2022 CHILDHOOD VISION SCREENING

EXPERT PANEL REPORT

TEXAS Health and Human Services
Texas Department of State Health Services

Table of Contents

Important Links

Texas Department of State Health Services

dshs.texas.gov

Vision and Hearing Screening Program

dshs.texas.gov/vhs

American Association for Pediatric Ophthalmology and Strabismus

aapos.org/home

Prevent Blindness

preventblindness.org

American Optometric Association

aoa.org

Executive Summary

In 2017, DSHS convened its first Childhood Vision Screening Expert Panel. The agency's goal was to conduct a formal review of evidence-based research, acceptable screening modalities, and best practices for screening school-age children. The 2017 meeting resulted in five recommendations that Vision, Hearing, and Spinal Screening (VHSS) follows today.

DSHS re-convened a panel in 2022 to re-evaluate the 2017 panel recommendations and guidance. The 2022 Childhood Vision Screening Expert Panel developed ten recommendations.

The meeting was held virtually on October 21, 2022, and was attended by seven panelists that included five optometrists, one ophthalmologist, and one school nurse. Stakeholder organizations nominated the vision screening panelists. The panelists recommended the following:

1. Prioritize monocular visual acuity testing for childhood vision screening. LEA[1] Symbols Charts and digital eye charts may be used by screeners but are not required. Screeners should continue to screen to 20/30.
2. Follow American Association for Pediatric Ophthalmology and Strabismus (AAPOS) guidelines for vision screening and formally include American Optometric Association (AOA) vision screening guidelines.
3. Do not conduct a childhood vision screening for children aged six and older with only an instrument-based screener such as a photoscreener. Children aged six and older must be screened for visual acuity with an approved wall chart or digital eye chart.
4. Do not screen children with a computerized and/or game-based visual acuity screeners.
5. VHSS should:
    - Continue to monitor and consider the use of approved U.S. Food and Drug Administration (FDA) devices with FDA designations for targeted age ranges.
    - Consider validated evidence-based research published in peer-reviewed and professionally accepted journals.

[1] Named for the creator of the chart, Dr. Lea Hyvärinen.

- Continue to monitor professional recommendations and convene experts, as necessary, to assist with review of policies and manuals to make revisions, as necessary.

6. Update the VHSS vision screening manual to provide clarity and additional information. The manual should clearly state:
   - Vision screening devices do not specifically measure subjective visual acuity which is required by DSHS.
   - Visual acuity screening is the AAPOS gold standard.
   - Children should either have a vision screening or be asked screening questions about changes in vision upon returning to school only after specific communicable diseases that may affect the eyes.
   - The minimum requirements for vision screening must be listed and distinguishable from optional screening methods.
   - The term school file may be either a hard copy file or an electronic record.
7. Promote the following eye health messages to screeners, children, and families:
   - A passed vision screening is not a clean bill of health. A comprehensive visual examination is important even if a student passes their vision screening at school or at their pediatrician's office. A screening does not check for all possible vision problems.
   - Follow the 20/20/20 rule[2]: for every 20 minutes of device/screen time look 20 feet away for 20 seconds to help your eyes relax.
   - Periodic exams are recommended throughout life since a person's vision and eye health can change.
8. Screen Texas preschool and school-aged children for both distant and near visual acuity.
9. Conduct vision screenings for children in grades 9 and 11. This is in accordance with AAPOS Preferred Practice Pattern[3] because of the large increase of myopia in young people and because vision can change over time.

[2] **https://www.aoa.org/AOA/Images/Patients/Eye%20Conditions/20-20-20-rule.pdf** (Accessed 01/03/2023)
[3] **https://www.aaojournal.org/article/S0161-6420(17)32958-5/fulltext** (Accessed 01/03/2023)

10. Refer a child after the first failed screening unless there is reason to believe a second screening is beneficial.

The 2022 recommendations were available for public comment from January 3 – 10, 2023. DSHS received 100 responses. These comments were reviewed and addressed in the report as appropriate.

