

Screening for hearing loss in primary care

BY BARBARA E WEINSTEIN

Hearing impairment is one physical disability that is increasing in prevalence in society in general, and in older adults in particular. Approximately 34 to 36 million Americans report suffering from some degree of hearing impairment with the number rising to 52.9 million by the year 2050. Extrapolating from a number of population based studies, hearing loss prevalence ranges from 30-47% among persons 65+ years and 70-80% for those 80 years of age and older [1].

Often assumed to be benign, hearing loss is an insidious condition which has profound effects on quality of life; age-related hearing loss (ARHL) takes about 7-10 years before people first realise that the condition exists. The inability to communicate effectively, often robs individuals of being productive members of society. ARHL is indirectly associated with mortality and directly associated with functional disability, social isolation, poor self-reported health and depression. Hearing impairment is a risk factor for cognitive decline, falls and mobility decline, and individuals with hearing loss have the increased burden of medical comorbidities.

Hearing loss is independently associated with increased burden of disease, poorer self-reported health, increased odds of hospitalisation, and healthcare use [2]. It has recently

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been acknowledged that on hospital discharge, errors often result from a breakdown in communication between the hospital team and the patient or primary care physician. As hearing loss is often invisible to primary care physicians, errors and adverse events in discharge planning which have been attributed to breakdowns in communication could be due, in part, to unrecognised hearing loss [3]. For example, upon discharge, physicians tend to rely on verbal instructions and the entire interaction is typically rushed [3]. Identification of persons with hearing loss may contribute to more effective transitions of care, notably, greater clarity in physician-patient communication, and adoption of strategies to promote communication, potentially contributing to reductions in medical errors in discharge planning.

A highly stigmatised condition for which people are reluctant to pursue treatments, hearing loss remains virtually untreated in the majority of older adults [4, 5]. Hearing aids are increasingly more sophisticated with features designed to improve speech understanding in noise, the most common complaint of individuals pursuing hearing aids. With the advent of hearing assistive technologies, including personal sound amplifiers, inexpensive alternatives open the door to numerous options from which to choose, especially for individuals who may not be ready or are unable to afford digital hearing aids.

Since hearing loss is prevalent and a range of effective interventions are available, screening at-risk older adults for hearing loss should become a priority in primary care. Identifying persons with hearing loss can potentially reduce illness burden, promote provision of high quality care and more effective care transitions. Acknowledging the importance of hearing status, the

Medicare-covered Annual Wellness Visit (AWV) includes provision of Personalised Prevention Plan Services (PPPS) at no cost to the beneficiary. Key elements of the first AWV providing PPPS include, among other things, detection of any cognitive impairment, review of potential risk factors for depression, review of functional ability based on direct observation or any appropriate screening questions or a screening questionnaire including at a minimum assessment of 'hearing impairment, ability to successfully perform activities of daily living (ADLs), fall risk and home safety' [6]. The existence of a potential hearing loss can be detected with a high degree of accuracy via direct questioning, handheld audiometry, and / or through observation of subtle behavioural indicators (Table 1) [7, 8]. Figure 1 shows a sample form which could be adapted for use when conducting hearing screenings. As a supplement to a hearing screen, when hearing loss is suspected, it is important to provide written and oral instructions and to adopt communication strategies such as facing the patient when speaking, in an effort to promote compliance and effective care transitions.

In summary, an underestimated public health problem, hearing loss is a serious threat to functional independence, quality of life and health of older adults. Mounting evidence suggests that a range of effective interventions is available to remedy hearing loss and its negative effects, yet 23 million Americans with hearing loss do not utilise hearing aids [4]. Routine screening of individuals at risk for hearing loss, including individuals at risk for falls, persons with depression, or memory problems, has the potential to reduce the burden of illness posed by hearing loss and improve health care outcomes [10].

TABLE 1: OPTIONS FOR DETECTION OF UNRECOGNISED HEARING LOSS.

MODALITY	ADVANTAGES	DISADVANTAGES
Direct or indirect questioning		
<p>Direct Questioning [9] Ask the patient: (e.g. Do you have a hearing problem now; Would you say you have any difficulty hearing; Do you feel you have hearing loss?) Indirect Questioning Ask a family member: (e.g. Do you think your spouse has a hearing problem now?)</p>	<p>Helps patients begin to think about the fact that they may have difficulty hearing and that it is not necessarily a natural part of the ageing process. If the doctor is concerned this helps to validate patient perceptions.</p>	<p>Patients are often reluctant to admit that they have hearing loss; Patients may not yet notice they have a hearing loss; Patients may only have difficulty in noisy environments and think it is typical for their age and not yet have concerns.</p>
Validated questionnaires		
<p>The screening version of the Hearing Handicap Inventory for the Elderly (HHIE-S)</p>	<ol style="list-style-type: none"> Score >8 associated with hearing aid candidacy, functional dependence, poor self rated health, hearing aid benefit, etc. Available in multiple languages. 	<p>Takes approximately 5 to 10 minutes to administer.</p>
Physical examination		
<p>Otoscopic examination to visualise the ear canal and tympanic membrane</p>	<ol style="list-style-type: none"> Cerumen impaction associated with age can lead to reversible hearing impairment. Cerumen impaction can create a temporary hearing loss and can block amplified sound from reaching inner ear and brain for processing. 	<p>NA</p>
<p>Handheld Audioscope™ (insert probe in ear to seal canal, set to 40dB and have patient indicate when tone is heard). Failure to detect one or more tones at 1000 and 2000 Hz constitutes a failure.</p>	<ol style="list-style-type: none"> Enables visualisation of ear canal. Acceptable likelihood ratios. Obtain information on each ear. 	<p>May be difficult for patients with minimal cognitive impairment (MCI) to condition to task.</p>
At-risk behaviours		
	<p>Recognising behaviours associated with hearing loss can help guide physician in delivery of improved patient-centred care.</p>	<p>Some behaviours are also typical of individuals with cognitive impairment, senile dementia or depression.</p>
<p>Confused by questions being asked and asks for frequent repetitions.</p>	<p>If physician knows this behaviour is due to hearing loss, this could promote improved patient-centred care.</p>	<p>People with MCI and senile dementia may display these behaviours.</p>
<p>Difficulty understanding physician recommendations (e.g. prescriptions, discharge, return visits).</p>	<p>Linking this to hearing loss could promote compliance with drug regimens, etc.</p>	
<p>Reports playing television at a loud level.</p>	<p>A common problem which leads many to pursue hearing intervention</p>	<p>Patient may not admit to this behaviour, caregiver often reports this.</p>

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Patient Name: _____ Date: _____ Age: _____

Screening Outcome
<input type="checkbox"/> At risk behavior for hearing loss <input type="checkbox"/> Cerumen Impaction <input type="checkbox"/> Did not Hear Tones During Audioscope Screen <input type="checkbox"/> Score > 8 on HHIE-S

Please schedule the following appointment(s):

Audiologists

It is recommended that you contact one of the following audiologists


1. _____
 2. _____
 3. _____

Otolaryngologists

It is recommended that you contact one of the following Otolaryngologists

1. _____
 2. _____
 3. _____

Figure 1: Sample Referral Form.



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Declaration of Competing Interests
 None declared
