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Clinical benefits of patient-generated health data

How real-time data offers improvement in individualized care

"The outcome of a people-first, digital health strategy is that it liberates clinicians and doctors to work at their highest and best use."

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The healthcare world is undergoing revolutionary technological change. While hearing healthcare has lagged behind other medical fields, it is time for the industry to embrace the change if we wish to thrive. Technology should not be perceived as a threat, but rather a gateway to greater clinical success. It will however, require practitioners to shift away from the “classical” way of thinking and performing, toward a fitting process that incorporates trials, patient and hearing instrument generated data as clinical tools.

In the second of our series of three patient generated health data articles, we explore the impact of the digital revolution on the hearing healthcare industry. We also examine how hearing instruments can be combined with mobile technology to gather critical patient data for greater clinical insight, improved evidence-based conversations and more individualized fittings.

Patient data – it is closer than you think

The hearing healthcare community is on the cusp of change, and that change is driven by both today’s healthcare consumer and rapid advances in technology.

As we have seen across the healthcare spectrum, health apps and wearable technology are becoming increasingly popular, allowing patients to more fully engage as active participants in the healthcare delivery process. Practitioners across many healthcare fields are demonstrating that evidence-based patient data gathered from these technologies and devices enriches clinician/patient conversations and improves patient outcomes through more effective care pathways.

It is not that we lack technology in the hearing healthcare industry. Technological advancements are made every day by hearing instrument manufacturers. Most practitioners and patients are using tools such as apps to control features or detect possible hearing loss.

We do however, have the opportunity to leverage technology in an even more meaningful way – one that can help to reshape our industry, achieve a new level of patient understanding and improve patient outcomes. The answer lies in the hearing instrument itself, and its ability to move beyond simple data logging to capture accurate information about a patient’s listening lifestyle, and with mobile technologies to help us better understand how the patient feels the hearing aids are performing in real life situations.

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Challenging the traditional fitting process

Capturing this listening data helps us overcome some well-understood challenges faced in the fitting process.

First, we are not immune to making our own assumptions and judgements. Every aspect of the initial hearing aid "first fit" is based on the pure tone audiogram. The choice of technology level and initial fitting adjustments are based on clinical judgement and the patients' definition of their lifestyle. When people come into the clinic, they give the clinician a definition of themselves. However, it is often based on an unintentionally biased self-appraisal or what they think the hearing healthcare professional (HHCP) wants to hear. The clinician then forms an opinion from that appraisal and perhaps from the person's age or demeanour. However, such assumptions are frequently flawed.

The second challenge seems to be that patients, in general, are lousy historians. People just have a poor recollection of where they go and what they hear. Furthermore, they have no good way to report sound levels. They don't have the background of a HHCP to understand how the instruments behave under particular circumstances or why. And they certainly haven't the ability to respond to, or express their experiences in terms that fit to the hearing professional's terminology. Thus, relying on a patient's memory is an imperfect approach. Memories are fuzzy, imprecise and often, just wrong.

The final challenge is that the "classical" fitting process itself is limited in its ability to bring about a successful listening experience. Hearing healthcare professionals are taught that a hearing aid fitting takes place during the visit when the patient first tries on the hearing aid. This approach assumes that a sophisticated digital device with thousands of parameters can be fitted with complete success and optimized for all possible listening situations in a matter of minutes, during a single appointment, on the basis of no more than a pure tone audiogram in a quiet room.

This might explain why we have a high return rate.

Fitting a hearing aid is so much more than hanging a hearing aid on an ear that has been quick fit to an audiogram. Only the basic gain model for quiet listening can really be fitted from the audiogram. It does not address the person's day to day listening behaviors in more difficult situations, yet they represent a significant amount of time for most people. Therefore, the customization for all the more difficult situations is based on the wearer's reports regarding their listening experience. The problem is people don't see the world or talk about their listening experiences by referencing things like acoustic signal levels and the percentage of time spent in a specific acoustic environment. . But that is the most relevant information for a clinician.

Thus, a patient will say, "they sounded great in your office, but I had to take them off as soon as I went out in the street because they sounded terrible." People simply don't live their lives in the quiet world reflected by an audiogram.

A perfect memory of listening experiences

Thinking of hearing instruments not only as medical devices that help improve hearing, but also as a sophisticated data collection technology fundamentally changes everything about the way we approach hearing aid fittings today.

1. It gives the clinician new insight into their patients' listening lifestyles and their experiences with the hearing aid in those various difficult listening environments.

2. It allows a practitioner to fully leverage a hearing aid trial period. Data gathered by the hearing instrument during the trial creates perfect acoustic memory of listening experiences and lifestyles providing clinicians with a far more accurate picture of what patients are hearing, allowing for better, data-driven, evidence-based technology decisions.

3. Subjective data, such as the patient's in the moment emotional reaction to those hearing experiences, completes the picture, and allows clinicians to have more emotionally connected discussions with their patients and to further individualize the fitting process.

4. Overall, it improves the fitting process, by providing clinicians with upfront information on all the listening experiences that happen outside of the clinician's office.

A fitting process that incorporates trials plus patient and hearing instrument generated data as clinical tools enhances patient engagement and improves outcomes. It can also be accomplished with little additional effort on the part of the practitioner. It merely requires a change in thinking and a slight shift in focus. The patient is going to try the hearing instruments anyway. They are already going to come back to the clinic and tell you how they feel and how the hearing aids worked. But now you have the extra ability to back up that patient-provided information with accurate, real-time data gathered by the hearing instruments over the same trial period.

Disrupting the clinical process for the better

As we further engage the patient in the fitting process, the likelihood of a positive outcome rises significantly. However, when a patient comes back into the office and they are unable to articulate their concerns or can't explain what they experienced, frustration sets in on both sides. The clinician is forced to use guesswork when troubleshooting complaints or seeking just the right technology level. The patient, exasperated with the fitting process, lays blame on the technology or even the HHCP, further solidifying the misperceptions that person held about the efficacy of hearing aids when they first walked through the door.

By pairing a hearing instrument that accurately logs the details of a patient's listening experiences to the subjective real-world data about the patient's emotional reaction to that sound experience, every step of the patient journey improves. Better patient data and a more expansive definition of the fitting process easily individualizes each fitting while improving the relationship.

Across the healthcare realm, and certainly within the hearing healthcare industry, our collective objective is to lay the groundwork for a more individualized and engaged patient experience that results in better outcomes, happier patients, and more referrals. With the technology now at hand, and real-time data available, now is the time to realize those goals.

Reference

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Published in the Hearing Review, October 2016 issue