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To: School Nurses, School Physicians, Primary Care Providers and Other Interested Parties

From: Massachusetts Department of Public Health

SUBJ: Massachusetts Vision Screening Protocols

DATE: September 30, 2016

MEMORANDUM

The Massachusetts Department of Public Health is pleased to provide the attached vision screening protocols, preschool through grade 12, for school districts throughout the Commonwealth. The Department, working in partnership with expert representatives from the ophthalmology and optometry professions, has established these standardized vision screening protocols to update the current school screening practice. The protocols described below represent evidence-based methodology and current best practice in the field of vision screening. They are intended to facilitate the identification of children with common vision problems as early as possible, when treatment is most effective, thus supporting educational achievement.

We acknowledge there may be issues, such as the timing of the screening within your district and/or training of personnel, both of which may play a significant role in the implementation of these new protocols. We remain confident in the knowledge that all school districts are committed to conducting this important population based screening program in the best manner possible.

Training in the New Protocols: The Department, through its Boston University School Health Institute for Education and Leadership Development (www.shield-bu.org) will continue to provide additional continuing education courses for primary care providers, their office staff, and school nurses on the preschool through grade 12 protocols.

PRESCHOOL VISION SCREENING PROTOCOLS

In 2004, the Massachusetts Legislature enacted Chapter 181 of the Acts of 2004 “*An Act Relative To Eye Examinations For Children*” which amended Massachusetts General Law, Chapter 71, and Section 57. An important requirement of the amendment is that “*Upon entering kindergarten or within 30 days of the start of the school year, the parent or guardian of each child shall present to school health personnel certification that the child within the previous 12 months has passed a vision screening conducted by personnel approved by the department of public health and trained in vision screening techniques to be developed by the department of public health in consultation with the department of education...For children who fail to pass the vision screening and for children diagnosed with neurodevelopmental delay, proof of a comprehensive eye examination performed by a licensed optometrist or ophthalmologist chosen by the child’s parent or guardian indicating any pertinent diagnosis, treatment, prognosis, recommendation and evidence of follow-up treatment, if necessary, shall be provided.*”

This applies to every child in the Commonwealth regardless of where the student is enrolled. Implementation is occurring across the Commonwealth in the offices of primary care providers and many school districts, effective this September.

KINDERGARTEN SCREENING PROTOCOLS

Those individuals familiar with the recent preschool age initiative will be happy to know that the protocols are the same when screening any child in kindergarten:

- **Screening of children entering kindergarten who do not present a vision screening certificate:** Schools should screen any kindergarten child who does not present to school health personnel certification that they, within the previous 12 months, have passed a vision screening. It is strongly advised that no child of preschool or kindergarten age go longer than 12 months without a vision screening.
- **Linear Distance Visual Acuity Critical Line Standard:** One major change to the kindergarten protocol is the Critical Line used for testing. **The Critical Line standard is now the 20/30 line for any child from 48 months and older through Grade 12** (Pretest Binocularly/Test Performed Monocularly).
- **Ocular Alignment and Stereopsis Assessment:** The revised protocol also includes an Ocular Alignment and Stereopsis assessment using the Random Dot E for children in kindergarten. This test is done binocularly with polarized glasses on.
- **Use of Machines:** The Department is not recommending the use of machines when screening preschool and kindergarten age children.

GRADES 1 THROUGH 12

Those individuals familiar with the current school vision screening protocol will notice changes that should improve the specificity/validity of the screening while reducing the time it takes to screen an individual child:

- **Linear Distance Visual Acuity Critical Line Standard:** The vision of each student in the public schools to be screened in the year of school entry, annually through grade 5 (or by age 11 in ungraded classrooms), once in grades 6 through 8 (or ages 12 through 14 in ungraded classrooms) and once in grades 9 through 12 (or ages 15 through 18 in ungraded classrooms). The Critical Line of 20/30 is now the standard threshold to be used for screening all children from age 48 months and older through Grade 12 (*Performed Monocularly*).
- **Linear Near Visual Acuity Critical Line Standard:** The vision of each student in the public schools to be screened in the year of school entry, annually through grade 5 (or by age 11 in ungraded classrooms), once in grades 6 through 8 (or ages 12 through 14 in ungraded classrooms) and once in grades 9 through 12 (or ages 15 through 18 in ungraded classrooms). The Critical Line of 20/30 is the standard threshold to be used for screening (*Performed Binocularly*).

Please note: Those using a machine for testing linear distance and linear near visual acuity in Grades 1 through 12 should not use the PLUS LenseTest.

- **Ocular Alignment and Stereopsis Assessment:** The revised protocol also includes an Ocular Alignment and Stereopsis assessment using the Random Dot E for children in **Grades 1 through 3**. This test is done binocularly using polarized glasses.

Ocular Alignment and Stereopsis assessment generally should not be part of the routine vision screening protocol for children in Grades 4 through 12.

However, the Department strongly advises that any child, whose residence was previously outside the Commonwealth prior to enrollment, should be screened using this protocol. It is also recommended that a child, who has transferred into your school district and cannot present past evidence of having completed this part of the screening, be screened in the same manner. The Department expects that over time, as this part of the protocol is implemented in Grades 1 through 3 throughout the Commonwealth, the number of children requiring this screening will be reduced.

Please note: Machine testing for Ocular Alignment and Stereopsis Assessment is not recommended.