Introduction

Prevent Blindness states the purpose of a vision screening is to identify vision problems in a treatable stage, provide education, and provide a referral to an eye care provider for a comprehensive eye exam (if needed). Up to 1 in 17 preschool-aged children, 1 in 5 Head Start children, and 1 in 4 school-aged children have vision disorders such as blurred vision.[4] Vision screenings are important because children generally do not realize they have a problem with their vision. Parents and teachers may not realize it either.

Poor vision can limit a child's ability to perform well in school.[5] If a child has difficulty reading what is on their desk or on the board, they will likely have difficulty learning. They may quickly lose interest in or give up on schoolwork. Their reading comprehension may be poor. These problems may result in behavioral issues and/or low self-esteem. Certain vision problems, without early intervention, may result in blindness. Undiagnosed vision problems may have a far-reaching impact on a child's health and well-being that may impact them for the rest of their life.

School vision screening is an important public health measure. It is a quick, cost-effective means of identifying children who may have a vision problem and need further evaluation by an eyecare professional. However, a screening is no substitute for a comprehensive eye exam. Even if a child passes a screening, regardless of who screened them, they should still have eye exams at professionally recommended intervals.

---

[4] **nationalcenter.preventblindness.org/making-childrens-vision-a-national-priority/**

[5] (2018, February 27). *School performance bridled by poor vision, visual disorders*. AOA.org. Retrieved November 18, 2022, from **aoa.org/news/clinical-eye-care/health-and-wellness/reading-proficiency-and-eye-exams?sso=y**

Forty states require vision screening for school-age children.[6] In Texas, children must have a vision screening at age four (if they turn four before September 1) and in kindergarten, 1st, 3rd, 5th, and 7th grades.[7] Children must also be screened if they are a first-time student in Texas, regardless of age.

Professional recommendations for vision screening can change over time as new research is conducted and new products are developed. It is important for vision screening programs to stay aware of changes and adjust program activities as necessary.

Background

The 71st Texas Legislature (1989) passed the Special Senses and Communication Disorders Act, which became Health and Safety Code, **Chapter 36**. The purpose of the Special Senses and Communication Disorders Act is to identify, as early as possible, individuals from birth through 20 years of age who need remedial vision services. Early detection and remediation of a vision disorder provide individuals with the opportunity to reach academic and social goals through adequate educational planning and training.

The Vision, Hearing, and Spinal Screening Program (VHSS) at the Texas Department of State Health Services (DSHS) is responsible for training and certifying vision screeners and confirming schools, preschools, licensed childcare centers, and licensed childcare homes are screening vision at the appropriate intervals. VHSS maintains a reporting system where these entities report aggregate screening data. VHSS conducts compliance visits to assist facilities with proper screening and recordkeeping.

VHSS looks to **AAPOS** for guidance on the standard of care for childhood vision screening. Pediatric ophthalmology is the field of medicine that focuses on children's eye care and surgery. AAPOS establishes guidelines for vision screening and is widely recognized by the fields of pediatrics and vision health.

H.B. 3157, 85th Legislature, 2017, Regular Session, amended **Texas Health and Safety Code, Section 36.004** to state DSHS rules must allow students to be

[6] Childhood Vision Screening Requirements by State. (2020). Retrieved November 5, 2022, from **preventblindness.org/vision-screening-requirements-by-state/**

[7] **25 Texas Administrative Code, Rule §37.25**

screened using photoscreeners to detect vision disorders. This prompted DSHS to convene its first Childhood Vision Screening Expert Panel in 2017. The goal was to conduct a formal review of evidence-based research, acceptable screening modalities, and best practices for screening school-age children.

