TSHA SI DISABILITY DETERMINATION GUIDELINES FOR VOICE DISORDERS

REVISED 2020

Voice Guidelines Revision Team

Emily Lambert, MS, CCC-SLP
Amy Hamilton Harris, MA, CCC-SLP

Voice Guidelines Peer Reviewer

Jan Lougeay, MA, CCC-SLP

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**Indicates forms that are essential to completing a comprehensive evaluation but are district specific and therefore not included in this manual.

General Information

Purpose and Intended Use of the SI Disability Determination Guidelines for Voice Disorders

The purpose of the SI Disability Determination Guidelines for Voice Disorders is to provide a structure within which the speech-language pathologist (SLP) can use consistent, evidence-based evaluation practices consistent with the law to:

- Provide information to teachers and parents regarding the nature of voice and disorders of voice and to give recommendations based on data collected by the Student Support Team (SST);
- Complete a comprehensive evaluation of a student's voice following a referral for voice concerns for a Full and Individual Evaluation (FIE) for special education;
- Identify whether a voice disorder is present;
- Determine if the presence of a voice disorder results in a disruption in academic achievement and/or functional performance, and document the need for specially designed instruction by the SLP; and
- Make recommendations to the Admission, Review, Dismissal (ARD) Committee regarding eligibility for special education services and support based on speech impairment (SI).

These guidelines are intended to be used in combination with the information provided in the *Texas Speech-Language-Hearing Association (TSHA) Disability Determination Guidelines for Speech Impairment, 2020* with the understanding that use of the tools in this voice guidelines manual require additional, specialized training. SLPs should become very familiar with the information in that manual and be aware that information from both manuals is essential to completing a comprehensive evaluation of voice.

Informational Materials
Regarding Voice Disorders for Parents

What is a Voice Disorder?

Eligibility decisions under IDEA define the following categories of disability that qualify a school-age student with a voice disorder for services under the law: physical development, communication development, social or emotional development, and adaptive development (CFR §300.313).

A **voice disorder** occurs when voice quality, pitch, and loudness differ or are inappropriate for an individual's age, gender, cultural background, or geographic location. A voice disorder is present when an individual expresses concern about having an abnormal voice that does not meet daily needs—even if others do not perceive it as different or deviant (American Speech-Language-Hearing Association [ASHA], n.d.). Voice quality can also be affected when psychological stressors lead to habitual, maladaptive aphonia or dysphonia. The resulting voice disorders are referred to as **psychogenic voice disorders** or **psychogenic conversion aphonia/dysphonia** (Stemple, Glaze, & Klaben, 2010). These voice disorders are rare. SLPs refer individuals suspected of having a psychogenic voice disorder to other appropriate professionals (e.g., psychologist or psychiatrist) for diagnosis and may collaborate in subsequent treatment. Voice disorders are not mutually exclusive, and overlap with other communication disorders or other disabilities is common. For example, the etiology of nodules is functional, as they result from behavioral voice misuse. The voice misuse results in repeated trauma to the vocal folds, which may then lead to structural (organic) changes to the vocal fold tissue.

SLPs may be involved in the assessment and treatment of disorders that affect the voice mechanism (i.e., the aerodigestive tract) but are not classified as voice disorders. An example is **paradoxical vocal fold movement** (PVFM), a condition in which there is intermittent adduction of the vocal folds that interferes with breathing. When PVFM is suspected, SLPs are often consulted to help identify abnormal laryngeal and respiratory function and to teach various techniques (e.g., vocal exercises, relaxation techniques, quick-release breathing techniques, and proper breath management) to improve laryngeal and respiratory control (Mathers-Schmidt, 2001; Patel, Venediktov, Schooling, & Wang, 2015; Traister, Fajt, & Petrov, 2016)

Information about Vocal Nodules

What are Vocal Nodules?

Vocal nodules are callous-like growths on the vocal folds. They interfere with proper vibration of the folds and cause the voice to sound raspy or hoarse. Initially, nodules can be soft tissue, but after extended periods of time without treatment, they become hard and resistant to therapy techniques.

Why do Students get Vocal Nodules?

When a student wears shoes that do not fit properly for a long period of time, a blister or callous often develops on his foot. It results from the constant rubbing together of the shoe against the skin. Vocal nodules form in a similar way. However, they are the result of the rubbing together of the vocal folds during speech. Vocal nodules usually form in students who misuse their voices by talking too loudly and screaming or yelling frequently. Often, students are more susceptible to nodules if they are frequently hoarse due to sinus drainage and allergies. Nodules may also form if the student uses his voice improperly by frequently using a loud whisper, breathing incorrectly, or tensing the muscles of the throat too much during speech.

What Vocal Nodules Are Not

Vocal nodules are not a disease that can be treated with medicine. There are other causes of hoarseness, however, which can be treated medically. The student must be examined by a Laryngologist or Otolaryngologist (ENT) to diagnose his voice problem and determine if the symptoms are the result of nodules or another medical issue. Vocal nodules are not related to cancer, and will not develop into cancer even if they are not treated. If vocal nodules remain untreated, they usually grow larger and the student will become hoarser until he sounds like he has laryngitis all the time. The student's nodules will not necessarily be gone "forever" when his vocal folds are clear. Since nodules are the result of vocal abuse, they will return if the voice is misused again for long periods.

What can Parents do to Help Their Child?

Since we are trying to change a bad habit of misusing the voice, parents' help at home is very important to the success of the therapy program. Parents can:

1. ***Help your student reduce the amount of loud talking and yelling he does at home.*** You will receive charts to record each time your student yells. Reward him on days he receives no marks for yelling. Remind him not to scream. Encourage him to walk close enough to the person he is talking to, so that he can be heard. Help him by seeing that your family gives him attention even when he talks softly so that he doesn't feel the need to yell.

2. ***Encourage him to spend long periods in total silence.*** A good example of this is to have him try to say nothing during a whole TV program or have him play a game with his siblings to see who can go without talking for the longest period of time. Resting his voice when he is at home is very important because when he is playing outside it is nearly impossible for you to monitor his screaming. Students who have nodules are often the students whose parents complain they "talk all the time." Helping your student plan quiet times during the day that precede or follow periods of excessive talking will help him rest his voice and reduce the vocal abuse.

