Effective November 1, 2023, refer to CMS Manual 100-02, Chapter 16-General Exclusions from Coverage for services included in this policy.

BlueCross BlueShield of Alabama

Name of Blue Advantage Policy:

Ocular Photoscreening in the Primary Care Physician's Office as a Screening Tool to Detect Amblyogenic Factors

Policy #: 175
Latest Review Date: April 2023
Category: Vision
ARCHIVED EFFECTIVE 11/1/2023

BACKGROUND:

Blue Advantage *medical policy does not conflict with Local Coverage Determinations (LCDs), Local Medical Review Policies (LMRPs) or National Coverage Determinations (NCDs) or with coverage provisions in Medicare manuals, instructions or operational policy letters. In order to be covered by Blue Advantage the service shall be reasonable and necessary under Title XVIII of the Social Security Act, Section 1862(a)(1)(A). The service is considered reasonable and necessary if it is determined that the service is:*

1. *Safe and effective;*
2. *Not experimental or investigational*;*
3. *Appropriate, including duration and frequency that is considered appropriate for the service, in terms of whether it is:*
   - *Furnished in accordance with accepted standards of medical practice for the diagnosis or treatment of the patient's condition or to improve the function of a malformed body member;*
   - *Furnished in a setting appropriate to the patient's medical needs and condition;*
   - *Ordered and furnished by qualified personnel;*
   - *One that meets, but does not exceed, the patient's medical need; and*
   - *At least as beneficial as an existing and available medically appropriate alternative.*

Routine costs of qualifying clinical trial services with dates of service on or after September 19, 2000 which meet the requirements of the Clinical Trials NCD are considered reasonable and necessary by Medicare. Providers should bill* ***Original Medicare* *for covered services that are related to* ***clinical trials*** *that meet Medicare requirements (Refer to Medicare National Coverage Determinations Manual, Chapter 1, Section 310 and Medicare Claims Processing Manual Chapter 32, Sections 69.0-69.11).*

POLICY:

Blue Advantage will treat **ocular photoscreening when performed in the primary care physician's office as a screening tool to detect amblyogenic factors** as a **non-covered** benefit and as **investigational**.

Blue Advantage does not approve or deny procedures, services, testing, or equipment for our members. Our decisions concern coverage only. The decision of whether or not to have a certain test, treatment or procedure is one made between the physician and his/her patient. Blue Advantage administers benefits based on the members' contract and medical policies. Physicians should always exercise their best medical judgment in providing the care they feel is most appropriate for their patients. Needed care should not be delayed or refused because of a coverage determination.

DESCRIPTION OF PROCEDURE OF SERVICE:

Many children permanently lose vision each year as a result of amblyopia, media opacities, and treatable ocular disease processes. Early diagnosis and treatment of these conditions has been shown to yield better visual outcomes. Amblyopia is the most common cause of visual impairment among children. Unless it is successfully treated in early childhood, amblyopia usually persists into adulthood. It is also the most common cause of monocular (one eye) visual impairment among young and middle-aged adults.

Ocular photoscreening has been investigated as an alternative screening method to detect risk factors for amblyopia, which include strabismus, high refractive errors, anisometropia, and media opacities. Ocular photoscreening is based on the principle of photo refraction in which the refractive state of the eye is assessed via the pattern of light reflected through the pupil. The images can then be analyzed based on the position of the corneal light reflex as well as the overall reflection of light from the fundus, which provides information on the child's fixation pattern and the presence or absence of strabismus. Patients are photographed in a darkened room while looking at the camera. The photographs can be sent to a central laboratory for analysis, either by ophthalmologists or specifically trained personnel. Results are typically graded as pass, fail or repeat photoscreening.

An advantage of ocular photoscreening over standard methods of testing visual acuity (i.e. use of Snellen charts, letters, etc.) is that photoscreening requires little cooperation from the child, other than having to fixate on the appropriate target long enough for photoscreening. Thus, photoscreening has the potential to improve vision screening rates in preverbal children and those with developmental delays who are the most difficult to screen. Many of the children that are most difficult to screen using conventional methods are also at highest risk of amblyopia (e.g., premature infants, children with developmental delays).

Ocular photoscreening can be performed in several settings. For example, photoscreening can be performed in public health setting or as part of school screening programs. In addition, photoscreening may be performed by ophthalmologists as an adjunct to an ophthalmologic exam.

