# Hearing Screening Guidelines for Schools 2018

The University of the State of New York
The State Education Department
Office of Student Support Services

## THE UNIVERSITY OF THE STATE OF NEW YORK
## Regents of The University

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# Table of Contents

# Foreword

*Hearing Screening Guidelines for Schools* provides schools with a framework for establishing the hearing screening program required under New York State Education Law §905 and the regulations promulgated thereunder, specifically, 8 NYCRR §136.3. These regulations were amended in 2017 effective July 1, 2018. These guidelines will assist schools with developing an effective hearing screening program including planning, implementation, and follow-up procedures. This document is intended for use by administrators and school health personnel to conduct the required hearing screenings utilizing recommended best practices from experts in the field. Every attempt has been made to ensure that the information and resources contained in this document reflect best practice in the field of school health. School districts should review these guidelines with their counsel, as necessary to incorporate the guidance with district policy. This document is not intended as a mandate and is to be used for guidance purposes only.

# Purpose of a School Hearing Screening Program

The purpose of a hearing screening program is to identify students with potential hearing impairment that will require further follow up evaluation by a health care provider. Identifying students with possible hearing impairment which may affect their intellectual, emotional, social, speech, and/or language development is necessary to provide the necessary assistance and accommodations to ensure the student is able to reach their full potential.

# Legislative and Regulatory Background

Education Law §902 requires school districts to employ a duly licensed qualified physician, or a nurse practitioner to perform the duties of the director of school health services. The director of school health services is commonly referred to as the medical director.

Education Law §905(1) requires public schools outside of New York City, to conduct screening examinations of vision, hearing, and scoliosis of all students at such times and as defined in the regulations of the commissioner, and at any time deemed necessary.

Commissioner's Regulation §136.3(e)(1)(iii) requires hearing screening to be conducted in school if results of a hearing screening are not provided to the school on the student's health certificate (the physical exam completed by a private healthcare provider) within six months of admission to the school and in grades Pre-K or Kindergarten, 1, 3, 5, 7 and 11, and at any other time deemed necessary. The hearing screening shall include, but is not limited to, pure tone screening.

Pursuant to Commissioner's Regulation §136.3(2)(f), hearing screening is not required where a student or the parent or person in parental relation to such student objects thereto on the grounds that such examinations conflict with their genuine and sincere religious beliefs. A written and signed statement from the student, parent or person in parental relation to the student that they hold such beliefs must be submitted to the principal or the principal's designee in which case the principal or principal's designee may require supporting documents.

# Planning the Screening Program

Hearing screening in school is to be conducted by the district director of school health services, commonly referred to as the medical director. The medical director may delegate this duty to the school nurse or other appropriate licensed health professional such as the school nurse, LPN, or medical director. (If the medical director chooses to delegate this duty to an appropriately licensed health professional, he/she must ensure

the licensed health professional to whom it is delegated is trained in screening procedures. Additionally, the delegation should be in writing, with specific parameters of screening results or observations that are to be brought to the medical director's attention.

Commissioner's regulation §136.3 requires school health personnel to conduct pure tone screening. Pure tone screening is the measurement of the student's hearing sensitivity to calibrated pure tones measured in decibels, and sound frequencies measured in hertz (HZ). A pure-tone screening determines whether a person can detect sounds presented at a soft level (20 dB HL) at selected pitches (frequencies), from low to high. It is important that the screening procedures are standardized district wide.

## Who Should be Screened

Students in in grades Pre-K or Kindergarten, 1, 3, 5, 7 and 11 as well as newly enrolled students within six months of admission to the school. who did not have a hearing screening noted on their health certificate of health appraisal require screening in school. School health personnel should develop systems to track which students will need screening completed at school when filing a health certificate or appraisal in the student's cumulative health record. Other students to consider for a hearing screening include students referred to the Committee on Special Education (CSE) /Committee on Preschool Special Education (CPSE), or students who need to repeat a grade.