3. ***Remind him not to clear his throat.*** Because students with nodules are hoarse, they often develop a habit of clearing their throats. Clearing the throat causes vocal folds to slap together very hard. This kind of movement will cause the nodules to get bigger.

4. ***Control coughing whenever possible.*** Coughing has the same effect as clearing the throat. Be sure to see that your student takes cough medicine that will reduce the amount of coughing if he should develop a cough.

5. ***Discourage your student from singing.*** Singing requires tension of the muscles of the throat and causes the same type of movement of the vocal folds as yelling does. Although no one expects your student will not need to stop singing forever, he should not sing while he has nodules.

6. ***Reduce the loudness of your own talking and that of the other family members.*** Frequently, students who talk loudly have parents and siblings who also talk loudly. One always tends to yell back at a person who yells at them. If the student needs to be heard over loud talking he will try to talk even louder. Trying to develop a family practice of talking quietly will be very helpful.

7. ***Remind your student to use his "practice" voice when he talks.*** In speech therapy your student will learn to talk in a very relaxed, breathy sounding voice. He is to use his new voice temporarily to rest his vocal folds until the nodules are improved or gone. Be sure to have him demonstrate his new voice to you and let him explain why he is talking that way.

8. ***Help your student find substitutes.*** When you stop him from yelling, discuss with him what he should have done instead of yelling.

9. ***Keep your speech therapist informed about how your student is doing at home.***

(Lougeay & Reaves, 1980)

Information about Resonance Disorders for Parents

What is a Resonance Disorder?

A resonance disorder is the incorrect mixture of airflow through the oral (mouth) and nasal (nose) cavities during speech. These disorders may be labeled as:

Hypernasality: Too much airflow through the nasal cavity, noticed on vowels (sounds as if speaker is "talking through his nose").

Hyponasality: Too little airflow through the nasal cavity, noticed on vowels (sounds as if speaker has a "cold").

Nasal Air Emission: Bursts of air on consonants (sounds as if speaker "snorts" during consonant production)

Why do Students have a Resonance Disorder?

The most common resonance disorder seen in students (hyponasality) may be the result of a cold, allergies, large tonsils, or a large adenoid. When a student presents with hypernasality and/or nasal air emission they may be experiencing difficulty with velopharyngeal function.

What is Velopharyngeal Function?

Speech production involves many activities of the oral (mouth) cavity. One of these activities is to close the velopharyngeal port (*velo* = soft palate and *pharyngeal* = throat) during the production of all English sounds with the exception of m, n, and ng (as in sing). If for some reason, the velopharynegal port does not function correctly, excess air will escape through the nasal (nose) cavity.

Can Velopharyngeal Dysfunction Lead to Other Speech Problems?

Difficulty with closing the velopharyngeal port may lead to the creation of compensatory articulation. Instead of saying /k/, the student may "drop" the placement of this sound into the throat creating a glottal stop.

What Can You do to Help Your Child?

A speech evaluation is the first step in assisting your student with a resonance disorder. A Speech Pathologist can evaluate your student for resonance and articulation errors and assist with the development of goals. In addition, a Laryngologist, Otolaryngologist (ENT) or a Cleft Palate Team can evaluate your student for a possible resonance disorder that could be related to structural or medical issues

Data Collection for Student Support Team

Health Information

Forms that are essential to completing a comprehensive evaluation are district specific and therefore are not included in this manual.

Pre-Referral Considerations and Intervention Recommendations

The following suggestions may be given to classroom teachers and/or parents as recommendations for stimulating healthy vocal behaviors prior to referral for a Full and Individual Evaluation for Special Education Services. The SLP should check for level of understanding of each recommendation through the school referral committee meeting.

Student: _____ **Date of Birth: _____**
Person Responsible: _____ **Date of Meeting**: _____

Consideration or Recommendation	Dates of Attempts	Results – be specific in recording data
1. Be sure student's hearing has been checked within the last 3 months.		
2. Determine if more than one language is spoken in the home.		
3. Discuss with parent and teacher the vocal quality issue of concern.		
4. Determine if the student has previously received services for a voice disorder.		
5. Teacher has implemented accommodations in the classroom if appropriate and has provided information to the school referral committee		

Additional Comments:

Voice Case History Form
Student/Parent Information

Student's Name: _____	
Student's Birth Date: _____	Age: _____
Parents' Names: _____	
Home Phone #: _____	Work Phone #: _____
Cell Phone #: _____	Email Address: _____
Address: _____ _____	

Referral Information

Referred by: _____	Physician's Name: _____
Physician's Address: _____ _____	
Physician's Phone Number: _____ *Please attach a physician report if applicable*	

*The SI Disability Determination Guidelines have been prepared by the Texas Speech-Language-Hearing Association (TSHA). Please note that they are **guidelines**. TSHA has no regulatory or administrative authority and there is no requirement to use the guidelines. They are provided by TSHA as a public service to enhance the quality of SLP services in public schools.*

Student's Medical History

Does the student have allergies? _____

If yes, please describe _____

_____

Please list any allergy medications: _____

_____

Is the student frequently around cigarette smoke? _____

Has the student ever had chronic ear infections, sinus infections, colds, asthma, etc.?

_____

_____

Has the student ever had surgery or been hospitalized? _____

If yes, please describe: _____

_____

_____

Is the student under a physician's care for any illness? _____

If yes, please describe: _____

_____

List any additional medication (other than allergy) your student routinely takes:

_____

Has the student ever been examined by an Ear Nose and Throat Specialist (ENT) or otolaryngologist? What were the results? Was a second appointment scheduled?

_____

_____

_____

Has the student ever lost his/her voice? _____ How many times? _____

Does the student ever complain of his/her throat burning? _____

Has the student been diagnosed with reflux (GERD)? _____

Does the student ever have heartburn? _____ Stomach Ache? _____

As an infant, did the student have colic, spit up or upset stomach? _____

When was the student's last hearing test and what were the results? _____

_____

Additional Comments:

_____

_____

_____

_____

_____

_____

Student's Voice Problem

Describe the voice problem: _____

_____

_____

What do you think caused the problem? _____

_____

_____

When did you first notice the problem? _____

Describe how the student's voice sounds: _____

_____

Did the problem come on suddenly or gradually? _____

Has the problem become worse/better recently? _____

Does the student's voice vary with different…

A) Times of day?