The 2017 meeting resulted in five recommendations that VHSS follows today:

1. School-based screening should focus on monocular visual acuity testing using an approved wall eye chart at standardized distances.
2. DSHS should continue to use the vision screening guidelines outlined AAPOS, as the standard procedure for screening school-aged children.
3. Instrument-based screening devices such as photoscreeners should be used in accordance with evidence-based, approved practices based on age and purpose. Instrument-based screening devices may be used to screen for conditions such as refractive error risk factors, medical risk factors such as cloudiness of the lens or other media opacities, retinal or optic nerve pathology and pupil size differences, but are not recommended for screening for visual acuity. Whenever an instrument-based screener is used on children aged six and older, an approved wall eye chart must also be used. Children with disabilities, who cannot be screened with a wall chart, should be referred for professional examination, regardless of photoscreening result.
4. Computerized visual acuity screeners do not currently have sufficient evidence of effectiveness to be supported by either the AAPOS or this expert panel. An approved wall chart visual acuity exam remains the gold standard at this time.
5. DSHS will consider use of approved FDA devices that have an FDA designation for targeted age ranges. As new technologies are developed, the department will consider validated evidence-based research published in peer-reviewed and professionally accepted journals. DSHS will routinely monitor professional recommendations and convene experts, as necessary, to assist with review of policies and manuals to make revisions as necessary.

Recommendations

VHSS requested the Texas Ophthalmological Association, Texas Optometric Association, and other stakeholder organizations to each nominate two panelists who are experts in vision screening. Twelve experts were nominated for the panel and seven were selected. Panelists were selected based on expertise and experience with childhood vision screening, with at least one nominee selected from each stakeholder organization.

The seven panelists included one ophthalmologist, five optometrists, and one school nurse with backgrounds in private practice and academia. Panelist names and nominating organizations are listed in **Appendix A.**

VHSS developed a series of questions for the panelists to help guide discussion. Panelists were given the series of questions in advance and encouraged to contribute additional questions. Some questions submitted by panelists fell outside the scope of the meeting and were addressed only as time allowed at the end of the meeting. Panelists were also asked to provide relevant information for reference **(Appendix B).** See **Appendix C** for the list of panel questions.

The meeting was held virtually on October 21, 2022. It was attended by the seven panelists and DSHS staff. Through this process, the following recommendations were developed:

Recommendation 1 - Prioritize monocular visual acuity testing for childhood vision screening. LEA Symbols Charts and digital eye charts may be used by screeners but are not required. Screeners should continue to screen to 20/30.

The 2022 panelists recommended school-based vision screenings should continue to focus on monocular visual acuity testing as recommended by the 2017 panel.

The 2022 panelists also felt the LEA Symbols Chart should be added to the list of approved eye charts. The objects on a LEA Symbols Chart are easily recognizable shapes such as squares and circles, which are helpful for facilities with young children who may not know their letters. Panelists agreed that due to cost, these charts should not be a requirement for schools to purchase; rather, schools should be allowed to purchase the chart when necessary. The LEA Symbols Chart is also recommended by AAPOS.

Panelists discussed conventional wall charts versus digital eye charts. The consensus was digital eye charts are acceptable, but must be an approved format (Sloan, HOTV Crowded, or LEA Symbols[8]). Screeners who use digital eye charts must be aware of their chart's required viewing distance.

Panelists agreed VHSS should continue to instruct screeners and schools to screen with 20/30 acuity charts instead of changing to or phasing in 20/32. AAPOS made the change to 20/32 charts for research purposes. Panelists agreed not to require schools and other facilities to buy new eye charts that are set for 20/32 acuity. Buying new 20/32 eye charts is cost prohibitive and the difference is minimal. For consistency across Texas, panelists recommended schools continue to purchase 20/30 charts when new eye charts are needed.

Recommendation 2 - Follow American Association for Pediatric Ophthalmology and Strabismus (AAPOS) guidelines for vision screening and formally include American Optometric Association (AOA) vision screening guidelines.

The 2017 panel recommended VHSS follow AAPOS guidelines for vision screening. AAPOS is named in **25 Texas Administrative Code Rule 37.23** as the guiding organization because pediatric ophthalmology is the medical specialty that focuses on children's eye care and surgery. AAPOS establishes guidelines for vision screening and is widely recognized by the fields of pediatrics and vision health.

All 2022 panelists supported using AAPOS guidelines. Some 2022 panelists supported formally adding AOA guidelines. The **AAPOS** and **AOA** guidelines are similar, but not identical.