## Who Should Not be Screened

Students who meet one or more of the following are not required to be screened in school:

1. Students who have documentation on the health certificate from a private health care provider;
2. Students who provide written evidence of having been diagnosed by an appropriate licensed health professional (physician, nurse practitioner, physician assistant, or audiologist) with a hearing loss, including sensorineural hearing loss and progressive hearing loss;
3. Students enrolled in regular or special education who are unable to respond, for any reason. Parents/guardians of such students should be referred to their health care provider for a hearing evaluation; and
4. Students who have an approved religious exemption from school administration for hearing screening. A written copy of the approved exemption should be filed in the student's cumulative health record [8 NYCRR §136.3(2)(f)].

## Education and Communication

A few days or weeks before the screening exams are to be conducted, school health personnel should instruct students on why the screening is done, what it entails,

and when it will be conducted. Very young students should be shown the equipment and allowed to try on the head phones. Recent noise exposure before pure-tone testing may affect the validity of the test results. Riding a loud motorcycle or listening to music through headphones may result in a temporary threshold shift and may not reflect the student's true hearing thresholds. Students, particularly in the secondary grades, should be instructed to minimize or avoid exposure to loud noise the day before the screening. each student be asked if they were exposed to loud sound the day before screening, if they have the screening should be postponed for at least 48 hours. This can be accomplished during a class, small group, assembly, webinar or other multimedia presentation.

Written information on the upcoming hearing screening should be posted on the school website, in a newsletter, or in a written notice provided to parents/guardians. This should inform parents/guardians that a screening is performed when the information is not included on the physical exam form submitted to the school, or the physical examination was completed at school. Information should include when screenings will be completed along with the types of hearing screening that will be involved:

## Equipment and Location

It is important that the audio equipment is used by trained health professionals, and it is calibrated, functioning properly, and used in an acceptable environment (quiet room) to get accurate results.

Licensed school health personnel will need to ensure that they have the necessary equipment to conduct a hearing screening. The equipment must be calibrated and functioning correctly. Recommended equipment includes but is not limited to:

1. Audiometer. Hearing screenings should be performed using a pure-tone audiometer. Manual audiometry is the recommended method. Sound intensity is measured in decibels (dB). Sound frequency is measured in hertz (Hz). Pure-tone audiometers used in school screening programs should meet the standards for screening audiometers established by the American National Standards Institute (ANSI S3.6-1989). Pure-tone audiometers should include, at a minimum, air frequencies of 500, 1000, 2000, and 4000 Hz. This equipment should be calibrated annually per manufacturer instructions. The Occupational Safety and Health Administration (OSHA) and good practice require that three types of audiometer calibration be conducted:

   - **Functional Check:** The operation of the audiometer must be checked daily *prior to audiometric testing*. First, the output of the audiometer is checked by conducting an audiometric test for a person with known, stable thresholds or utilizing a "bio-acoustic simulator" device. Next, the tester must listen to the output of the audiometer to make sure it is free from distorted or unwanted sounds. One should wiggle the cords and connection points of the cords and listen for static or intermittency. Deviations of 10 dB or greater on the output check or detection of static

or unwanted sounds on the listening check require that an acoustical calibration be performed prior to use.

- **Acoustical Calibration:** The acoustical calibration must be performed at least **annually**. This is a more objective form of the functional check conducted using an acoustic calibration system. Output deviations of greater than 10 dB or any other unusual variations require that an exhaustive calibration be performed.
- **Exhaustive Calibration:** An exhaustive calibration should be conducted at least **every two years** in accordance with specifications of the American National Standards Institute (ANSI). As the name implies, this calibration entails a more in-depth analysis of the audiometer's function and may include adjustments according to ANSI specifications.

***Please Note:*** Headphones should not be transferred from one audiometer to another without an additional calibration being performed.

