maintain a license (if one is required) in the state(s) where the practice is located, or where services will be provided.
 - 5.2.1.1** The practice shall document that required training requirements have been met for the maintenance of state licensure for clinical support staff (if licensure is required).
 - 5.2.2** Patient care coordinators and front office staff engaging in hearing aid services shall be trained to adhere to federal and state regulations.
- 5.3 Training Plan.** The practice shall establish a training plan for each audiologist and clinical support staff member and shall provide support for continuing education.
- 5.3.1.1** All staff shall be provided opportunities for training that will encourage them to follow and observe best practices.
 - 5.3.1.2** Support may be provided through financial, time (for onsite or offsite training), review and analyzation of case studies conducted by the staff, and/or other applicable activities and resources, that are directed to acquire, maintain, and advance the necessary skills in the provision of licensed audiologic services and support services.
- 5.4 Written clinical protocols.** All provided clinical services shall have a corresponding, written protocol attesting to the evidence based best practice for all specific services or procedures. Protocols shall be developed for both routine and rare events. [Examples may include, but are not limited to sudden hearing loss, ototoxicity baseline and monitoring, falls risk, and tinnitus mental health referrals for those experiencing depression.]
- 5.5 Clinical Decision Trees (Algorithms).** Practices shall develop (or adopt) step-by-step clinical algorithms to determine whether and when to perform procedures to solve a clinical problem.
- 5.5.1** Clinical decision-making algorithms shall be based on documented evidence-based best practices, professional judgment, and individual patient characteristics. The assessment procedure may vary from these algorithms based on patient needs, cooperation, and the assessment setting. Algorithms should be used to determine, identify, quantify, describe, and/or assess.^{17,31,32}
 - 5.5.2** Clinical decision-making algorithms shall be evaluated annually with clinical documentation of the review.
 - 5.5.3** Clinical decision-making algorithms should be examined against several factors.

5.5.3.1 Algorithms shall address the developmental age, or special populations for which the algorithm is appropriate.

5.5.3.2 Algorithms shall address the referrals received for which algorithm is appropriate as well as referrals outside the practice, which are appropriate for this algorithm.

5.5.3.3 Algorithms shall address expected outcomes the audiologist plans to develop or prepare for patient as a result of completing the assessment

5.5.3.4 Algorithms shall address the clinical process, including the decision-making and interpretation regarding diagnostic and rehabilitative implications of information, observations, and results occur throughout this process.

5.5.3.5 Algorithms shall be accompanied by references.

5.5.3.6 Algorithms shall be reviewed at regular intervals to incorporate new evidence.

5.6 Coordinated feedback. The practice shall implement mechanisms for formal and informal feedback from patients and staff.

5.6.1 Patient surveys shall be used to assess patient satisfaction with clinical services, operations, and outcomes.

5.6.1.1 Patient feedback should be obtained at regular intervals, and at least annually.

5.6.1.2 The practice may use written, verbal, or online survey tools to obtain feedback.

5.6.2 Staff surveys shall be used to assess staff satisfaction with clinical services, operations, and outcomes.

5.6.2.1 Staff feedback should be obtained at regular intervals, and at least annually.

5.6.2.2 The practice may use written, verbal, or online survey tools to obtain feedback.

5.6.3 Staff meetings shall be held regularly to assess clinical operations to ensure the delivery of cohesive, evidence-based services. Staff meetings should provide an opportunity to discuss and address quality improvement efforts, specific concerns or negative outcomes, risk management, and innovations in all systems.

5.6.3.1 For those facilities who do not employ any staff, it is understood that self-reflection activities will be conducted in lieu of staff meetings.

5.7 Practice, Provider and Patient metrics. The practice shall establish and use metrics to evaluate business and clinical outcomes, improve performance, and to identify risks, strengths, weaknesses, opportunities and threats.

5.7.1 The practice shall develop and apply the Key Performance Indicators (KPI), to each area of the practice.

5.7.2 The practice shall publish the KPIs to be monitored, and document the rationale, the chain of responsibility, and the intervals for measuring and reporting.

5.7.3 The practice shall inform and train staff regarding each metric/KPI for which they will have responsibility to develop, impact, monitor, or report.

5.7.4 The practice shall provide documentation that KPIs have been recorded, monitored, and utilized in decision-making processes.