Recommendation 3 - Do not conduct a childhood vision screening for children aged six and older with only an instrument-based screener such as a photoscreener. Children aged six and older must be screened for visual acuity with an approved wall chart or digital eye chart. This recommendation does not apply to children aged six and older that have disabilities, are non-verbal, or non-cooperative. [9]

[8] **http://www.pediatrics.org/cgi/doi/10.1542/peds.2015-3597**

[9]Hull, Jennifer (March 30, 2020). Photoscreening. American Association for Pediatric Ophthalmology and Strabismus. **aapos.org/glossary/photoscreening**

The 2022 panelists agreed that a combination of photoscreening and visual acuity screening is acceptable, but children aged six and older cannot be screened using only a photoscreener. Photoscreeners can detect risk factors for many eye conditions but do not assess visual acuity. Screening for visual acuity is the primary goal for childhood vision screening. The use of photoscreeners alone may also result in a higher number of false fails on screenings.

2022 panelists recommend the differences between visual acuity screening and photoscreening to be explained in greater detail in the screener manual and during screener trainings. Panelists believe greater detail will provide school nurses and other screeners with more understanding of why photoscreening is not recommended as a standalone screening methodology for children aged six and over.

Panelists also stated it is acceptable to screen children for visual acuity only and not use a photoscreener for additional testing.

Public comment highlighted the benefit of photoscreening children aged six and older that have disabilities, are non-verbal, or non-cooperative. This is supported by AAPOS.[10]

Recommendation 4 - Do not screen children with a computerized and/or game-based visual acuity screeners.

The 2022 panel agrees with the 2017 panel that computerized and/or game-based visual acuity screeners are not recommended.

Panelists found no peer-reviewed research to indicate game-based visual acuity screeners are better than or equal to traditional visual acuity screening with a wall chart. Published studies are limited and therefore do not support use of game-based screeners on a large scale for vision screening. Panelists felt game-based screeners were more appropriate for vision therapy or amblyopia therapy. Further, no leading vision organization recommends widespread use of game-based screeners for visual acuity screening.

[10]Hull, Jennifer (March 30, 2020). Photoscreening. American Association for Pediatric Ophthalmology and Strabismus. **aapos.org/glossary/photoscreening**

Recommendation 5 - Panelists agree DSHS should:

- Continue to monitor and consider the use of approved FDA devices with FDA designations for targeted age ranges.
- Consider validated evidence-based research published in peer-reviewed and professionally accepted journals.
- Continue to monitor professional recommendations and convene experts, as necessary, to assist with review of policies and manuals to make revisions, as necessary.

Recommendation 6 - Update the VHSS vision screening manual to provide clarity and additional information. The manual should clearly state:

- Vision screening devices do not specifically measure subjective visual acuity, which is required by DSHS.
- Visual acuity screening is the AAPOS gold standard.
- Children should either have a vision screening or be asked screening questions about changes in vision upon returning to school only after specific communicable diseases that may affect the eyes.
- The minimum requirements for vision screening must be listed and distinguishable from optional screening methods.
- The term school file may be either a hard copy file or an electronic health record.

2022 panelists suggested several changes to the vision screening manual. Proposed changes were to provide clarifying information and additional information about general eye health. The 2022 panel also recommended the manual be available online.

The manual currently states children should have a vision screening upon returning to school after a communicable disease. The Texas Education Agency has a list of communicable diseases with many having no impact on a child's vision (for example head lice). Panelists suggested the manual should be revised to recommend either vision screening or asking children or parents about changes in vision only for certain communicable diseases that may impact vision (for example, tuberculosis and human immunodeficiency virus (HIV)).

The manual describes visual acuity screening and additional tests that are allowed but not required. Panelists agreed the manual must state the minimum requirements for vision screening to eliminate confusion.

The manual currently instructs schools to keep a copy of students' screening results in their school file. One panelist pointed out that many schools now have electronic health records and no longer maintain hard copy files. While it seems reasonable that the term school file could refer to both paper and electronic files, a clarifying statement would be helpful for school nurses.

