



BEST PRACTICE

It's a Matter of Ethics

BY CATHERINE V. PALMER

There has been a strong focus on professional ethics from the Academy since about 2001, and this focus certainly appears to be important and appropriate. But what about ethical practice? If we talk about ethical practice, we have to be comfortable saying that there are hearing health-care professionals who are not practicing ethically.

Brian Walden (2009) published an outstanding article summarizing the recent history of professional ethics in audiology and providing very clear guidelines in terms of what clinicians need to do in relation to conflicts of interest. There has been a strong focus on professional ethics from the Academy since about 2001, and this focus certainly appears to be important and appropriate. But what about ethical practice? I wonder if we have conveniently focused on professional ethics not only because it is important but because it actually is quite easy to talk about without implying anyone is really doing anything wrong. Most presentations start with something like “Although the gifts you are taking aren’t impacting your treatment choices, the perception is that

there could be an impact.” Somehow this lets us off the hook and provides us the chance to change our behavior not because we were actually doing something wrong but because others might think it was wrong. If we talk about ethical practice, we have to be comfortable saying that there are hearing health-care professionals who are not practicing ethically; there are people doing the wrong thing, and it has nothing to do with perception. There is no room for a statement like “It’s okay that you aren’t following best practices by not measuring the output of the hearing aid you are fitting, and it’s okay that you are charging for your expertise but not using it—it’s just that someone might perceive this as the wrong way to fit hearing aids.” Perception is not reality here; reality is reality.

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Unethical practice negatively impacts our patients and negatively impacts our profession. We are all responsible for our profession and must not tolerate behavior that would harm our collective reputation and ability to function as an autonomous profession dedicated to providing communication solutions.

The U.S. Food and Drug Administration (FDA) currently regulates hearing aids. This implies that hearing aids are considered devices that could potentially be dangerous to the consumer and that they are devices that need to be dispensed by individuals with expertise in verifying the performance of these devices. Therefore, hearing aids need to be fit by individuals knowledgeable about their features, able to manipulate the various parameters, and equipped to measure the output of these devices in the ear canal of the individual who will be using them. Practitioners must be capable of interpreting data in light of evidence related to how best to achieve the goals of a hearing aid fitting (audibility for a variety of levels of input, comfort, and sound quality).

Failure to measure implies that the hearing health-care professional believes the manufacturer's hearing aid settings are appropriate for the individual patient and there is no need for verification. The evidence that clearly indicates this is a false assumption includes work by Hawkins and Cook (2003), who reported a clear trend for manufacturer-simulated values to overestimate the output that was actually provided by the hearing aids with differences of as much as 20 dB. Keidser et al (2003) demonstrated that different manufacturer algorithms provided significantly different amounts of gain for the same hearing loss through their first fit settings. Mueller et al (2008) showed that there were significant differences between manufacturers when it came to the prescribed maximum output of hearing aids as well. The prescribed maximum output for six hearing aids from different manufacturers resulted in differences of more than 15 dB, and the estimated output graphs varied by more than 8 dB compared to measured outputs. Underfitting leaves sound

inaudible, and overfitting can potentially harm an individual. Both results are intolerable and are avoided when the actual output in the individual's ear is measured.

Mueller (1998) reported that only 34 percent of the audiologists responding to a *Hearing Journal* survey indicated that they used real-ear probe microphone measurements. Perhaps most disturbing in this survey was that 12 percent of these individuals indicated that RETZ was their measure of choice, and, of course, this is not a measurement at all (just a meaningless set of initials that Dr. Mueller added as a foil!). Mueller replicated this survey in 2005 and found similar, disappointing results with very little difference between individuals possessing varying degrees (MA vs. AuD) or years of practice. He had hypothesized that newly graduated AuDs would be using best practices since these clinicians were fortunate enough to be in doctoral-level programs where one would assume evidence-based practice formed the curriculum. This was not the case.

