

Hearing and Balance Screening and Referrals for Medicare Patients: A National Survey of Primary Care Physicians

DOI: 10.3766/jaaa.19.2.7

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Abstract

Hearing and balance problems are prevalent among the elderly. Primary care physicians (PCPs) are important pivotal points of entry for ensuring that patients receive needed audiology services. New Medicare beneficiaries are entitled to one-time preventative examinations including hearing/balance screenings. A 35-item questionnaire was developed to assess physicians' participation in, knowledge about, and attitudes toward hearing/balance screenings and referrals for the elderly. The survey was mailed to 710 PCPs (19 undeliverable; 95 returned; response rate = 13.7%) in major metropolitan areas in the United States. Generally, these PCPs were not conducting hearing/balance screenings, aware of patient self-report screening questionnaires, or likely to screen in the future. They referred to audiologists and otolaryngologists mainly when patients complained of having hearing/balance difficulties, and they stated that these problems were important in the elderly and that the Medicare program was worthy of funding but that they had little time and were not reimbursed appropriately for screening. Therefore, PCPs could benefit from informational outreach campaigns on the prevalence of, negative HRQoL (health-related quality of life) effects from, and screening procedures for hearing/balance disorders in the elderly.

Key Words: Balance, elderly, hearing, Medicare, physicians, referrals, screening, survey

Abbreviations: AAA = American Academy of Audiology; AAFP = American Academy of Family Physicians; BPPV = benign paroxysmal positional vertigo; DHI = *Dizziness Handicap Inventory*; EBP = evidence-based practice; HHIE-S = *Hearing Handicap Inventory for the Elderly—Screening Version*; HRQoL = health-related quality of life; PCP = primary care physician; USPSTF = U.S. Preventative Services Task Force Advisory Committee

Sumario

Los problemas de la audición y el equilibrio son prevalentes entre los ancianos. Los médicos de atención primaria (PCP) son importantes elementos pivote para asegurar que los pacientes reciban los servicios audiológicos necesarios. Los nuevos beneficiarios de Medicare tienen derecho a exámenes preventivos por una vez, incluyendo tamizaje de audición y equilibrio. Se desarrolló un cuestionario de 35 ítems para evaluar la participación de los médicos, su

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conocimiento y sus actitudes hacia el tamizaje de la audición y el equilibrio, y de sus referencias de ancianos. El cuestionario se envió por correo a 710 PCP (19 no llegaron al destinatario; 95 retornaron; tasa de respuesta = 13.7%) distribuidos en áreas metropolitanas principales de los Estados Unidos. Generalmente, estos PCP no estaban realizando tamizajes de audición y equilibrio, ni eran conscientes de los cuestionarios de tamizaje de auto-reporte, ni tampoco dispuestos a tamizar en el futuro. Ellos referían a los audiólogos y otolaringólogos principalmente cuando los pacientes se quejaban de dificultades auditivas o del equilibrio, y mencionaron que estos problemas eran importante para los ancianos y que el programa de Medicare debería cubrirlos, pero que había poco tiempo y que no existía un pago apropiado para tales tamizajes. Por lo tanto, los PCP podrían beneficiarse de campañas de información sobre la prevalencia, los efectos negativos de la HRQoL (calidad de vida relacionada con la salud) y sobre los procedimientos de tamizaje para los trastornos de la audición y el equilibrio en los ancianos.

Palabras Clave: Equilibrio, anciano, audición, Medicare, médicos, referencias, tamizaje, cuestionario

Abreviaturas: AAA = Academia Americana de Audiología; AAFP = Academia Americana de Médicos Familiares; BPPV = vértigo posicional paroxístico benigno; DHI = *Inventario de Discapacidad por Mareo*; EBP = práctica basada en evidencia; HHIE-S = *Inventario de Discapacidad Auditiva para Ancianos —Versión de Tamizaje*; HRQoL = calidad de vida en relación a la salud; PCP = médico de atención primaria; USPSTF = Comité Consultor de los EEUU para la Fuerza de Trabajo de Servicios Preventivos

Hearing and balance problems are increasingly common among persons of Medicare age (i.e., 65 years and older), and they frequently compromise the health-related quality of life (HRQoL) of elderly persons and their families (National Council on the Aging, 1999; Chisolm et al, 2007). The older segment of the U.S. population is living longer (Rice and Fineman, 2004), includes about 34.1 million people, and is projected to increase dramatically by 80% from 2010 to 2030 (Population Resource Center, 2006).

Primary care physicians (PCPs) are often the first professionals to see elderly patients having hearing and/or balance problems. The term "PCP" is defined in the broadest possible context, used here to include general practitioners, internists, and other physicians who may see elderly patients in their practices. The American Academy of Family Physicians (AAFP, 2006) defined primary care as "that care provided by physicians specifically trained for and skilled in comprehensive first contact and continuing care for persons with any undiagnosed sign, symptom, or health concern (the "undifferentiated" patient) not limited by problem origin (biological, behavioral, or social), organ system, or diagnosis." In today's health-care milieu, many non-primary care physicians provide primary care services

to patients, which increases the ambiguity of assigning the ultimate responsibility of preventative health care such as screening for hearing loss and balance system disorders (AAFP, 2006). Because PCPs are often gatekeepers to hearing and balance care in the elderly, they can be important pivotal points of entry in the process of patients obtaining access to treatment in a timely fashion. Thus, it is important that PCPs determine the need for and make necessary referrals to insure that older persons receive appropriate audiology services. Otherwise, comparatively easily remediable hearing and balance problems might be overlooked, trivialized in importance to patients when their PCPs fail to acknowledge subtle or even obvious communication and/or ambulatory difficulties, or result in delay of treatment, which might prolong frustration and reduce HRQoL.

As increasingly more households provide care for their older members, untreated problems like sensorineural hearing loss and risks for falls can decrease older persons' independence, indirectly adding additional stress and frustration to family units. Unfortunately, the length and focus of PCPs' consultations with patients vary and are often mediated by several factors that may preclude screening for hearing loss and balance system disorders (Wilson and Childs, 2006). Failure to address

hearing loss and ambulatory difficulties may inadvertently increase some older persons' reliance on family members in the execution of activities of daily living. Family members and/or caregivers can ally with PCPs in encouraging the elderly to address health-care needs (e.g., seeking amplification and assistive mobile devices such as canes and walkers) that may increase their independence and HRQoL.

We certainly have had ample experiences with annoyed family members who are aware of today's advanced hearing aid technology but cannot get their older loved ones to give amplification a chance. Similarly, although some patients having balance system disorders can be treated successfully through vestibular rehabilitation and physical therapy, most of those who cannot could still benefit greatly from assistive mobile devices that are available and helpful in preventing falls (Graafsmans et al, 2003). Unfortunately, many elderly persons simply refuse to use walking aids due to stigma (Richardson et al, 2004).

The national Medicare system is the primary medical insurer for elderly persons. It is important that Medicare, PCPs, audiologists, and caregivers work together to provide necessary hearing and balance testing and treatment to promote the best possible HRQoL outcomes for older persons and their families.