NOTE: INSTRUMENT-BASED VISION SCREENING IS APPROVED ONLY FOR 3-5 YEAR OLDS

The Department of Public Health has consulted with its pediatric ophthalmology/optometry consultants and with the Department of Elementary and Secondary Education as required by statute. We will allow school health programs to accept documentation from a Primary Care Provider (PCP) who conducts a vision screening for any child ages 3-5 and who uses this

technology. Also, in the absence of a PCP's written record on entry into kindergarten indicating the screening has been done; school nurses may conduct this screening on children in this age group with this technology. Vision screening documentation is required by statute for children entering kindergarten (MGL Chapter 71 Section 57).

This position is consistent with the "*American Academy of Pediatrics (AAP), Instrument-Based Pediatric Vision Screening Policy Statement*" (November 2012) (<http://pediatrics.aappublications.org/content/130/5/983.full>). PCP's can document the screening on the "*Massachusetts School Health Record – Health Care Provider's Examination*" form (<http://www.mass.gov/eohhs/docs/dph/com-health/school/health-record-form.pdf>) or issue written proof of screening results in another form. According to the AAP, Instrument-Based Pediatric Vision Screening Policy Statement (2012), these screening devices are recommended as an alternative to visual acuity screening with vision charts for this 3 through 5 year old age group.

Regardless of the type of photoscreening or autorefraction system used, it is recommended that the screener know how to use and apply the technology properly understanding the limitations of the instrument and test in relation to the children's age. It is suggested that if your school acquires one of these devices that staff are knowledgeable and trained in the use of the technology and insure privacy with any transfer of electronic data into a student health record.

NOTE: INSTRUMENT-BASED VISION SCREENING IS NOT APPROVED FOR CHILDREN AGE 6 OR OLDER

Massachusetts Vision Screening Protocol

Preschool and Kindergarten:

Evaluate Linear Distance Visual Acuity and Stereopsis

Function to be Evaluated	Specific Test	Recommended Testing Procedure	Passing Criterion
<p>1) LINEAR DISTANCE VISUAL ACUITY</p>	<p>MassVAT (Massachusetts Visual Acuity Test) flip cards with HOTV letters or Lea symbols</p> <p>or</p> <p>Wall Chart HOTV or Lea symbols wall chart</p>	<p>Test distance: 10 feet</p> <p>Pretest: <i>(Performed Binocularly)</i> Test child's ability to perform the test by having child identify or match all 4 letters or symbols when presented up close.</p> <p>Test procedure:<i>(Performed Monocularly)</i> Test child's ability to identify or match optotypes on the critical line.</p> <p>CRITICAL LINE: 20/40 at 36 to 47 months 20/30 at 48 months and older</p>	<p>Child must identify or match 4 out of 5 letters or symbols on the critical line with each eye tested <i>monocularly</i>, being careful to watch for peeking.</p>
<p>2) OCULAR ALIGNMENT and STEREOPSIS</p>	<p>Random Dot E</p>	<p>Test distance: 4 feet</p> <p>All testing, including pretesting, should be done binocularly with the polarized glasses on.</p> <p>Pretest: Test child's ability to perform the test by having the child identify the location of the 3-dimensional E correctly on 4 out of 5 presentations.</p> <p>Test procedure: Test child's ability to identify the location of the stereo E. Five presentations should be used, varying the location in a random manner.</p>	<p>Child must locate stereo E on 4 out of 5 presentations. Done <i>binocularly</i> with the polarized glasses on.</p>

Massachusetts Vision Screening Protocol

Grades 1 through 3: Evaluate Linear Distance/Near Visual Acuity and Stereopsis

Grades 4 through 12: Evaluate Linear Distance/Near Visual Acuity

Function to be Evaluated	Specific Test	Recommended Testing Procedure	Passing Criterion
1) LINEAR DISTANCE VISUAL ACUITY	<p>GRADES 1-3: line letters, HOTV, or tumbling E's</p> <p>GRADES 4-12: line letters. Numbers, tumbling E's or HOTV may be used if child is unsure of letters</p>	<p>Grades 1-12: Wall chart placed at distance (10 or 20 feet) or testing machine with distance slide</p> <p>Test procedure: All acuity tests are performed monocularly. Test child's ability to identify optotypes on the critical line.</p> <p>CRITICAL LINE: 20/30 Monocular visual acuity</p>	<p>Child must identify 80% of the letters or symbols on the critical line with each eye tested monocularly, being careful to watch for peeking. Letters or symbols must not be presented one at a time.</p>
2) LINEAR NEAR VISUAL ACUITY	<p>GRADES 1-12: line letters, HOTV, tumbling E's, or numbers</p>	<p>Near card at 14 inches or testing machine with near slide. This test is done with both eyes open.</p> <p>CRITICAL LINE: 20/30 Binocular visual acuity</p>	<p>Child must correctly identify 80% of the letters/symbols on the critical line of the near card or the near slide in the testing machine.</p>
3) OCULAR ALIGNMENT and STEREOPSIS	<p>GRADES 1-3: Random Dot E</p>	<p>Test distance: 4 feet</p> <p>All testing, including pre-testing, should be done binocularly with the polarized glasses on.</p> <p>Pretest: Test child's ability to perform the test by having the child identify the location of the 3-dimensional E correctly on 4 out of 5 presentations</p> <p>Test procedure: Test child's ability to identify the location of the stereo E. Five presentations should be used, varying the location in a random manner.</p>	<p>Grades 1-3: Child must locate stereo E on 4 out of 5 presentations</p> <p>Grades 4-12: Binocular balance testing does not need to be done</p>