2. Standard TDH 39/41, 51headphones, insert earphones, or other devices provided with newer audiometer models are recommended. Use of large circumaural earphones, e.g., Aural domes and Otocups is not recommended. These devices do not reduce noise below 1000 Hz, while the recommended earphones can reduce weaker ambient noise above 1000 Hz. Additionally, the larger headphones are awkward for smaller children, are more difficult to get a snug and accurate placement and increase the test- retest variability in the screening frequencies.

3. Non-alcohol disinfectant wipes as recommended by manufacturer or disposable earphone covers. If using wipes- clean the ear pieces between students by wiping the ear pieces thoroughly. Avoid getting liquid in the holes in the ear piece.

4. Table and chairs for both the screener and the student.

The room where screening will be completed needs to be as quiet as practicable. The screening site should be selected during school hours, so noise problems can be identified- including noise from HVAC systems. Headphones do not eliminate the need for a quiet screening environment. The site should be away from stairs, windows, street noise, hall traffic, cafeterias, gyms, heating/cooling vents and equipment, bathrooms, play areas, etc. Sound treated areas may be available in school libraries or band/music rooms. These areas should be utilized when available. An electrical outlet should be available in the room if necessary for the audiometer.

The noise level can be checked with the audiometer. The screener with normal hearing wears the audiometer earphones. The screening frequency pure tones (1000 Hz, 2000 Hz, and 4000 Hz) should be heard at a level of 10 dB (screening level for a child is 20 dB and for adults is 25 dB). <u>If the tones cannot be heard at 10 dB at each screening frequency, do not screen in that environment.</u> The ambient noise level including air handling noise from heating and cooling vents will mask the reference threshold level and will cause pure tone threshold levels to be inaccurate.

The audiometer should be positioned on the table where the controls are only visible to the screener.

# Conducting the Screening

Students should be screened individually and separately. Any students waiting to be screened should be at a separate location to avoid any additional noise or distractions for the student who is being screened.

## Prescreening Steps

Before screening, visually check to see if the student has drainage or excess cerumen (wax) coming from his/her ears. Do not screen the student if present. Document findings on the student's cumulative health record (CHR) and notify parent/guardian of need for follow up with private provider before screening can be completed.

The student should be seated in a comfortable manner not facing the audiometer, but where the screener is able to observe student responses. The screener should be cognizant of and avoid any cues they may inadvertently give, such as vocalizations and facial expressions. The screener should review the procedure with the student, including what the student's response task is to indicate a sound has been heard: such as raising a hand, finger, or saying yes. Young children are typically given a more play-like activity to indicate response. Conditioned play audiometry is commonly used with toddlers and preschoolers (ages 2–5). The student is trained to perform an activity each time a sound is heard. The activity may involve putting a block in a box, placing pegs in a hole, or putting a ring on a cone. Conditioning young children may require additional time and can also be completed with the headphones on the table before placing over the ears

Ask the student to push hair away from ears, and to remove eyeglasses, large earrings or other accessories that might interfere with the headphone placement. Carefully place the earphones over the student's ears, ensuring a snug placement. Snug fitting earphones reduce ambient noise and allow for the most accurate screening. Never allow a student to place the headphones over their ears, proper placement of the head phones is important for accurate results.

To be sure that the student understands the instructions, start the screening protocol at 30 dB at 1000 Hz of 1-2 seconds in duration. (If the history or student indicates that they hear better in one ear over the other, start with the indicated better ear. Otherwise, start with the right ear.) If no response is given, present the tone at 40 dB and at successive 10 dB increments until a response is obtained. The interval between tones should not be less than 1-2 seconds. Once a clear response is obtained start the screening protocol. Vary the presentation timing between tones to reduce predictability and guessing.

## Screening Protocol

1. Set audiometer to 20 dB. (25 dB may be used if ambient noise is loud)
2. Test frequencies should be 500, 1000, 2000, 3000, 4000. Additional test frequencies of 6000, and 8000 Hz are to be added for students in grades 7 and 11. [1],[2].
3. Elicit 2 positive responses at each frequency.
4. Change to the other ear and repeat all frequencies in that ear.