A recent cross-sectional analysis of a national random sample of 1,217,103 Medicare fee-for-service beneficiaries revealed that 82% had one or more chronic health conditions (Wolff et al, 2002). The leading chronic health-care conditions in the elderly are arthritis, hypertension, hearing impairment, heart disease, cataracts, deformity/orthopedic impairments, sinusitis, and diabetes (Healthy People 2010, 2004). Hearing loss, the third most common condition, can contribute to a decline in patients' physical and mental status if left untreated (Yueh et al, 2003). Hearing loss is present in approximately 314 of every 1,000 people over 65 years of age and in about 40–50% of those 75 years and older (Gates et al, 1990). Mental, emotional, and social consequences of untreated hearing loss in adults can negatively impact individuals' overall HRQoL (Bess et al, 1989; Bess et al, 1990; Mulrow et al, 1990; Keller et al, 1999; National Council on the Aging, 1999; Strawbridge et al, 2000; Dalton et al, 2003; Pugh, 2004; Chisolm et al, 2007).

Similarly, balance system disorders and risk for falls also increase with age (Colledge et al, 1994) as revealed in a recent epidemiological study, which surveyed elderly people and found that the prevalence was 36% at 70 years of age and increased to 40–50% for those around 90 years of age (Jonsson et al, 2004). Dizziness in the primary care setting represents a broad spectrum of diagnoses and manifestations in the elderly population (Sloane et al, 1994), and injuries due to falls from balance problems are a leading cause for admission to convalescent hospitals and often life-altering changes in the HRQoL and living status of elderly persons and their families.

Screening for hearing and balance problems in the elderly could be an important preventative health-care step in identifying, diagnosing, and remediating hearing loss and balance disorders, particularly with recent changes in Medicare benefits. Medicare participants whose coverage began after January 1, 2005, are entitled to a one-time Welcome to Medicare preventative physical examination within the first six months of enrollment (Solodar and Chappell, 2005). This should encompass a review of beneficiaries' medical/social history, potential for depression, functional ability, level of safety including screening for hearing impairment and falls risk; examinations (e.g., measurement of height, weight, blood pressure, visual acuity, electrocardiogram) performed by physicians or "qualified non-physician practitioners" (e.g., physician assistants, nurse practitioners, or clinical nurse specialists, but not by audiologists); and education, counseling, and plans for appropriate screening, referral, and preventative services like bone density testing that are covered separately by Medicare (Solodar and Chappell, 2005).

Some physician specialty groups have expressed reservations about participating in the Medicare program because of low reimbursement rates for the preventative examination, difficulty in scheduling patients within the first six months of enrollment, and problems with verifying eligibility for benefits (Solodar and Chappell, 2005). However, as Solodar and Chappell (2005) pointed out, this might be an opportunity for audiologists to help physicians by educating them about easily administered, cost-effective, professionally recommended patient self-report hearing and balance screening instruments that are available, and the audiology services they can provide for

elderly persons. Although some busy physicians may not have time to screen their elderly patients for hearing loss and/or balance disorders, recent comparison estimates of relative health impact and cost accountability for services deemed effective by the U.S. Preventative Services Task Force Advisory Committee (USPSTF) and the Advisory Committee on Immunization Practices (Maciosek et al, 2006) revealed that hearing screening ranked 11th out of the 15 most common health screenings for adults. Hearing screening was ranked higher than those for high-risk cholesterol and diabetes. The USPSTF recommended (with a grade of "B") the screening of older adults by periodically questioning them about their hearing, counseling them on the availability of hearing aids, and making referrals when necessary. The grading of health-care recommendations as part of evidence-based practice (EBP) is becoming common in audiology, and a grade of "B" means that the hearing screening of elderly patients can be made with confidence (Cox, 2005). However, no recommendations have been made about the specific tools or techniques to be used in these screenings. Further, a retrospective chart review of elderly patients who complained of dizziness to their PCPs indicated an under-referral for those presenting with chronic symptoms (Bird et al, 1998). Thus, research involving randomized, controlled clinical trials is needed to determine the most efficacious methods for conducting hearing and balance screenings in the elderly (Yueh et al, 2007).

The Welcome to Medicare one-time preventative examination program and available scientific evidence suggest that hearing screening coupled with appropriate diagnosis and management through the use of amplification could increase the likelihood of elderly patients being able to circumvent the deleterious effects of untreated hearing loss (Chisholm et al, 2007). However, lack of hearing screening of elderly patients in primary-care settings precludes their reaping benefits derived from the use of amplification. For example, Cohen and colleagues (2005) surveyed 260 physicians (85 responded = 32.7% response rate) and found that although 97.6% of the respondents felt that hearing loss affected patients' HRQoL, only 60% performed any hearing screenings. Surveys are also needed to assess physicians' awareness of hearing loss, current practices, and attitudes

toward the importance of hearing screening within the overall context of geriatric health care. Similarly, there is a paucity of research investigating the screening and management of balance disorders in the elderly (Kwong and Pimlott, 2005). Screenings leading to appropriate referrals for diagnosis and treatment of hearing problems are important for insuring the HRQoL of elderly patients and their families because EBP data are now available supporting the use of amplification in adults (National Council on the Aging, 1999; Chisolm et al, 2007). Recently, the American Academy of Audiology Task Force on the Health-Related Quality of Life Benefits of Amplification in Adults concluded that hearing aid use (a comparatively noninvasive, low-risk option with considerable potential benefits, which is the only viable treatment for sensorineural hearing loss) improves adults' HRQoL by reducing psychological, social, and emotional effects of sensorineural hearing loss, an insidious, potentially devastating chronic health condition if left unmanaged (Chisolm et al, 2007).

Unfortunately, elderly patients with hearing/balance disorders and their families may not be identified without PCPs serving as a conduit for referrals to hearing health-care professionals for timely diagnoses and appropriate treatments. However, not much is known about PCPs' preparedness to screen for hearing loss and balance system disorders within the context of the Welcome to Medicare one-time preventative examination.

Therefore, the purpose of this study was to conduct a national survey of PCPs to assess their knowledge of, experiences with, and attitudes toward hearing loss, hearing screening, balance system disorders, balance screening, and the Welcome to Medicare one-time preventative examination. The survey also assessed the types of referrals these PCPs made for their elderly patients having hearing and/or balance problems.

METHOD

Participants

Potential participants in this national study were 710 PCPs listed in the WebMD Physician Online Directory. These physicians reportedly were primary care doctors and

practiced within one mile of the center of 25 U.S. cities with populations of over 560,000 people. They had mailing addresses within the United States, and the list included physicians from 16 states and the District of Columbia.

The Questionnaire

The survey instrument used was the *Welcome to Medicare Program: Physicians' Screening for Hearing and Balance Survey*, a 35-item questionnaire developed for this study and shown in the Appendix. Note that because questions 9, 11, 17, 19, and 29 have multiple parts, they were converted to separate items, which resulted in 35 rather than 29 total items.

The entire questionnaire was developed through an exhaustive iterative process using input from physicians, colleagues, and experts in the field. Realizing that physicians' time is precious, the questionnaire was designed to elicit their information in less than five minutes in order to maximize the likelihood of having them return the survey.