5.8 Equipment Calibration and Maintenance. The practice shall establish and implement a calibration and maintenance schedule for equipment and instruments, which meets or exceeds both legal and recommended industry standards.

5.8.1 Calibration and maintenance records shall be maintained by the practice in conjunction with the practice's record retention policy.

5.8.2 Maintenance and calibration records shall be publicly available upon request.

REFERENCES:

1. Americans with Disabilities Act (ADA) Federal Government website. Accessed on April 27, 2018 at the following link: <https://www.ada.gov/>.
2. Bankaitis, A U, and Robert J. Kemp. *Infection Control in the Audiology Clinic*. United States: Auban, 2005. Print.
3. United States Department of Labor Occupational Safety and Health Administration. Evacuations Plans and Procedures e-tool website. Accessed on May 15, 2018 at the following location: <https://www.osha.gov/SLTC/etools/evacuation/checklists/eap.html>.
4. U.S. Equal Employment Opportunity Commission. Discrimination Laws and Statutes website. Accessed on May 15, 2018 at the following location: <https://www.eeoc.gov/laws/statutes/>.
5. U.S. Department of Health and Human Services. HIPAA requirements. Accessed on May 10, 2018 at the following location: <https://www.hhs.gov/hipaa/for-professionals/privacy/guidance/access/index.html>.
6. Findlaw website for state laws related to medical records. Accessed on May 10, 2018 at the following location: <https://statelaws.findlaw.com/health-care-laws/medical-records.html>.
7. Office of the Inspector General. Statement on nominal value. Accessed on May 12, 2018 at the following location: <https://oig.hhs.gov/fraud/docs/alertsandbulletins/OIG-Policy-Statement-Gifts-of-Nominal-Value.pdf>.
8. Federal Trade Commission website. Truth in Advertising laws. Accessed on May 15, 2018 at the following location: <https://www.ftc.gov/news-events/media-resources/truth-advertising>.
9. USA.gov State Consumer Protection website. Accessed on May 16, 2018 at the following location: <https://www.usa.gov/state-consumer>.
10. Academy of Doctors of Audiology Code of Ethics. Accessed on May 10, 2018 at the following location: <http://www.audiologist.org/academy-documents/code-of-ethics>.
11. American Academy of Audiology Code of Ethics. Accessed on May 10, 2018 at the following location: https://www.audiology.org/sites/default/files/about/membership/documents/Code%20of%20Ethics%20with%20procedures-REV%202018_0216.pdf.
12. Committee on Accessible and Affordable Hearing Health Care for Adults; Board on Health Sciences Policy; Health and Medicine Division; National Academies of Sciences, Engineering, and Medicine; Blazer DG, Domnitz S, Liverman CT, editors. *Hearing Health Care for Adults: Priorities for Improving Access and Affordability*. Washington (DC): National Academies Press (US); 2016 Sep 6. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK367633/> doi: 10.17226/23446
13. ASHA. Hearing aids for adults. 2016f. [April 25, 2016]. <http://www.asha.org/Practice-Portal/Professional-Issues/Hearing-Aids-for-Adults>.
14. Valente M. Guideline for audiologic management of the adult patient. 2006. [February 22, 2016]. <http://www.audiologyonline.com/articles/guideline-for-audiologic-management-adult-966>.
15. Ravn G, Preves D. Hearing Aid-Related Standards and Test Systems. *Seminars in Hearing*. 2015;36(1):29-48. doi:10.1055/s-0034-1396925.
16. Lindsey E. Jorgensen, Verification and validation of hearing aids: Opportunity not an obstacle, *Journal of Otology*, Volume 11, Issue 2, 2016, Pages 57-62, ISSN 1672-2930, <https://doi.org/10.1016/j.joto.2016.05.001>. (<http://www.sciencedirect.com/science/article/pii/S1672293016300228>)
17. American Academy of Audiology Guidelines and Standards website. Accessed on May 7, 2018 at the following location: <https://www.audiology.org/publications/guidelines-and-standards>.

