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Development of a Patient-Centered Health Literacy Toolkit for Audiology and Hearing Loss (The 'HH Lit Kit')

Jennifer L. Gilligan
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DEVELOPMENT OF A PATIENT-CENTERED HEALTH LITERACY TOOLKIT FOR AUDIOLOGY & HEARING LOSS (THE ‘HH LIT KIT’)

by

JENNIFER GILLIGAN

A capstone research project submitted to the Graduate Faculty in Audiology in partial fulfillment of the requirements for the degree of Doctor of Audiology, The City University of New York

2016
This manuscript has been read and accepted for the Graduate Faculty in Audiology in satisfaction of the capstone research project requirement for the degree of Au.D.

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Abstract

DEVELOPMENT OF A PATIENT-CENTERED HEALTH LITERACY TOOLKIT FOR AUDIOLOGY & HEARING LOSS (THE ‘HH LIT KIT’)

by

Jennifer Gilligan

Adviser: Barbara E. Weinstein, PhD

The Patient-Centered Health Literacy Toolkit for Audiology & Hearing Loss (‘HH Lit Kit’) represents four years of inquiry into health literacy and Patient-Centered Care (PCC) in audiology. While awareness of health literacy continues to gain momentum in medicine and public health, there is a paucity of information on PCC and health literacy in audiology.

Low health literacy is linked to poorer health and poorer quality of life. Patients with hearing loss are at high risk for low health literacy. This presents a major concern because hearing loss affects the way information is processed, retained, and applied. Gaps have been identified in the literature that highlight the necessity to better provide patients with evidence-based, unbiased counseling, and appropriate treatment options that can be readily understood and acted upon.

The ‘HH Lit Kit’ and accompanying ‘Clinician Guide’ were developed to address these issues using evidence-based and validated resources specific or relevant to the discipline. The main aim of the ‘HH Lit Kit’ is to promote a clinical environment conducive to positive patient outcomes for adults with acquired sensorineural hearing
loss and hearing handicap, making it an ideal intervention tool for the private practice, hospital or VA setting.

Acknowledgements

I would like to thank my late father, my mother, my husband, my daughter and my mentor Barbara E. Weinstein for their kindness, patience, trust and expertise.

To Dad, your stroke and aphasia showed me the suffering that comes with not being able to take part in daily communication. Seeing your bravery during such a disabling illness was humbling, and is the very reason why I chose this path. Happy memories of you are my touchstone. To Mum, thank you for being my first teacher. The love of knowledge that you painstakingly helped me build is a huge part of who I am today. To Poppy, thank you for being a wonderful daughter. Your encouragements have kept me going more than you know. And to Steve, there is absolutely no way I could have done this without you! Thank you for supporting me every single day.

To Dr. Weinstein, thank you for your expert guidance, for the exciting opportunities in which you included me, and for your kindness. It is a joy to work with someone who shares my own passion, and I look forward to our continuing partnership.

This capstone is dedicated to the memory of my dear friend Dr. Suzanne Dow an incredible person and impeccable scholar who left us too soon.
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Introduction

The ‘HH Lit Kit’ (Appendix B) with its accompanying ‘Clinician Guide’ (Appendix A) is an intervention toolkit for improving outcomes in adult-onset sensorineural hearing loss. It was designed to fill literature-identified gaps in the provision of Patient-centered care (PCC) to adults with handicapping hearing loss. It was also developed to be readily accessible by patients with low health literacy, a population demographic to which many older adults with hearing loss belong. The tools are intended to be easy-to-use and engaging for patients at all stages in the intervention continuum. The focus on shared decision-making (SDM) is drawn from a range of evidence-based and validated sources, including the World Health Organization, the National Institutes of Health, the United States Department of Health & Human Services.

This paper and the ‘Clinician Guide’ (Appendix A) provide an overview of PCC and Health Literacy and reviews research findings relevant to the audiological setting. The rationale, development, and implementation of the toolkit are identified and discussed. Instructions on how to create health literate materials are given, and materials for evaluating existing interventions are provided. A detailed descriptor of each tool is provided with explanatory background, information and references.
Patient-Centered Care: An Overview

Awareness of the need for a paradigm shift in healthcare delivery has been explicit in the medical literature since the late 20th century, and has evolved from a controversial notion into an accepted scientific model known as Patient-Centered Care (PCC). A driving force behind this change was Harvey Picker, Ph.D., founder of the Picker Institute, who pioneered the concept that outstanding medical care must include sensitivity to a patient’s personal beliefs and comfort, not just treatment of their disease. Dr. Picker’s advocacy has been far-reaching and groundbreaking. His original vision for PCC, “understanding and respecting patients’ values, preferences and expressed needs”, was derived from empirical multi-decade (“Patient-Centered Care Improvement Guide”, 2016) and forms the rational core around which coalitions of clinicians, researchers, patient advocates, institutions and policy makers are aiming to reshape the future of healthcare.

Picker’s eight principles of PCC remain relevant today, and were painstakingly developed from focus group research and literature reviews executed by Harvard Medical School on behalf of the Picker Institute and The Commonwealth Fund (Picker Principles of Patient Centered Care | Graduate Medical Education Challenge Grant Program, 2016).

Picker’s vision of PCC includes delivery of care that is not only respectful of and responsive to individual patient preferences, needs, and values, but also ensures that patient values guide all clinical decisions in an equitable way, regardless of health literacy level, age, gender, ethnicity, geographic location or socioeconomic status. As
such, awareness of the current shortcomings, and facilitating patient-centeredness are highly relevant to audiologists evaluating and treating older patients with hearing loss.

Figure 1. Picker’s eight principles of PCC.

Although the recent widespread recognition of the importance of PCC in general medicine is encouraging, PCC is still far from being fully implemented by all healthcare professionals, including audiologists. The Institute of Medicine (IOM) (Baker, 2001) identified a “quality chasm” wherein the healthcare system is ill equipped to manage increasingly prevalent chronic conditions, particularly in the elderly. This is a pressing concern given the demographic shift to an aging population in which hearing loss is
increasing in both prevalence and severity. Disabling hearing loss is now known to affect 25 percent of adults aged 65 to 74, and 50 percent of those who are 75 and older ("NIDCD", 2016). Among recommendations for improvement, the IOM envisioned bridging the chasm through a shared responsibility to reduce the burden of illness, injury, and disability, and to improve the health and functioning of the people of the United States. Audioligists are key stakeholders in this initiative, as they must assist patients in navigating the physical and psychosocial consequences of hearing loss.

With Picker's original goals in mind, and the best practice guidelines from professional organizations such as the American Academy of Audiology (AAA) and the American Speech-Language-Hearing Association (ASHA) in place, it is clear that audiologists need to incorporate patient centeredness into all patient encounters. Unfortunately, at this time, and in stark contrast to the wealth of evidence bases in primary care medicine and public health, there is a lack of field-specific research to help guide audiologists, highlighting a need for developing gold standard, evidence-based practices in this arena. Of the available findings, the emergent trend shows the following: poor health literacy awareness, an overall lack of consideration for patient preferences, and that the balance of power is most often in the hands of the audiologist (Grenness, Hickson, Laplante-Levesque, Meyer & Davidson, 2015; Nair & Cienkowski, 2010). Indeed, at the very heart of the rationale for developing the 'HH Lit Kit' lies the notion that PCC and health literacy form interlocking foundations that can greatly influence an individual's decision-making, adherence to treatment, health outcome and overall health status.
What Is Health Literacy?

Health literacy is defined by US Department of Health and Human Services (2000) as “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.” It encompasses a skillset that leads to improved information comprehension and retention, empowered decision making and the ability to apply health knowledge in practical terms to prevent a chronic condition from getting worse. Systematic review of the literature shows patients with low health literacy experience poorer health outcomes (DeWalt et al., 2004), have less access to healthcare, and greater healthcare disparities (Sudore & Schillinger, 2009), experience a nearly twofold increase in mortality rate (Sudore et al., 2006).

The definition of health literacy can be further divided into three distinct areas (Nutbeam, 1998). These are: functional health literacy – basic reading and writing skills; interactive health literacy – communicative and social skills needed to discuss health information with others; and critical health literacy – skills needed to analyze information and make informed decisions (Figure 2). Using this three-tiered definition of health literacy, it is clear how deficits in any of the areas could negatively impact a patient in terms of: their health knowledge about hearing loss: their access to audiological services; how readily they understand and discuss hearing handicap with health providers or family members; their decision-making process in determining the most appropriate treatment; and their success in maintaining a positive behavior change, such as wearing hearing aids successfully. A gap in any of these factors could negatively affect a patient’s overall health status and quality of life. Having
demonstrated its powerful impact on patient wellbeing, it is not only evident but also imperative that health literacy achieve keystone placement in the arch of PCC.

Figure 2. Elements of health literacy as put forth by Nutbeam (1998) with Audiology-specific examples given.

The prevalence of low health literacy is alarming. The National Assessment of Adult Literacy (Kutner et al., 2007) found that about 33% of all people have limited health literacy, and only 12% have proficient health literacy. This translates to an estimated 90 million Americans with low health literacy. Of the 30,000 Americans
assessed by the NAAL, up to 40% of all Americans and 65% of those over 65 years of age had low health literacy (Figure 3). According to these findings, the elderly and those who did not finish High School are at the greatest risk. These statistics are mirrored globally: from an international perspective, nearly half of all adults in eight European countries have inadequate health literacy skills that purportedly will affect health outcomes (Kickbusch et al., 2013).

The National Network of Libraries of Medicine (NNLM) (Glassman, 2013) has identified several socioeconomic factors known to impact health literacy, including: income level; occupation; education; housing, and access to medical care. The Institute of Medicine (IOM) (Kindig Panzer & Nielsen-Bohlman, 2004) has identified at-risk populations for low health literacy as: the elderly; people with speech, language, hearing and vision disorders; people with cognitive or mental disorders; non-English speakers; ethnic minorities; people in poverty; and people who are homeless.