_____

_____

B) Seasons or weather?

_____

_____

C) Days of the week? _____

_____

When is the voice best? _____ When is the voice worst? _____

Does the student talk excessively? _____

Does the student yell, scream, make vocal noises, or sing excessively? Please describe:

_____

_____

_____

Does the student frequently cough or clear his/her throat? _____

Has the student demonstrated frustration with his/her voice problem? _____

Do you suspect the student uses his/her voice more frequently throughout the day compared to other students the same age? _____

_____

Is the student involved in school or community activities in which his/her voice is used excessively (cheerleading, athletics, drama, choir, etc.)? _____

_____

_____

Has the student ever had speech therapy? _____

If yes, please describe the problem:

_____

_____

When did the student attend therapy? _____

Clinicain's Name:

_____

Describe the student's personality. Is he/she outgoing, shy, loud, quiet, etc.? _____

_____

_____

Family History

Does anyone in your family have a voice problem? _____ _____ _____
Has anyone in your family had speech therapy? _____ _____ _____
Does the student have any siblings? _____ If yes, please list ages: _____

Suggestions for Classroom Accommodations

1. Provide the student with an appropriate "voice" model.

2. Reinforce the student for appropriate voice quality:

    a. Give the student a tangible reward (e.g., classroom privileges, line leading, passing out materials, five minutes free time, etc.), or

    b. Give the student an intangible reward (e.g., praise, handshake, smile, etc.).

3. Speak to the student to explain what he/she needs to do differently (e.g., use a quiet voice versus a loud voice, whistle or clap versus yelling, talk less, etc.).

4. Establish a "quiet time" during the day when no one speaks except in an emergency. Soft music might be used in the background.

5. Encourage good posture while sitting, standing, and walking, etc. Poor posture can deter good breath support which facilitates good vocal quality.

6. Have the student list occasions when he/she abuses his/her voice. Discuss alternate ways to communicate in these situations (e.g., walk over to a person instead of shouting across the room; blow a whistle outside to get someone's attention instead of yelling, etc.).

7. Discuss how hard it is on the throat to clear the throat. Encourage the student to get a drink instead.

8. When the student has a cold, sore throat, laryngitis, etc., discuss how the throat might look and encourage the student to talk as little as possible. Do not encourage whispering as an alternative as it may only mask the vocal abusive behavior.

9. Suggest student use slower rate of speech.

10. Encourage student to articulate distinctly.

11. Encourage student to open his/her mouth when speaking. Establish a method that you can use to remind the student to use good vocal hygiene when he/she is speaking too loud or too soft.

Parent/ Teacher Checklist of Voice Concerns

Student's Name: _____	Date of Birth/Grade: _____
Person completing the form: _____	Date: _____

Parents and teachers, please check all that apply to the student's speech:

- € 1. Hoarse for more than two weeks.
- € 2. Laryngitis for more than two weeks.
- € 3. Voice pitch too high, too low, or not appropriate for age and/or gender
- € 4. Talks through nose.
- € 5. Voice too loud or too soft.
- € 6. Has voice that is breathy (i.e., Marilyn Monroe type of voice).
- € 7. Voice sounds strained.
- € 8. Visible tension in neck, upper body, or face when speaking.
- € 9. Voice breaks in student too young to be experiencing change of voice.
- € 10. Voice is monotone.
- € 11. Irregular or labored breathing when speaking.
- € 12. Any voice characteristic that attracts attention.
- € 13. Tonsillectomy and/or adenoidectomy.

Student Checklist of Voice Concerns

Student's Name: _____	Date of Birth/Grade: _____
Person completing the form: _____	Date: _____

Student, please check all that apply to your speech:

- € 1. People have trouble hearing me when I talk.
- € 2. I run out of air when I talk.
- € 3. Sometimes it's hard to talk.
- € 4. Talking makes me tired.
- € 5. My throat hurts when I talk.
- € 6. My voice squeaks when I talk.
- € 7. People ask me what's wrong with my voice.
- € 8. I don't like to talk because sometimes people tease me.
- € 9. People think I sound like a boy/girl when I speak.
- € 10. I lose my voice after talking a while.
- € 11. I don't like the way my voice sounds.
- € 12. People ask me if I have a cold.