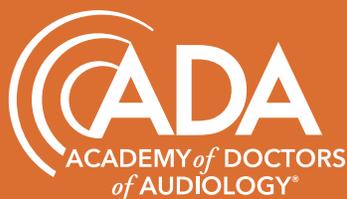
18. U.S. Department of Labor. Occupational Safety and Health Administration. Healthcare. Infectious Diseases. Accessed on May 14, 2018 at the following location: https://www.osha.gov/SLTC/healthcarefacilities/infectious_diseases.html,
19. United States Centers for Disease Control and Prevention. Guidelines for Infection Control. Accessed on May 15, 2018 at the following location: <https://www.cdc.gov/infectioncontrol/guidelines/index.html>
20. U.S. Food and Drug Administration. Code of Federal Regulations Title 21 Section 874. Accessed on May 16, 2018 at the following location: <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=874>.
21. ANSI-S3.1-1991, Maximum permissible ambient noise levels for audiometric test rooms. <https://www.ansi.org/>
22. U.S. Food and Drug Administration. Code of Federal Regulations Title 21 Section 882. Accessed on May 16, 2018 at the following location: <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=882>.
23. U.S. Food and Drug Administration. Code of Federal Regulations Title 21 Section 890. Accessed on May 16, 2018 at the following location: <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=890>.
24. Centers for Medicare and Medicaid Services (CMS) <https://www.cms.gov/Medicare/Fraud-and-Abuse/PhysicianSelfReferral/index.html>. Physician Self-Referral website. Accessed on May 14, 2018.
25. Office of Inspector General, U.S. Department of Health and Human Services. Fraud and Abuse Laws website. Accessed on May 15, 2018 at the following location: <https://oig.hhs.gov/compliance/physician-education/01laws.asp>.
26. Centers for Medicare and Medicaid Services (CMS) coding and Education website. Accessed on May 15, 2018 at the following location: <https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/MLN-Publications-Items/ICNg00943.html>.
27. Sjoblad S, Abel D. How to Implement Itemization in an Audiology Practice. *Seminars in Hearing*. 2016;37(2):137-147. doi:10.1055/s-0036-1579704.
28. Internal Revenue Service (IRS) website. Accessed on May 10, 2018 at the following location: <https://www.irs.gov/businesses/small-businesses-self-employed/how-long-should-i-keep-records>.
29. Centers for Medicare and Medicaid Services (CMS) Medical Record Retention and Media Formats for Medical Records. Accessed on May 15, 2018 at the following link: <https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/SE1022.pdf>.
30. The American Speech-Language Hearing Association. Practice Portal, Audiologists. Accessed on May 15, 2018 at the following link: <https://www.asha.org/Practice-Portal/Audiologists/>.
31. The American Speech-Language Hearing Association. Joint Committee Clinical Practice Statements Algorithms. Accessed on May 15, 2018 at the following link: <https://www.asha.org/policy/GL1999-00013/>.



CALL FOR VOLUNTEERS

Help build the future of audiology, while building your leadership experience and your professional network. No experience required.

Visit audiologist.org/leadership/committees and volunteer today.



The Power to Practice



INSIGHTS FROM THE OUTSIDE

Mastering the Initial Patient Contact and Pre-appointment Conversation

Insights from the Outside is a group of practicing clinician-owners. They are a diverse group from many medical specialties, including dentistry, veterinary medicine, cosmetic surgery, ophthalmology, audiology and optometry. Uniquely created by CareCredit, the groups' purpose is to capture and share “best practices” to some of the common challenges all health-care business owners face, such as attracting new patients, patient barriers to care, care acceptance, patient retention, social media, team training and empowerment and much more.

This article features ophthalmologist Dr. Ethan Sadri, owner of Atlantis Eyecare, dentist Dr. Howard Ong, owner of Seal Beach Dentistry, and Nola Aronson M.A., CCC-A, owner of Advanced Audiology.



Can you share your goals and desires when it comes to the patient experience in your practice?

MS. ARONSON The overall goal of our patient experience is to make patients feel comfortable and understand that we are here to help in any way we can with their hearing concerns. Our patient experience starts with an introduction to our front office receptionist. Then the patient is escorted to our waiting room where they can read some literature and enjoy some coffee, candy and other treats. We have a video playing in the background that explains about hearing loss and new technology — hopefully educating the patient while entertaining them at the same time. When it's time to see the provider, it's our hope that they are comfortable and informed about hearing loss and what they can expect from their visit to our office.

DR. SADRI Like Ms. Aronson, we really focus on educating our patients about the latest updates and innovations in eye care. We also use video and written content to provide patients with as much relevant information as we can, prior to their exam, so that their visit with the doctor is as efficient and effective experience as possible.