Failing to respond to any frequency in either ear at 20 dB* indicates failure of screening. Such students should be rescreened during the same session or within one week. Additionally, the student's ear canal should be visualized with an otoscope to check for anomalies. If the student fails a second screen, the parent/guardian is to be notified in writing of the results and referred to their health care provider for further evaluation. Ideally the notification includes information on the student's reliability during the test and the frequency level the student did not pass- which may be useful for the health care provider.

**Students with scar tissue from previous infections or surgeries may have difficulty passing at 20 dB. In such cases review medical history and discuss with the district medical director.*

## Documentation

Pursuant to Rules of the Board of Regents, Part 29 §29.2(3), licensed health professionals must maintain a record for each patient which accurately reflects the evaluation and treatment of the patient. Documentation in the individual student's CHR should include the date the screening was completed, the observations made by the health professional, any related statements by the student, screening results of each frequency, special circumstances related to the screening, and any communication with the provider and/or parent/guardian.

The results of the screening are recorded in the student's cumulative health record (CHR) and signed by the health professional who completed the screening. The records of the screenings are to be kept as long as the minimum retention period which is until the student reaches age 27. See records retention requirements NYSED Records Retention Schedule for School Health Records.

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[1] *Guidelines for Manual Pure Tone Threshold Audiometry* 2005, American Speech-Language-Hearing Association. https://www.asha.org/policy/GL2005-00014/
Accessed April 23, 2018. Recommends screening at 500, 1000. 2000, 3000, 4000, 6000, and 8000 Hz.

[2] *Bright Futures Periodicity Schedule 2017*, American Academy of Pediatrics
https://www.aap.org/en-us/professional-resources/practice-transformation/managing-patients/Pages/Periodicity-Schedule.aspx
Accessed April 23, 2018. Recommends screening at 500, 1000, 2000, 4000 Hz. Add 6000 and 8000 Hz for adolescents ages 11-21.

## Notification

Per Commissioners regulation 136.3(e)(2) the results of any hearing screenings requiring a follow up with a health care provider must be provided in writing to the student's parent /guardian and to the student's teacher(s) while the student is enrolled in the school. To avoid unnecessarily alarming the student, or potential loss of the notice - the written notification should be mailed and not sent home with the student. Such notification should be in the parent's/guardian's primary language and must state the results of the screening and refer the parent to follow up with their health care provider. This notification should also include an evaluation form for the parent/guardian to take to the appointment and return the completed form to school. A sample form is available at New York Center for School Health- Screening Guidelines and Resources .

P***lease Note:*** *School hearing screenings are not diagnostic and should not state that a student has a hearing loss, but instead should state that findings indicate a possible hearing issue that requires a more thorough evaluation by a health care provider.*

Best practice is to precede the written notification with a telephone call to the parent/guardian to explain their child's screening results, and the importance of the parent/guardian providing the school with information on the results and recommendations of any follow up evaluation. The information on the evaluation form will be used to determine if any adjustments or accommodations are needed for the student. Schools should develop a system to follow up on referrals to ensure they track that the parent/guardian has followed through on the referral. If the parent/guardian has not followed up on the referral, school personnel should explore the reason(s) why and provide assistance and/or resources. Schools should develop procedures for documenting all communication, along with efforts undertaken by school personnel to assist the parent/guardian in finding low cost or free health care and/or health insurance options as necessary.

# School Considerations

## Signs and Symptoms of Hearing Loss

School personnel should know the signs and symptoms of potential hearing loss for students who are unable to complete the hearing screening, and/or to identify students who may need a screening in a year they normally would not receive one.