Bamford et al (2001) reported that only 20 percent of individuals fitting amplification to children used real-ear probe microphone measures. These individuals are comfortable relying on manufacturer estimations that Seewald et al (2008) showed generated substantial variation in output in a population that is unable to provide reliable reports about audibility and comfort. This is a population brought to us by parents who trust us by virtue of our membership in a profession. They trust that we are using the latest data and technology to insure that their baby hears the sounds that will be critical to speech and language development. Seewald (2008, p.26) notes that "Failure to appropriately verify the electroacoustic performance of the hearing aid in terms of predicted speech audibility and maximum hearing instrument output can result in obstructing the language benefits an infant would have otherwise received from being identified at an early age and optimally fitted." This is not something any of us would want to be accused of, yet this is exactly what the accusation would be. The individual

who did not measure the audibility of the hearing aid would simply have no defense for that behavior.

Two common responses from individuals who do not use real-ear probe microphone measures are that they cannot afford the equipment or that they do not have time to add this measurement to their hearing aid fitting appointments. Inability to afford required equipment is not an excuse for unethical practice. Until the appropriate equipment is obtained, individuals should not be fitting hearing aids. Inadequate time does not make sense, since verification through real-ear probe microphone measures is much more efficient and less time-consuming than questioning patients about the loudness of a sound that they cannot accurately judge, since they are new hearing aid users or using unreliable word recognition testing (Thornton and Raffin, 1978) to verify the fitting. If there is not time for real-ear probe microphone measures, then there is not time to fit hearing aids.

Audiology practice guidelines clearly state the standard for verifying the output of a hearing aid. The Academy's *Guidelines for the Audiologic Management of Adult Hearing Impairment* states that "Prescribed gain (output) from a validated prescriptive method should be verified using a probe microphone approach that is referenced to ear canal SPL." The guideline goes on to indicate that this can be "simulated" with the use of real-ear-to-coupler difference (RECD), which consists of a probe microphone measure that establishes the difference between the coupler and real ear so the actual response in the ear canal can be accurately estimated. This is the recommended method for fitting pediatric patients since the RECD is a quick measure that does not require the child to sit still for an extended period of time while fine-tuning takes place. The Academy's *Pediatric Amplification Protocol* (2003) supports this recommendation by stating, "Output characteristics should be verified using a probe-microphone approach that is referenced to ear canal SPL.... If probe-microphone measures of real-ear hearing aid performance are not possible, hearing aid performance can be predicted accurately in the real ear by applying age appropriate average RECD values to measured 2-cc coupler electroacoustic results."

Are best practices a matter of ethics? The Academy and American Speech-Language-Hearing Association (ASHA) codes of ethics make it clear that failure to follow best-practice guidelines is a violation. Principle 2 of the Academy *Code of Ethics* states that "Members shall maintain high standards of professional competence in rendering services.... Individuals shall maintain professional competence, including participation in continuing

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education,” and Principle 4 states that “Members shall provide only services and products that are in the best interest of those served.” Principle of Ethics II from the ASHA *Code of Ethics* states that “Individuals shall honor their responsibility to achieve and maintain the highest level of professional competence.” All of these statements point to the assumption that an ethical practitioner will follow the best practices supported by evidence and published by their professional organizations.

Until recently, clinicians who did not use real-ear probe microphone measures were in essence protected from questioning consumers. How could hearing aid purchasers know the standard for verifying the hearing aid response? The patient saw that the hearing aids were connected to a computer and there were graphs on the computer screen. These graphs do not represent measurements. Measurements result from a microphone being placed in the ear canal (either from an independent real-ear probe microphone system or from an integrated probe microphone system that may accompany a particular hearing aid). With the recent publication of the *Consumer Reports* (2009) article focused on hearing aids, consumers now have information that may empower them to ask the hearing health-care provider exactly how the hearing aid response will be verified. *Consumer Reports* indicates that “of that battery of tests, one stands out as a

must-have: the real ear test, which measures the match between your hearing loss and the response of your hearing aid.” The article continues with a quote from Dr. Todd Ricketts, “There is evidence that you get a better fitting with a real-ear test and people are more satisfied” (*Consumer Reports*, 2009). The discussion of this quote on the Academy SoundOFF listserv prompted a comment from one audiologist who indicated that there could be an “over-reliance on real ear measures.” It was heartwarming to see Ryan McCreery’s (audiologist at Boystown Hospital, Omaha, Nebraska) response to this comment,

