Head Start/Early Head Start Program Performance Standards and Your Vision Screening Program: Evidence-Based?

Janet Schultz, PNP-BC, ARNP
P. Kay Nottingham Chaplin, Ed.D.

1302.42 Child health status and care.

• (a) Source of health care. (1) A program, within 30 calendar days after the child first attends the program or, for the home-based program option, receives a home visit, must consult with parents to determine whether each child has ongoing sources of continuous, accessible health care – provided by a health care professional that maintains the child’s ongoing health record and is not primarily a source of emergency or urgent care – and health insurance coverage.
1302.42 Child health status and care

• (2) If the child does not have such a source of ongoing care and health insurance coverage or access to care through the Indian Health Service, the program must assist families in accessing a source of care and health insurance that will meet these criteria, as quickly as possible.

• (ii) Assist parents with making arrangements to bring the child up-to-date as quickly as possible; and, if necessary, directly facilitate provision of health services to bring the child up-to-date with parent consent as described in §1302.41(b)(1).

1302.42 Child health status and care

• (2) Within 45 calendar days after the child first attends the program or, for the home-based program option, receives a home visit, a program must either obtain or perform evidence-based vision and hearing screenings.

• (3) If a program operates for 90 days or less, it has 30 days from the date the child first attends the program to satisfy paragraphs (b)(1) and (2) of this section.
“Evidence-Based” Definition from the National Center for Children’s Vision and Eye Health (NCCVEH)

- Definition of “evidence-based” from the NCCVEH: Vision screening tools should be evidence-based, meaning . . .

- Information about the study and effectiveness of the tools were peer-reviewed and published in a scientific journal.

- The screening tools are able to identify targeted vision problems based on data from large-scale screenings performed by comparable screening personnel in typical screening settings, in which all children who pass and fail the screenings also received comprehensive eye examinations conducted by eye care professionals (ophthalmologists, optometrists, pediatric ophthalmologists, or pediatric optometrists).

- Outcomes from the eye examinations were used to validate the performance of the screening tools.

- Simply stating a tool was used to screen 10,000 children does not make the tool evidence-based.

- Stating the tool was used to screen 10,000 children, screening results were compared with eye examination results, and the tool found 90% of children with vision disorders is an example of an evidence-based tool.

EIGHT KEY VISION DEVELOPMENT MILESTONES TO MONITOR FROM BIRTH TO FIRST BIRTHDAY

- Begin with 1st milestone, regardless of child’s age.
- Check box if baby meets milestone – Check 2nd box if baby does not meet milestone and move to Next Steps. Begin with 1st Milestone regardless of age and stop when milestone exceeds baby’s age.

<table>
<thead>
<tr>
<th>AGE (Milestones may vary up to 8 weeks)</th>
<th>MILESTONE</th>
<th>IMPORTANCE OF MILESTONE</th>
<th>QUESTIONS TO ASK OR BEHAVIORS TO MONITOR</th>
<th>NEXT STEPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth to no later than 8 weeks</td>
<td>1st Milestone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Monitor stable eye contact when awake and alert and indicated by parent or caregiver.</td>
<td>Stable eye contact is defined as holding eye contact.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Babies have innate attraction to faces, especially smiling faces. Creates pleasant feelings in baby and parent.</td>
<td>Stable eye contact with parent or caregivers is important to developing bonding and communication.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Lack of stable eye contact can interfere with early emotional and general development.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

©2018 P. Kay Nottingham Chaplin, EdD  For personal viewing only to review and refresh knowledge. Not to be used as a stand-alone training or certification tool.
Check-off year 1 vision screening tool available at: http://nationalcenter.preventblindness.org/publications-and-presentations

- Time for reaching milestones can vary up to 6 weeks . . . except milestone related to straight eyes.

- Slides show when baby **should** reach milestones.

- Process:
  - Milestone and age when milestone should occur
  - Why milestone is important
  - What to do if milestone not met . . . or next steps
• Many vision milestones are related to overall developmental milestones . . . want you to think about those milestones from a perspective of vision . . . or how baby’s vision could impact milestone.

To calculate “corrected age”, subtract the number of weeks born before 40 weeks of gestation from the chronological age.

For example, chronological age = 6 months (24 weeks).

Child born at 28 weeks gestation.

40 weeks minus 28 weeks = 12 weeks.

Chronological age of 24 weeks minus 12 weeks equal 12 weeks (3 months).

Corrected age is 3 months.

You may find this age calculator helpful:
https://mymonthlycycles.com/premature_baby_age_calculator.jsp
What to Do? Next Steps
Talk close to baby’s face while helping baby to feel parent’s or caregiver’s face.