Based upon this knowledge, it should be inferred that audiologists will often encounter patients with health literacy challenges, because many older patients are likely to have an existing or underlying communication disorder (e.g. hearing loss) and may also belong to one or more of the other risk categories. Additionally, older adults form the largest cohort with hearing handicaps requiring some form of intervention. Audiologists serving older adult populations should use particular vigilance, as there are several mediating factors that can affect geriatric health literacy. Older adults have a higher prevalence of dementia or cognitive impairment and a higher prevalence of chronic diseases such as hypertension that can result in reduced cognitive function (Weinstein, 2013). Furthermore, older adults are more likely to exhibit poor physical
health and tend to have higher rates of sensory impairments that impede reading and other communication skills needed for everyday literacy and self-management (Weinstein, 2013). The latter factors that can be easily overlooked or misinterpreted when health care providers interact with patients; they are also factors that have critical implications for a patient’s health outcomes if not taken into consideration. Therefore, audiologists must be keenly aware of the reasons to promote health literacy (Figure 3), and should become professionally involved in improving health literacy among all populations served.
Table 1
Characteristics of Individuals With “Below Basic” Health Literacy

<table>
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<tr>
<th>Characteristic</th>
<th>Percentage in “Below Basic” Population</th>
<th>Percentage in Total Population</th>
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<tr>
<td>Those who do not graduate from high school</td>
<td>51%</td>
<td>15%</td>
</tr>
<tr>
<td>Individuals who do not speak English prior to entering school</td>
<td>39%</td>
<td>13%</td>
</tr>
<tr>
<td>Adults who report poor health</td>
<td>10%</td>
<td>4%</td>
</tr>
<tr>
<td>Hispanic Adults</td>
<td>35%</td>
<td>12%</td>
</tr>
<tr>
<td>African American Adults</td>
<td>19%</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Adults age 65+</strong></td>
<td><strong>31%</strong></td>
<td><strong>15%</strong></td>
</tr>
<tr>
<td>Those who do not have medical insurance</td>
<td>36%</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Individuals with multiple disabilities</strong></td>
<td><strong>48%</strong></td>
<td><strong>30%</strong></td>
</tr>
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Note: this table highlights the demographics of patients likely to have low health literacy. “Multiple disabilities” includes sensory deficits and chronic diseases. Adapted from: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy (NAAL, 2016)
More than 22 million people speak English "less than very well"

More than 34 million people are from another country

More than 95 million people (43% of all adults) have literacy levels below what is needed to understand the most basic health information

Around 40 million people over age 65 (33% of older adults) have low Health Literacy

Poor Health Literacy is a stronger predictor of a person’s health than age, income, race, education level and employment status

Figure 3. Reasons to promote health literacy: Quick Facts. Adapted from AMA (Abrams et al., 2007), IOM (Kindig, et al., 2004) and ARHQ (Berkman et al., 2004)
Health Literacy And Audiology

In the fields of primary care medicine and public health, a wealth of research exists on health literacy and PCC. Systematic review of 96 studies (Berkman et al., 2011) concluded that health literacy is associated with poorer health outcomes and poorer use of health care services. From these findings it can be surmised that for audiologists, health literacy and PCC should encompass the provision of clear, comprehensible communication, to ensure that patients get plain, unbiased and culturally appropriate information that will equip them to better understand their hearing loss and make educated choices about treatment. This would involve the provision of patient education and counseling at the appropriate health literacy level, in an accessible format and using a range of modalities. Unfortunately, this is not being implemented as the gold standard of PCC in audiology, as evidenced by findings from the few studies that have been done.

In an effort to explore the link between health literacy and hearing aid use, Nair and Cienkowski (2010) conducted a study to quantify the health literacy of older patients receiving rehabilitative audiological services. They sought to establish the baseline level of health literacy, and to determine if a significant difference existed in the language level used by patients and the average reading level of American adults. Further, they explored whether a difference existed in level of language among audiologists, patients, and patient education materials (i.e. hearing aid instruction guides). Participants included 12 adults with hearing impairment (eight males, four females, mean age 70.6 years) with a mean pure tone average (PTA) of 36.1 dBHL. Five were first-time hearing aid users; seven were experienced hearing aid users. Each person participated in a
hearing aid orientation appointment. Three different audiologists with different levels of graduate experience participated (two of whom had completed graduate-level counseling courses). Counseling dialogs were videotaped and transcribed. For selected participants, the counseling involved distribution of printed hearing aid informational brochures included in the packaging of hearing aids and required by the FDA to be read by consumers.

The videotaped sessions and informational brochures were analyzed by transcription of dialog and printed materials into Microsoft Word, using the Flesch-Kincaid grade level formula (FKGL, Kincaid et al., 1975). According to ReadabilityFormulas.com as cited in AHRQ (DeWalt et al., 2010) FKGL outputs a grade level that an average student in that grade can read. For example, a score of 7.4 indicates that the text can be understood by an average student in seventh grade. Based on the analyses from the counseling sessions, each of the 12 participants had a predicted health literacy level that was below a fourth grade reading level. The audiologists' FKGL was found to be significantly higher than the patients' FKGL, and significantly lower than the FKGL in the hearing aid instruction guides (which had a mean FKGL of 7.9). Nair and Cienkowski (2010) concluded that many hearing aid users are at a triple disadvantage in that access to information starts with being able to hear, then being able to ask questions, and understanding the responses from the audiologist. Poor understanding resulting from disparities in language level can be costly, time consuming and frustrating to the most important stakeholder, namely the person with hearing loss. The cascading effects of a lack of understanding due to
hearing loss and health literacy are likely to have far-reaching effects, including a negative impact on overall health and difficulty navigating the health system.

The need for appropriate informational materials has also been highlighted in a recent assessment of hearing aid manuals by Caposecco, Hickson & Meyer (2014). Caposecco et al. (2014) analyzed the content, literacy demand, readability, graphic content, layout, interactivity and cultural appropriateness of 36 printed hearing aid user guides from nine manufacturers to determine their suitability for older adults with hearing loss. Suitability was judged using the Suitability Assessment of Materials (SAM) (Doak et al., 1996) and each of the domains was scored as “superior”, “adequate” or “unsuitable” depending on objective criteria included in the instrument (Figure 4). Caposecco et al. (2014) reported that 69% of the guides were unsuitable for their intended audience, based on the parameters measured with these assessment tools.

Specifically, the reading level was too advanced in all of the hearing aid user guides, with a mean US grade level of 9.6, and in more than 90%, excessive technical jargon and uncommon vocabulary was used in lieu of simpler terminology. In terms of scope, 90% of the guides included information about a range of different hearing aid styles and technologies as the informational brochures tend to be generic and not always specific to the model being used by the patient. Summary sections and overviews of main hearing aid functions were not included in 33% of the guides, and graphics were rarely described with captions. Content and design issues were also identified in the majority of the guides. In 100% of the guides, the font was too small, with the majority having fonts less than 12 points in size. Layout was described as “cluttered”, with insufficient white space and poor text-to-paper contrast in many
examples, resulting from inappropriate selection of gloss or semi-gloss paper stock. Separately, these factors may each contribute to lack of understanding; together, they may negatively impact self-efficacy and preclude successful outcomes, resulting in dissatisfaction, increased healthcare costs and longer follow up appointment times.

Based upon these findings, it is clear that it is not only crucial to identify patients with low health literacy, but also critical to have the appropriate knowledge and resources to modify counseling materials so patients at risk for low health literacy are better able to understand and act upon information in a self-efficacious manner. A valuable line of inquiry thus presents itself as to efficient and evidence based methods to fill the “quality chasm” in patient-centered, health literate audiological care.
Figure 4. Overview of the SAM, (Doak et al., 1996) utilized by Caposecco et al. (2014) to evaluate the suitability of hearing aid user guides.
Considerations for a Patient-Centered Health Literacy Toolkit

The American Academy of Audiology (AAA) and The American Speech-Language-Hearing Association (ASHA) scope of practice criteria outline rehabilitation and management plans that are patient-centered, culturally appropriate, and psychosocially focused, as well as educational and informative. Amplification counseling includes “fitting ...dispensing, and educating the consumer and family/caregivers in the use of sensory aids” as well as helping a person adjust to sensory aids and coping with the consequences of the loss ("Scope of Practice | Audiology", 2016; "Scope of Practice in Audiology", 2016). Additionally, the AAA calls for audiologists to develop counseling materials for use with patients that are at an appropriate health literacy levels. Unfortunately, at the time of writing, there are no hearing aid industry standards for ensuring the readability of manufacturers’ patient brochures.

Patient centeredness is also the focus of the American Geriatric Society’s (AGS) Task Force aimed at optimizing the health of older individuals (AGS) (Besdine et al., 2005) to ensure that every one receives high-quality, PCC. Therefore, delivery of PCC, together with an awareness of patient demographics and the literature-identified shortcomings is especially relevant to audiologists seeing older patients with hearing loss.

With this information in mind, and considering the patchy evidence base for PCC as it relates to health literacy and Audiology, the rationale for creation of the ‘HH Lit Kit’ was threefold: to improve the comprehension, motivation, communication, self-efficacy and empowerment of patients with adult-onset sensorineural hearing loss; to educate
audiologists about the critical importance of PCC and health literacy on patient outcomes; and to contribute to research in the field. Integral concepts underlying the 'HH Lit Kit' are that it identifies and assists patients with low health literacy, and at the same time provides audiologists with the appropriate knowledge and resource bases to modify existing materials or create new ones that best foster patients’ understanding and ability to initiate positive hearing health behavior changes in a self-efficacious manner.