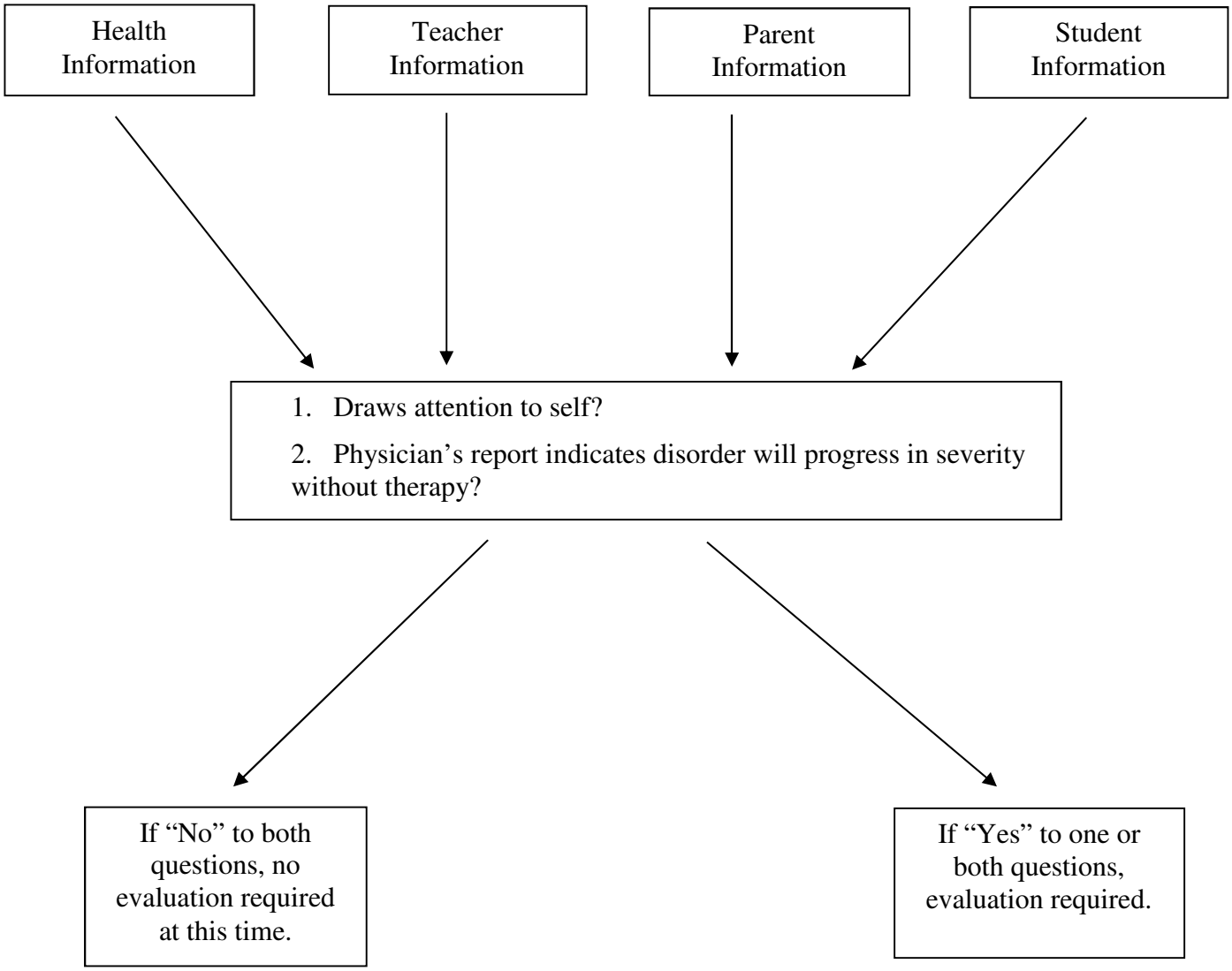
Describe your voice: _____

_____

_____

_____

Student Support Team Deliberation for Voice

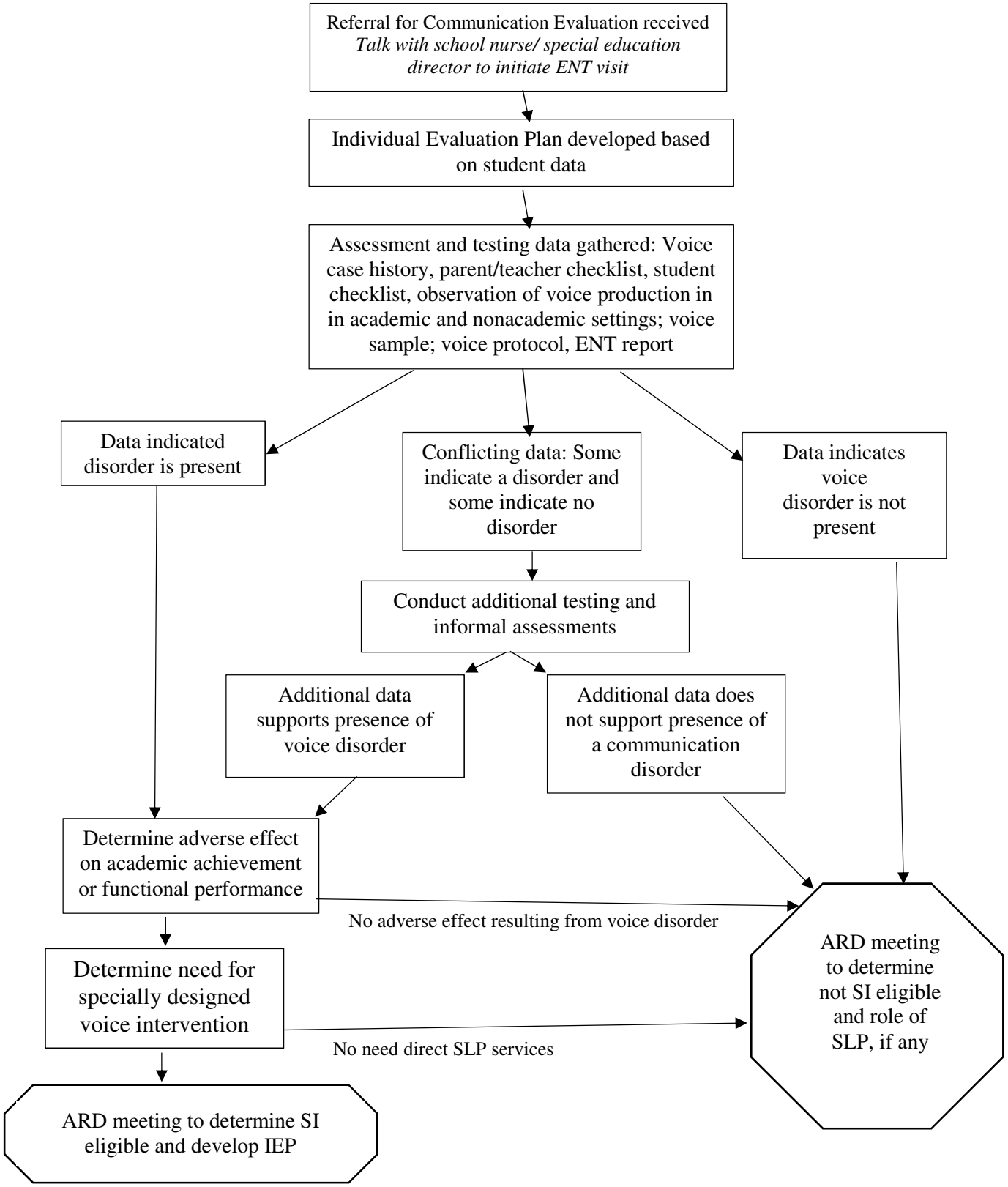


Student Support Team Deliberations for Special Education Referral

Forms that are essential to completing a comprehensive evaluation are district specific and therefore not included in this manual.