Questions to Ask or Behavior to Monitor
Does baby maintain stable eye contact when awake and alert and initiated by parent or caregiver?

Why important?
Lack of stable eye contact can interfere with early emotional and general development.

Milestone:
Maintains stable eye contact when awake and alert and initiated by parent or caregiver.

1st vision milestone – ages 6 weeks to no later than 8 weeks

2nd vision milestone – during 3rd and 4th months

Milestone:
Lively communication with social smile.

Why important?
Brain is maturing, baby can vary accommodation, baby sees clearly at several distances.

Questions to Ask or Behavior to Monitor
When parent/caregiver approaches baby, does baby respond with a smile?

What to Do? Next Steps
Refer to pediatric primary health care provider to coordinate an eye examination.

Refer to pediatric primary health care provider to coordinate an eye examination.
What to Do? Next Steps
Gently use baby’s elbows to bring hands to midline. Make it a game.

Questions to Ask or Behavior to Monitor
Does baby bring hands to midline and to mouth?

Why important?
Leads to exploring hands with mouth, which leads to exploring baby’s world.

Milestone:
Awareness of hands and exploration of hands with mouth.

3rd vision milestone – during 3rd or 4th months

What to Do? Next Steps
Refer to pediatric primary health care provider to coordinate an eye examination AND refer to Birth to 3 Early Intervention to help baby observe and begin to copy hand movements of other children and adults.

Questions to Ask or Behavior to Monitor
Is baby keenly watching hands movements of others? Is baby beginning to copy hand movements of others?

Why important?
Leads to goal-directed reaching and grasping. Begins process of learning from imitation and understanding actions and goals of others.

Milestone:
Keenly watching hands movements of others; beginning to copy hand movements.

4th vision milestone – by 5th month

Questions to Ask or Behavior to Monitor
Is baby keenly watching hands movements of others? Is baby beginning to copy hand movements of others?

Why important?
Leads to goal-directed reaching and grasping. Begins process of learning from imitation and understanding actions and goals of others.

Milestone:
Keenly watching hands movements of others; beginning to copy hand movements.
5th vision milestone – by age 5 months (no variance on this one)

Milestone:
Eyes are straight and do not appear to cross or drift.

Why important?
Eyes must be straight for good binocular vision to develop.

Questions to Ask or Behavior to Monitor
Do baby’s eyes ever appear to cross or drift?

What to Do? Next Steps
Immediately refer for eye exam to help determine cause of eye misalignment.

6th vision milestone – during ages 6 or 7 months

Milestone:
Goal-directed hand-arm movements.

Why important?
If baby is not reaching for objects, maybe baby cannot see the objects.

Questions to Ask or Behavior to Monitor
Does baby reach for, grasp object, and look at object when reaching?

What to Do? Next Steps
Refer to pediatric primary health care provider to coordinate eye examination AND Birth to 3 Early Intervention for assistance in helping baby develop goal-directed hand-arm movements.
7th vision milestone – during ages 7, 8, or 9 months

Milestone:
Recognition of family and/or caregiver faces.

Why important?
Baby could be incorrectly diagnosed as being on autism spectrum.

Questions to Ask or Behavior to Monitor
Does baby recognize family members outside the home among groups of people?

What to Do? Next Steps
Encourage family members/caregivers to wear same colorful blouse/shirt or headband when greeting baby each morning.

8th vision milestone – during ages 9 to 12 months
IF baby has been exposed to books

Milestone:
Points to individual pictures in a book and vocalizes while pointing.

Why important?
If baby shows no interest in books or does not point to pictures, perhaps baby cannot see the pictures.

Questions to Ask or Behavior to Monitor
When given a book with pictures, does baby point to individual pictures and vocalize?

What to Do? Next Steps
If baby does not respond to the book, try a different book. Perhaps baby is not interested in the first book.
What to Do? Next Steps

Parents and caregivers can encourage baby to eat food with fingers.

Questions to Ask or Behavior to Monitor

Does baby use thumb and first finger to pick up objects?

Why important?

Helps baby to better explore baby’s world in more detail and to improve fine motor skills of hands.

Milestone:

Uses thumb and first finger to pick up objects, such as crumbs on floor.