DR. ONG Our patient experience is directly linked to our practice culture—which we define through our relationship-building skills. We feel the best way to gain initial trust and confidence is to take the time to simply speak to, visit and honestly connect with patients. Once that initial relationship is established, everything else follows—from educating patients and instilling confidence in our treatment recommendations to having patients accept and follow through with care. We personally go out and greet every patient and walk them into our practice. Little things like that are just part of our practice culture and goes back to treating patients like we would want to be treated.



Is the patient experience something that you and your team purposefully craft and continually update?

DR. SADRI Yes, we routinely craft and update our messaging to the patient. I think an informed patient is a powerful patient who can ask proper questions and understand and take part in their own care. Also, an informed patient is typically more motivated to move forward with their procedure or care goals. With the advent of the internet and all the different information that's available today, patients are really savvy. While I definitely think it's important that we as clinicians control the dialogue from a healthcare provider's standpoint, as far as I'm concerned there's no such thing as an over-informed patient.

DR. ONG Yeah, I would agree with that. Our major focus is relationship-building which can be hard to monitor but one of the things we do to stay up-to-date with what's happening with our patient experience is have regular meetings. We divide our practice into different teams and we meet as a group at least once a month. During that time we talk about relationship-building. We make sure that every team member understands that this is the single most important tool we have to create a positive patient experience.

MS. ARONSON Similar to what Dr. Ong said, we have clinic meetings where we go over what's going on with each patient. If we've had any problems with a patient we try and determine why, what happened, what was said to the patient, what we can do to rectify the problem and what we can learn from it so that it doesn't happen again.



What are your practice's first points of contact with the patient?

DR. ONG These days it's the internet or our social media platform. Patients are definitely checking us out online before contacting us. In fact, we had several new patients come in this past month, and when we asked how they heard about us, more than half said they found us on social media through Yelp or Facebook or some other form of digital media.

We actually have a review system that generates a request to patients automatically after their visit. Once they've completed a review we get their permission and then post it on our Facebook page and other social media platforms. That seems to be the primary way that many of our new patients are prompted to call or come by or make an appointment.

MS. ARONSON I'm personally very involved in my community. Although it has 330,000 people, it's very tight knit. My husband does all the marketing for our practice and he and I belong to several networking groups. I'm also on the board of directors of two non-profits here so when people see our ads and other marketing materials, I think they feel like they already know, like and trust us because of how much we're out there in the community. You can't just sit behind your desk. People work with people they know and trust and so that's how we've built up our business by being out there. In addition to advertising in about four different papers, I'm also on a radio show on the senior hour once a month. So when people come to our practice, most of the time they say, "Oh, we see you everywhere. We feel like we know you already."

Something we just started is a physician newsletter. We also have a patient newsletter that we email out. And of course we have our website which is continually evolving. We put open house events that we have once a month on the website for people to see and there's a place for someone to sign up for a free hearing guide. We offer free hearing screenings to the whole entire community to get people into the door as well. We also recently started making videos. Most of them are informational because when somebody comes to your page, you want to look like the expert that knows everything so that they're not looking around at different websites. So we have different short videos that say how to take care of your hearing aid, how to clean your hearing aid, what happens when you need a hearing aid, you know we have a video on tinnitus, just whatever we can think of that people would be interested in.

DR. SADRI Our initial point of contact with patients usually comes through the phone, internet, or a primary care or optometry referral. Typically the patient calls in for an appointment with the provider. Then my team sends them a packet of information to review and forms to fill out so that when they come in, they have a clear understanding of what to expect at their appointment.



As you said, Dr. Sadri, often the first point of contact is an incoming phone call. How critical a step is this first person-to-person contact in the patient's journey?

DR. SADRI It's extremely critical. If a patient calls in and has to deal with long wait times, dropped calls, a short or unmotivated team member it simply kills a patient's confidence in the practice. On the other hand, if a patient experiences a pleasant greeting from a caring staff member with no wait or hold time, and they are able to schedule an appointment within a reasonable timeframe, they are far more likely to have a positive impression of your practice and keep their appointment. I think phone skills are like any other people skills; you have to be empathetic and come from a place of care and comfort for the patient.