Voice Evaluation and Disability Determination

Voice Flow Chart



Use of Voice Disability Determination Forms

In this section, you will find four forms that will assist you in the assessment/eligibility process.

The first form, *Voice Sample Procedures*, presents the procedures to collect the speaking sample used to determine if the student's voice disorder meets disability criteria for service delivery in the public schools. It is **essential** that the SLP audio record the voice sample, or it will be impossible to make the decisions necessary for disability determination.

The *Voice Evaluation Protocol* and *Voice Evaluation Protocol – 2 (including the CAPE-V)* provide documentation for consideration in the disability determination decision along with documentation of the adverse effect on educational performance resulting from a voice disorder. The evaluator can choose which protocol to use.

The fourth form, *Voice Disability Determination*, assists the SLP in making the final decision for recommendation regarding the student's eligibility for service. The intent of this form is to provide a specific list of qualifying and non-qualifying conditions. This form summarizes the information gathered during the evaluation process and can serve as an organizer when reporting to the ARD committee.

Voice Sample Procedures

Directions:

Use the procedures outlined in numbers 1-12 to collect the speaking sample that will be reviewed and used to determine eligibility for service.

Audio record and/or videotape the voice sample. You will need to listen several times to determine your scores. Check your recording equipment before beginning the evaluation to ensure that it is working. Use a watch or clock with a secondhand or a stopwatch for time measurement. Have the student complete the following speaking tasks:

1. State full name, date of birth, day, month and year of the recording.

2. **Evaluate all parameters on Voice Eligibility Protocol**

   When evaluating all parameters (i.e., Voice Areas) use the provided visual analog scale to record judgments. In some cases, the parameters evaluated require only a score of 0 or 100 (i.e., the characteristic is either present or absent). These parameters are indicated on the voice evaluation protocol.

   - If the student can read, have him/her complete an oral reading of approximately 75 words. (Use of reading material from classroom curriculum is recommended.)

   - Question and Answer. Engage in a brief dialogue in an effort to capture spontaneous, ongoing vocal quality.

   - Have student participate in connected/conversational speech by describing a picture, trip, or hobby. (At least one minute and can be practiced before to ensure continuity of speaking.)

3. **Evaluate Physical Mechanism**.

   - Observe respiration during speaking. Look for evidence of clavicular breathing, diaphragmatic breathing, shortness of breath/panting, audible breath/stridor, running out of breath at the end of phrases.

   - Observe tension sites. Look at face, mandible, neck/throat, shoulders and general body.

4. **Evaluate variability in pitch**.

   Listen to variability during reading and conversation.

5. **Evaluate hypernasality and/or nasal air emission**.

   Have the student say the following sentences with no nasal sounds. *Hypernasality will be carried on the vowels and nasal air emission will be heard as bursts of air during consonant production.*

   Pick up the puppy.

   Buy baby a bib.

   Suzy sees the sky.

   Chase the chilly cherry.

   Go give Kate cake.

   Cookie, Cookie, Cookie,

   Puppy, Puppy, Puppy

   I like cookies.

   I like puppies.

6. **Evaluate hyponasality**.
   Have the student say the following sentences. *Hyponasality will be obvious on nasal sounds*.

   Mr. Norris never knew. Coming home is fun.

   My nose never runs. Hammer nine nails.

7. **Evaluate possible nasal air emission**.

   Have the student say the following words. *Nasal emission is most obvious on sibilants, fricatives, and affricates. In severe cases, it will be noted on plosives. Make note of tongue position/placement during sibilant production. Is tongue tip at alveolar ridge?*

   busy Suzy pie sigh

   kite sight Pat sat

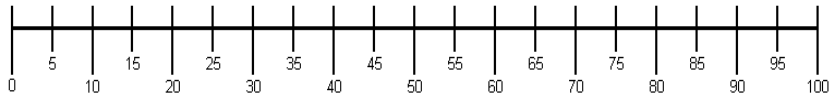
VOICE EVALUATION PROTOCOL

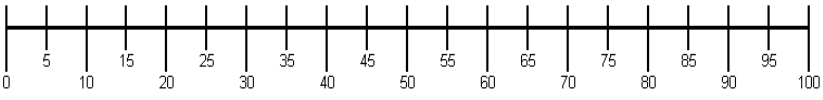
Student: _____ **Date:** _____

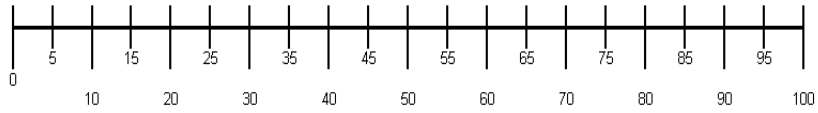
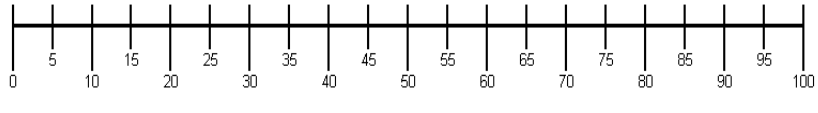
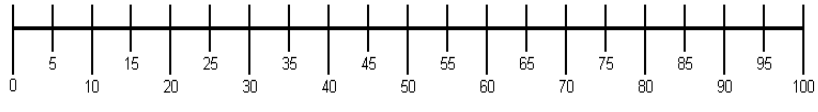
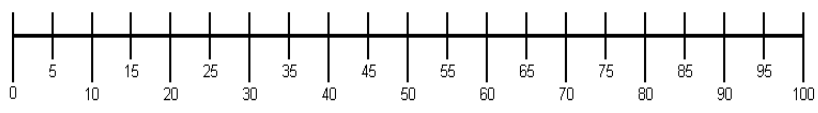
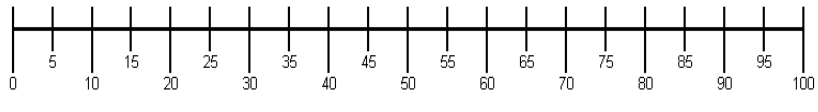
Date of Birth: _____ **SLP:** _____