*Note: This policy addresses the use of photoscreening in the primary care physician office setting, where it is performed as an adjunct or alternative to the standard visual exam. It is anticipated that the results of photoscreening would be used by the primary care physician to determine whether the patient required referral to a pediatric ophthalmologist for further evaluation.

KEY POINTS:

This policy has been updated with review of literature performed through April 24, 2023.

Summary of Evidence

No studies have been identified that evaluate whether the results of ocular photoscreening performed in the primary care physician office setting leads to higher referral rates to ophthalmologists, earlier diagnosis and treatment, or a decrease in vision-impairing amblyopia, when compared to a standard visual assessment. Randomized controlled trials and/or other well-designed scientific evidence proving this technology, when used in the primary care physician office setting, results in improved outcomes is needed. The evidence is insufficient to determine that the use of ocular photoscreening in the primary care physician's office improves overall net health outcomes.

Practice Guidelines and Position Statements

American Academy of Ophthalmology (AAO)

The American Academy of Ophthalmology (AAO) Preferred Practice Patterns for Pediatric Eye Evaluations (2017) state that vision screening should be performed at an early age and at regular intervals throughout childhood. The elements of vision screening vary depending on the age and level of cooperation of the child. Subjective visual acuity testing is preferred to instrument-based screening in children who are able to participate reliably. Instrument-based screening is useful for some young children and those with developmental delays. Instrument-based screening techniques, such as photoscreening and auto refraction, are useful for assessing amblyopia and reduced-vision risk factors for children ages one to five years, as this is a critical time for visual development. Instrument-based screening can occur for children at age six years and older when children cannot participate in optotype-based screening.

American Academy of Pediatrics (AAP)

The AAP presented the following policy statement in 2012:

Photoscreening and handheld auto refraction may be electively performed in children six months to three years of age, allowing earlier detection of conditions that may lead to amblyopia, as well as in older children who are unable or unwilling to cooperate with routine acuity screening. Photoscreening and handheld auto refraction are recommended as an alternative to visual acuity screening with vision charts from three through five years of age. The use of vision charts and standard physical examination techniques to assess amblyopia in children three to five years of age in the medical home remains a viable practice at the present time. There is no recommendation for mass screening at this time.

U.S. Preventive Services Task Force Recommendations
The U.S. Preventive Services Task Force (USPSTF) recommends vision screening for all children at least once between the ages of three and five years, to detect the presence of amblyopia or its risk factors.

Various screening tests that are feasible in primary care are used to identify visual impairment among children. These tests include visual acuity tests, stereoacuity tests, the cover-uncover test, and the Hirschberg light reflex test (for ocular alignment/strabismus), as well as the use of auto refractors (automated optical instruments that detect refractive errors) and photoscreeners (instruments that detect amblyogenic risk factors and refractive errors).

KEY WORDS:
Ocular photoscreening, MTI PhotoScreener, photoscreening, ocular, iScreen, iScreen Vision Screener

APPROVED BY GOVERNING BODIES:
Examples of U.S. Food and Drug Administration (FDA) approved photoscreeners available:

- Those in which the screener interprets the photograph (such as MTI Photoscreener™, Medical Technology and Innovations, Inc., Lancaster, PA; Visiscreen 100™, Vision Research Corporation, Birmingham, AL)
- Those in which a computer interprets the photograph (such as The EyeDx System™, EyeDx, Inc., San Diego, CA).

BENEFIT APPLICATION:
Coverage is subject to member's specific benefits. Group specific policy will supersede this policy when applicable.

CURRENT CODING:
CPT Codes:

99174	Instrument-based ocular screening (e.g., photoscreening, automated-refraction), bilateral; with remote analysis and report
99177	Instrument-based ocular screening (e.g., photoscreening, automated-refraction), bilateral; with on-site analysis

REFERENCES:
1. Arnold RW, et al. performance of four new photoscreeners on pediatric patients with high risk amblyopia. J Pediatr Ophthalmol Strabismus 2014 Jan-Feb; 51(1):46-52.