Recommendation 7 - Promote the following eye health messages to screeners, children, and families:

- A passed vision screening is not a clean bill of health. A comprehensive visual examination is important even if a student passes their vision screening at school or at their pediatrician's office. A screening does not check for all possible vision problems.
- Follow the 20/20/20 rule[11]: for every 20 minutes of device/screen time look 20 feet away for 20 seconds to help your eyes relax.
- Periodic exams are recommended throughout life since a person's vision and eye health can change.

According to the American Academy of Ophthalmology and the America Academy of Optometry, children are becoming more nearsighted at a younger age. This has been linked to increase in near vision demand for tablets and small devices.

2022 panelists recommend information about eye health be included in the vision screening manual to educate screeners. They also recommend this information to be broadly available to the public, particularly preschool- and school-age children and their families.

Recommendation 8 - Screen Texas preschool and school-aged children for both distant and near visual acuity.

[11] Boyd, K. (2020, March 3). Computers, Digital Devices and Eye Strain. American Academy of Ophthalmology EyeSmart. **aao.org/eye-health/tips-prevention/computer-usage**

Texas preschool and school-aged children should be screened for both distant and near visual acuity. The 2022 panel agreed near visual acuity is equal in importance to distant visual acuity, and near screening would be beneficial for students.

2022 panelists discussed many conditions affecting near visual acuity including accommodative issues and amblyopia. Focusing on distance visual acuity only means many children are overlooked who need vision care. The large shift to using near devices like tablets results in children with visual stress syndrome, accommodative issues, and other vision problems caught during screenings.

2022 panelists determined adding near visual acuity screening would be difficult, for school nurses and other school screeners but not impossible. Some school nurses are already interested in certification for near visual acuity screening. Nurses are asked to conduct near vision screening on students with special needs by their school's special education department. Therefore, whether near visual acuity screening becomes a requirement, school nurses need training and certification on near visual acuity screening.

Recommendation 9 - Conduct vision screenings for children in grades 9 and 11. This is in accordance with AAPOS Preferred Practice Pattern[12] because of the large increase of myopia in young people and because vision can change over time.

Texas high school children should have vision screenings in 9th and 11th grades. The 2022 panelists recommended older children should be screened because of the large increase of myopia in young people and because vision can change over time. Currently, 7th grade is the last grade schools are required to screen child vision in Texas (unless an older child has recently transferred to a Texas school for the first time). The 2022 panel agreed additional school screenings in 9th and 11th grades are appropriate and consistent with screenings in lower grades. The AAPOS Preferred Practice Pattern[13] states vision screenings should occur every one to two years after age 5 throughout life. The impact of adding high schools

[12] (2018). *Pediatric Eye Evaluations Preferred Practice Pattern®*. aao.org. **https://www.aaojournal.org/article/S0161-6420(17)32958-5/fulltext**

[13] (2018). *Pediatric Eye Evaluations Preferred Practice Pattern®*. aao.org. **https://www.aaojournal.org/article/S0161-6420(17)32958-5/fulltext**

was anticipated to be minor because older students are generally both quicker and easier to screen. Further, high schools already have distance visual acuity charts.

Recommendation 10 - **Refer a child after the first failed screening unless there is reason to believe a second screening is beneficial.**

A second screening is not required for a child who fails their visual acuity screening. Currently, screeners are instructed to screen a child a second time if they fail their first vision screening. The second screening may happen the same day by a different screener, or at a future date.

A failed initial screening could be due to reasons other than vision disorders, such as an illness or allergies, forgetting their glasses at home, etc. 2022 panelists determined a second failed screening is not required to refer a child to an eye doctor. The screener may choose to screen a child a second time if they believe circumstances led to a failed first screening.

Discussion

A list of the 2022 recommendations were available for public comment from January 3 – 10, 2023 through the **VHSS website.** Stakeholders were notified of the public comment opportunity through announcements sent to the VHSS GovDelivery listserv, Texas Private School Accreditation Commission (to inform private schools), Health and Human Services Commission (HHSC) Childcare Licensing (to inform licensed childcare centers and childcare homes), panelists, alternate panelists, and the nominating organizations point of contact. There were over 8,000 recipients, which included school nurses, medical device suppliers, medical organizations, and vision stakeholders.