The model for the 'HH Lit Kit' was found through database search "health literacy toolkit" which revealed the work of DeWalt et al. (2011). The Agency for Healthcare Research and Quality (AHRQ) commissioned DeWalt and colleagues together with The University of North Carolina at Chapel Hill to develop and test a health literacy Universal Precautions Toolkit (HLUP Toolkit) that provides step-by-step guidance and 20 tools for assessing primary care practices and making changes in order to connect with patients of all literacy levels. According to DeWalt et al. (2010) health literacy must be viewed as a universal precaution, where the provision of care is structured to minimize risks for every patient, so they can be in a position to make safe and appropriate healthcare decisions. The HLUP Toolkit is a comprehensive resource with empirically derived methods for healthcare providers to improve spoken and written communication, facilitate patient self-management, build trust and empowerment, and develop supportive systems, all of which relate to PCC and health literacy in the audiological rehabilitation context. It serves as an ideal model when considering similar aims in the field of audiology.
HLUP Toolkit beta-testing revealed several key areas requiring improvement: tools to improve spoken communication, tools to improve written communication, and tools to improve self-management and empowerment. These areas correspond to the gaps identified in the existing audiology-related research, and dovetail well with some of the evidence-backed psychosocial models of hearing health behavior change that many audiologists may already be aware of. In particular, counseling-based interventions that draw upon the transtheoretical model of behavior change (TTM) (Prochaska, 2013), shared decision-making (SDM) and the construct of self-efficacy (Bandura, 1997). As such, in developing a patient-centered health literacy toolkit for audiology, methodological focus was directed towards these constructs and theories, and field-related findings with relevance were considered.
The ‘HH Lit Kit’ s Underlying Models and Theories

The initial concern in choosing a methodology upon which to build the ‘HH Lit Kit’ was one of clinical efficiency, with a special acknowledgment of audiologists who report feeling rushed through interventions, and of those for whom counseling is not reimbursed (i.e. the majority in clinical practice). With these considerations in mind, particular attention was paid to models demonstrating any potential for streamlining and optimizing the delivery of PCC in audiology whilst maintaining a focus on evidence-based theories of behavior change. These necessities led to the adoption of four major methodologies showing relevant and positive outcomes in the literature: the ‘5As’ Construct (Whitlock, Orleans, Pender & Allan, 2002), and thus by default, the Transtheoretical ‘stages of change’ model (Prochaska, 2013), the self-efficacy construct (Bandura 1997) and the shared decision making (SDM) model (Charles, Gafni & Whelan, 1997) Each of these are inherent in implementation of the toolkit. Figure 5 details these primary models inherent in the ‘5As’ construct and in development of the ‘HH Lit Kit’. Figure 6 describes how each ‘A’ is implemented in the continuum of PCC.
Self-Efficacy (Bandura, 1997) - Confidence in one's own ability to take action, make a behavior change and maintain it despite any obstacles or challenges.

Motivational interviewing (Miller & Rollnik, 2002) - Explore and elicit behavior change through reflective listening. Decisional balance belongs to the patient.

Transtheoretical Model (Prochaska, 2013) - Intentional behavior change occurs in a continuum of 5 stages: Pre-contemplation; Contemplation; Preparation; Action; Maintenance.

Shared Decision Making (Charles, Gafni & Whelan, 1997) - Key decisions are made jointly in accordance with patient preferences and values.

*Figure 5. Models and mediators of behavior change inherent within the '5As' construct*
**Assess**

- Ask about/assess behavioral health risk(s) and factors affecting choice of behavior change goals/methods.

**Advise**

- Give clear, specific, and personalized behavior change advice, including information about personal health harms and benefits.

**Agree**

- Collaboratively select appropriate treatment goals and methods based on the patient’s interest in and willingness to change the behavior.

**Assist**

- Using behavior change techniques (self-help and/or counseling), aid the patient in achieving agreed-upon goals by acquiring the skills, confidence, and social/environmental supports for behavior change, supplemented with adjunctive medical treatments when appropriate (e.g. pharmacotherapy for tobacco dependence, contraceptive drugs/devices).

**Arrange**

- Schedule follow-up contacts (in person or by telephone) to provide ongoing assistance/support and to adjust the treatment plan as needed, including referral to more intensive or specialized treatment.

*Figure 6. The 5 A’s construct (Whitlock et al., 2002)*
The ‘5As’ Construct

The ‘5As’ construct (Whitlock et al., 2002) seen in its original iteration in Figure 6 and its proposed ‘HH Lit Kit’ iteration in Figure 7, is an intervention methodology designed to guide healthcare providers in asking patients about their health behaviors, to reveal, for example, an area of risk such as social isolation or restricted social participation due to a hearing handicap. The ‘5As’ guides health care providers in giving unbiased options for making a positive health behavior change to minimize risk, for example the decision to acquire hearing aids or an assistive listening device. It assesses a patient’s interest or motivation to change, assists them in overcoming any barriers associated with change, and directs a path of follow up that supports self-efficacious maintenance of the behavior change, for example successful hearing aid use. Furthermore, it encourages provider-initiated Quality Improvement (QI) measures to monitor and enhance delivery of PCC.

The ‘5As’ originates from a tobacco cessation guide for physicians developed by the National Cancer Institute (Bailey et al., 2000). Whitlock et al. (2002) revised the construct to include “Agree” based upon the evident need to include shared decision making in the delivery of patient-centered care, addressed later on in this section. The ‘5As’ contains at its constructural core the patient-driven factor of behavior change. The World Health Organization (WHO) (Hornik, 2002) describes behavior change as a central objective in all public health interventions, either to prevent an illness, to modify behaviors that place a patient’s health at risk, or to encourage adoption of lifestyle patterns to manage chronic conditions. A number of behavior change models exist, with the unifying commonality that the individual patient serves as the locus of change,
with the intervening health care provider lending empathetic support, unbiased information and helping the patient to build self-efficacy skills.

The evidence base for the ‘5As’ as a unifying framework for PCC shows that brief interventions designed to fit into everyday practice produce clinically meaningful behavior changes (Whitlock et al., 2002). Across disciplines, use of the ‘5As’ construct improves health behaviors, positively influence behavioral change, and increase health care providers’ communication with patients (Goldstein, Whitlock & DePue, 2004; Ockene et al., 1999).
Application of Five A's to Audiology

- **Assess**
  - Patient Needs/Preferences
  - Health Literacy
  - Health Beliefs & Behaviors
  - Functional Communication
  - Hearing Handicap

- **Advise**
  - Educate about hearing loss
  - Options for treatment
  - Offer the pro’s and con’s of treatment
  - Provide health-literate information and counseling

- **Agree**
  - Engage the patient in Shared Decision Making
  - Explore the patient’s story to uncover motivation toward Behavior Change
  - Agree on goals and expectations

- **Assist**
  - Help the patient adjust to treatment
  - Identify and overcome barriers to treatment
  - Foster self-efficacy

- **Arrange**
  - Organize and facilitate follow-up
  - Monitor provision of PCC with CQI

*Figure 7.* How the 5 A’s construct can be applied to a PCC model in audiology
Self-Efficacy

Self-efficacy refers to an individual’s confidence in or expectations about the ability to adopt a behavior or belief in the ability to carry out or succeed with a task. In short, the person with hearing impairment must come to see that they are capable of changing behavior and succeeding at the task before them (Bandura, 1997; Rollnick, Mason & Butler, 2001) Self-efficacy evolves as a patient becomes more experienced and more knowledgable, causing a perceptual shift that influences behavior change. This is achieved through the patient having mastery experiences, for example succeeding at inserting hearing aids, as well as the patient’s vicarious experiences of watching others, for example seeing an audiologist model how to change a hearing aid battery. Other factors that contribute to bolstering self-efficacy are verbal persuasion from others, for example encouragement from an audiologist, and the physiologic feedback produced within the patient as they attempt to make behavior change, for example increased ability to hear speech in noise while wearing hearing aids.

An important factor to consider in self-efficacy is the verbal communication that takes place in the patient-audiologist dyad. Motivational interviewing (MI) (Miller & Rollnick, 2002) is a patient-centered counseling style that improves self-efficacy by eliciting behavior change and resolving ambivalence (Rollnik & Miller, 1995). Systematic review and meta-analyses show significant effects for MI across a broad range of behavioral problems and diseases (Rubak, Sandbæk & Christensen, 2005), suggesting its suitability for addressing hearing health behavior changes in the audiology practice setting.
Motivational Interviewing

Motivational interviewing (MI) has several guiding principles that are often used with the acronym “OARS” (see Figure 9). MI requires reflective listening on the part of the health care provider (i.e. letting the patient talk). In contrast to the expert/layperson paradigm of traditional counseling where the clinician tells the patient what must be done, MI casts the patient as the expert, and encourages them to evaluate and resolve their perceived barriers to behavior change through discussion (Emmons & Rollnick, 2001). The gestalt of MI is that the therapeutic relationship functions best as an equitable partnership, in keeping with the overarching goals of PCC.
Table 2  
**MI Uses OARS**

<table>
<thead>
<tr>
<th>Motivational Interviewing</th>
<th>Open-ended questions: an open question requires the patient to reflect, whereas a closed question constrains the range of responses to a short answer.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Example: &quot;Can you tell me a bit about what brings you here today? &quot;</td>
</tr>
<tr>
<td></td>
<td><strong>Affirmations</strong>: extract examples of personal strength from the patient’s story and highlight them.</td>
</tr>
<tr>
<td></td>
<td>Example: “Following along with the conversation was hard, but you used your lip reading skills. Hearing well is really important to you.”</td>
</tr>
<tr>
<td></td>
<td><strong>Reflection</strong>: repeat and expand upon any change talk that the patient engages in.</td>
</tr>
<tr>
<td></td>
<td>Example: &quot;You said you'd like to hear better. Have you had thoughts about what the next step could be?&quot;</td>
</tr>
<tr>
<td></td>
<td><strong>Summary</strong>: let the patient know what you heard, and ensure that it is correct.</td>
</tr>
<tr>
<td></td>
<td>Example &quot;To recap, you've been having some difficulty hearing well and you're thinking about what you will do next. Is that right?&quot;</td>
</tr>
</tbody>
</table>

This table exemplifies how open questions, affirmation, reflection and summary by the health care provider might be used in an audiological counseling session.
The Transtheoretical Model of Behavior Change (TTM)

The transtheoretical model of behavior change (TTM) (Prochaska, 2013) identifies and examines consistent patterns associated with behavior change within the patient-provider dyad. In one of its current iterations, the TTM describes five separate stages of change that exist within a cyclical continuum (see Figure 8).