Teacher: _____ **Grade:** _____

VOICE AREA *A.*		0 - 10 Normal	11-29 Mild	30 - 54 Moderate	55 - 79 Severe	80 - 100 Very Severe
1. Hoarseness (Combination of harshness and breathiness lasting longer than 30 days) **Use Visual Analog Scale to score this on a 1 - 100 continuum; 0 = Normal; 100 = Very Severe**	**Voice Impairment Score**					
2. Harshness/ Tension Consider both in your rating. (Unpleasant,rough voice with neck and shoulder tension present) **Use Visual Analog Scale to scorethis on a 1 - 100 continuum; 0 = Normal; 100 = Very Severe**	**Voice Impairment Score**					
3. Hard/Harsh Glottal Attack (Unpleasant burst of sound forcing vocal folds together during vowel production) **Use Visual Analog Scale to score this on a 1 - 100 continuum; 0 = Normal; 100 = Very Severe**	**Voice Impairment Score**					
4. Breathiness (Audible, excessive airflow released during phonation) **Use Visual Analog Scale to score this on a 1 - 100 continuum; 0 = Normal; 100 = Very Severe**	**Voice Impairment Score**					
5. Aphonia (Intermittent or consistent inability to phonate) **Score as: Absent = 0; Present = 100**	**Voice Impairment Score**	Aphonia may result from severe vocal abuse, but also could be a symptom of a medical disorder. Aphonia could also be a symptom of a neurolgoical or structural issue that will not respond to therapy. Input from the pysician will help determine if this student will benefit from intervention.				
6. **Tremor** (Uneven breaks in voice, unsteadiness in voice) **Score as: Absent = 0; Present = 100**	**Voice Impairment Score**	Tremor is sometimes an indication of neurological problems. If present, check case history for evidence of diagnosed neurological issues. It may be necessary to refer to a neurologist for consultation. However, tremor does not qualify a student for voice therapy.				

VOICE AREA		
1. Hypernasality (Excessive nasal airflow/resonance carried on vowels) **Use Visual Analog Scale to score this on a 1 - 100 point continuum; 0 = Normal; 100 = Very Severe**	**Voice Impairment Score**	
2. Nasal Air Emission (Bursts of nasal air carried on consonants) **Score as: Absent = 0; Present = 100**	**Voice Impairment Score**	
3. Articulation Errors (Specifically glottal stops, nasal fricatives, pharyngeal fricatives) **Scores as: Absent = 0; Present = 100**	**Voice Impairment Score**	

VOICE AREA		
1. **Habitual Speaking Pitch** (too high, too low, consider appropriateness for age/gender) **Use provided Visual Analog Scale to score this on a 1 - 100 continuum; 0 = Normal; 100 = Very Severe**	**Voice Impairment Score**	
2. Pitch Range (Ability to produce 2-octave range) **Score as: Produced 2 Octive Range = 0; Could not produce 2 Octave Range= 100**	**Voice Impairment Score**	
3. Pitch Breaks (Sudden, uncontrolled, inappropriate changes in pitch) **Score as: Absent = 0; Present = 100**	**Voice Impairment Score**	**Pitch breaks that occur as the result of voice changes during puberty should be rated as 0 (i.e. within normal limits).**

Associated Factors	**Associated factors alone do not qualify a student for voice therapy, however these factors are significant in determining voice therapy goals.**	
1. Habitual Volume Choose one ___Too Soft___Too Loud **Use provided Visual Analog Scale to score this on a 1 - 100 continuum; 0 = Normal; 100 = Very Severe**	**Voice Impairment Score**	
2. Breathing Pattern (Clavicular, diaphragmatic, shortness of breath/panting, audbile breath/stridor, runs out of breath at end of phrase) **Use Visual Analog Scale to score this on a 1 - 100 point continuum; 0 = Normal; 100 = Very Severe**	**Voice Impairment Score**	
3. Efficiency of Air Use (s/z ratio less than 1 is normal; counting on one breath for 10 seconds) **Use Visual Analog Scale to score this on a 1 - 100 point continuum; 0 = Normal; 100 = Very Severe**	**Voice Impairment Score**	
4. Throat Clearing / Coughing **Use Visual Analog Scale to score this on a 1 - 100 continuum; 0 = Normal; 100 = Very Severe**	**Voice Impairment Score**	
5. Abusive Vocal Noises (grunting, excessive motor noises) **Use Visual Analog Scale to score this on a 1 - 100 continuum; 0 = Normal; 100 = Very Severe**	**Voice Impairment Score**	
6. Hyponasality (Reduced nasal airflow/resonance on /m/, /n/, /ng/ and vowels)		**Hyponasality results from atypical structure. It may be necessary to refer to an ENT.**
7. Cul-de-sac Resonance (Result of posterior tongue carriage) **Use provided Visual Analog**		**Cul-de-sac resonance results from atypical structure. It may be necessary to refer to an ENT**

Additional Information		
1. Oral Mechanism Structure (Fistula, Unrepaired Cleft Palate, Submucous Cleft Palate, Short Palate, Large Tonsils) **Scores as: Absent = 0; Present = 100**	**Voice Impairment Score**	
2. Otolaryngology Examination / Results	**Attach If Applicable**	

Voice Evaluation Protocol – 2

Respiratory Assessment

Observe the student at rest and during connected speech. Check all that apply

☐ Clavicular breathing (shoulders elevating/ vertical movement during inhalation)

☐ Thoracic breathing (chest expanding during inhalation)

☐ Diaphragmatic breathing (expansion in the abdomen during inhalation)

Other factors:

☐ Speaks on residual air (continues speaking despite running out of air)/ Inadequate replenishing breaths

☐ Gasping/ audible inhalation

Upper Body Tension Assessment

Observe the student for changes in tension when speaking. This may include:

- Visible tension in the anterior neck, jaw, face and shoulders
- Poor posture (e.g., anterior head carriage; upper body slumping over)

Perceptual Assessment

Audio record the evaluation to ensure that you can capture the student's vocal quality and perceptual features. Use this audio recording as a baseline for comparison purposes at progress reporting periods and re-evaluations.

You will complete the Consensus Auditory-Perceptual Evaluation of Voice (CAPE-V) as well as some additional descriptors.