DSHS received 100 responses during the public comment period, 90 percent of which were from school nurses/school districts and three percent were from childcare providers. The remaining 7 percent included a visual testing company, a non-profit that supports blindness prevention, medical associations, and a college of optometry. These comments were reviewed, discussed by agency leadership, and addressed in the report as appropriate.

In general, 2022 panelists agreed with the previous 2017 recommendations, such as focusing screenings on monocular visual acuity and photoscreeners not being acceptable as a standalone means of vision screening in children aged six and up. The panel did not recommend computerized vision screening due to insufficient peer-reviewed supported research.

Additional recommendations were made by the 2022 panel including updates to the vision screening manual; increase emphasis on eye health education for screeners, students, and families; comprehensive exams at appropriate intervals even if a child passed a vision screening; adding grades 9 and 11 to the screening rules; and adding near visual acuity screening to all vision screenings.

Many of these new recommendations are driven by increases in myopia and other vision disorders caused or exacerbated by the increasing dependence on near vision due to electronic devices for work, school, and personal life.

Conclusion

To confirm program policies and procedures align with current screening standards, VHSS consults with experts in childhood vision screenings. The 2022 expert panel affirmed the recommendations developed by the 2017 panel and made additional recommendations. VHSS received public comment on the recommendations as well.

DSHS Response

VHSS reviewed the recommendations considering the public comments with internal subject matters to determine next steps regarding the recommendations. DSHS plans to adopt all the recommendations of the expert panel with a few exceptions. At this time, DSHS will not implement Recommendations #8, #9, and #10. DSHS will also not fully adopt Recommendation #2.

- VHSS will not fully implement Recommendation #2. Following two different sets of guidelines will lead to potential implementation challenges if they differ. The program will follow the AAPOS guidelines.
- VHSS will not implement Recommendation #8. School nurses expressed concern over additional workload and costs associated with implementing this recommendation.

- VHSS will not implement Recommendation #9. School nurses expressed concern over increasing workloads and described the challenges of screening high school students with complex student schedules. Some nurses noted the large size of many Texas high schools.
- VHSS will not implement Recommendation #10. Some school nurses expressed it can be beneficial for the student to have a second screening before referring them.

The Department of State Health Services appreciates the knowledge and contributions of the expert panelists and their volunteering time to this effort. DSHS will be working on next steps for when and how these recommendations are implemented.

Vision, Hearing, and Spinal Screening Program

General Information

The Vision and Hearing Screening Program at the Texas Department of State Health Services (DSHS) works to identify children with vision and hearing disorders who attend any public, private, parochial, denominational school or a Health and Human Services Commission (HHSC) licensed childcare center and licensed childcare home in Texas.

Our Mission

Preschoolers and school children with hearing and vision problems will be identified early and linked to appropriate remedial services. School children will learn about preventive vision and hearing care.

Contact Information

Vision, Hearing, and Spinal Screening Program
Texas Department of State Health Services
1100 West 49th Street
Mail Code 1818
Austin, Texas 78756

