



Standardized Remote Management of Veterans with Asymmetric Sensorineural Hearing Loss



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INTRODUCTION

- Asymmetric sensorineural hearing loss (ASNHL) can be a sign of vestibular schwannoma¹
- Sufficient concern for vestibular schwannoma requires an ENT referral for retrocochlear work-up, which usually includes an MRI
- Existing guidelines are unclear for VA audiologists regarding when an otolaryngology referral is warranted for Veterans with ASNHL
- There is a lack of consensus on which patient factors beyond the audiogram (e.g., noise exposure or age) should be included in guidelines for referral
- Standardized referral guidelines for ASNHL patients may facilitate remote patient management, allowing for improved patient convenience and reduced cost for the VA system

AIM: Collect input from VA audiologists on current management practices for Veterans diagnosed with ASNHL and develop a remote care model

METHODS & DATA ANALYSIS

- A Delphi approach was used, which includes surveying a group of experts (in a particular subject area) through the disbursement of sequential questionnaires with summarized feedback of opinions derived from earlier responses²
- After several iterative survey rounds answered by the group of experts, consensus is derived through analysis of the sequential questionnaire responses by panel members
- Three sequential electronic surveys were administered to audiology service leadership at VA 1-A facilities nationwide
- Surveys used a mix of Likert -type, multiple choice, forced-choice, and limited free response options to solicit expert input on current audiology referral practices for ASNHL
- Survey questions were designed to evaluate three primary domains: current practices, perceived value of previous testing and interdisciplinary collaboration
- All responses were anonymous to panel members
- Consensus was defined as 80% agreement from the group

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CURRENT CLINICAL PRACTICE PATTERNS

Respondent Demographics (n=8)		
Respondents	Mean Years of Clinical Practice	25.25 (8.05)
	Work at VA Medical Centers with Affiliated Academic Institutions	4 (50%)
	Supervise Audiology Externs	7 (88%)
	Work at VA Medical Centers currently classified as CI surgical sites	6 (75%)

Table 1. Demographic information displayed for survey respondents. Mean years of clinical practice is displayed with standard deviation in parentheses. Remaining rows are displayed with number of respondents and percentage in parentheses. Data displayed as count of respondents unless otherwise specified*. The 8 respondents were from 6 VA integrated service network regions (VISN 1, 8, 17, 20, 21, and 22). All respondents were full-time VA staff providers.

Unique Considerations for Veterans

Veteran Population	<ul style="list-style-type: none"> Noise Exposure Age Distance to Care
History	<ul style="list-style-type: none"> Noise Exposure Otologic Surgery Neurologic Comorbidities
Symptoms	<ul style="list-style-type: none"> Unilateral tinnitus Vertigo Unilateral facial numbness/paresthesia
Physical Exam Findings	<ul style="list-style-type: none"> Facial numbness Unsteady gait Asymmetric gaze-evoked nystagmus

Table 2. Consensus of factors beyond the audiogram respondents indicate are most important to consider for Veterans with ASNHL.

Determining When to Refer

Pure-Tone Audiometric Guidelines	<ul style="list-style-type: none"> 20 dB difference at three contiguous frequencies 80% asymmetry in word recognition scores 45 dB difference at pure-tone thresholds at 3.0 kHz
Additional Audiologic Tests	<ul style="list-style-type: none"> Word recognition results Auditory brainstem response (ABR) results Elevated/absent acoustic reflex thresholds

Table 3. Consensus of current audiometric guidelines and audiologic test results used to determine when a Veteran with ASNHL is referred for retrocochlear work-up

Domain	Round	Question	Responses
Current Practices	1	Do you have established referral guidelines within your service for ASNHL?	4 YES, 4 NO
	1	To what degree do you believe referral practices within your service vary for ASNHL?	7 Vary Significantly, 1 Vary Slightly
	1	Are you aware of any widely used consistent VA criterion for referral for ASNHL?	8 NO
	1	Do you have a fixed rule to determine when to refer a Veteran with ASNHL for a retrocochlear work-up?	2 YES, 5 NO, 1 NR
	1	Do you feel the Veteran population is different from the non-Veteran population with respect to determining when ASNHL warrants ENT referral for retrocochlear work-up?	7 YES, 1 NO
Perceived Value of Previous Testing	2	I perform ABR testing on ___ of patients with ASNHL before ENT referral.	2 >75%, 2 50%, 3 25%, 1 Never
	2	How have you arrived at the practice pattern of conducting ABRs before referral to ENT?	2 Physician-requested, 3 Consensus of colleagues, 3 Other
	1	Would you refer to ENT again for potential retrocochlear pathology even if there is a previous normal MRI on file?	3 YES, 5 NO
	2	If a Veteran presented with asymmetric SNHL and a previous clear MRI, I would NOT refer the patient to ENT if the scan was less than ___ old.	4 2 YEARS, 4 5 YEARS
Interdisciplinary Collaboration	1	How much interaction is there between ENT and audiology when deciding if a patient should move ahead with a retrocochlear workup?	5 NO IMPACT, 2 MORE LIKELY, 1 NR
	1	Do you have regular meetings with your ENTs?	1 YES, 7 NO
	1	Who do you refer your patients with ASNHL to?	6 VA ENT, 1 VA PCP, 1 Other
	3	If you knew a Veteran with ASNHL would be managed by ENT remotely, would that impact your referral decision/criteria?	5 NO IMPACT, 2 MORE LIKELY, 1 NR

Table 4. Selected survey questions with responses

PROPOSED REMOTE CARE MODEL

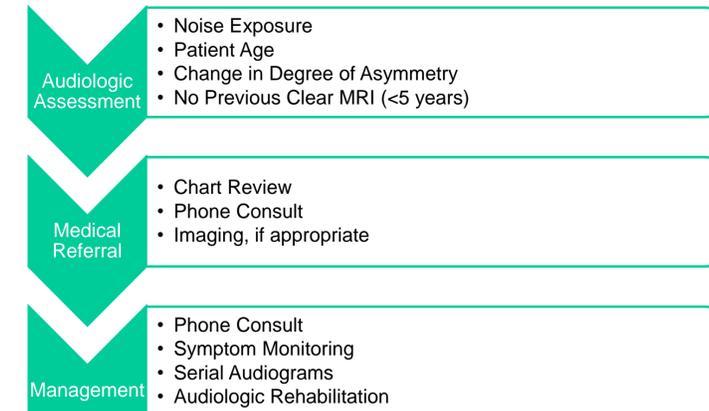


Figure 1. Proposed ASNHL referral pathway from Audiology to ENT considering patient factors beyond the audiogram and primarily remote management by ENT

DISCUSSION

- Respondents felt that published referral criteria were insufficient and factors beyond the audiogram should be considered
- Clear communication pathways between audiology and ENT are desirable in considering referrals
- Current referral criteria do not consider patient factors beyond the audiogram, lacking face and content validity
- Results suggest that remote management of patients with ASNHL is feasible and desirable.
- Our proposed model provides a systematic process for referral based on interdisciplinary consensus, potentially reducing cost and improving outcomes

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