The CAPE-V provides a millimeter scale to evaluate vocal parameters. It may be helpful to use a millimeter ruler as a guide for placing tick marks.

Perceptual features: (Check all that apply)

☐ Rough	☐ Harsh	☐ Straining to speak
☐ Increased pitch	☐ Decreased pitch	☐ Glottal fry
☐ Pressed	☐ Back-focused	☐ Heavy
☐ Increased intensity/ loudness		☐ Decreased intensity/ loudness
☐ Aphonic	☐ Voice breaks	☐ Pitch breaks
☐ Breathy	☐ Asthenia/ weakness	

Timed Measurements – *Use a Stopwatch*

1. Maximum Phonation Time: ask the student to prolong an /a/ sound for as long as they can on one breath. You will collect the measurement 3 times and take the longest production of the /a/.

2. Greater than or equal to 10 seconds is considered to be Within Normal Limits (WNL)

/a/ 1: _____ /a/ 2: _____ /a/ 3: _____

3. S/Z Ratio: ask the student to prolong /s/ for as long as possible on one breath. Then ask them to prolong /z/ for as long as possible on one breath. Take a ratio of the two. Ratios > 1.4 *may* be indicative of laryngeal pathology. A higher ratio indicates that the student's vocal fold vibration during phonation is inefficient

If they do not understand the task, ask them to repeat it again until you feel that their performance is their best effort. A model of what "best effort" looks like is very helpful, too. Let them see how long you can prolong the sound and then they can copy you.

Verbal cues: /s/: hiss like a snake, leaky tire/ balloon; /z/: buzz like a bee, buzz your teeth

/s/: _____ /z/: _____
Ratio: _____

Stimulability

These measurements are designed to (a) observe what happens to the student's voice when they perform these techniques (Is it better? Worse? The same?), and (b) determine what therapy techniques the student would benefit from *if* they meet eligibility criteria.

Key: I = Improved NC = No change N = Normal voice
E = Exacerbated U = Unable to complete task

Acoustic files with each stimulability exercise are available online via the TSHA website.

____ Hum

(1. Do you feel vibrations in the front of your face? 2. Does it feel easy to make sound?)

____ Straw phonation

(Step 1: blow air only through the straw. It should feel easy. Step 2: start with airflow only through the straw and then turn the voice on. Both steps should feel effortless. If needed this can be modified to blowing bubbles into a cup of water with the straw.)

____ Hum-chew	_____ Increased airflow	_____ Continuants: sh→zh
____ Labial trill	_____ Replenishing breaths	_____ Straw phonation
____ Lingual trill	_____ Continuants: f→v	
____ Yawn-sigh	_____ Continuants: s→z	
____ Increased or	_____ Decreased intensity/loudness	
____ Increased pitch	_____ Decreased pitch	

Consensus Auditory-Perceptual Evaluation of Voice (CAPE-V)

Name:_____ **Date:**_____

The following parameters of voice quality will be rated upon completion of the following tasks:

1. Sustained vowels, /a/ and /i/ for 3–5 seconds duration each.
2. Sentence production:
   a. The blue spot is on the key again.
   b. How hard did he hit him?
   c. We were away a year ago.
   d. We eat eggs every Easter.
   e. My mama makes lemon muffins.
   f. Peter will keep at the peak.
3. Spontaneous speech in response to: "Tell me about your voice problem." or "Tell me how your voice is functioning."

Legend: C = Consistent I = Intermittent
MI = Mildly Deviant MO = Moderately Deviant SE = Severely Deviant
Although the PDF scale is accurate, printer configurations vary. Verify that your paper copy has accurate 100-mm lines before reproducing this form.

Overall Severity _____ C I ___/100
MI MO SE

Roughness _____ C I ___/100
MI MO SE

Breathiness _____ C I ___/100
MI MO SE

Strain _____ C I ___/100
MI MO SE

Pitch (Indicate the nature of the abnormality): _____
_____ C I ___/100
MI MO SE

Loudness (Indicate the nature of the abnormality): _____
_____ C I ___/100
MI MO SE

_____ _____ C I ___/100
MI MO SE

_____ _____ C I ___/100
MI MO SE

COMMENTS ABOUT RESONANCE: NORMAL OTHER (Provide description):_____

COMMENTS ABOUT RESONANCE: NORMAL OTHER (Provide description):_____

ADDITIONAL FEATURES (for example, diplophonia, fry, falsetto, asthenia, aphonia, pitch instability, tremor, wet/gurgly, or other relevant terms):

Clinician:_____

Note. This form may be photocopied for clinical purposes. Available online at http://ajslp.asha.org.

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Progress Reporting

It is very beneficial for you to review the initial evaluation audio recording prior to completing the perceptual assessment for their progress notes. This will help remind you where they started so you can better assess how they have progressed toward their goals. Complete a CAPE-V and include the comparison on your progress report. You can opt to use the CAPE-V sentences if the student is a reader or simply do a conversational task (e.g., story retell, oral sequencing, etc.) as a voice sample. Progress reporting for voice should always include a perceptual assessment component.

Voice Disability Determination

Student: _____ Date: _____ Teacher: _____

SLP: _____ Grade: _____ DOB: _____

Voice Disorder Documented	No Voice Disorder Documented
Impairment: Check each area in which the student exhibits an impairment. Impairment is indicated if a score of 11 or more is rated on at least one item assessed in the following voice areas. **Phonation/Vocal Quality** ☐ Hoarseness ☐ Harshness/Tension ☐ Hard/Harsh Glottal Attack ☐ Breathiness ☐ Aphonia **Pitch** ☐ Habitual Speaking Pitch ☐ Pitch Range ☐ Pitch Breaks **Resonance** ☐ Hypernasality ☐ Nasal Air Emission ☐ Articulation Errors	▪ Voice disorder is judged to be normal (i.e., score of 1-10) ▪ Identified differences do not impact educational performance. ▪ The only **VOICE AREA** in which student scored in the disorder range is: ☐ Tremor ☐ Pitch Breaks as a result of puberty ☐ Hyponasality ☐ Cul-de-sac Resonance ☐ Associated Factors ☐ Oral Mechanism ▪ Voice disorder(s) is due to untreated upper respiratory infection and/or allergy symptoms.
Evidence that includes at least two sources (check all that apply) ___1. Parent Report ___2. Student Report ___3. Teacher Report ___4. Physician Report ___5. Speech-Language Pathologist	Only one source of evidence indicated a disorder (i.e., Physician's Report)

Adverse Effect on Educational Performance (check all that apply) ___1. Oral Communication ___2. Social-Emotional Adjustment/Behavior ___3. Reaction of peers, teachers, and parents	Voice disorder is related to ESL or dialect

_____Student Meets Disability Criteria – voice disorder and adverse effect on educational performance documented

_____Student Does Not Meet Disability Criteria

Students must be seen by an otolaryngologist prior to enrollment in therapy to identify medically treatable disorders. If the doctor concludes that a medical condition exists that precludes speech therapy, the parent is responsible for further intervention.