Phone: 512-776-7420
Fax: 512-776-7256

vhssprogram@dshs.texas.gov

dshs.texas.gov/vhs

Appendix A

2022 DSHS Childhood Vision Screening Expert Panelists

Panelist Name	Background Summary	Nominating Organization
Laurie Smith, BSN, RN, NCSN	Registered Nurse and school nurse since 2003; Nationally Certified School Nurse; Director of Health Services, Pittsburg Independent School District; Executive Committee and Incoming President, Texas School Nurses Organization.	Texas School Nurses Organization
Megyn Busse, MD	Pediatric ophthalmologist since 1993; Fellow, American Academy of Ophthalmology; private practice, supporting Dell Children's Medical Center; consultant to DSHS Vision, Hearing, and Spinal Screening Program, 2002-2020; member of multiple professional organizations.	Texas Ophthalmological Association
Mary Kate Sain, OD, FAAO	Optometrist since 2020; Diplomate, American Board of Optometry; Fellow, American Academy of Optometry; Professor of Practice, University of Houston College of Optometry; Director of Eye Care Services, Northside Eye Care Center, Fort Worth; Chair, Texas Public Health Association Vision Care Section; Vice-President, Tarrant County Optometric Society; Board Member, Lighthouse for the Blind, Fort Worth.	Texas Optometry Board
Celina Villareal, OD, FAAO	Optometrist since 2003; Diplomate, American Board of Optometry; Fellow, American Academy of Optometry; Board Member, Prevent Blindness Texas; Assistant Clinical Professor, University of Texas Health Science Center San Antonio (UTHSCSA) Dept of Ophthalmology; Supervisory Optometrist for a VA clinic.	Texas Optometric Association
Janet Garza, OD, FAAO, ABO	Optometrist since 2013; Fellow, American Academy of Optometry; Clinical Assistant Professor and Director of Primary Care Optometry Residency Program, University of Houston (UH) College of Optometry; Clinical Director, UH Eye Center - Heights; Board of Directors, Prevent Blindness Texas and Chair, Public Health Committee.	Prevent Blindness Texas
Ashleigh Burroughs Yates, OD	Optometrist since 2020; Senior Clinical Instructor, University of Incarnate Word Rosenburg School of Optometry in San Antonio (work includes teaching a vision screening course); numerous scholarships and awards; volunteer work that includes vision screening.	Texas Optometry Board
Ann-Marie Mora, OD	Optometrist since 2006; Clinical Assistant Professor, UTHSCSA, Department of Ophthalmology; several research projects; volunteer experience; member of several professional organizations; member of 2017 DSHS Childhood Vision Screening Expert Panel.	UTHSCSA Department of Ophthalmology

Appendix B

Panel References

Grossman, D., MD, MPH (2017). Vision Screening in Children Aged 6 Months to 5 Years US Preventive Services Task Force Recommendation Statement. *JAMA*, *318*(9), 836-844. US Preventive Services Task Force, Grossman, D. C., et al. (2017). Vision Screening in Children Aged 6 Months to 5 Years: US Preventive Services Task Force Recommendation Statement. *JAMA*, *318*(9), 836–844. https://doi.org/10.1001/jama.2017.11260

(2020). *Vision Screening*. aapos.org. **aapos.org/glossary/vision-screening-description**

(2018). *Pediatric Eye Evaluations Preferred Practice Pattern®*. aao.org. **aaojournal.org/article/S0161-6420(17)32958-5/fulltext**

Repka MX. Use of Lea symbols in young children. Br J Ophthalmol. 2002 May;86(5):489-90. doi: 10.1136/bjo.86.5.489. PMID: 11973238; PMCID: PMC1771130. **ncbi.nlm.nih.gov/pmc/articles/PMC1771130/**

Hull, Jennifer (March 30, 2020) *Photoscreening.* American Association for Pediatric Ophthalmology and Strabismus. **aapos.org/glossary/photoscreening**

(2016). *Procedures for the Evaluation of the Visual System by Pediatricians: Clinical Report - 2016*. aao.org. **aao.org/clinical-statement/procedures-evaluation-of-visual-system-by-pediatri**

(2017). *Comprehensive Pediatric Eye and Vision Examination*. aao.org. **aoa.org/AOA/Documents/Practice%20Management/Clinical%20Guidelines/EBO%20Guidelines/Comprehensive%20Pediatric%20Eye%20and%20Vision%20Exam.pdf**

(2022). *Communicable Disease Chart and Notes for Schools and Childcare Centers*. **dshs.texas.gov/texas-school-health**

(2020). *Facing the Myopia Epidemic*. aao.org. **https://www.aao.org/eyenet/article/facing-the-myopia-epidemic**

(2021). *Reshaping care: New myopia management guidance released*. aoa.org. **https://www.aoa.org/news/clinical-eye-care/diseases-and-conditions/new-myopia-management-guidance-released?sso=y**

(2021). *AOA report: Doctors of optometry leaders in fight against myopia's threat*. aoa.org. **aoa.org/news/clinical-eye-care/public-health/doctors-of-optometry-leaders-in-fight-against-myopias-threat?sso=y**