In my humble opinion, there’s no such thing as an over-reliance on real ear measures among audiologists. The problem is that the vast majority of audiologists don’t do real ear verification so they have no idea what the fit of the device is in that individual patient’s ear... I agree that prescriptive targets are akin to

normative values, and I view them as a starting point rather than a strict guideline to take into account the individual loss of the patient. Regardless of whether or not you choose to even use prescriptive targets, real ear measures still provide evidence that speech is audible through the hearing aid, which is not something that can be reliably determined from the manufacturer fitting screens or algorithms.... I hope we can continue to discuss the reasons that hearing aid acceptance is not higher in the hearing-impaired population. The fact that a doctoral profession is arguing about whether or not to individually verify the gain and output of a hearing aid in a patient’s ear that takes less than 5 minutes might just be a good place to start.

If you are wondering if providing this level of verification will establish you as an expert and set you apart from other providers, keep in mind that it does not

require any particular expertise to attach cords to a HiPro Box, double click on NOAH, enter a patient name, click hearing thresholds on a graph, double click on a manufacturer icon, and click “first fit.” This level of “expertise” does not require a doctoral degree. As a profession, it is time to be

expert. An expert knows exactly what levels of sound are being produced in an individual’s ear canal. These data are used for the initial hearing aid fitting and counseling, subsequent fine-tuning, and assisting in establishing realistic communication expectations based on the level of audibility that has been achieved across input levels and frequencies. 

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References

American Academy of Audiology. (2003) *Pediatric Amplification Protocol*. www.audiology.org (accessed July 2, 2009).

As a profession, it is
time to be expert.

American Academy of Audiology. (2008) *Guidelines for the Audiologic Management of Adult Hearing Impairment*. www.audiology.org (accessed July 2, 2009).

American Academy of Audiology. *Code of Ethics*. www.audiology.org/resources/documentlibrary/pages/codeofethics.aspx (accessed July 2, 2009).

American Speech-Language-Hearing Association. *Code of Ethics*. www.asha.org/docs/html/ET2003-00166.html (accessed July 2, 2009).

Bamford J, Beresford D, Mencher G, et al. (2001) Provision and fitting of new technology hearing aids: implications from a survey of some "good practice services" in UK and USA. In: Seewald RC, Gravel JS, eds. *A Sound Foundation Through Early Amplification: Proceedings of an International Conference*. Stafa, Switzerland: Phonak AG, 213–219.

Consumer Reports. (2009) Hear well in a noisy world: hearing aids, hearing protection, and more. www.consumerreports.org/health/healthy-living/home-medical-supplies/hearing/hearing-aids/overview/hearing-aids-ov.htm (accessed July 2, 2009).

Hawkins D, Cook J. (2003) Hearing aid software predictive gain values: how accurate are they? *Hear J* 56(7):26–34.

Keidser G, Brew C, Peck A. (2003) How proprietary fitting algorithms compare to each other and to some generic algorithms. *Hear J* 56(3):28–38.

Mueller HG. (1998) Probe-microphone measurements: yesterday, today, and tomorrow. *Hear J* 51(4):17–22.

Mueller HG. (2005) Probe-microphone measures: hearing aid fitting's most neglected measure. *Hear J* 58(10):21–30.

Mueller HG, Bentler R, Wu YH. (2008) Prescribing maximum hearing aid output: differences among manufacturers found. *Hear J* 61(3):30–36.

Seewald R, Mills J, Bagatto M, Scollie S, Moodier S. (2008) A comparison of manufacturer-specific prescriptive procedures for infants. *Hear J* 61(11):26–34.

Thornton A, Raffin M. (1978) Speech-discrimination scores modeled as a binomial variable. *J Speech Hear Res* 21:507–518.

Walden B. (2009) Professional ethics: back to basics. *Audiol Today* 21(3):56–60.



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