The survey was designed to elicit information about physicians' knowledge of, experiences with, and attitudes toward hearing loss, hearing screening, balance system disorders, balance screening, and the Welcome to Medicare one-time preventative examination, as well as the types of referrals made for their elderly patients. Information gleaned from the survey will assess the need, content, and preferred format for educational outreach campaigns. The survey was designed using a format employed earlier in assessing related health-care professionals' knowledge and attitudes toward participating in audiologic service delivery (Johnson et al, 1992; Johnson et al, 1998).

Each section of the questionnaire elicits critical information about physicians' preparedness to screen for hearing and balance disorders in elderly patients. For example, the section "Knowledge about Hearing and Balance Problems in the Elderly" contains questions concerning prevalence and effects of hearing and balance disorders in the elderly. Participants were also asked about their current screening practices, which provided a way to judge their responses on other sections of the questionnaire and to help determine if additional information about these procedures should be provided to them.

Procedure

With the WebMD Physician Online Directory, 710 PCPs were located who practiced within one mile of the center of the 25 most populous U.S. cities over 560,000 people (i.e., Austin, TX; Baltimore, MD; Boston, MA; Charlotte, NC; Chicago, IL; Columbus, OH; Dallas, TX; Detroit, MI; El Paso, TX; Fort Worth TX; Houston, TX; Indianapolis, IN; Jacksonville, FL; Los Angeles, CA; Memphis, TN; Milwaukee, WI; New York, NY; Philadelphia, PA; Phoenix, AZ; San Antonio, TX; San Diego, CA; San Francisco, CA; San Jose, CA; Seattle, WA; and Washington, DC). The number of names retrieved for each location varied according to the population density and zoning restrictions (e.g., residential or commercial) within one mile of the city center. No more than 100 names were retrieved from any city, and some locations had no physicians listed (e.g., Dallas, TX). Addresses were obtained and verified from the WebMD Physician Online Directory, *WebMD Little Blue Books*, and/or other online physician directories. The questionnaire, a cover letter including instructions, and a pre-addressed and stamped envelope for returning the survey were sent to each of the 710 PCPs in February 2006. In addition, copies of the *Hearing Handicap Inventory for the Elderly—Screening Version* (HHIE-S; Ventry and Weinstein, 1982) and the *Dizziness Handicap Inventory* (DHI; Jacobson and Newman, 1990) were included with each mailing. This was done to (1) insure that these physicians were familiar with examples of patient self-report tools that are available for screening hearing and balance problems, (2) provide these instruments for them to use in their practices, and (3) encourage and give an incentive for the PCPs to respond to the survey considering the notoriously low return rates that are typical with postal surveys of physicians, which is discussed later. The Institutional Review Board at the University of California Santa Barbara approved this project as "exempt" from needing any informed consent from the participants due to the survey nature of the study.

Data Preparation and Analysis

Returned questionnaires were numbered and placed into a notebook, and the participants' data were entered into Survey Monkey, an online survey database. The physicians'

responses were tallied, and calculations were made of the percentages responding in each category for each item on the questionnaire. Data entry and analysis were completed independently and then verified by two sets of reliability judges. That is, two judges double-checked the data that were transferred from the individual questionnaires to the spreadsheet. Similarly, two judges double-checked the tallying of responses on the spreadsheet for each item on the questionnaire to determine the number of respondents who responded to each category. These data were then used to calculate the numbers and percentages in the tables, which were also triple-checked for accuracy.

RESULTS AND DISCUSSION

The purpose of this study was to conduct a national survey of PCPs to assess their knowledge of, experiences with, and attitudes toward hearing loss, hearing screening, balance system disorders, balance screening, and the Welcome to Medicare one-time preventative examination, as well as the types of referrals they make for their elderly patients. The respondents' demographic information and results are presented and discussed below. The questionnaire was mailed to 710 physicians (19 were returned undeliverable by the postal system), and 95 completed surveys were returned, producing a 13.7% response rate. The issue of notoriously low return rates in studies surveying physicians about health-related questions has been dealt with in the medical literature (e.g., Templeton et al, 1997; Kaner et al, 1998; Pirota et al, 1999; Hocking et al, 2006). Templeton and colleagues (1997) suggested that a relatively low response rate need not affect the validity of the data collected and does not necessarily mean that the sample is not representative of the greater population of physicians practicing in large metropolitan areas as long as response biases are accounted for in the analyses. Reasons for not returning surveys may include paucity of time, preliminary screening of mail by office staff, and lack of interest on the topic. Several recent national surveys of physicians on hearing health-care issues have reported similar response rates to those in this study (Moeller et al, 2006). Unfortunately, the low response rate obtained here may be indicative of the relative importance of this topic to this sample of PCPs, suggesting a need for educational out-

reach programs to PCPs.

The participants' data are summarized on the following tables according to the numbers and percents of PCPs replying out of the total sample responding for each question coinciding with the questionnaire items as seen in the Appendix. As noted earlier, for ease of presenting the data, questions 9, 11, 17, 19, and 29 in the Appendix, having multiple parts, were converted to separate items on the tables, which resulted in 35 rather than 29 total items.

The maximum possible number of responses was 95, but in some cases the number was smaller if participants failed to provide a response or wrote in N/A (not applicable) for certain items. The N/A responses were not used in calculating the totals or the percentages for those items. For some questions, the total percent was greater than 100% because participants were instructed to reply to all choices that applied. Also, some participants provided additional comments in the margins of the questionnaire to expand upon some of their responses.

Physicians' Demographics and Hearing and Balance Screening Practices

Table 1 presents the physicians' demographic information and practices for hearing and balance screening of their elderly patients. Items 1, 2, and 3 of the questionnaire showed that the sample was fairly balanced between males (53.2%) and females (46.8%) with the majority reporting to be internists (72.2%) followed by family physicians (16.7%), and they were either in private practice (47.8%) or saw patients in clinics (21.1%) or hospitals (20.0%). Item 4 revealed that about half of the physicians (51.1%) reported being in practice for more than 15 years with the rest showing a fair distribution across years of practice. Templeton and colleagues (1997) reported that older practitioners are less likely to return national surveys than are their younger cohorts, which can enter age bias into study results. However, the balance of years of experience and practice settings found in the present study bodes well for these data being a representative sample of PCPs nationally, and should reduce age bias from affecting the results (Templeton et al, 1997). Item 5 indicated that about half of the physicians' caseloads were composed of 30–50% elderly patients (49.4%), while nearly one-fourth (22.4%)

Table 1. Demographics and Practices

Item	Question/Response	Number	%	
1	What is your gender?			
	Male	50	53.2	
	Female	44	46.8	
	Total	94	100.0	
	N/A	1		
2	What type of physician are you?			
	Internist	65	72.2	
	Family Physician	15	16.7	
	Primary Care Doctor	1	1.1	
	Other	9	10.0	
Total	90	100.0		
N/A	5			
3	What is your practice setting?			
	Hospital	18	20.0	
	Private Practice	43	47.8	
	Clinic	19	21.1	
	Other	10	11.1	
Total	90	100.0		
N/A	5			
4	How long have you been in practice?			
	0 to 5 years	6	6.7	
	6 to 10 years	23	25.6	
	11 to 15 years	15	16.7	
	15+ years	46	51.1	
Total	90	100.1		
N/A	5			
5	On average, what is the percentage of elderly patients that you see in your practice setting?			
	0%	1	1.1	
	10%	13	14.6	
	20%	11	12.4	
	30%	19	21.3	
	40%	15	16.9	
	50%	10	11.2	
	60%	5	5.6	
	70%	7	7.9	
	80%	5	5.6	
	90%	2	2.2	
	100%	1	1.1	
Total	89	99.9		
N/A	6			
6	Do you routinely screen your Medicare-aged patients for hearing and/or balance problems?			
	Hearing only	3	3.4	
	Balance only	5	5.7	
	Both	9	10.3	
	Neither	7	8.0	
	If I suspect a problem or patient complains	63	72.4	
	Total	87	99.8	
	N/A	8		
	7	How do you usually screen for hearing problems?		
		Pure tones	9	10.6
Whisper test		27	31.8	
HHIE		0	0.0	
Tuning forks		10	11.8	
Finger friction		13	15.3	
Do not screen		15	17.6	
Other		11	12.9	
Total		85	100.0	
N/A		10		