DR. ONG I agree, and I'm happy to say our admin team is exceptional about welcoming patients over the phone. They take the time to walk new patients through our digital media — inputting their data online so when they come to our practice, they are ready. Our team also uses the initial phone call to really try and get to know the patient and determine their needs by asking questions that go beyond "How did you hear about us?" They ask about everything from the level of anxiety the patient may feel while undergoing treatment to the best time to schedule an appointment to eliminate conflicts. Those secondary or tertiary questions really help to set the patient up for success and limits disappointments. When it comes to phone skills I think a lot has to do with training. We meet and work on telephone training with our team every month. We discuss talking points, and if there's been any feedback from patients — positive or negative.

We also use scripts. Although after hundreds of phone calls all of our admins know exactly what to say by now. But for those who are just beginning or looking to improve their telephone skills, I definitely recommend starting with a script because you don't want to have a boring or meandering conversation with a patient that goes nowhere. You definitely want to be scripted and specific with those secondary, tertiary questions I was talking about so that you're capturing all the relevant information and the admin knows what they've talked about with the patient when they meet them for the first time.

MS. ARONSON That's a great idea, Dr. Ong. One of the things we do to maintain our phone skills is have secret shoppers call our office and give us feedback on what happened during the call. I also work with a company that records our phone calls so that I listen to them — especially the missed opportunities — and see what's happening and how the phone calls are being answered. We also do a lot of role-playing to make sure that first point of contact is really friendly on the phone. And we train our team to really listen to what the person is saying and we practice how to answer correctly. Because if you don't answer the questions right or you try to give prices over the phone or things like that, then the patient's going to go shopping around and looking around or if they don't feel comfortable, they're not going to make an appointment. So I think that first point of contact is one of the most important people in your office.



The next step in the patient journey is the pre-appointment communication. What do you do to continue the experience before the patient arrives at the practice?

MS. ARONSON In our follow-up with the patient we have a patient input form that the front office fills out that has certain questions to ask the patient about their hearing and what they're experiencing so that we can determine how to schedule the appointment appropriately and give enough time for the provider to be able to do things right. We also have our team member ask for a third-party to attend the appointment with the patient. They also use this conversation to ask the patient specific questions like, "What problems are you having?" "Do other people notice those problems, too?" "How long have you had those problems?"

Finally, to ensure that the patient shows up for their appointment, we do various things to confirm. We have a system that will email the patient a week before their scheduled appointment. Then we will email or text the patient to remind them a few days before and then our office staff will call the day before to confirm. We have a very low no show rate. In fact, the only time we have a no show is when it's raining outside.

DR. SADRI After the initial contact we have patients go to our website and fill out the necessary forms. Then they have a conversation with a counselor and a front office person to see what they're coming in for, how urgent it is and to provide them with educational materials up front. So if they are coming in for LASIK, we want to educate them about the procedure as much as possible up front. If they're coming in for cataracts, we want to do the same thing.

How we present the information to our patients depends on the demographic and the age. If they prefer email, we will send them materials that way. A lot of our patients still like the traditional mail, especially older patients, so we often use that method. Once they get the materials we ask the patient to review them and contact us with any questions. We find that patients who have engaged with the information come in more educated and knowledgeable about the procedure and feel more comfortable. If they didn't review the material, it's pretty obvious. When that happens, the first appointment becomes an informational appointment and then they have to come back for a follow up—which is fine but it's not as efficient as the patients who come in already having the basic knowledge about their treatment.

DR. ONG During our confirmation phone call, we always make sure that the patient knows which member of our team they are talking with. Then once they come in we make it a point to introduce them to the team member who initially had that phone conversation with them so they have a point of contact. That connection helps solidify and strengthen the patient experience. We also take the information we gathered in that initial conversation and we put it into their chart before we actually see the patient so the whole team, doctors and assistants are aware of some of the conversations we've had with the new patient. We leverage those notes when the patient comes, using them as bullet points during the chair-side conversation. You can literally see their eyes light up when they realize that someone was paying attention and as a result we now have a solid foundation on which to start a relationship. ■

This content is subject to change without notice and offered for informational use only. You are urged to consult with your individual business, financial, legal, tax and/or other advisors with respect to any information presented. Synchrony Financial and any of its affiliates, including CareCredit, (collectively, "Synchrony") makes no representations or warranties regarding this content and accepts no liability for any loss or harm arising from the use of the information provided. Your receipt of this material constitutes your acceptance of these terms and conditions.