**Figure 8.** TTM stages of change exemplified with correlates to audiology
Application of the TTM to audiology has recently yielded some findings with significant relevance. Laplante-Lévesque, Hickson and Worral (2013) found that among adults with acquired hearing loss, the patient’s stage of behavioral change is a significant outcome predictor. The later the stage of change, the more likely a patient is to adopt a rehabilitation intervention, and the more likely they are to report a successful outcome. Later stages of change include Preparation and Action, where the patient is actively seeking information on an intervention or the intervention itself. These stages necessitate the audiologist’s provision of clear, unbiased treatment options and the patient’s critical Health literacy skills to make an informed choice. In keeping with the principles of PCC, any decision that is reached should be in keeping with the patient’s values and reached equitably through the exchange of information between stakeholders.
Shared Decision-Making

Historically, delivery of healthcare has involved a paternalistic approach to intervention and counseling, wherein top-down advice was delivered from clinician to the patient with the expectation of total compliance (Laplante-Lévesque, Hickson, & Worrall, 2010). More recently, a shared decision-making (SDM) approach has gained favor in geriatric medicine and allied health practices which tends to be bottom-up. Considered to promote intervention adherence, SDM (Charles et al., 1997) takes into account the audiologist’s and patient’s expertise as decision stakeholders. The audiologist holds technical expertise and knowledge of the hearing loss, its prognosis, treatment options and outcomes, whereas the patient’s expertise is held in their experience of illness, their Health literacy level, as well as their risk-adversity, and individual values and preferences (Coulter & Collins, 2011).

SDM currently lacks a universal definition in the literature; however, its key concepts are the acknowledgment of patient values and the discussion of available intervention options. Six steps of SDM are outlined by the Informed Medical Decisions Foundation ("Shared Decision Making Resources | Informed Medical Decisions Foundation", 2016) shown in Figure 9. According to a recent systematic review, use of SDM demonstrates better patient outcomes and increased adherence to treatment and is especially suitable for adults with chronic health conditions (Joosten et al., 2008).
Laplante-Lévesque, Hickson and Worral (2010) developed an audiology-specific model of SDM following clinical trials involving older adults with acquired hearing loss.

Their study used a plain language decision aid that offered a choice of four interventions, along with evidence bases for each. Participants completed an initial

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**Figure 9. Six Steps of Shared Decision Making.** Adapted from Informed Medical Decisions Foundation ("Shared Decision Making Resources | Informed Medical Decisions Foundation", 2016)

- **Invite the patient to participate:**
  - Inviting patients to participate lets them know that they have options and that their goals and concerns are a key part of the decision making process.

- **Present options**
  - Patients need to know the available options.

- **Provide information on benefits and risks:**
  - Provide balanced information based on the best available scientific evidence. Check back with patients to be sure they understand.

- **Assist patients in evaluating options based on their goals and concerns**
  - To understand patients’ preferences, ask them what is important to them and what they are concerned about.

- **Facilitate deliberation and decision making:**
  - Let patients know they have time to think things over, and ask them what else they need to know or do before they feel comfortable making a decision.

- **Assist patients to follow through on the decision:**
  - Lay out the next steps for patients, check for understanding, and discuss any possible challenges with carrying out the decision.
consultation with an audiologist and brought the decision aid to home with them. At the second session, one to four weeks later, a discussion between audiologist and patient was initiated during a one-hour interview. Audiologists asked which factors were involved in the decision process, and the question “What would an ideal scenario of decision making entail?”. Transcripts of the interviews were analyzed. Analysis identified areas and concepts that patients believed to be critical components of SDM, including getting the “full picture”, being informed, understanding the nature of chronic hearing impairment, and having time to deliberate before deciding. Interpretations of the findings suggest that the patient’s story must be central to the decision making process. Audiologists must involve patients and their family members in the process, must provide solid patient education, describe the options for intervention in a manner which is readily understandable, respect the patient’s preferences and establish a level of trust. A flow diagram illustrating how these findings can be applied to an audiology-specific SDM model is seen in Figure 10. A later study by the same authors (Laplante-Levesque, Hickson, & Worrall, 2012) provided a stepped outline for the audiologist (Table 3).
Figure 10. An evidence-based model of SDM tailored to audiology from “A Qualitative Study of Shared Decision Making in Rehabilitative Audiology,” by Laplante-Levesque, Hickson, & Worrall, 2010. Journal of the Academy of Rehabilitative Audiology, 43, 27-43
Table 3  
*Shared decision-making: Tips* (Laplante-Levesque, Hickson, & Worrall, 2012)

<table>
<thead>
<tr>
<th>Tip</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare patients for SDM by stating early that they will be invited to be involved in decisions.</td>
<td></td>
</tr>
<tr>
<td>Seek to understand the patient's experience and expectations</td>
<td></td>
</tr>
<tr>
<td>Communicate information at a level appropriate patient Health Literacy. Be prepared to simplify explanations, use nontechnical language, convey quantitative information in a qualitative way and use diagrams to aid comprehension.</td>
<td></td>
</tr>
<tr>
<td>Ensure that patients feel comfortable to ask questions.</td>
<td></td>
</tr>
<tr>
<td>Build a partnership with the patient.</td>
<td></td>
</tr>
<tr>
<td>Describe the evidence about interventions to the patient in a clear way, including any uncertainties.</td>
<td></td>
</tr>
<tr>
<td>Take into account the cultural values and preferences of your patients when discussing the options.</td>
<td></td>
</tr>
<tr>
<td>Check that patients understand the information provided and the options available to them.</td>
<td></td>
</tr>
<tr>
<td>Give patients time to think about options. Many will want to involve their communication partners too.</td>
<td></td>
</tr>
</tbody>
</table>

In summary, the locus of control in adopting positive behavior change lies with the patient, and the health care provider should utilize evidence-based theories that
elicit behavior change and support self-efficacy. The ‘5As’, construct provides a concise roadmap for delivery of PCC in the audiological setting, and subtends well-researched and field-applicable models for implementation, including TTM and SDM. Together, these forms of intervention create a strong framework, resulting in their adoption as the methodology for the ‘HH Lit Kit’. The overarching rationale is that positive hearing health behavior change involves complex decisions that are likely to have lasting implications, so, audiologists must strive to facilitate equitable partnerships that allow patients be well-informed agents of their own behavior change as they navigate through the continuum of intervention and rehabilitation.
Decision Aids

A decision aid is a visual tool that helps organize and systemize a set of intervention options. Decision aids help to determine a patient’s values associated with the potential risks and benefits of the options available. When used as part of the SDM process, decision aids serve as a vehicle for patient participation. Decision aids can help a patient to prioritize the things that matter most to them. They encourage the patient to share their preferences with their health care provider, and can reveal a patient’s level of motivation, their knowledge level, and their desire to self manage a condition. As part of their systematic review, Stacey, et al., (2014) found that use of decision aids increases a patient’s knowledge of available treatments and empowers them to make informed choices with greater clarity, indicating that decision aids can play a pivotal role in improving health literacy. Furthermore, decision aids can lead to more accurate expectations regarding possible treatment outcomes. The findings show that patients who use decision aids are more likely to reach decisions that are consistent with their values and are far less likely to remain passive or undecided. These factors lend themselves to improved overall health status and quality of life. As such, decision aids have relevance across a wide range of health care fields and disciplines, including audiology.

The first step in developing a decision aid, (referred to within the ‘HH Lit Kit’ as an “infographic” or “counselgraphic”) is to identify the treatment options involved in the patient encounter, including the choice of not taking action. McCaffrey et al. (2012) highlighted the importance of providing patients with information that is supported by
high quality evidence. Inclusion of evidence is an important consideration given that untreated hearing loss has numerous well-documented negative psychosocial correlates, uptake remains low in part due to cost and stigma. Of course, the evidence included will depend upon the purpose of the decision aid being developed.

The second step in developing a decision aid is to support patients in clarifying their values and preferences. A successful hearing health decision aid will encourage users to be actively involved in decision making, will guide patients in the decision making process and may help to patients to collaborate with family members in their effort to come to a resolution about their care.

The third step is taking in creating a decision aid is to ensure it is at the appropriate health literacy level using the SAM (Doak et al., 1996), an evidence-based, standardized methods for evaluating the content and design of healthcare materials. SAM was tested and validated with individuals from a variety of cultural backgrounds (Doak et al, 1996) and has been used in a number of studies assessing written health-care materials (e.g. Weintraub et al, 2004).

The value of decision aids has been evaluated by the Mayo Clinic Center for Innovation (Oshima Lee & Emmanuel, 2013) and includes increased patient knowledge of available treatments, more accurate risk perceptions, greater patient participation in decision-making, reduced internal conflict, and improved patient health status and quality of life. The need for decision aids has also been demonstrated in the context of Health literacy. McCaffery et al. (2012) found that low health literacy is linked to higher patient uncertainty when making medical decisions, less question asking on the part of the patient and eventual patient regret. This underscores the fact that individuals with
low health literacy may not be aware of their potential and important role in the decision making process. Indeed, the findings suggest that patients with higher levels of health literacy become more engaged in the decision making process when decision aids are made available to them McCaffery (2012). A summary of the goals of patient-centered decision aids is shown in Figure 11.