In accordance with the Commissioner's Regulation (8 NYCRR §136.3 [a][4]), it is a general duty of the trustees and boards of education to maintain a program of education relating to the health of students. This program of education may include information regarding the signs and symptoms of hearing loss. Indicators a student may display indicating a possible hearing impairment include:

- Sudden school failure following a severe illness
- Speech is delayed.
- Speech is not clear.
- Talking either too loudly or too softly
- Frequent requests to repeat what has just been said
- Often says, "Huh?"
- Does not follow directions. This is sometimes is mistaken for not paying attention or just ignoring,
- Irrelevant or inappropriate answers to questions
- Inattention to classroom discussion
- Turning one ear toward speaker
- Watching the lips of the speaker
- Turns the volumes up too high.
- Tending to isolate self, being passive, or tiring easily

## Information on Hearing Loss for School Personnel

Consideration should always be given as to whether a referral should be made for an initial evaluation with the Committee on Special Education (CSE) or 504 team to determine if the student qualifies as a student with a disability. It is important to realize that most children with hearing loss have a slopping hearing loss where they have better hearing for the lower frequency (low pitch sounds) and more hearing loss in the mid to high-frequencies (mid and high pitch sounds). Thus, even children with a moderate to even a severe hearing loss may orient to the teacher's voice when called but will have a difficult time understanding what is being said without face to face contact. It is very difficult to determine the severity of hearing loss by behavioral observation.

The following classifications are based on hearing levels through the frequency range that are most important for the understanding of speech. Suggestions to address various levels of hearing loss are provided below.

- ***Mild hearing loss (21-40 dB)***

Student has difficulty hearing faint or distant speech.

Suggested accommodations:

- ✓ Will benefit from favorable seating and seeing the speakers face; and/or
- ✓ May benefit from hearing aid or educational amplification (e.g., FM Assistive Listening Device.)

- ***Moderate hearing loss (41-59 dB)***

Conversational speech is just audible at a distance of three to five feet away.

Suggested accommodations:

- ✓ Use of hearing aid, auditory training, educational amplification[3], or any combination of; and/or
- ✓ Will benefit from favorable seating and seeing speakers face; and/or

- ***Severe hearing loss (60-85 dB)***

Conversational speech is just audible at a distance of one foot away.

Suggested accommodations:

- ✓ Use of hearing aid with or without educational amplification; and/ or
- ✓ speech-language therapy to aid the student with communication skills.

- ***Profound hearing loss (85 dB or more)***

Student may hear only very loud sounds (jet plane overhead, subway, etc.)

Suggested accommodations:

- ✓ amplification hearing aids with educational amplification; and/or
- ✓ sign language; and/or
- ✓ note taker.

[3] Children with hearing loss require a clear auditory signal if they are to understand oral instructions, class discussions, and other spoken communications. Even when properly functioning amplification devices are worn, the child still may have difficulty understanding spoken language. In addition, the high levels of noise and reverberation that exist in most classrooms often reduce the effective use of hearing aids, cochlear implants, and HATS (Anderson, 1989; Crandell, 1991; Crandell & Smaldino, 2000; Crum & Matkin, 1976; Finitzo-Hieber & Tillman, 1978; Leavitt, 1991). For this reason, noise sources must be eliminated or reduced. To ensure that the child receives the best audible signal, HATS are often used to enhance signal-to-noise ratios in addition to, or instead of, personal hearing aids. The complex interactions among noise, distance from the speaker, acoustic characteristics of the room, and type of amplification make simple recommendations for preferential seating inadequate to ensure good use of hearing in the classroom (ASHA, 1995; Flexer, 1992; Flexer, Wray, & Ireland, 1989; Seep, Glosemeyer, Hulce, Linn, & Aytar, 2000)

# Resources

American Speech-Language-Hearing Association (ASLHA)

ASLHA School Age Hearing Screening

Center for Disease Control and Prevention- Hearing Loss in Children

Hands & Voices

National Institute on Deafness and other Communication Disorders

New York State Center for School Health

New York State Education Department- School Health Services