REAL LIFE HEARING AND MACHINE LEARNING: A REVIEW

Continued from page 31

THREE ASPECTS OF MACHINE LEARNING



Modern hearing aid processing power is vast, compared to a decade ago. Integrating machine learning into hearing aids changes the way patients interact with their hearing aids and the realworld, providing them with opportunities for immediate personalized improvement based on their intentions and preferences in the moment, as well as long-term possibilities to make their hearing devices even smarter in the future. ■

James W. Martin, Jr, Au.D. is the Director of Audiological Communication for Widex USA.

Wendy Switalski, Au.D., MBA is the Director of Professional Development for Widex USA.

Jens Brehm Nielsen, Ph.D. is Architect of Data Science & Machine Learning for Widex, A/S, Lyngø, Denmark.

REFERENCES

- Gatehouse. (2016, June 13). *Auditory Ecology and its contribution to Quality of Life, with emphasis on the Individual*. Retrieved from Hearingirc.com.
- Jackson, P. (Director). (2001). *Lord of the Rings: The Fellowship of the Ring* [Motion Picture].
- John Paul Mueller, L. M. (2018). *Artificial Intelligence for Dummies*. New Jersey: John Wiley & Sons Inc.
- Mueller, J. P. (2016). *Machine Learning for dummies*. New Jersey : John Wiley & Sons Inc.,.
- Oliver Townend, J. B. (2018). Real-Life Applications of Machine Learning in Hearing Aids. *Hearing Review*.
- Paul R. Daugherty, H. J. (2018). *Human + Machine. Reimagining Work in the Age of AI*. Boston, Massachusetts: Harvard Business Review Press.
- Theobald, O. (2017). *Machine Learning for Absolute Beginners*. Scatterplot Press.
- Townsend, O., & Jens Brehm Nielsen, P. a. (2018). Soundsense Learn - Listening Intention and Machine Learning. *Hearing Review*.
- Tri. (2018). *The Nine Different Types of Intelligence*. Retrieved from Examinedexistence.com.

A SENSIBLE OUTCOME MEASURE FOR BUSY AUDIOLOGISTS

Continued from page 33

Assessment to be administered after fitting and at intervals over time. This approach decreases operational effort for clinicians and decrease number survey occurrences for the patient to generate useable data. Additional follow up interviews to capture current state allow for ongoing comparisons and changes to both most recent value and to “baseline”.

Because of hearing difficulties:

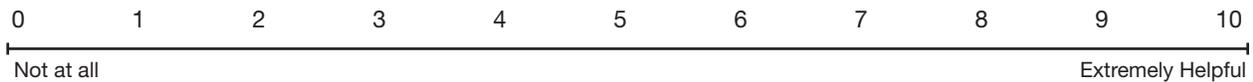
(check never, sometimes, most times)

	BEFORE you started wearing HEARING AIDs			AFTER being fitted for HEARING AIDs		
	Never/ Seldom	Sometimes	Most times	Never/ Seldom	Sometimes	Most times
1. You routinely engage in community or social activities?						
2. You actively talk to family members or friends who are sitting in the same quiet room with you?						
3. You feel anxious, frustrated, angry, sad or fatigued?						
4. You move away from a background noise source, or move closer to a speaker to better hear or see them in conversation?						

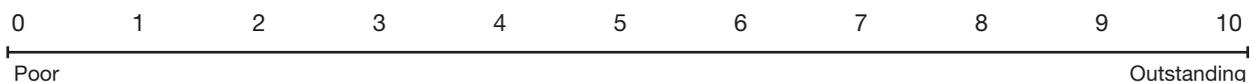
5. Think about how much you used your present hearing aids during the past two weeks. On an average day, how many hours did you use the hearing aids?

- None
 Less than 1 Hour
 1 to 4 Hours
 4 to 8 Hours
 More than 8 Hours

6. Think about the situation where you most wanted to hear better before you got your present hearing aids. In recent weeks, rate how much has the hearing aids helped in those situations?



7. Independent of how your hearing aids are performing,, how would you rate the quality of support that have received for your health aids?