Item	Question/Response	Number	%
8	How do you usually screen for balance problems?		
	Observe patient's gait	80	88.9
	DHI	0	0.0
	Do not screen	8	8.9
	Other	2	2.2
Total	90	100.0	
N/A	5		
9	Were you aware of the attached screening instruments (HHIE and DHI) before receiving them with this survey?		
	Yes HHIE	4	4.7
	No HHIE	79	91.9
	Yes DHI	1	1.2
	No DHI	84	97.7
Total	86	195.5	
N/A	9		
10	Did you actually use the HHIE and DHI to screen your elderly patients prior to receiving this survey?		
	Yes HHIE	1	1.3
	No HHIE	74	97.4
	Yes DHI	1	1.3
	No DHI	75	98.7
Total	76	197.8	
N/A	19		
11	If you did not use the HHIE and DHI previously, will you use them now to screen your elderly patients?		
	Yes HHIE	23	28.4
	No HHIE	28	34.6
	Yes DHI	24	29.6
	No DHI	23	28.4
	Unsure	35	43.2
Total	81	164.2	
N/A	14		
12	What referrals do you make if you suspect hearing or balance problems in patients or if they fail your screenings? (check all that apply)		
	Otologist	50	58.1
	Audiologist	67	77.9
	Hearing aids	13	15.1
	Chiropractics	2	2.3
	Physical therapy	39	45.3
	Nothing	0	0.0
	Total	86	198.7
	N/A	9	
	13	Do you routinely refer your patients with hearing and/or balance problems to audiologists?	
Yes		67	81.7
No		15	18.3
Total	82	100.0	
N/A	13		
14	If you answered no, why not?		

reported proportions of 60–100%, and the remaining (28.1%) saw fewer than 20%. Again, this broad cross-section should help to reduce practice biases from affecting the results. Therefore, the practices for, knowledge of, and attitudes toward hearing/balance screening and referrals for this sample of physicians should be reflective of PCPs seeing elderly patients nationwide.

Responses to items 6 through 11 on Table 1 produced some very important findings. Nearly three-fourths (72.4%) of the PCPs reported screening only if they suspect a problem or patients complain about hearing and/or balance difficulties. Few screen the elderly for hearing (3.4%), balance (5.7%), or disorders in both areas (10.3%) on a routine basis. These results are troubling, particularly for hearing, because waiting to screen until patients admit that they have problems or complain is inadequate, especially if they do not recognize or are in denial about their hearing losses. The hearing screening methods reported and their frequency of use were (from most to least frequent): whisper test (31.8%), finger friction (15.3%), other (12.9%), tuning forks (11.8%), and pure-tone testing (10.6%). Physicians should be advised that the whisper, finger friction, and tuning fork tests are neither cost-effective nor practical to implement on a systematic basis because of calibration and standardization issues (Yueh et al, 2003).

Yueh and colleagues (2003) completed a scientific review and concluded that the most reliable methods of detecting hearing loss include use of an audiometer, a combination audiometer-otoscope, and a self-report questionnaire, the HHIE-S. Although several studies have concluded that the HHIE-S has acceptable sensitivity and specificity for detecting hearing impairment (e.g., Lichtenstein et al, 1988); unfortunately, not a single PCP who responded to this survey reported usually using it as a screen for hearing problems. Meanwhile, 97.4% of these PCPs said they did not use it, and 91.9% were not even aware of it before receiving this survey. Further, over one-third would not (34.6%) or was unsure if they would (43.2%) use it in the future. Clearly, although the HHIE-S is not the only screening tool available, PCPs (and their patients) should benefit from being made aware of the evidence supporting the effectiveness and time-efficient use of such instruments in screening for hearing loss in the elderly population.

Similarly, 88.9% (the rest marked either

“do not screen” or “other”) of the physicians surveyed here said they watch patients’ gaits to screen for balance disorders, but recall that most of them only do so if they suspect a problem or if patients complain. Again, these practices are not effective, especially if patients do not report difficulties, are in denial of their conditions, or fear having to use walkers, canes, wheelchairs, or other ambulatory assistance devices. Although some instruments (e.g., the *Four Square Step Test*) have shown promise for identifying elderly patients with vestibular dysfunction and risk for falls (Cho et al, 2004; Whitney et al, 2007), they have not been as extensively investigated as those for hearing and may not be as time efficient as using a self-report questionnaire like the DHI (Whitney et al, 2004; Vereeck et al, 2007). As with the HHIE-S, 97.7% of these PCPs were not aware of and did not use (98.7%) the DHI prior to receiving this survey, and would not use (28.4%) or were unsure (43.2%) if they would use it in the future. Again, these physicians could benefit from instruction on the implementation of self-report questionnaires like the DHI for screening balance disorders in their elderly patients.

Items 12 through 14 on Table 1 addressed what referrals these PCPs made if they suspected hearing or balance problems in patients or if they failed their screenings; most responded audiologists (77.9%), otologists (58.1%), physical therapy (45.3%), and hearing aids (15.1%). So few of these PCPs reporting that they referred their elderly patients for hearing aids is troubling considering the proven benefits of amplification (Chisolm et al, 2007). It is possible that some of the PCPs who referred to audiologists assumed that they would evaluate and counsel patients for amplification. Nevertheless, education about which patients are suitable candidates for amplification and the capabilities of current hearing aid technology may be warranted. Fortunately, 81.7% of the respondents said they routinely referred their patients with hearing and/or balance problems to an audiologist. Of the 18.3% who did not refer to an audiologist, five said they referred to ENTs first, and three replied only for hearing problems. Although it is encouraging that most of these PCPs do refer their patients to audiologists, it is clear that there is a need for physicians to be educated about the HRQoL benefits that can be derived from the use of amplification (Chisolm et al, 2007).

Physicians' Knowledge about Hearing and Balance Problems in the Elderly

The results of the second part of the survey, which dealt with physicians' knowledge about hearing and balance problems in the elderly, are summarized in Table 2 and indicated some areas of concern. On items 15 and 16, nearly three-fourths (69%) of the physicians stated that they were unsure whether either the HHIE (*Hearing Handicap Inventory for the Elderly*) or the DHI were effective self-report screening methods for the elderly. These findings indicate that physicians should be made aware of the evidence that the HHIE-S is both a sensitive and specific screening tool for hearing loss in the elderly (Lichtenstein et al, 1988). They should also be informed on how to interpret scoring of the HHIE-S. For example,

Lichtenstein and colleagues (1988) have shown that the HHIE-S was reliable across practice locations and that scores between 0 and 8 had a likelihood ratio of 0.36 (95% confidence interval, 2.65 to 55.0), whereas scores over 26 had a likelihood ratio of 12.0 (95% confidence interval, 2.12 to 55.0) for predicting presence of a hearing loss. Unfortunately, similar data are not yet available for scoring procedures to be used with the DHI in screening the elderly for predicting balance disorders.