**Figure 11.** The goals of patient based decision aids
In summary, the importance of decision aids as a mechanism for increasing patient knowledge, promoting patient engagement and offering targeted intervention options to persons with hearing loss cannot be overstated, especially when choices to be made may have lasting implications. Experience has shown that when patients know they have options for the best treatment, screening test, or diagnostic procedure, most of them will want to participate with their clinicians in making the choice (Coulter, 1997). This interest is shared by patients worldwide, as demonstrated by the recent release of the Salzburg statement endorsing shared decision making, authored by representatives from 18 countries. (Barry & Edgman-Levitan (2012). Therefore, partnering with well-informed patients and patients who are active in their health care is a high priority in the provision of PCC.
Guidelines for Producing Health Literate Materials

According to DeWalt et al. (2010) and summarized in Table 4, using clear written and oral communication strategies can help patients feel more involved in their healthcare and may increase likelihood of adherence to treatment plans. Providing both written and verbal information can increase knowledge as compared to verbal information as the sole modality. Sudore and Schillinger (2009) found that use of pictures as a supplement to verbal counseling and written text dramatically improved the recall of patients with low health literacy receiving anticoagulation medications, and furthermore drastically reduced associated medication errors. Furthermore, research suggests that easy-to-read materials are preferred by all patients regardless of literacy level, with benefits including improved comprehension and shorter reading time (Davis et al, 1996). It has also been demonstrated that well designed health-care materials that the reader can understand will enhance self-efficacy (Doak et al, 1996).
Table 4
The AHRQ Guidelines for Improving Communication

- Keep written materials at or below the 5th grade level.
- Use a large, high-contrast fonts at least 14 point such as Arial or Helvetic
- Chunk related information together using clearly defined headings, bullet points, and breaks between sections.
- Leave areas of white space on the page to minimize clutter and improve reading ease.
- Sentence structure should be simple and use the fewest words possible.
- Use active voice and first-person pronouns.
- Multi-syllable words, jargon and medical terminology should be avoided.
- Use of simple, captioned graphics and pictures can enhance the message.
- Bolded key words and simple glossary definitions are also helpful.
- Limit the scope of information, beginning with only the most important.
- Use repetition and summarization of no more than 3-5 key points
- Use concrete and specific conversation, rather than generalizations.
The Suitability Assessment of Materials (SAM)

The Suitability Assessment of Materials (SAM) (Doak et al., 1993; Doak et al., 1996) is one of the few standardized methods for evaluating the content and design of healthcare materials. It was developed in collaboration with health education scholars, the Johns Hopkins School of Medicine and the National Institutes of Health. It was first implemented in a population-scale initiative aimed at improving nutrition education among urban African Americans. Validation of the SAM was conducted with 172 health care providers from several cultures as well as students and faculty of the University of North Carolina School of Public Health and Johns Hopkins School of Medicine. It has been used in a number of studies assessing written health-care materials (e.g. Caposecco et al., 2014, Weintraub et al, 2004; Lagassé et al., 2011)

Many of the SAM-related research findings highlight the unsuitability of existing materials for scoring poorly on reading level, content, graphics, self-efficacy, cultural appropriateness, and learning motivation. Caposecco, et al. (2014) utilized the SAM to assess the literacy level of various instructional brochures distributed by hearing aid manufacturers and found that the majority scored poorly on content, graphics, self-efficacy, and learning motivation and stimulation. For further information on the SAM and Health Literate patient education, see Doak C, Doak L, and Root J. Teaching Patients with Low Literacy Skills, 2nd Edition, Philadelphia: Lipincott 1996.

A copy of the SAM adapted from Doak et al. (1993), with full evaluation criteria and score sheets is included in the toolkit, with instructions on how to complete the measures to evaluate the health literacy and patient-centeredness of materials. It is listed within Appendix A as “Clinician Resource E”. With these guidelines in mind, the
‘HH Lit Kit’ has been carefully designed to meet the AHRQ guidelines, and each tool was assessed using SAM standards as set forth by Doak et al., (1996). A summary of the guidelines set forth by Doak et al. (1996) is shown in Figure 12. This figure highlights the key points suggested by Doak et al. (1996) for the development of education and counseling materials. It can be applied to the written, visual and spoken modalities within the therapeutic dyad.
Figure 12. Guidelines for creating health-literate, patient-centered materials

Set realistic objectives

- Limit the objective to what the majority of the population needs now
- Use a planning sheet to figure out the objective and identify key points

To change health behaviors, focus on desired behavior and skills

- Emphasize behaviors and skills rather than facts
- Consider the sequence of information. Place key points first and last

Present context before concept

- State the purpose or use for the new content before presenting it
- Relate new information to the context of patients' lives

Partition complex instructions

- Break information into easy-to-use chunks
- Provide opportunities for small successes

Use plain language

- Write at a 5th grade level or below, in the active voice, in conversational style.
- Use familiar words and avoid jargon. Keep sentences simple and short

Make it interactive

- Have the patient write, show, tell, demonstrate, select or solve a problem
- Use teach-back and Ask Me 3™ to assess comprehension
 Toolkit Overview

Within the ‘HH Lit Kit’ (Appendix B), there are sixteen separate patient-centered tools and five clinician resources (Table 5). Each tool contains clinician resources and its place within the 5A’s framework and is described and discussed in the ‘Clinician Guide’ (Appendix A). Background information, rationale and literature relevance are included together with SAM score, with comparison to existing materials, where applicable.

Table 5
HH Lit Kit Toolkit Contents

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<tbody>
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<td>• 2. Hearing Health Checklist</td>
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<td>• 3. Single Item Literacy Screener (SILS)</td>
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<tr>
<td>• 4. Modified Hearing Handicap Inventory Screener</td>
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<th>Advise</th>
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<tr>
<td>• Signs of Hearing Loss Postergraphic</td>
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<tr>
<td>• 5. How I Hear Easy Audiogram</td>
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<td>• 6. How I Hear: NU6 Soft Speech</td>
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<td>• 7. Should I Get Hearing Aids Counselgraphics™</td>
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<td>• 8. Costs &amp; Benefits Counselgraphics™</td>
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<tr>
<td>• Clinician Resource A: &quot;Am I Doing it Right?&quot; Clinician MI Reminder Card</td>
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<tr>
<td>• Modified Hearing Handicap Inventory Screener</td>
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<tr>
<td>• Counselgraphics™:</td>
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<td>• 9. Are All Hearing Aids the Same? 10. RIC vs. CIC. 11. Listening to TV with Hearing Loss</td>
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<th>Assist</th>
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<tr>
<td>• Clinician Resource B: Ten Elements of Teach-Back Method</td>
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<tr>
<td>• 12. Your RIC Hearing Aid Interactive Brochure</td>
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<td>• 13. Your CustomHearing Aid Interactive Brochure</td>
</tr>
<tr>
<td>• 14. Strategies &amp; Situations Card Game</td>
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<tr>
<td>• 15. Family &amp; Friends Communication Leaflet</td>
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<tr>
<td>• Modified Hearing Handicap Inventory Screener</td>
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<thead>
<tr>
<th>Arrange</th>
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<tbody>
<tr>
<td>• 16. Heal Rx / Clinician Resource C: Ask Me 3™</td>
</tr>
<tr>
<td>• Clinician Resource C: qTIP: Continuous Quality Improvement Questionnaire</td>
</tr>
<tr>
<td>• Clinician Resource D: Suitability Assessment of Materials packet</td>
</tr>
</tbody>
</table>
References


older adults. *International Journal of Audiology, 53*(sup1), S43-S51.


Hopkins School of Medicine project “Nutrition Education in Urban African Americans”. funded by the National Institutes of Health. *National Heart Lung and Blood Institute, Bethesda, MD.*


Laplante-Lévesque, A., Hickson, L., & Worrall, L. (2012). What makes adults with hearing impairment take up hearing aids or communication programs and
achieve successful outcomes?. *Ear and Hearing*, 33(1), 79-93.


it work?. Archives of Internal Medicine, 159(18), 2198-2205.


behavioral counseling interventions: An evidence-based approach. The full text of this article is available via AJPM Online at www.ajpm-online.net.

Appendix A
Clinician's Guide

Tool 1: The “Signs of Hearing Loss” Postergraphic

Figure A1. ‘Signs of Hearing Loss’ postergraphic.
The psychosocial, emotional and cognitive issues associated with adult-onset hearing loss are well documented in the literature. Patients often experience shame, anger, frustration, embarrassment and sadness. Interpersonal relationships suffer, and gradual withdrawal from participation and activities is common. Tiredness, distractibility and exhaustion can result from the cognitive demand associated with effortful listening. (Weinstein, 2013; Laplante-Lévesque, Hickson and Worrall, 2010; Pichora-Fuller & Souza, 2003; Ventry & Weinstein, 1983).

This postergraphic tool was designed to raise patients’ hearing health literacy during the initial encounter with an audiologist. It is designed for display in the waiting room, or as a tool to facilitate an informal discussion of hearing handicap in patient-audiologist dyads. The postergraphic outlines many of the common percepts of hearing impairment in an easy-to-relate to format that uses plain language, simple graphics a call to action at the 1st grade reading level. Depending upon how the patient engages with the material, the tool is encompassed within either the Assess or Advise section of the '5As', or both.
### Table A1
**SAM Analysis of the ‘Signs of Hearing Loss’ Postergraphic**

<table>
<thead>
<tr>
<th>‘Signs of Hearing Loss’ Postergraphic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAM Score</strong></td>
</tr>
<tr>
<td><strong>Fry Reading Grade Level</strong></td>
</tr>
<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td><strong>Comparison material:</strong></td>
</tr>
<tr>
<td><strong>Source:</strong></td>
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<tr>
<td><strong>SAM Score</strong></td>
</tr>
<tr>
<td><strong>Weaknesses</strong></td>
</tr>
</tbody>
</table>
Tool 2. The Single Item Literacy Screener (SILS)

The SILS screener (Morris, N. S., MacLean, C. D., Chew, L. D., & Littenberg, B., 2006) uses one question to help practitioners assess the health literacy of their patients. Validation is documented in the literature (Morris et al., 2006). In a cross-sectional study (n=999) of diabetic patients, the sensitivity of the SILS in detecting limited reading ability was 54% [95% CI: 47%, 61%] and the specificity was 83% [95% CI: 81%, 86%] with an area under the Receiver Operating Characteristics Curve (ROC) of 0.73 [95% CI: 0.69, 0.78].