2. Committee on Practice and Ambulatory Medicine Section on Ophthalmology; American Association of Certified Orthoptists; American Association for Pediatric Ophthalmology and Strabismus; American Academy of Ophthalmology. Eye examination in infants, children, and young adults by pediatricians: organizational principles to guide and define the child health care system and/or improve the health of all children. Ophthalmology. 2003 Apr; 110(4):860-5.
3. Donahue S, Baker C. Committee on Practice and Ambulatory Medicine, Section on Ophthalmology, American Association of Certified Orthoptists, American Association for Pediatric Ophthalmology and Strabismus, American Academy of Ophthalmology. Visual System Assessment in Infants, Children, and Young Adults by Pediatricians. Pediatrics 2016; 137; 1.
4. Garry GA, et al. Validation of Spot screening device for amblyopia risk factors. JAAPOS 2014 Oct; 18(5):476-80.
5. Halegoua J, et al. Vision photoscreening of infants and young children in a primary care pediatric office: can it identify asymptomatic treatable amblyopic risk factors? Clin Pediatr 2015 Jan; 54(1):33-9.
6. Kemper AR, Clark SJ. Preschool vision screening in pediatric practices. Clin Pediatr (Phila). 2006 Apr; 45(3):263-6.
7. Kulp MT, Vision in Preschoolers Study Group. Findings from the Vision in Preschoolers (VIP) Study. Optom Vis Sci 2009; 86: 619-623.
8. Laiginhas, R., Ferreira, C. C., Leitão, R., Geraldes, R., Chibante-Pedro, J., Monteiro, M., & de Matos, C. (2020). Prevalence of Amblyopia After Photoscreening. Journal of pediatric ophthalmology and strabismus, 57(6), 372–377. doi.org/10.3928/01913913-20200824-01Loh AR, Chiang MF. Pediatric Vision Screening. Pediatr Rev. 2018 May; 39(5):225-234.
9. Longmuir SQ, Pfeifer W, Leon A et al. Nine-year results of a volunteer lay network photoscreening program of 147,809 children using a photoscreener in Iowa. Ophthalmology 2010; 117(10):1869-75.
10. Lowry EA, Wang W, Nyong'o O. Objective vision screening in 3-year-old children at a multispecialty practice. J AAPOS. 2015 Feb; 19(1):16-20.
11. McConaghy, J. R., & McGuirk, R. (2019). Amblyopia: Detection and Treatment. American family physician, 100(12), 745–750.
12. Miller JM, Lessin HR; American Academy of Pediatrics Section on Ophthalmology; Committee on Practice and Ambulatory Medicine; American Academy of Ophthalmology; American Association for Pediatric Ophthalmology and Strabismus; American Association of Certified Orthoptists. Instrument-based pediatric vision screening policy statement. Pediatrics. 2012 Nov; 130(5):983-6.
13. Peterseim MM, et al. Photoscreeners in the pediatric eye office: compared testability and refractions on high-risk children. Am J Ophthalmol 2014 Nov; 158(5):932-8.
14. Ransbarger KM, et al. Results of a community vision-screening program using the Spot photoscreener. J AAPOS 2013 Oct; 17(5):516-20.

15. U.S. Preventive Services Task Force (USPSTF). Final Recommendation Statement: Visual Impairment in Children Ages 6 months to 5 years: Screening. U.S. Preventive Services Task Force. September 2018.
16. Wallace DK, Morse CL, Melia M, Sprunger DT, Repka MX, Lee KA, Christiansen SP; American Academy of Ophthalmology Preferred Practice Pattern Pediatric Ophthalmology/Strabismus Panel. Pediatric Eye Evaluations Preferred Practice Pattern®: I. Vision Screening in the Primary Care and Community Setting; II. Comprehensive Ophthalmic Examination. Ophthalmology. 2018 Jan; 125(1):P184-P227.

POLICY HISTORY:

Medical Policy Group, June 2004
Available for comment September 7-October 21, 2004
Medical Policy Group, June 2006
Medical Policy Group, June 2008
Medical Policy Group, June 2010
Medical Policy Group, December 2010
Medical Policy Group, December 2012
Medical Policy Group, October 2013
Medical Policy Group, December 2015
Medical Policy Group, September 2016
Medical Policy Group, August 2019
Medical Policy Group, March 2021: Reviewed by consensus. References added. No new published peer-reviewed literature available that would alter the coverage statement in this policy.
Medical Policy Group, April 2022: Reviewed by consensus. No new published peer-reviewed literature available that would alter the coverage statement in this policy.
Medical Policy Group, April 2023: Reviewed by consensus. No new published peer-reviewed literature available that would alter the coverage statement in this policy.
Medical Policy Group, November 2023: Archived effective 11/1/2023.