Although items 17 and 18 showed that the vast majority of these PCPs believed that hearing loss (91.9%) and balance problems (97.7%) negatively affect older persons' quality of life, their responses to items 19 through 21 regarding the prevalence of and treatments for hearing loss indicate a need for further education. For example, 33.7% of these PCPs

Table 2. Knowledge about Hearing and Balance Problems in the Elderly

Item	Question/Response	Number	%
15	Is the HHIE an effective self-report hearing screening method for the elderly?		
	Yes	23	27.4
	No	3	3.6
	Unsure	58	69.0
	Total	84	100.0
	N/A	11	0.0
16	Is the DHI an effective self-report balance screening method for the elderly?		
	Yes	23	27.4
	No	3	3.6
	Unsure	58	69.0
	Total	84	100.0
	N/A	11	0.0
17	Does hearing loss negatively affect older persons' quality of life?		
	Yes	79	91.9
	No	0	0
	Unsure	7	8.1
	Total	86	100.0
	N/A	9	0.0
18	Do balance problems negatively affect older persons' quality of life?		
	Yes	85	97.7
	No	0	0
	Unsure	2	2.3
	Total	87	100.0
	N/A	8	0.0
19	Do about one in three people over 65 years of age have hearing loss?		
	Yes	57	66.3
	No	0	0
	Unsure	29	33.7
	Total	86	100.0
	N/A	9	0.0
20	Can about 40% of all hearing loss be treated medically?		
	Yes	23	27.4
	No	10	11.9
	Unsure	51	60.7
	Total	84	100.0
	N/A	11	0.0
21	Can most nonmedical hearing loss be treated effectively with today's hearing aids?		
	Yes	34	41.0
	No	4	4.8
	Unsure	45	54.2
	Total	83	100.0
	N/A	12	0.0
22	Are balance problems prevalent in elderly persons?		
	Yes	80	94.1
	No	1	1.2
	Unsure	4	4.7
	Total	85	100.0
	N/A	10	0.0
23	Is vestibular rehabilitation effective in treating some balance problems in the elderly?		
	Yes	48	56.5
	No	4	4.7
	Unsure	33	38.8
	Total	85	100.0
	N/A	10	0.0
24	Can benign paroxysmal positional vertigo (BPPV) be treated in about three sessions?		
	Yes	39	48.8
	No	2	2.5
	Unsure	39	48.8
	Total	80	100.1
	N/A	15	0.0

were unsure that about one in three people over age 65 have hearing loss (National Institute on Deafness and other Communication Disorders, National Institutes of Health, 2007). Further, 27.4% incorrectly believed and 60.7% were unsure if about 40% of all hearing losses could be treated medically when only about 20% can be. Moreover, 59.0% either did not believe or were unsure of whether most non-medical hearing losses could be treated effectively with today's hearing aids. The finding that most of these PCPs believed that hearing loss negatively affects older persons' quality of life agrees with Cohen and colleagues (2005), who surveyed internal medicine and family medicine physicians from a referral basin in a tertiary-care center.

Similarly, items 22 through 24 revealed that although most of these PCPs (94.1%) knew that balance problems are prevalent in elderly persons, many of them were unsure (38.8%) or did not believe (4.7%) that vestibular rehabilitation is effective in treating some balance problems in the elderly. In fact, vestibular rehabilitation for elderly patients has been found to improve their postural adaptation and possibly reduce their risk for falls (Horak, 2006; Suarez et al, 2006). Similarly, about half of these respondents either did not believe (2.5%) or were unsure (48.8%) that benign paroxysmal positional vertigo (BPPV) could be treated in about three sessions. In fact, recent evidence from a systematic review with meta-analysis documented the safety and effectiveness of the Epley procedure for treatment of BPPV (Hilton and Pinder, 2004), and canalithic-repositioning therapy can be effective within one to two sessions (Li and Epley, 2007).

The interpretation of some of the items on the questionnaire should be made with caution. Specifically, Table 2 shows that items 15 through 24 used a three-option "yes, no, unsure" response format to probe the PCPs' knowledge about hearing and balance problems. Because "unsure" is a broad term and several of the participants used this option for some of these items, it is difficult to know the depth of their knowledge and exactly how "unsure" they really were. Having response options with wider ranges could have provided more insight into their answers. Similarly, the results for item #20 ("Can about 40% of all hearing loss be treated medically?") should be interpreted with caution because "treated medically" and "40%" may have been ambigu-

ous to some of the participants, and their responses may not accurately reflect their true knowledge about hearing loss.

Attitudes toward Hearing and Balance Screening in the Elderly

The results of the third part of the survey, which dealt with physicians' attitudes toward hearing and balance screening in the elderly, are summarized for items 25 through 35 in Table 3 and reveal some possible attitudinal barriers to the routine screening for hearing and balance disorders in elderly patients. Although item 25 showed that 83.7% of the respondents disagreed with the statement that "Screening for hearing loss in the elderly is a waste of resources, because there are few treatments for it," item 27 revealed that 18.1% agreed and 17.0% were neutral to the statement that "hearing loss is a low-priority health condition in the overall medical management of elderly patients." Similarly, although item 26 showed that 80.5% of the respondents disagreed with the statement that "screening for balance problems in the elderly is a waste of resources, because there are few treatments for them," item 28 revealed that 3.4% agreed and 13.6% were neutral to the statement that "balance problems are a low-priority health condition in the overall medical management of elderly patients." However, item 29 showed that nearly all of these physicians (89.8%) agreed that "it is very important to evaluate elderly patients' hearing and/or balance if they complain about having problems." Unfortunately, as stated earlier, many senior citizens may be in denial about having these problems and/or may consider these conditions a normal part of aging. Therefore, a proactive approach in circumventing the deleterious effects of hearing and balance disorders is warranted through early screening and preventative treatment *before* patients become socially isolated or injured from a fall.