The question is: “How often do you need to have someone help you when you read instructions, pamphlets, or other written material from your doctor or pharmacist?” Responses range from “1” (never) to “5” (always). A cut-off point of “2” was found to accurately identify all patients potentially in need of assistance. The SILS screener is incorporated into the intake form ‘Hearing Health Checklist’ within the ‘HH Lit Kit’.
Tool 3: Modified Hearing Handicap Inventory for the Elderly Screener (m-HHIS)

The original Hearing Handicap Inventory for the Elderly (HHIE) (Ventry & Weinstein, 1982) was developed as a self-assessment tool for evaluating the emotional and social adjustment effects of hearing loss in elderly people. It is well established in the literature and in clinical practice. A screening version of the protocol, the HHI-S (Weinstein, 1986) is a shortened 10-item questionnaire where the patient must answer “yes” (4 points), “sometimes” (2 points) or “no” (0 points). Score ranges from 0-40. The probability of a patient’s hearing handicap is shown in Table A2.

Table A2

*Scoring the HHI-S*

<table>
<thead>
<tr>
<th>Points Range</th>
<th>Probability of Hearing Handicap</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-8</td>
<td>13%</td>
</tr>
<tr>
<td>10-24</td>
<td>50%</td>
</tr>
<tr>
<td>26-40</td>
<td>84%</td>
</tr>
</tbody>
</table>

The HHI-S has both a high test-retest reliability (r=0.93) (Lichtenstein, Bess & Logan, 1988) and high sensitivity (94.7%) and specificity (75%) (Rosis, Souza & Iório, 2009) when utilized as an aid to identifying older individuals with hearing impairment.

In evaluating the HHI-S for inclusion in the ‘HH Lit Kit’ the reading level was found to be 10th grade (see Table A3) which places it in the unsuitable and must be revised category using the SAM (Doak, Doak & Root, 1996).
The Modified HHI-S (m-HHIS) (adapted with permission from Weinstein) achieves a 4th grade reading level. Each item’s point of view was changed from third-person to first-person, and the words “hearing problem” were removed in favor of behavior-based terminology. The items are color-coded to give the clinician quick access to whether reported situational difficulties are biased toward social or emotional factors. Administration can be self-report or clinician-guided (estimated time 5 minutes for each condition). Validation of this version is being investigated at time of writing.

The m-HHIS is intended for use in the pre- and post-intervention encounters to track the patient’s perceived handicap and assess whether success is being made with the chosen treatment plan. There is a “notes” space where the audiologist can record further details of difficulty without and with hearing aids or other treatment. Reduction of hearing handicap post-intervention using the Hearing Handicap Inventory is well-described in the literature (Abrams et al., 1992) and findings attest to the construct validity of its items as a measure of hearing aid benefit (Newman & Weinstein, 1998).
Figure A2. 'The Modified Hearing Handicap Inventory Screener (m-HHIS)'
Table A3

*Original HHI-S items*

Does a hearing problem cause you to feel embarrassed when meeting new people?
Does a hearing problem cause you to feel frustrated when talking to members of your family?
Do you have difficulty hearing when someone speaks in a whisper?
Do you feel handicapped by a hearing problem?
Does a hearing problem cause you difficulty when visiting friends, relatives, or neighbors?
Does a hearing problem cause you to attend lectures or religious services less often than you would like?
Does a hearing problem cause you to have arguments with family members?
Does a hearing problem cause you difficulty when listening to TV or radio?
Do you feel that any difficulty with your hearing limits or hampers your personal or social life?
Does a hearing problem cause you difficulty when in a restaurant with relatives or friends?
### Table A4

**SAM Analysis of the ‘m-HHIS’**

‘Modified Hearing Handicap Inventory Screener (m-HHIS)’

<table>
<thead>
<tr>
<th>SAM Score</th>
<th>N/A</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fry Reading Grade Level</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td></td>
</tr>
</tbody>
</table>

**Strengths**

- Low reading level; active voice; plain language; interactive; use of a readiness scale; testimonials include change talk to foster self-efficacy

**Comparison material:**

Original HHI-S (Weinstein, 1986)

| Fry Reading Grade Level | 10<sup>th</sup> grade |

**Weaknesses**

Materials with reading levels above 8<sup>th</sup> grade should be revised.
Tool 4: The “Hearing Health Checklist”

Between 18 and 26% of Americans have difficulty filling out forms according to the 1993 National Literacy Act Survey (Kirsch, 1993). This low functional health literacy can present a barrier to healthcare access. Patients are limited by the burdensome format and jargon-filled language of case history and intake forms with readability levels that exceed the patient’s ability (Schwartzberg, VanGeest & Wang, 2005). Some of the readily available public information on what to expect when asked about hearing case history achieves a 9th grade reading level, and includes a lot of technical jargon.

Patients with low health literacy often harbor shame, which can be reinforced if clinicians become frustrated over inability to fill out forms. They may make excuses for not completing the task, such as “I forgot my reading glasses” and may not be willing to disclose health information due to mistrust of the system. (Baker, Parker & Williams, 1996; Williams, et al., 1995)

The ‘hearing healthcare checklist’ includes a simple patient-centered introduction that is meant to contextualize the action of form filling. “Yes/No” self-report paradigm is presented according to the guidelines stated in the SAM (Doak et al., 1996). The cover graphic is friendly and attracts attention, with a call to action and summary included. The document achieves a 3rd grade reading level and includes a “not sure” check box option for almost every question item. Patients are advised to seek help if they have any trouble with the document or with the English Language. These features are intended to minimize shame and to signal the clinician when clarification and
appropriate further questioning may be required during the encounter.

Figure A3. ‘The Hearing Health Checklist’ cover
Do you think you have a hearing problem?  ☐ YES  ☐ NO  ☐ NOT SURE

Is one ear better than the other?  ☐ RIGHT  ☐ LEFT  ☐ BOTH
SAME

What do you think caused your hearing problem?

How bad is it from 1-10 (1 = not bad, 10 = very bad)  ☐

How long have you had trouble hearing?  ☐ WEEKS  ☐ MONTHS  ☐ YEARS

Do you think your hearing is changing?  ☐ YES  ☐ NO  ☐ NOT SURE

Did your hearing loss happen suddenly?  ☐ YES  ☐ NO  ☐ NOT SURE

Have you been dizzy?  ☐ YES  ☐ NO  ☐ NOT SURE

Have you seen a doctor for it?  ☐ YES  ☐ NO

Do your ears hurt today?  ☐ YES  ☐ NO
Do your ears ever feel blocked?  ☐ YES  ☐ NO

Do you have ringing or buzzing in your ears?  ☐ YES  ☐ NO  ☐ NOT SURE

In both ears?
Does it come and go?
When is it the worst?
Do any of your relatives have hearing loss? ☐ YES ☐ NO ☐ NOT
SURE

Who?

Was it from old age? ☐ YES ☐ NO ☐ NOT
SURE

Have you been around noise? ☐ YES ☐ NO ☐ NOT
SURE

☐ Military
☐ Machines / factory / farm / outdoor / construction
☐ Rifle / shooting / hunting
☐ Music

Have you ever been treated for cancer or a serious infection? ☐ YES ☐ NO

Have you ever hit your head or been in an accident? ☐ YES ☐ NO

Have you ever had ear surgery? ☐ YES ☐ NO ☐ NOT
SURE

How often do you need to have someone help you when you read instructions, pamphlets, or other written material from you doctor or pharmacist?

☐ 1. NEVER ☐ 2. RARELY ☐ 3. SOMETIMES ☐ 4. OFTEN ☐ 5. ALWAYS

How do you rate your health?

☐ 1. EXCELLENT ☐ 2. VERY GOOD ☐ 3. GOOD ☐ 4. OKAY ☐ 5. BAD
What medicines do you take?

_______________________     for   __________________________

_______________________     for   __________________________

_______________________     for   __________________________

_______________________     for   __________________________

Where would you like to hear better? Write down the type of situation, for example, “in the car”.

1. __________

2. __________

3. __________

4. __________

Notes:

*Figure A4. The ‘Hearing Health Checklist’ interior, including the SILS*
**Table A5**
*SAM analysis for the ‘Hearing Health Checklist’*

<table>
<thead>
<tr>
<th>‘Hearing Health Checklist’</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAM Score</strong></td>
</tr>
<tr>
<td><strong>Fry Reading Grade Level</strong></td>
</tr>
<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td><strong>Comparison material:</strong></td>
</tr>
<tr>
<td><strong>Fry Reading Grade Level</strong></td>
</tr>
<tr>
<td><strong>Weaknesses</strong></td>
</tr>
</tbody>
</table>
Tool 5. ‘How do I Hear? My Audiogram’ Patient Education Sheet

Difficulty hearing and understanding speech is a very common complaint of patients with sensorineural hearing loss. A pure tone audiogram alone cannot reflect an individual's degree of hearing handicap, and as stated by Doak et al. (1996), patients do not readily understand graphs or jargon. Unfortunately, very little research exists on audiogram comprehension by patients. In a study of 35 adults with hearing loss Martin, Krueger and Bernstein (1990) found that following an audiological evaluation and counseling session, none knew what an audiogram was, despite having had it explained to them by a clinician. This may be related to the fact that an audiogram does little to relate the patient’s experiences of hearing loss to real life. Without an understanding of patient’s concerns, there is little basis for engaging in the rehabilitative process!