8th vision milestone – during ages 9 to 12 months

IF baby has NOT been exposed to books

Using the Milestones Tool – Case Profile #1

• Child’s age: 5 months
  • Developmental skills exhibited:
    • Maintaining stable eye contact initiated by an adult
    • Social smile
    • Exploring hands and putting them in their mouth
    • Watching hand movements of others
    • Eyes drift and cross when tired

• Pass or Refer?
  • ______
Using the Milestones Tool – Case Profile #2

• Child’s age: 9 months
  • Developmental skills exhibited:
    • Maintains stable eye contact initiated by an adult
    • Social smile
    • Exploring hands and putting them in their mouth
    • Watching hand movements of others
    • One eye turns in
    • Goal-directed arm movements
    • Recognizes parents, caregivers, and Grandpa

Pass or Refer?
• ______

Using the Milestones Tool – Case Profile #3

• Child’s age: 9 months
  • Developmental skills exhibited:
    • Maintains stable eye contact initiated by an adult
    • Social smile
    • Exploring hands and putting them in their mouth
    • Watching hand movements of others
    • Eyes are straight
    • Goal-directed arm movements
    • Recognizes parents, caregivers, and Grandpa

Pass or Refer?
• ______
Years 1 and 2 - Vision Screening Tools

Instrument-based screening

- Instruments do not measure visual acuity

- *Instruments analyze digital images of the eyes to provide information about amblyopia risk factors:*
  - Estimates of significant refractive error (hyperopia, myopia, astigmatism)
  - *Estimates of anisometropia*
  - Estimates of eye misalignment

---

**Instrument-Based Screening**

- Use beginning at 12 months; better success at 18 months (AAP)

Instruments “Approved” by NCCVEH

Welch Allyn® Spot™ Vision Screener

Plusoptix S12C Vision Screener

Welch Allyn® SureSight™ Vision Screener

Disclaimer: These tools are examples of vision screening instruments for this age group. These are not shown for the purpose of sales or promotion.

Evidence-Based Vision Screening Tools & Procedures for Children Ages 3, 4, and 5 Years

• Optotype-Based Screening

• Instrument-Based Screening
Threshold & Critical Line Screening

- **Threshold screening**
  - Move down chart until child cannot correctly identify majority of optotypes

- **Critical line screening**
  - Use only line child needs to pass according to child’s age

“Not so great” charts . . .
**NOT Recommended by NCCVEH and/or AAP**

- "Sailboat"
- Allen Pictures
- Lighthouse or "House, Apple, Umbrella"
- Snellen
- Tumbling E

---

**Why NOT Recommended?**

- The use of validated and standardized optotypes and acuity charts is important for an accurate assessment of vision.
- Charts not standardized.
- Children may not know their letters.
- Requires discrimination of direction, which is not sufficiently developed in preschool-aged children.
- Not well validated in screening environment.

---


Tips:
• Line outside optotypes
• 20/32 vs. 20/30
• 10 feet vs. 20 feet

Preferred Optotypes for Ages 3 to 7 Years
• NCCVEH
• AAP
• Recommend LEA SYMBOLS® and HOTV letters as optotypes


Preferred Optotype Format

NCCVEH national guidelines call for using single, LEA SYMBOLS® or HOTV letter optotypes surrounded with crowding bars for children ages 3, 4, and 5 years at 5 feet.

Options: Critical Line Screening at 10 feet

Sight Line Kit

©2018 P. Kay Nottingham Chaplin, EdD For personal viewing only to review and refresh knowledge. Not to be used as a stand-alone training or certification tool.
Also acceptable . . .

Screening Distance

- 5 or 10 feet from chart to child's eyes
- Arch of foot on line (NOT heels or toes to the line) or back of chair (with child's back to back of chair)
Occluders – Younger Children <10 Years

Unacceptable Occluders Ages 3, 4, and 5 years

- Hand
- Tissue
- Paper or plastic cup
- Cover paddle

Why unacceptable?

Children can easily peek

To Point or Not to Point . . . ?

- Pointing to each optotype to help children know where they are on the chart is permissible.
  - True or False?
  - ✓

- 1.8 “Line-by-line isolation or pointing may be used, but not letter by letter


No Pointing at Optotypes

- Holding pointer at optotype makes optotype easier to identify.

  - Instead . . . briefly point under or over top of optotype and quickly remove pointer.

- If line has a box around optotypes, stay outside the box with pointer.
“Untestable” is not a failed vision screening.

Keep track of “untestable” children.

**Untestable children in VIP study were 2x as likely to have vision problems than those who passed vision screening.**

If possible, rescreen untestable children same day.

If you have reason to believe that the child may perform better on another day, consider rescreening the child no later than 6 months.