Item 30 produced some of the most important findings of this study in that 54.6% of these respondents agreed with, 19.8% were neutral to, and only 25.5% disagreed with the statement, "I do not have time to do routine hearing and/or balance screenings for my elderly patients." These findings are critical to the process of assuring that elderly patients receive needed audiology services. If PCPs admit that they do not have time to conduct

Table 3. Attitudes toward Hearing and Balance Screening in the Elderly

Item	Question/Response	Number	%	Item	Question/Response	Number	%
25	Screening for hearing loss in the elderly is a waste of resources, because there are few treatments for it.			30	I do not have time to do routine hearing and/or balance screenings for my elderly patients.		
	Agree	1	1.2		Agree	47	54.6
	Strongly	0	0		Strongly	15	17.4
	Moderately	1	1.2		Moderately	32	37.2
	Neutral	13	15.1		Neutral	17	19.8
	Disagree	72	83.7		Disagree	22	25.5
	Strongly	33	38.4		Strongly	7	8.1
	Moderately	39	45.3		Moderately	15	17.4
	Total	86	100.0		Total	86	99.9
	N/A	9			N/A	9	
26	Screening for balance problems in the elderly is a waste of resources, because there are few treatments for them.			31	Audiologists are well qualified to diagnose and manage nonmedical hearing and balance problems in the elderly.		
	Agree	2	2.3		Agree	45	51.7
	Strongly	0	0		Strongly	13	14.9
	Moderately	2	2.3		Moderately	32	36.8
	Neutral	15	17.2		Neutral	30	34.5
	Disagree	70	80.5		Disagree	12	13.8
	Strongly	32	36.8		Strongly	4	4.6
	Moderately	38	43.7		Moderately	8	9.2
	Total	87	100.0		Total	87	100.0
	N/A	8			N/A	8	
27	Hearing loss is a low-priority health condition in the overall medical management of elderly patients.			32	Medicare reimburses me adequately for each one-time preventative physical exam for new beneficiaries.		
	Agree	16	18.1		Agree	10	11.4
	Strongly	1	1.1		Strongly	5	5.7
	Moderately	15	17.0		Moderately	5	5.7
	Neutral	15	17.0		Neutral	27	31.0
	Disagree	57	64.8		Disagree	50	57.5
	Strongly	24	27.3		Strongly	24	27.6
	Moderately	33	37.5		Moderately	26	29.9
	Total	88	99.9		Total	87	99.9
	N/A	7			N/A	8	
28	Balance problems are a low-priority health condition in the overall medical management of elderly patients.			33	The Welcome to Medicare program one-time preventative physical exam is worthy of federal funding.		
	Agree	3	3.4		Agree	53	61.6
	Strongly	0	0		Strongly	32	37.2
	Moderately	3	3.4		Moderately	21	24.4
	Neutral	12	13.6		Neutral	25	29.1
	Disagree	73	83.0		Disagree	8	9.3
	Strongly	35	39.8		Strongly	3	3.5
	Moderately	38	43.2		Moderately	5	5.8
	Total	88	100.0		Total	81	100.0
	N/A	7			N/A	9	
29	It is very important to evaluate elderly patients' hearing and/or balance if they complain about having problems.			34	Would you like additional information about hearing and balance screening in the elderly?		
	Agree	79	89.8		Yes	49	60.5
	Strongly	61	69.3		No	32	39.5
	Moderately	18	20.5		Total	81	100.0
	Neutral	5	5.7		N/A	14	
	Disagree	4	4.5	35	If so, in what form would you like it?		
	Strongly	3	3.4		Internet sites	21	44.7
Moderately	1	1.1	Brochures		17	36.2	
Total	88	100.0	Lunch and learn		8	17.0	
N/A	7		Other		1	2.1	
			Total	47	100.0		
			N/A	48			

hearing and/or balance screenings for their elderly patients and they are not even aware that brief, standardized, self-report instruments are available, then it is unlikely that they will be helpful in detecting problems when they exist, making appropriate referrals in a timely fashion, and encouraging seniors to try the treatments that are readily accessible to them and their families. As indicated earlier, in some cases, this can lead to prolonged periods of communication difficulties and possible risk of falls and increased frustration among family members. However, if physicians were aware of and knew about how to use instruments like the HHIE-S and the DHI in an expeditious way (e.g., patient completion in the waiting room), then hearing and balance screenings could become a seamless process that is compatible with the realities of a busy medical practice. This would also help physicians to comply with the Welcome to Medicare principles regarding hearing and balance screenings for their elderly patients. If use of self-report questionnaires is too time-consuming and daunting a task, as may be indicated by these PCPs saying that they still will not use them in the future, then physicians should know that simply asking all elderly patients if they think that they have a hearing and/or balance problem is at least better than waiting for them to complain before addressing these issues (Gates et al, 2003).

Interestingly, nearly half of the physicians in this study were either neutral to (34.5%) or disagreed with (13.8%) the statement (in item 31), "Audiologists are well qualified to diagnose and manage nonmedical hearing and balance problems in the elderly." If this finding from this sample of PCPs is truly representative of how the greater population of physicians nationwide views audiologists, then it may point to part of the reason why more older Americans are not receiving appropriate and timely diagnosis and treatment for their hearing and/or balance problems. The results for this question seem to be at odds with those cited earlier for item 12 in which a majority of the respondents said they refer their patients to audiologists, even in greater numbers than to otologists. Can the conflicting results from these two questions mean that these PCPs refer to audiologists, even though they are not sure whether audiologists are well qualified to work with hearing and balance problems in the elderly? Either way, as a group, audiologists see themselves as *the* source for the

assessment and treatment of balance and, especially, hearing problems. The American Academy of Audiology (AAA) and its members have made inroads toward autonomy and the recognition of *audiology* as a household word by the overall population of this country and its physicians through Audiology Awareness and Direct Access campaigns. However, the findings that the PCPs sampled were not aware of patient self-report tools like the HHIE-S and the DHI and did not and probably will not use recommended screening instruments in the future, although most referred to audiologists (while about half of them appeared to be unconvinced about how qualified audiologists are to work with hearing and balance problems in the elderly), indicate that there may indeed be obstacles in the way of achieving routine screening and referrals for these patients. Thus, there appears to be a need to educate physicians about their duty for screening, which instruments are appropriate, what referrals to make, the effectiveness of treatments that are available, and the role that audiologists play in working with hearing and balance problems in the elderly.

As indicated earlier, there may be other obstacles impeding the achievement of hearing and/or balance services for elderly patients. The reluctance of these PCPs to conduct routine hearing and/or balance screenings for their elderly patients may be due in part to the lack of reimbursement that they receive for these services by third-party payers. This is supported by the fact that nearly all of the responses to item 32 were either neutral toward (31.0%) or disagreed with (57.5%) the statement that "Medicare reimburses me adequately for each one-time preventative physical exam for new beneficiaries." Nevertheless, most of these PCPs still saw value in the system as indicated by the fact that 61.6% of them agreed with and 29.1% were neutral to the statement in item 33 that "The Welcome to Medicare program one-time preventative physical exam is worthy of federal funding." Clearly, the negative responses to these questions suggest that some physicians hold attitudes that could present obstacles to the systematic screening for hearing and balance disorders in elderly patients, which would necessitate educational outreach campaigns to the medical community. However, when item 34 asked, "Would you like additional information about hearing and balance screening in the elderly?" about 40% said "No." Use of the fil-

tering feature of Survey Monkey permitted closer inspection of the responses of PCPs who denied the need for additional information, and it did not appear that they were any more or less informed than or held attitudes different from those displayed by the overall sample. However, the sizeable proportion of respondents not wanting any additional information shows that outreach campaigns must be carefully designed regarding the type and amount of education provided to physicians. Responses to item 35 revealed that those physicians wanting additional information preferred to receive it in the form of Internet sites (44.7%), brochures (36.2%), and lunch-and-learn presentations (17.0%).