Rationale for Development of the Voice Evaluation Protocol and Use of the Visual Analog Scale

Evaluation of vocal quality can be performed using a variety of tools including acoustic measurements, videostroboscopy and perceptual judgments by SLPs.

Historically, SLPs relied on perceptual judgments exclusively in the clinical setting because the equipment necessary to take acoustic measures or observe laryngeal function during voicing was not readily available. With the recent development of clinically friendly equipment to aid in the assessment of voice (i.e., Visi-pitch, Dr. Speech, Speech Viewer, PRAAT) that allow measurement of some vocal parameters, the trend has been to incorporate those measurements into assessment decisions.

Many SLPs feel that without measurements such as average fundamental frequency, perturbation, harmonics to noise ratio, and so forth, their perceptual judgments are too subjective to efficiently quantify presence of a disorder or track changes during therapy. Voice clinics where laryngologists and SLPs work together typically combine information gathered via stroboscopy, acoustic measurement and perceptual judgment to describe voice disorders.

Within the school setting, equipment is rarely available to the SLPs. They must combine information learned from the laryngologist's report with their own perceptual judgments and observations to make their assessment and treatment decisions. Many clinicians seem to doubt that the judgments they make are valid without acoustic data to support them.

Recently there have been several studies published that looked at the reliability of perceptual scales when used to evaluate vocal quality. Eadie and Doyle (2005) discussed various

studies and concluded that perceptual scales can represent a valid approach to voice evaluation and description. However, they also discussed the importance of listener training if use of such scales is to be truly reliable among raters. The ASHA Special Interest Division 3 developed and distributed an auditory-perceptual scale (CAPE-V) to be used to describe the severity of perceptual attributes of voice problems. This tool is widely accepted as the best available tool for auditory-perceptual evaluation of voice characteristics. It uses a visual analog scale for rating. Visual analog scales are routinely used in the medical field to quantify perceptual judgments like pain and fatigue. They have been shown to increase the intra- and inter-judge reliability of patient reports by allowing assignment of a numeric value to represent patient perception.

The *Voice Evaluation Protocol* was developed considering the design of the CAPE-V and the need of SLPs in the schools who must support their eligibility decisions. It, too, uses a visual analog scale for the purpose of quantifying judgments. Every attempt has been made to limit sources of variability in the tool, but its reliability and validity have not yet been assessed. It is recommended that SLPs engage in training and practice using the *Voice Evaluation Protocol* with referent voice recordings as examples to develop skill in using the tool to make reliable and valid judgments.

Eadie & Doyle, 2002; Lougeay, Altuna, Sullivan, & Danaher, 2006.

Report Recommendations

General Ideas for Intervention Targets

Identify and eliminate abusive behaviors

1) Increase relaxation of the larynx through head and neck muscle relaxation exercises.
2) Facilitate and habituate relaxed diaphragmatic breathing with breathing exercises and methods of easy airflow release during speech.
3) Improve vocal hygiene by increasing water consumption.
4) Increase oral/nasal resonance utilizing /m/, /n/, /ng/ phonemes from the mask area.
5) Reduce laryngeal, lingual strap and jaw muscle tension through laryngeal massage and range of motion exercises.
6) Increase self-monitoring of pitch during conversational speech.
7) Increase self-monitoring of volume during conversational speech.

Identify and eliminate inappropriate nasal resonance

1) Differentiate between nasal and denasal sounds using tactile feedback.
2) Produce vowel sounds and anterior consonants with the back of the tongue lowered.
3) Increase open oral movements.
4) Articulate distinctly.
5) Produce light, quick articulatory contacts during production of pressure-sensitive phonemes.
6) Increase self-motivation to use appropriate resonance balance during conversational speech.
7) Increase self-motivation to use appropriate volume during conversational speech.

Dismissal Criteria Guidelines

1. Goals have been achieved at mastery level.

2. Dismissal criteria should consistently mirror eligibility criteria. Procedures used to determine eligibility should be repeated to assess progress and provide data to support dismissal.

3. All aspects of the voice disorder should be considered in the dismissal decision, including evidence and adverse effect on educational process.

4. Dismissal criteria may include consideration of chronicity, potential for improvement based on structural limitations, and medical diagnosis.

5. Structural limitations (i.e., cleft palate, palatal fistula) may affect success in therapy for some students, especially those qualified for therapy due to nasality or nasal air emission. Dismissal is appropriate if the ARD committee has agreed that continued therapy will not improve vocal quality.

6. Prior to dismissal, a continuum of support services should be considered. This continuum should include consultation with the SLP that is gradually reduced in frequency and duration. Training and recommendations for parents and staff should be included to reinforce learned skills.

7. Students may be recommended for dismissal from therapy when the ARD committee determines a plateau has been reached in the intervention process. Factors influencing this decision could include:

    a. The student understands and can use strategies, but chooses not to do so.

    b. The student lacks motivation, although every reasonable attempt has been made to encourage participation.

    c. The student is unable to understand and implement the changes necessary to improve vocal quality.

    d. The student and his family are satisfied with his vocal quality.

    e. The ARD committee agrees that the student has been in therapy for a reasonable period of time with no progress, and further therapy is unlikely to result in change.

References and Resources

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Resources

Helpful websites:

www.asha.org/Practice-Portal/clinical-Topics/Voice-Disorders/

http://www.mnsu.edu/comdis/kuster2/newdisorders.html#voice

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