The tool recognizes that in explaining test results, a counseling opportunity exists for audiologists to show how a patient’s hearing loss affects phoneme perception and relate it to a reported difficulty in everyday life.

The ‘How I Hear’ Easy Audiogram on side one features a simplified audiogram with speech and familiar sounds overlay. The image is adapted from manufacturer Phonak’s promotional material (permissions requested). On the page, simple information about loudness and pitch is given using relatable examples. It is intended for the audiologist to plot the patient’s audiometric configuration over the audiogram. The patient is invited to identify which sounds fall above and below threshold and identify any which cannot be heard at normal levels.
The reverse of the audiogram contains the “How do I Hear Speech” patient education sheet. The audiologist should present the included NU-6 ordered-by-difficulty list at a soft or normal conversational level (35-45dBHL) and note down errors in response. The word list can then be used as a counseling tool to demonstrate to the patient how hearing loss can impact phonemic perception. The sheet encourages the patient to compare these results with the standard suprathreshold word recognition score under headphones, and ask them “Did your score improve when speech was made loud enough?”
How do I hear? My Audiogram

Sound can be measured in two ways. How loud it is and what pitch it is.

For example, a truck has a low pitch sound, and bird song has a high pitch sound. A whisper is a very soft sound, and an airplane is a very loud sound.

An audiogram tells you how loud a sound needs to be before you can hear it.

Very Soft Sounds

125 250 500 1000 2000 4000 8000 Hz

Very Loud Sounds

Normal Hearing
Mid Hearing Loss
Moderate Hearing Loss
Severe Hearing Loss
Profound Hearing Loss

SPEECH

Your Audiologist measured your hearing based on sound loudness and pitch.
Your right ear is the line marked with circles. Your left ear is the line marked with X's.
You did not hear anything above your lines. Are there any speech sounds above your lines? Which ones are they?

Figure A5. ‘How do I hear? My Audiogram’
Tool 6. ‘How do I Hear Speech’ Patient Education Sheet

How do I hear speech?

Speech is made of soft, high pitch sounds, and loud, low pitch sounds.

Most of the time, loud low pitch sounds are in the middle of words. They are vowels. An example of a vowel is the "o" sound in the middle of "dog".

Soft, high pitch sounds are found at the beginning and end of words. They are consonants. An example is the "d" sound at the beginning of "dog". Another example is the "g" sound at the end.

Your hearing loss might affect how well you hear consonant sounds. Instead of hearing "dog" you might hear "bog" or "boll".

Consonant sounds change the meaning of words. For example: cat, sst, fat, hat. Even a small amount of hearing loss can cause you to miss what was said.

Your Audiologist tested how well you can hear speech sounds at a soft level.

![Score:]

Level (dBHL)

Your Audiologist also tested how well you hear these sounds if speech is made louder.

![Score: R L]

Level (dBHL)

Did your score get better when speech was made louder?

Figure A6. ‘How do I hear speech?’
### Table A6

**SAM Analysis of ‘How do I hear? My Audiogram’**

<table>
<thead>
<tr>
<th>SAM Score</th>
<th>87.5%</th>
<th>Superior</th>
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</thead>
<tbody>
<tr>
<td>Fry Reading Grade Level</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td></td>
</tr>
<tr>
<td>Strengths</td>
<td>Low reading level; active voice; plain language</td>
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</tr>
<tr>
<td>Comparison material:</td>
<td>‘Understanding Your Audiogram’ <a href="http://www.hopkinsmedicine.org/hearing/hearing_testing/understanding_audiogram.html">http://www.hopkinsmedicine.org/hearing/hearing_testing/understanding_audiogram.html</a></td>
<td></td>
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<td>Fry Reading Grade Level</td>
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<td>Materials with reading levels above 8&lt;sup&gt;th&lt;/sup&gt; grade should be revised.</td>
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</table>
Table A7
SAM Analyses of ‘How I Hear Speech’

<table>
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<tr>
<th>Strengths</th>
<th>Low reading level; active voice; plain language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison material:</td>
<td>‘Speech Audiometry <a href="http://www.hopkinsmedicine.org/hearing/hearing_testing/speech_audiometry.html">http://www.hopkinsmedicine.org/hearing/hearing_testing/speech_audiometry.html</a></td>
</tr>
<tr>
<td>Weaknesses</td>
<td>Materials with reading levels above 8th grade should be revised.</td>
</tr>
</tbody>
</table>
Counselgraphics (Tools, 7-10)

For an in-depth view of decision aids, refer to the shared decision-making (SDM) and decision aid sections in this paper.

Tool 7: ‘Should I Get Hearing Aids?’ Counselgraphic

Figure A7. ‘Should I Get Hearing Aids’ counselgraphic.
<table>
<thead>
<tr>
<th><strong>SAM Score</strong></th>
<th>80.5%</th>
<th>Superior</th>
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<td><strong>Fry Reading Grade Level</strong></td>
<td>4th grade</td>
<td></td>
</tr>
<tr>
<td><strong>Strengths</strong></td>
<td>Low reading level; active voice; plain language; interactive; use of a readiness scale; testimonials include change talk to foster self-efficacy</td>
<td></td>
</tr>
</tbody>
</table>
Tool 8: ‘Costs & Benefits of Treatment’ Counselgraphic

For an in-depth view of decision aids, refer to the shared decision-making (SDM) and decision aid sections in this paper.

Figure A8. ‘Costs & Benefits of Treatment’ Counselgraphic
Table A9  
*SAM Analysis of the ‘Costs & Benefits of Treatment’ Counselgraphic*

<table>
<thead>
<tr>
<th>Costs &amp; Benefits of Treatment’ Counselgraphic</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAM Score</td>
</tr>
<tr>
<td>Fry Reading Grade Level</td>
</tr>
<tr>
<td>Strengths</td>
</tr>
</tbody>
</table>


Tool 9. ‘Are All Hearing Aids the Same?’ Counselgraphic

For an in-depth view of decision aids, refer to the shared decision-making (SDM) and decision aid sections in this paper.

<table>
<thead>
<tr>
<th>Type</th>
<th>Hearing Loss</th>
<th>Good to know:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invisible In Canal</td>
<td>Mild to Moderate</td>
<td>One piece. Invisible. Tiny size and tiny battery. Some people find it hard to use because of the size. (E.g. bad eyesight or problems moving the fingers). Only one microphone (not so good for speech in noise). No button (you need a remote control to change volume). Doesn’t fit in all ears. Not suitable for severe loss.</td>
</tr>
<tr>
<td>In Canal</td>
<td>Mild to Severe</td>
<td>One piece. Nearly invisible. Small size and small battery. Some people find it hard to use because of the size. Some models have two microphones. Some only have one microphone (not so good for speech in noise). Room for a button or volume control. Fits most ears. Not suitable for severe hearing loss.</td>
</tr>
<tr>
<td>Half Shell</td>
<td>Mild to Severe</td>
<td>One piece. Invisible from the front but seen from the side. Bigger battery size. Some people find it easier to use. Two microphones (better for speech in noise). Room for a button and/or volume control. Fits most ears. Suitable for severe hearing loss.</td>
</tr>
<tr>
<td>Full Shell</td>
<td>Mild to Severe</td>
<td>Two microphones (better for speech in noise). Room for a button and/or volume control. Fits most ears. Suitable for severe hearing loss.</td>
</tr>
<tr>
<td>RIC (Receiver in Canal)</td>
<td>Mild to Severe</td>
<td>Two pieces (in the ear and behind the ear). Nearly invisible from the front and side. Available in many colors. Choose your battery size. Two microphones (better for speech in noise). Room for a button and/or volume control. Fits most ears. Suitable for severe hearing loss. Good for people who have normal low pitch hearing.</td>
</tr>
</tbody>
</table>

*Figure A9. Are all hearing aids the same?*
Table A10

*SAM Analysis of ‘Are All Hearing Aids the Same?’ Counselgraphic*

<table>
<thead>
<tr>
<th>Strengths</th>
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<tr>
<td>SAM Score</td>
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</table>
Tool 10. ‘RIC vs. CIC?’ Counselgraphic

For an in-depth view of decision aids, refer to the shared decision-making (SDM) and decision aid sections in this paper.

Figure A10. ‘Which Hearing Aid is Right for Me?’ Counselgraphic
Table A11

*SAM Analysis of ‘Which Hearing Aid is Right for Me?’ Counselgraphic*

Which hearing aid is right for me?

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAM Score</strong></td>
<td>89%</td>
<td>Superior</td>
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<td>3rd grade</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Strengths</strong></td>
<td></td>
<td>Low reading level; active voice; plain language; interactive; testimonials act as summary; use of pictures</td>
<td></td>
</tr>
</tbody>
</table>
Tool 11: ‘Listening to TV with a Hearing Loss’ Counselgraphic

For an in-depth view of decision aids, refer to the shared decision-making (SDM) and decision aid sections in this paper.

*Figure A11. ‘Listening to TV with a hearing loss’*
Table A12

SAM Analysis of ‘Listening to TV with a hearing loss’

<table>
<thead>
<tr>
<th>‘Listening to TV with a hearing loss’</th>
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</thead>
<tbody>
<tr>
<td><strong>SAM Score</strong></td>
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<tr>
<td><strong>Fry Reading Grade Level</strong></td>
</tr>
<tr>
<td><strong>Strengths</strong></td>
</tr>
</tbody>
</table>

Tools 12 & 13: ‘Your RIC/Custom Hearing Aid’ Brochures

For an in-depth view of the suitability of hearing aid brochures, refer the section on health literacy and audiology in this paper, in particular the discussion of findings by Caposecco et al., (2014).
Figure A 12. Example of hearing aid brochure exterior
Getting used to your hearing aids

It takes time to get used to hearing aids. The more you wear them, the sooner you will start to be successful.