(2022). *Keeping children's vision in focus*. aoa.org. **aoa.org/news/clinical-eye-care/public-health/keeping-childrens-vision-in-focus?sso=y**

Appendix C

Panel Questions

Questions 1-3 refer to 2017 Recommendation 1: *School-based screening should focus on monocular visual acuity testing using an approved wall eye chart at standardized distances.*

1. Does this panel agree that school-based vision screening should focus on monocular visual acuity testing?
2. We currently require Sloan or HOTV (crowded version preferred) wall charts. Have there been any changes to the list of approved visual acuity wall charts in the past five years?
3. Are computerized/digital eye charts acceptable? Why or why not?

Question 4 refers to 2017 Recommendation 2: *The Department of State Health Services should continue to use the vision screening guidelines outlined by the American Association for Pediatric Ophthalmology and Strabismus (AAPOS), as the standard procedure for screening school-aged children.*

4. Should DSHS still continue to follow vision screening guidelines outlined by AAPOS?

Questions 5-7 refer to 2017 Recommendation 3: *Instrument-based screening devices such as photoscreeners should be used in accordance with evidence-based, approved practices based on age and purpose. Instrument-based screening devices may be used to screen for conditions such as refractive error risk factors, medical risk factors such as cloudiness of the lens or other media opacities, retinal or optic nerve pathology and pupil size differences, but are not recommended for screening for visual acuity. Whenever an instrument-based screener is used on children aged six and older, an approved wall eye chart must also be used. Children with disabilities, who cannot be screened with a wall chart, should be referred for professional examination, regardless of photoscreening result.*

5. Does this panel agree with the 2017 recommendation on photoscreeners?
6. We are often asked why photoscreeners cannot be the sole screening methodology used for vision screening in children ages six and up. Can the panel please address this?
7. Is it ok if a school only screens with an eye chart and does not use a photoscreener, even though that means there are conditions for which they may not be screening?

Question 8 refers to 2017 Recommendation 4: *Computerized visual acuity screeners do not currently have sufficient evidence of effectiveness to be supported by either AAPOS or this expert panel. An approved wall chart visual acuity exam remains the gold standard at this time.*

8. Do computerized, game-based visual acuity screeners now have sufficient evidence of effectiveness to be supported by either AAPOS or this panel? Are there

any new technology-based vision screening methods or software that have become professionally accepted and recommended in the last five years?

Question 9 refers to 2017 Recommendation 5: *The Department of State Health Services will consider use of approved FDA devices that have an FDA designation for targeted age ranges. As new technologies are developed, the Department will consider validated evidence-based research published in peer-reviewed and professionally accepted journals. The Department of State Health Services will routinely monitor professional recommendations and convene experts, as necessary, to assist with review of policies and manuals to make revisions as necessary.*

9. Does this panel agree with this recommendation?
10. AAPOS recommends visual acuity testing to 20/32. Our program rules recommend 20/30 acuity testing with a wide spaced Sloan letter chart. Historically, schools had 20/30 charts. Switching to 20/32 charts would have meant that all schools would have had to buy new eye charts. Is this still acceptable? Should 20/32 be phased in?
11. Where should one stand for a vision screening? Should their heel be on the line, their arch on the line, or their toes on the line?
12. Does anything in the training manual need to be added, updated, or removed?
13. Are there any messages that DSHS should promote regarding eye health?

Additional questions contributed by panelists that are outside the scope of this childhood vision screening expert panel meeting:

1. Should we screen for near visual acuity?
2. Should older kids also be screened due to endemic myopia?
3. Can or should we eliminate the second failed screening?
4. Can the accessibility of vision screening certification be improved?
5. Is it possible to shorten the vision screening certification course for registered nurses?
6. Is there any recourse for students who are not in compliance for failed vision referrals?
7. Can someone evaluate why failed screeners do not follow up with a recommended comprehensive eye exam?

Vision, Hearing, and Spinal Screening Program

dshs.texas.gov/vhs