Recommendations for Educational Outreach Programs to Physicians

Making recommendations to audiologists for effective ways of educating the medical profession about hearing and balance screening of the elderly is similar to those regarding newborn hearing screening programs. For example, Moeller and colleagues (2006) conducted focus groups with and a national survey of PCPs and arrived at five themes for audiologists involved with newborn hearing screening program education campaigns directed to physicians. First, audiologists must recognize physicians' time constraints and remember that they usually see patients of all ages. Second, audiologists should resist the temptation of bombarding physicians with dense reading materials aimed at developing expertise in hearing loss and specific programs within audiology; the most important thing is that PCPs recognize potential problems and know when and how to refer patients to other qualified hearing health-care professionals. Third, educational materials should use accepted multidisciplinary terms that are easily understood without having to consult medical or audiological dictionaries. Fourth, educational materials should be evidence-based and translate basic research into quality patient care. Fifth, physicians prefer receiving educational materials in familiar formats including grand rounds, algorithms, patient education information, and continuing medical education seminars.

The findings of this study suggest that it is important for audiologists to remind physicians of the critical and pivotal role they play in the early identification of hearing and/or bal-

ance problems in the elderly. Physicians need to know that they should make appropriate referrals for the timely diagnosis of hearing loss and that they should advocate subsequent treatment through amplification that can help circumvent reductions in overall HRQoL for elderly patients and their families (Chisolm et al, 2007). Moreover, physicians should recognize that preventing falls in the elderly through early proactive detection of balance disorders and timely and appropriate referrals for diagnosis and treatment is far more cost-effective than the hospitalization and subsequent rehabilitation that are necessary for broken hips and head trauma resulting from accidents.

Because the current movement from a treatment model for chronic health-care conditions to one of prevention can represent a paradigm shift for some members of the medical community, it may take time for audiologists to design and implement the most efficacious hearing and balance educational outreach campaigns for physicians. In the meantime, it is important that PCPs be informed that effective screening of hearing and balance can be accomplished easily and quickly via instruments like the HHIE-S and the DHI or by simply asking all elderly patients if they believe that they have a hearing loss or balance problem (Gates et al, 2003).

Physicians should also be reminded of the key role that audiologists play in the diagnosis and treatment of hearing losses and balance disorders that are not amenable through medical intervention. Recall that the responses from nearly half of the physicians in this study suggested that they did not seem to be convinced that audiologists are well qualified to diagnose and manage nonmedical hearing and balance problems in the elderly. This indicates that both individually and collectively as a profession, audiologists still have work to do in educating physicians about their scope of practice, expertise, and value as health-care providers and team members in the nonmedical management of hearing and balance disorders. Physicians also need to be informed regarding the effectiveness of current treatments for balance disorders (particularly, BPPV) and, especially, updated about recent developments and successes in amplification for sensorineural hearing loss in elderly patients. Individual audiology practitioners and the American Academy of Audiology as an organization would do well to provide physi-

cians with brief summaries of the Academy's recent evidence-based Task Force findings on the HRQoL benefits of hearing aids (Chisolm et al, 2007).

CONCLUSIONS

This study surveyed PCPs from major metropolitan areas in the United States on their knowledge of, experiences with, and attitudes toward hearing loss, hearing screening, balance system disorders, balance screening, and the Welcome to Medicare one-time preventative examination, as well as the referrals they make for their elderly patients. Any conclusions drawn from these data must be weighed in light of some possible limitations of the sample obtained. First, a relatively low response rate (13.7%) was achieved; however, it did not necessarily preclude this from being a representative sample of practicing PCPs from major metropolitan areas in the United States (Templeton et al, 1997). The relative balance in locations, genders, types of physicians, practice settings, years of experience, and numbers of elderly patients seen as reported by the respondents should have reduced effects of response biases on the data. Further, a low response rate could be indicative of the relative unimportance of this topic (i.e., hearing and balance problems) to these PCPs in caring for elderly patients. However, that does not seem to be the case, because of the fact that almost all of the respondents stated that hearing and balance problems are prevalent and can negatively affect the quality of life of older persons, that they did not view these as low-priority health conditions, that it is important to evaluate them when patients complain, and that the Welcome to Medicare program is worthy of funding.

Another possible limitation of this study, as in any research using a survey method where respondents self-select their participation, concerns issues as to why some people reply while others do not. Postal surveys always raise questions about those persons who fail to respond (e.g., Did they ever receive the questionnaire in the first place due to inaccurate or changed addresses or problems with mail delivery? Were they no longer in practice? Did they receive the survey, intend to respond, but forget to return it by the cutoff date? Were they too busy? Did they not care about the topic? Did the surveys never reach the PCPs due to front-office mail sorting by receptionists?). Because it is impossible to know the reasons why people

do not respond and how they would have responded if they had, it is especially important that the data from the sample that does participate reflect a broad cross-section of the greater population and that potential biases be considered. Others (e.g., Cartwright, 1978; McDonald, 1993; Sibbald et al, 1994; Templeton et al, 1997) have noted that because physicians are frequently overwhelmed with solicitations to complete surveys, they often self-select their participation based on topics that are of direct interest to them or on which they actively practice. Thus, considering the balance in demographics mentioned above for participants in this study, neither respondent biases nor a lack of interest (at least among those who chose to respond to the questionnaire) should have overly affected the results presented here.

Although the respondents were generally positive about the importance and need for hearing and balance screening in their elderly patients, their responses did demonstrate some insufficiencies in knowledge and potential attitudinal barriers that could interfere with effective screening for hearing and balance disorders in the elderly. The overall response rate and the results of the survey indicate a critical need for educational outreach to PCPs on this topic. This is an issue of importance to audiologists, the AAA, the Medicare program, and elderly patients and their families. The content, format, and delivery of information must be strategically planned to make a positive impact on PCPs.

As gatekeepers, physicians need to understand and exercise the power they have in their initial screenings for identifying potential problems and for making appropriate referrals leading to the timely diagnosis and treatment of hearing and balance problems for their elderly patients. PCPs also need to be knowledgeable about current treatment options and offer persuasive, firm, and enthusiastic encouragement for patients to seek help for their problems in order to help prevent the deleterious effects of hearing and balance disorders on the HRQoL of elderly patients and their families. In particular, PCPs need information about the benefits of and effective methods for preventative hearing and balance screening in the elderly. In addition, the medical community could benefit from sound evidence regarding the efficacy of treatments provided by audiologists for hearing and balance disorders that are not amenable through medical intervention.

Unfortunately, PCPs' perceived demands on

their time, problems in scheduling examinations within the first six months of patients' enrollment in the Medicare program, and the relatively low reimbursement rates for their services will not improve soon. This is especially true now that the Medicare system's resources are being taxed to even greater levels as the "Baby Boomers" age and increasing numbers of people live longer. A potential solution for some PCPs might be for the Medicare system to relax its criterion that the Welcome to Medicare examination must be completed within six months of patients' enrollment in the plan. Although early testing is desirable, most elderly people with hearing and/or balance problems have already lived with them for some time, and waiting another six months so that evaluations could be completed within the first year of enrollment might still be effective.

