Sudden Sensorineural Hearing Loss Standard Procedure for the MHS

Guidance for Primary Care

Recommendations from the
Defense Health Agency
Hearing Center of Excellence

Version Date: June 2020

MHS Military Health System
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Background

The American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) Foundation published a clinical practice guideline (CPG) in March of 2019 that defined sudden sensorineural hearing loss (SSNHL) as:

- An acute loss of hearing over 72 hours
- A decrease of at least 30 decibels (dB) in three (3) consecutive frequencies
- Audiogram compared to a prior audiogram or the opposite ear's thresholds.[1]

Reported incidences of SSNHL range from 5 to 20 per 100,000 persons, but this is likely an underestimation as many patients who spontaneously recover may not seek medical attention.[2,3,4,5] Proper diagnosis of SSNHL remains challenging as it is often idiopathic, with no identifiable cause in 71-90% of cases.[3,5,6,7]

The AAO-HNS Foundation CPG discusses a variety of treatment options, to be determined by the treating otolaryngologist.

Proposed options	Discouraged options
■ Oral steroids	■ Antivirals
■ Intratympanic (IT) steroids	■ Thrombolytics
■ Combination of oral and IT steroids	■ Vasoactive substances
■ Hyperbaric oxygen	

Adherence to the treatment guidance on SSNHL found in this CPG can aid in standardization, to a certain extent, and foster value for both the patient and healthcare system. Quality of patient care is of increasing importance in the US healthcare system and will continue to frame important discussions on healthcare utilization and delivery.

Diagnosis in Active Duty Service members is particularly difficult due to the high rates of sensorineural hearing loss secondary to acoustic trauma and chronic hazardous noise exposure. A recent study by the Hearing Center of Excellence demonstrated that, within the Military Health System, 27% of the patients diagnosed with SSNHL either failed to meet criteria or were misdiagnosed.[8]

Upon completion of the study, several clinical gaps in the diagnosis and treatment of SSNHL were identified for primary care (PC), emergency department (ED), otolaryngology (ENT), and audiology (Aud).

Specialties	Gap
PC, ED	Recognition of signs & symptoms; knowledge of referral criteria
All specialties	Understanding of required documentation, diagnosis coding, and procedural coding for treatment
ENT	Standardized steroid dosage (oral and IT)
AUD	Standardized documentation of word lists used for word recognition testing

Further Reading

For a case review, overview of existing guidelines, and clinical recommendations, please refer to the following sources.

- Rauch, 2008. Full text is available at https://www.nejm.org/doi/pdf/10.1056/NEJMcp0802129.
- 2019 CPG. Full text is available at https://www.ncbi.nlm.nih.gov/pubmed/31369359.

Primary Care Clinical Presentation

1. Patients present with a full or blocked ear after awakening. Tinnitus may occur as well as vertigo. They describe symptoms such as: "It feels like I have water in my ear" or "I can't clear my ear".

2. Patients may not be able to lateralize the ear affected by hearing loss at first presentation. Precise questioning of the patient hearing status is warranted.

3. You may ask "Has your hearing changed?" or "Can you use your mobile device/phone on the symptomatic ear?".

4. It is important to ask if patients have experienced recent trauma, external ear and canal pain, drainage, fever, or other systemic symptoms. Patients with SSNHL do not present with the above symptoms.

5. Clinical exam is normal with no obvious explanation to the ear fullness or hearing loss (for example: cerumen impaction, otitis externa, otitis media, tympanic membrane perforation, etc).

6. It is recommended that a Weber or Rinne test be performed with a 512-Hz/256-Hz tuning fork. See *Table 1. Recommended Technique and Associated Findings for Webber and Rinne Testing* for additional information.

    a. In lieu of a tuning fork, clinicians may also ask the patient to hum, which will be heard in the better hearing ear, opposite of the symptomatic ear.

Table 1. Recommended Technique and Associated Findings for Weber and Rinne Testing

Weber Test	Rinne Test
1. Place vibrating tuning fork (256 or 512 Hz) at midline of forehead or on maxillary teeth (cannot be false teeth). 2. Ask where the sound is heard; it is normal to hear at the midline or "everywhere". 3. If the sound lateralizes to one ear then: a. There is conductive hearing loss (CHL) in that ear, OR b. There is sensorineural hearing loss (SNHL) in the opposite ear	1. Place vibrating tuning fork (256 or 512 Hz) over the mastoid bone of one ear, then move the tuning fork to the entrance of the ear canal (do not touch the ear). 2. The sound should be heard better via air conduction (at the entrance to the ear canal). 3. If the sound is heard better by bone conduction, then there is a CHL in that ear. 4. Repeat for the other ear.

Patients should be referred to ENT/Audiology on the same day for audiometric testing. The preffered pathway for refferal depends on the clinical environment. If an audiologist is present, this would be the first refferal, followed by ENT. If facilities do not have audiometric testing capabilities then the treating clinician may consider empirical treatment for SSNHL with prednisone 60mg if there are no contraindications to steroid therapy (e.g. diabetes, immunocomprised, etc.). Every effort should be made to consult ENT/Audiology within 72 hours of starting the medication. *Imaging studies are not warranted at this stage of evaluation.*

Coding Guidance

Primary care should use the code **H91.90, unspecified hearing loss**.