In the beginning, you will notice many new sounds in the background. These are sounds that you were missing because of the hearing loss.

Most new hearing aid users say they noticed their own footsteps, the refrigerator hum, a clock ticking, or the turn signal in their car.

As your ears and brain get used to hearing aids, everyday sounds will fade into the background again. It can take from a few days to several weeks for this to happen.

Start using the hearing aids in a quiet room. Once you are used to how they sound in quiet, you can try them out in different places, such as at a party or restaurant.

Write down things that bother you about the hearing aids. Describe your problem. Your Audiologist will then tune them.

Be patient and give yourself time.

---

“Getting used to your hearing aids can be a slow process. It's like learning to walk again,” says Alex.

---

Tip: Take out your hearing aids around very loud noise (e.g., power tools, a music concert, or lawn mower). Use ear plugs instead. Loud noise can damage your hearing.

---

“During the first week, I heard sounds that I wasn’t used to hearing. One morning, I realized there were birds outside. They sounded beautiful!” says Gina.

---

Your Audiologist will ask you how things sounded with your new hearing aids.

Use this space to note down any listening problems.

---

Figure A 13. An example page from hearing aid brochure interior
Table A13

**SAM Analyses of ‘Your RIC Hearing Aid’ & ‘Your Custom Hearing Aid’ Brochures**

### ‘Your RIC Hearing Aid’

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAM Score</strong></td>
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<td>Superior</td>
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<td><strong>Fry Reading Grade Level</strong></td>
<td>6th grade</td>
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<td><strong>Strengths</strong></td>
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<td></td>
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<td></td>
<td>Low reading level; active voice; plain language; learning stimulation and motivation; interactive</td>
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<tr>
<td><strong>Comparison material:</strong></td>
<td>See Caposecco et al. (2014)</td>
<td></td>
</tr>
<tr>
<td><strong>Fry Reading Grade Level</strong></td>
<td>9th grade</td>
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<td><strong>Weaknesses</strong></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Materials with reading levels above 8th grade should be revised.</td>
<td></td>
</tr>
</tbody>
</table>

### ‘Your Custom Hearing Aid’

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>SAM Score</strong></td>
<td>88%</td>
<td>Superior</td>
</tr>
<tr>
<td><strong>Fry Reading Grade Level</strong></td>
<td>6th grade</td>
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</tr>
<tr>
<td><strong>Strengths</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low reading level; active voice; plain language; learning stimulation and motivation; interactive</td>
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</tr>
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<td><strong>Comparison material:</strong></td>
<td>See Caposecco et al. (2014)</td>
<td></td>
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<td><strong>Fry Reading Grade Level</strong></td>
<td>9th grade</td>
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<tr>
<td><strong>Weaknesses</strong></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Materials with reading levels above 8th grade should be revised.</td>
<td></td>
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</tbody>
</table>
Tool 14: ‘Strategies and Situations’ Card Game

This activity is intended for use in individual or group aural rehabilitation. It has been designed to foster self-efficacy in patients with a hearing handicap. Ten picture cards depict an individual who is experiencing difficulty in a certain listening situation. The audiologist shows the picture and reads the explanation on the reverse of the card. Smaller cards with possible compensatory strategies are given out, and participants choose the strategies that would best fit the situation depicted. Some of the strategy cards are things that the person with hearing loss can do, and some are things that communication partners can do. The audiologist leads any resulting discussion and should encourage participants to explore any personal situations where such strategies might have helped, or could help in the future.

Figure A14. Cards from the ‘Strategies and Situations’ game.
Table A14

*SAM Analysis of the ‘Strategies and Situations’ Card Game*

<table>
<thead>
<tr>
<th>‘Strategies and Situations’ Card Game</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAM Score</strong></td>
<td>84%</td>
</tr>
<tr>
<td><strong>Superior</strong></td>
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<td><strong>Fry Reading Grade Level</strong></td>
<td>5&lt;sup&gt;th&lt;/sup&gt; grade</td>
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<tr>
<td><strong>Strengths</strong></td>
<td>Low reading level; active voice; plain language; cultural match; interactive; learning stimulation and motivation; use of questions</td>
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</tbody>
</table>


Tool 15: ‘Hearing Loss & Family’ Education Leaflet

This leaflet has been designed for family members and conversation partners to read. It contains tips and strategies for communicating with adults who have hearing loss and wear hearing aids.

---

When a person gets hearing aids for the first time, miracles do not happen overnight.

- Learning to hear speech again can take time.
- Damaged hearing never gets back to normal.
- Speech doesn’t sound perfect through hearing aids.
- People who had hearing loss for a long time may take a while to get used to hearing aids.

Your loved one has taken an important step by accepting their hearing loss. You may need to make some small changes, too!

---

*Figure A15. ‘Hearing Loss & Family’ education leaflet.*
<table>
<thead>
<tr>
<th></th>
<th>'Hearing Loss &amp; Family’ Education Leaflet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAM Score</strong></td>
<td>88%</td>
</tr>
<tr>
<td><strong>Fry Reading Grade Level</strong></td>
<td>6\textsuperscript{th} grade</td>
</tr>
<tr>
<td><strong>Strengths</strong></td>
<td>Low reading level; active voice; plain language; cultural match; use of testimonials as summary; use of blank space; chunking of related information; interactive; cultural match, use of testimonials as summary; use of blank space; chunking of related information; interactive</td>
</tr>
<tr>
<td><strong>Comparison material:</strong></td>
<td>‘Communicating with People with Hearing Loss’ <a href="https://www.ucsfhealth.org/education/communicating_with_people_with_hearing_loss/">https://www.ucsfhealth.org/education/communicating_with_people_with_hearing_loss/</a></td>
</tr>
<tr>
<td><strong>Weaknesses</strong></td>
<td>Materials with reading levels above 8\textsuperscript{th} grade should be revised.</td>
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</tbody>
</table>
Clinician Resource A: ‘MI Reminder Card’

For an in-depth discussion of motivational interviewing (MI) please refer to the section in this paper. This free resource was gathered from the Center for Evidence Based Practice at Case Western and is intended to remind the audiologist of the guiding principles of MI, which foster patient-directed behavior change through reflective listening.

Studies show that MI has significant effects on clinical outcomes for chronically ill older adults (Lundahl et al. 2010; Cummings et al., 2009)

![Figure A16. MI reminder card (CenterforEBP.Case.edu, 2016).](image)
Teach-back is a loop to check for patient recall and comprehension. It can help audiologists to close the loop between patient education and patient understanding. It identifies patients who do not understand and creates an additional opportunity to re-teach the information. According to studies on patient memory (Kessels, 2003) and retention (Anderson et al., 1979), 40-80% of all medical information received is forgotten immediately, and nearly half of the information retained is incorrect.

Teach-back is not an assessment of a patient’s health literacy, but rather a tool for the audiologist to assess whether instructions have been properly understood. It is comprised of three simple steps: explain a key point, check for comprehension, and re-explain if needed. Teach-back method serves as a valuable tool during hearing aid orientation, when a patient is learning a new skill that requires comprehension and retention. According to research by White, et al. (2013), use of the ‘teach-back’ method in a prospective cohort study of heart failure patients over age 65 resulted in increased retention of self-care information.
10 Elements of Competence for Using Teach-back Effectively

1. Use a caring tone of voice and attitude.
2. Display comfortable body language and make eye contact.
3. Use plain language.
4. Ask the patient to explain back, using their own words.
5. Use non-shaming, open-ended questions.
6. Avoid asking questions that can be answered with a simple yes or no.
7. Emphasize that the responsibility to explain clearly is on you, the provider.
8. If the patient is not able to teach back correctly, explain again and re-check.

**What is Teach-back?**

- A way to make sure you—the health care provider—explained information clearly. It is not a test or quiz of patients.
- Asking a patient (or family member) to explain in their own words what they need to know or do, in a caring way.
- A way to check for understanding and, if needed, re-explain and check again.
- A research-based health literacy intervention that improves patient-provider communication and patient health outcomes.

Schillinger, 2003

*Figure A17. ‘10 Elements of Teach-Back’ (Teach-Back Toolkit 2016).*
Clinician Resource C: ‘Hearing and Listening Prescription / Ask Me 3)

The National Patient Safety Foundation (NPSF) is an independent, non-profit patient advocacy organization has developed a program called ‘Ask Me 3’ which encourages patients to ask healthcare providers, “What is my main problem? What do I need to do? Why is it important for me to do this?” (NPSF, 2013). These questions are intended to facilitate PCC and health literacy, and translate very well into the audiological setting.

Figure A18. The Hearing and Listening Prescription, an iteration of Ask Me 3 (http://www.npsf.org/?page=askme3, 2016).
Clinician Resource D: ‘Questionnaire Targeting Intervention Patient-Centeredness (qTIP)’

In developing and testing the Health Literacy Universal Precautions Toolkit (HLUP Toolkit) DeWalt et al. (2011) created a patient exit interviews protocol for gaining perspectives on counseling and the therapeutic relationship in terms of the ‘5 As’. Similarly, in creating the HH Lit Kit, a patient questionnaire was developed to assess and monitor PCC in the practice setting. The qTIP is intended as an anonymous and brief measure to be used as part of tracking quality improvement (QI). Its aim is to correctly identify gaps in the provision of PCC over time in any area of the ‘5As’ construct.

Clinician Resource E: SAM Information and Evaluation Criteria

The SAM (Doak et al, 1996) materials can be found in Appendix B. An explanation of the domains assessed is given and there are clear step-by-step instructions for using the measure to assess existing materials for suitability. A copy of the scoring sheet is included. Alternatively, the SAM may be utilized as a resource for creating new health literate, patient-centered counseling materials, as was done in development of tools and resources for the HH Lit Kit (See Appendix B).
Appendix A References