8. Based on my current hearing health experience, I would recommend hearing aids to family and friends.

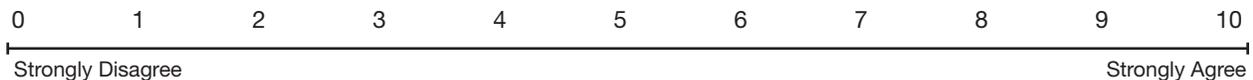


Figure 1. The Patient Centered Outcome Measure

Sources

1. Meyer, C., Grenness, C., Scarinci, N., & Hickson, L. (2016). What Is the International Classification of Functioning, Disability and Health and Why Is It Relevant to Audiology?. *Seminars in Hearing*, 37(3), 163-86.
2. Cox RM., Alexander, GC. and Beyer CM.. (2003) Norms for the International Outcome Inventory for Hearing Aids. *Journal of the American Academy of Audiology*, 14(8): 403-413.

EDITOR'S MESSAGE

Continued from page 7

Although Teixeira doesn't mention audiology or hearing aids in his book, some important lessons can be gleaned from his work. Given the high level of academic training and interpersonal communication skills of most audiologists, there are ample opportunities to decouple on-going follow-up care, counseling and support from the traditional customer value chain. For example, regardless of where a person bought their hearing aids, audiologists are poised to offer a comprehensive array of professional services that allow any person with hearing loss to optimize their communication, health and well-being. Indeed, work is already underway by some forward-thinking audiologists to offer self-management support training as part of patient centered care using the chronic care model and outlined in a recent issue of *Seminars in Hearing*.

The real challenge, however, is abandoning ineffective business tactics like trying to compete on price and, instead, striving to improve efficiency so that a decoupled (or unbundled) service package is both appealing to a broad swath of customers and profitable from the private practice.

You can learn more about the decoupled customer value chain and unbundled counseling and support packages here:

1. *Unlocking the Customer Value Chain: How Decoupling Drives Consumer Disruption* by Thales Teixeira, Currency Books, 2019
2. *Novel Approaches to Fostering Hearing Loss Self-Management in Adults*. *Seminars in Hearing*. February 2019. Guest Editor: Michelle L. Arnold, Au.D. ■

ONE YEAR OF ADA MEMBERSHIP - FOR FREE!

ADA
ACADEMY of DOCTORS
of AUDIOLOGY

2018 ADA Membership Application

Member Information

First Name: _____ M.I.: _____ Last Name: _____ Degree: _____
Business Name: _____ State: _____ Zip Code: _____
City: _____ Business Fax: _____
Business Phone: _____ Website: _____
Business Email: _____

Required Credentials

Referred by: _____ Code of Ethics: _____
 YES, I agree to abide by the Code of Ethics.
License #: _____ Associate _____ Au.D. School: _____
License State: _____ License State: _____ Graduation Date: _____
Au.D. School: _____ Au.D. School: _____
Graduation Date: _____ Graduation Date: _____

Employment

Business Setting: Private Practice ENT Office Hospital/Clinic Educator School System
 Community Agency Government Hearing Industry Consultant Retired Other

Payment Information

\$350 Fellow \$300 Associate \$50 Student \$50 Web Subscription \$525 Lifetime \$95 Assistant \$1000 Bundled Practice
 I prefer an online ONLY subscription to Audiology Practices. Doing so will reduce my membership fee by \$25.00 (Not eligible to Graduated Members)
 Check (enclosed) American Express MasterCard Visa Discover
Card number appears on credit card (please print): _____ Expiration Date: _____

Make the switch to Gravity Payments - the credit card processor ADA trusts - to provide your practice simple and seamless payment solutions and get a FREE year of ADA membership!

USE PROMO CODE "GRAVITY-AUD" TO TAKE ADVANTAGE OF THIS OFFER!

✓ CREDIT

✓ DEBIT

✓ MOBILE PAYMENTS

✓ ECOMMERCE

✓ POS

FIND OUT MORE:

WWW.AUDIOLOGIST.ORG/GRAVITY

gravity
PAYMENTS

HEAR AND NOW Early Career AuD Resources



The Academy of Doctors of Audiology offers a variety of resources for early career professionals.

Early Career Listserv: Subscribers can network and discuss issues facing new audiologists through this email-based discussion forum.

Young Professionals Resources: A collection of resources that will help you in your transition from student to professional.

Mentorship Program: What did you do right? What was harder than you expected? What do you wish you could change? As a recent graduate, you are a perfect candidate to help shape the future of audiology by becoming a mentor! Mentee opportunities are also available.

Visit audiologist.org/early for access to these resources and more!