Patient Information

Standardized patient information based on the clinical practice guidelines is available from the AAO-HNS Foundation and can be found in Appendix A of this document.

Metrics for Implementation

The above standard protocol for the evaluation and treatment of SSNHL can lead to better understanding of treatment outcomes and cost to MHS. With the implementation of this protocol, HCE will evaluate certain metrics biennially for all specialties.

Primary care metrics will include:

- ✓ Appropriate consult to ENT/Audiology within 72 hours of patient presenting with suspected SSNHL
- ✓ Coding compliance
- ✓ Use of tuning fork or documentation of office evaluation for hearing loss
- ✓ Appropriate dose of steroids (Prednisone 60 mg qd, 7-10 days, taper is an option)

References

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Appendix A

American Academy of Otolaryngology-Head and Neck Surgery Foundation

Clinical Practice Guidelines
Patient Information

CLINICAL PRACTICE GUIDELINES

PATIENT INFORMATION

SUDDEN SENSORINEURAL HEARING LOSS (SSNHL) FREQUENTLY ASKED QUESTIONS (FAQS)

WHAT IS CAUSING THE PROBLEM?	The cause of sudden sensorineural hearing loss (SSNHL) is often not clear. It usually is in one ear. You may have other symptoms including dizziness (spinning sensation, balance problems, or vertigo) and ringing (tinnitus) or feeling like your ear needs to pop.
HOW IS SUDDEN HEARING LOSS DIAGNOSED?	The sudden loss in hearing occurs within a 3-day period and is obvious to you. You may also have loud ringing, dizziness, and/or pressure in the ear. You should see a healthcare provider as soon as possible if you have any of these symptoms. Your healthcare provider will complete a physical examination and review your medical history. A hearing test (audiogram) should be obtained by your healthcare provider but other routine lab tests and x-rays are not usually recommended.
WILL MY HEARING COME BACK?	Approximately half of patients with SSNHL recover at least some hearing without treatment. Patients with mild to moderate to severe hearing loss are considered in the "steroid-effective zone" and have a high chance — over 75 – 80% — of recovery with steroid therapy. The earlier that treatment is begun, the better the chances for recovery. Patients with profound hearing loss, which is a complete loss of hearing, patients who experience dizziness (vertigo) with their sudden hearing loss, and individuals above age 65 have a much lower chance of getting their hearing back. In those cases, you and your healthcare provider should discuss aggressive treatments to try to bring your hearing back. Hearing can take up to 6 weeks or more to return, after treatment is finished.
IS THERE ADDITIONAL TESTING NEEDED WITH SSNHL?	Once in a while (less than 1% of the time) SSNHL is due to a benign (non-cancerous) tumor on the nerve that connects the ear to the brain. These tumors are called "vestibular schwannomas." Your healthcare provider may order a magnetic resonance imaging (MRI) scan to look for this tumor if an MRI is safe for you. Another option is a type of hearing test called Auditory Brainstem Response (ABR). However, if the ABR is abnormal, your healthcare provider should recommend an MRI.

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SUDDEN SENSORINEURAL HEARING LOSS (SSNHL) FREQUENTLY ASKED QUESTIONS (FAQS)

HOW IS SUDDEN HEARING LOSS TREATED?	There are many treatments for SSNHL. Watchful waiting may be recommended. This is because half of patients may get back hearing on their own — these are usually patients with mild to moderate degrees of hearing loss, but healthcare providers do not currently have a way to predict who will get better without treatment. Initial treatment should be given within 2 weeks and can include steroids in pill form or injected into the ear directly (intratympanic steroid injections), or hyperbaric (pronounced hi-per-bar-ik) oxygen therapy (HBOT) given with steroids. If the first treatments do not work, your otolaryngologist should discuss "salvage therapy." You may be offered HBOT with steroids, but your healthcare provider should recommend intratympanic steroid injections through the eardrum. The benefits of therapy may include more quick and complete recovery of hearing, but there are also side effects that must be considered when choosing from the available options.
WHAT ARE THE SIDE EFFECTS OF EACH TREATMENT?	Side effects are different with each type of treatment but may include anxiety, pain, dizziness, high blood sugar, high blood pressure, depression, or sleep problems. In head-to-head comparisons, intratympanic injection of steroids causes much fewer side effects than oral steroids. You should talk to your healthcare provider about side effects from any treatment that you are considering.
WHAT ELSE CAN I EXPECT?	Sudden hearing loss can be frightening and may make you feel embarrassed, frustrated, worried, lonely, and even depressed. Talking with a counselor can be helpful. If you have tinnitus (ringing in the ear), it is usually loud and awful at the beginning, but reduces significantly over the first several months and if the hearing comes back up. If you do not experience full hearing recovery, you may want to talk to your otolaryngologist and audiologist about hearing aids or other devices you can use to make hearing easier. You should get a follow-up hearing test (audiometry) within 6 months of your first visit with SSNHL.

SOURCE: Chandrasekhar SS, Tsai Do BS, Schwartz SR, et al. Clinical Practice Guideline: Sudden Hearing Loss (Update). Otolaryngol Head Neck Surg. 2019;161 (1_Suppl):[S1-S45].

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