The current reimbursement rate to physicians for completing the entire Welcome to Medicare examination is \$124.30. Thus, aside from appealing to their sense that screening and prevention is the right thing to do, the best method for getting PCPs to complete these examinations routinely is to show them ways to minimize the time involved by making the process as easy as possible. Physicians need to realize that questionnaires like the HHIE-S and DHI are simple, easy to use, professionally recommended, and cost-effective screening tools that receptionists or office staff can administer to patients in the waiting room prior to the physical examination. The questionnaires can be scored to highlight potential communication and/or falls risk problems before physicians even see the patients, which can minimize their time while still complying with the Welcome to Medicare rules. If physicians are unwilling to use questionnaires, then simply asking all patients if they have hearing and/or balance problems requires little time and is better than doing nothing at all. The cost of using questionnaires or merely inquiring if patients have problems is near nil, but the benefits of identifying and referring patients can be enormous as far as the HRQoL of elderly patients and their families is concerned. Physicians need to understand that treatments are available for almost all types and degrees of hearing and balance problems and how they can lead to positive outcomes in enhanced HRQoL for their patients.

Physicians know that, for many persons, being 65 years of age or older is not what it was in the past and that, as a group, they still con-

sider themselves to be "young" and certainly not "elderly." Although hearing and balance problems are prevalent for many of these individuals, the implications of such disorders can go well beyond simple issues of acuity and agility that the impairments imply. More importantly, hearing and balance problems frequently affect individuals' daily functioning, activity restrictions, and participation in communication with others. These areas of HRQoL are assessed by screening tools like the HHIE-S and DHI-S (*Dizziness Handicap Inventory—Screening Version*), which can provide valuable information well beyond that obtained by simple hearing and balance screenings used in the past.

It is important to emphasize the finding that about 75% of these respondents said they did not have time to conduct routine hearing and/or balance screenings of their elderly patients. It is possible to conclude that the responses supplied by the 13.7% of the sample that did respond to this survey were actually revealing what the 86.3% who did not respond would have said if they had replied. That is, if PCPs do not have time to screen patients, then it makes sense that they would also not have time to respond to this or any of the many other survey requests that they probably receive. This supports our conclusion that although PCPs see the need for and value of hearing/balance screening in the elderly, it is incumbent upon audiologists and their professional organizations to help PCPs find ways of doing this more efficiently. This is where audiologists can show their worth and partner with PCPs to help ease the burden of handling the nonmedical management of their patients' hearing and balance problems.

Although total compliance is unlikely, ideally, the goal should be to identify hearing and balance problems in all older persons. In the meantime, identifying hearing and/or balance problems through the Welcome to Medicare program by the effective and efficient partnering of physicians, audiologists, and the Medicare system is a realistic and achievable start to getting timely referrals leading to diagnosis and treatment for individuals, as they enter their golden years, that will lead to maintenance or improvements in the HRQoL for them and their families.

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Appendix

Welcome to Medicare Program: Physicians' Screening for Hearing and Balance Survey (note that questions 9, 11, 17, 19, and 29 having multiple parts were converted to separate items on the tables resulting in 35 rather than 29 total items)

Instructions: Circle all that apply/write in your best response/agreement for each question.

DEMOGRAPHICS/PRACTICES RE HEARING/BALANCE SCREENING IN THE ELDERLY

1. What is your gender? Male Female
2. What type of physician are you? Internist Family physician Primary care doctor Other _____
3. What is your practice setting? Hospital Private practice Clinic Other _____
4. How long have you been in practice?
Less than 5 years 6 to 10 years 11 to 15 years More than 15 years
5. On average, what is the percentage of elderly patients that you see in your practice setting?
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
6. Do you routinely screen your Medicare-aged patients for hearing and/or balance problems?
Hearing only Balance only Both Neither Only if I suspect a problem or patient complains
7. How do you usually screen for hearing problems?
Pure tones Whisper test HHIE Tuning forks Finger friction Do not screen Other _____
8. How do you usually screen for balance problems?
Observe patient's gait DHI Do not screen Other _____
9. a. Were you aware of the attached screening instruments (HHIE and DHI) before receiving them with this survey?
Yes HHIE No HHIE Yes DHI No DHI
b. Did you actually use the HHIE and DHI to screen your elderly patients prior to receiving this survey?
Yes HHIE No HHIE Yes DHI No DHI
c. If you did not use the HHIE and DHI previously, will you use them now to screen your elderly patients?
Yes HHIE No HHIE Yes DHI No DHI Unsure
10. What referrals do you make if you suspect hearing or balance problems in patients or if they fail your screenings?
Otologist Audiologist Hearing aids Chiropractics Physical therapy Nothing Other _____
11. Do you routinely refer your patients with hearing and/or balance problems to audiologists?
Yes No If not, why?

KNOWLEDGE ABOUT HEARING AND BALANCE PROBLEMS IN THE ELDERLY

12. Is the HHIE an effective self-report hearing screening method for the elderly?
Yes No Unsure
13. Is the DHI an effective self-report balance screening method for the elderly?
Yes No Unsure

14. Does hearing loss negatively affect older persons' quality of life?
Yes No Unsure
15. Do balance problems negatively affect older persons' quality of life?
Yes No Unsure
16. Do about one in three people over 65 years of age have hearing loss?
Yes No Unsure
17. a. Can about 40% of all hearing losses be treated medically?
Yes No Unsure
- b. Can most nonmedical hearing losses be treated effectively with today's hearing aids?
Yes No Unsure
18. Are balance problems prevalent in elderly persons?
Yes No Unsure
19. a. Is vestibular rehabilitation effective in treating some balance problems in the elderly?
Yes No Unsure
- b. Can benign paroxysmal positional vertigo (BPPV) be treated in about three sessions?
Yes No Unsure

ATTITUDES TOWARD HEARING AND BALANCE SCREENING IN THE ELDERLY

20. Screening for hearing loss in the elderly is a waste of resources, because there are few treatments for it.
Strongly Agree Moderately Agree Neutral Moderately Disagree Strongly Disagree
21. Screening for balance problems in the elderly is a waste of resources, because there are few treatments for them.
Strongly Agree Moderately Agree Neutral Moderately Disagree Strongly Disagree
22. Hearing loss is a low-priority health condition in the overall medical management of elderly patients.
Strongly Agree Moderately Agree Neutral Moderately Disagree Strongly Disagree
23. Balance problems are a low-priority health condition in the overall medical management of elderly patients.
Strongly Agree Moderately Agree Neutral Moderately Disagree Strongly Disagree
24. It is very important to evaluate elderly patients' hearing and/or balance if they complain about having problems.
Strongly Agree Moderately Agree Neutral Moderately Disagree Strongly Disagree
25. I do not have time to do routine hearing and/or balance screenings for my elderly patients.
Strongly Agree Moderately Agree Neutral Moderately Disagree Strongly Disagree

26. Audiologists are well qualified to diagnose and manage nonmedical hearing and balance problems in the elderly.

Strongly Agree	Moderately Agree	Neutral	Moderately Disagree	Strongly Disagree
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27. Medicare reimburses me adequately for each one-time preventative physical exam for new beneficiaries.

Strongly Agree	Moderately Agree	Neutral	Moderately Disagree	Strongly Disagree
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28. The Welcome to Medicare program one-time preventative physical exam is worthy of federal funding.

Strongly Agree	Moderately Agree	Neutral	Moderately Disagree	Strongly Disagree
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29. a. Would you like additional information about hearing and balance screening in the elderly?

Yes No

b. If so, in what form would you like it?

Internet sites Brochures Lunch and learn Other _____