---

**Referral Criteria**

### NCCVEH
- **Age 3 years:**
  - Majority of optotypes on **20/50 line**
- **Ages 4 and 5 years:**
  - Majority of optotypes on **20/40 line**
- **Ages 6 years and older:**
  - Majority of optotypes on **20/32 line**

### AAP
- **Age 3 years:**
  - Majority of optotypes on **20/50 line**
- **Ages 4 years:**
  - Majority of optotypes on **20/40 line**
- **Ages 5 years and older:**
  - Majority of optotypes on **20/32** (or **20/30**) line
  - Or 2-line difference even in passing lines (i.e., 20/20 and 20/32)

---


Choices for Near Vision Screening

Can do critical line only with both eyes open or one eye at a time.

2 Approaches to Vision Screening

1. **Optotype-based screening**
   - Tests of visual acuity using optotypes to measure visual acuity as interpreted by the brain
   - Quantifiable measurement of the sharpness or clearness of vision when identifying black optotypes on a white background using specific optotype sizes at a prescribed and standardized distance

2. **Instrument-based screening**
   - Instruments do not measure visual acuity
   - Instruments analyze digital images of the eyes to provide information about amblyopia risk factors:
     - Estimates of significant refractive error (hyperopia, myopia, astigmatism)
     - Estimates of anisometropia
     - Estimates of eye misalignment
Instrument-Based Screening

• Use beginning at 12 months; better success at 18 months (AAP)

• Use instruments OR tests of visual acuity for children ages 3, 4, and 5 years (NCCVEH and AAP)

• FYI - Instruments at any age for 6 years and older if child or young adult cannot do test of visual acuity (AAP)


Instrument-Based Screening

• If use instruments, no need to also do visual acuity screening unless you want to check both VA and refractive error.

• If cannot “capture” a pass or refer result... refer child for comprehensive eye exam.
Instruments “Approved” by NCCVEH

- Welch Allyn®
  - Spot™ Vision Screener
- Plusoptix
  - S12C Vision Screener
- Welch Allyn®
  - SureSight™ Vision Screener

Disclaimer: These tools are examples of vision screening instruments for this age group. These are not shown for the purpose of sales or promotion.

Resources . . .
Check-off year 1 vision screening tool available at:

http://nationalcenter.preventblindness.org/publications-and-presentations

http://nationalcenter.preventblindness.org

 Reports and Information from Prevent Blindness

- A complete list of public health reports available from Prevent Blindness
- Children’s Vision and Eye Health: A Snapshot of Current National Issues
- Eye health and safety information
- Our Vision for Children’s Vision, A National Call to Action for the Advancement of Children’s Vision and Eye Health
- Prevent Blindness Statement on School-Aged Vision Screening and Eye Health Programs
- Eight Key Vision Development Milestones to Monitor from Birth to First Birthday
- Vision Preservation and the National Prevention Strategy: A Call to Action
- Vision screenings and eye exams- complimentary public health approaches for vision

Provider education tools

Parent/family resources

Technical assistance

Professional Development

Communication tools

http://nationalcenter.preventblindness.org
Vision and Eye Health

Moving Into the Digital Age With Instrument-Based Vision Screening

P. K. Nottingham Chaplin, EdD
Kire Baldonado, BA
Amy Hutchinson, MD
Bruce Moore, OD

Significant advancements in new screening models are leading to improved design, functionality, and reliability of screening tools. Presently, two main screening approaches are available to school nurses: the digital age screening and instrument-based screening. Instrument-based screening formats include a variety of visual acuity testing approaches, such as letters, charts, and computer-based testing. Instrument-based screening tools and techniques are available for all ages and include optoelectronically-based screening systems. Child-friendly and age-appropriate tools can be used to enhance the world’s vision screening if clinicians are aware of these tools. The use of instrument-based screening, NASN School Nurse, 30(3), 154-60.

Year of Children’s Vision

- [http://nationalcenter.preventblindness.org/year-childrens-vision](http://nationalcenter.preventblindness.org/year-childrens-vision)
- Archived vision screening webinars in Resources
Resources to Support Families . . .

Financial Assistance Programs
VS Referral Documents
Parent Education

http://nationalcenter.preventblindness.org/resources-2

Tips for Wearing Eye Glasses -
https://www.preventblindness.org/your-childs-glasses

Eyes That Thrive:
http://www.preventblindness.org/eyes-thrive

©2018 P. Kay Nottingham Chaplin, EdD  For personal viewing only to review and refresh knowledge. Not to be used as a stand-alone training or certification tool.
Helpful info and statistics for grant proposal writing . . .


NASN Vision and Eye Health Resource

(National Center for Children’s Vision and Eye Health and NASN partnership)

https://www.nasn.org/nasn-resources/practice-topics/vision-health
Conclusion of Today’s Presentation . . .

Thank You!!!

Janet Schultz  JSchultz@DANYA.COM  
Dr. P. Kay Nottingham Chaplin  kay@good-lite.com  304-906-2204