

## **APPENDIX**

### **Description of the Process Used to Develop the Recommendations of the National Expert Panel to the National Center for Children's Vision and Eye Health**

#### **Rational and Process for the National Expert Panel Development of Recommendations for Vision Health Systems for Children aged 36 to <72 Months**

Amblyopia and its primary risk factors, strabismus and significant refractive error,<sup>1,2</sup> are the most common visual disorders in preschool children.<sup>3</sup> Evidence suggests that the success of amblyopia treatment is influenced by a child's age, with children younger than 7 years of age being more responsive to amblyopia treatment.<sup>4</sup> A recent report concluded that there is adequate evidence that early treatment of amblyopia results in improved visual outcomes.<sup>3</sup> In addition, optical correction of significant refractive error may be related to child development<sup>5</sup> and improve school readiness.<sup>6,7</sup> Healthy People 2020 specifically includes the goal of increasing vision screening rates in children aged 5 years and under, with a modest 44% target.<sup>8</sup> In addition, the USPSTF has endorsed preschool vision screening for children 3 years to 5 years of age,<sup>3</sup> and the American Academy of Pediatrics' Bright Futures Guidelines<sup>9</sup> recommend vision screening for all children to detect amblyopia or risk factors for the development of amblyopia. Early diagnosis of amblyopia is particularly important as there is strong evidence for best outcomes with treatment begun by age 4 years, and good results with treatment begun by age six years.<sup>10</sup>

Presently there exists little consistency among stakeholders in children's vision health in regards to frequency, referral criteria, or follow-up in regards to vision screening referral outcomes. Further contributing to the public health challenges of children's eye health is the fact that there are no standards for the public health surveillance of children's eye health in the U.S. The development of a more uniform approach to children's vision health systems is critically needed.

The Maternal and Child Health Bureau, recognizing the importance of early vision health as a component of a child's overall development, funded the establishment of the National Center for Children's Vision and Eye Health (NCCVEH) at Prevent Blindness in 2009 through a 3-year cooperative agreement (United States Department of Health and Human Services Cooperative Agreement #H7MMC15141) and subsequent grant (United States Department of Health and Human Services grant #H7MMC24738). A National Expert Panel (NEP) comprised of leading professionals in ophthalmology, optometry, pediatrics, public health, and related fields (full list of NEP members available at: <http://nationalcenter.preventblindness.org/leadership-national-center-childrens-vision-and-eye-health>) was formed to advise the NCCVEH on how best to improve the public health infrastructure supporting the early detection of children's vision problems. The NEP undertook a consensus process incorporating review of the published literature (through February 2014) including research, reviews and policy statements; and consulted with programs that are developing vision health program infrastructure. The NEP supplemented their evaluation of the literature with the group's clinical experience where necessary. The NEP specifically addressed vision screening methodology and the system of care needed to ensure appropriate, subsequent referral for an eye examination by an optometrist or ophthalmologist.

The NEP has written three reports targeting children aged 36 to <72 months with recommendations for 1) conducting quantitative vision screening, 2) an integrated data system to track vision screening and subsequent eye examination, and 3) specifying recommendations for developing state and national level performance measures to track progress toward the goal of providing high quality vision screening and follow-up eye care to all children aged 36 to <72 months of age. The views expressed in the publications represent the consensus of the NEP and do not necessarily reflect the official policies of the U.S. Department of Health and Human Services, or the Health Resources and Services Administration, nor does mention of the

department or agency names imply endorsement by the U.S. Government. The recommendations developed by the National Expert Panel do not necessarily reflect the views of any individual member of the panel, the institutions where he or she is employed, or of any of the professional organizations to which the panel members belong.

## REFERENCES

1. Tarczy-Hornoch K, Cotter SA, Borchert M, McKean-Cowdin R, Lin J, Wen G, Kim J, Varma R, Multi-Ethnic Pediatric Eye Disease Study G. Prevalence and causes of visual impairment in Asian and non-Hispanic white preschool children: Multi-ethnic Pediatric Eye Disease Study. *Ophthalmology* 2013;120:1220-6.
2. Tarczy-Hornoch K, Varma R, Cotter SA, McKean-Cowdin R, Lin JH, Borchert MS, Torres M, Wen G, Azen SP, Tielsch JM, Friedman DS, Repka MX, et al. Risk factors for decreased visual acuity in preschool children: the multi-ethnic pediatric eye disease and Baltimore pediatric eye disease studies. *Ophthalmology* 2011;118:2262-73.
3. US Preventive Services Task Force. Vision screening for children 1 to 5 years of age: US Preventive Services Task Force Recommendation statement. *Pediatrics* 2011;127:340-6.
4. Holmes JM, Lazar EL, Melia BM, Astle WF, Dagi LR, Donahue SP, Frazier MG, Hertle RW, Repka MX, Quinn GE, Weise KK. Effect of age on response to amblyopia treatment in children. *Arch Ophthalmol* 2011;129:1451-7.
5. Ibironke JO, Friedman DS, Repka MX, Katz J, Giordano L, Hawse P, Tielsch JM. Child development and refractive errors in preschool children. *Optom Vis Sci* 2011;88:181-7.
6. Roch-Levecq AC, Brody BL, Thomas RG, Brown SI. Ametropia, preschoolers' cognitive abilities, and effects of spectacle correction. *Arch Ophthalmol* 2008;126:252-8; quiz 161.
7. Atkinson J, Anker S, Nardini M, Braddick O, Hughes C, Rae S, Wattam-Bell J, Atkinson S. Infant vision screening predicts failures on motor and cognitive tests up to school age. *Strabismus* 2002;10:187-98.

- 8 US Department of Health and Human Services. Healthy People 2020. Objective Retained As Is from Healthy People 2010, V HP2020–1.  
<http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=42> .  
Accessed February 9, 2014.
9. American Academy of Pediatrics. Bright Futures Guidelines for Health Supervision of Infants, Children, and Adolescents: Rationale and Evidence. Available at:  
[http://brightfutures.aap.org/pdfs/Guidelines\\_PDF/13-Rationale\\_and\\_Evidence.pdf](http://brightfutures.aap.org/pdfs/Guidelines_PDF/13-Rationale_and_Evidence.pdf).  
Accessed May 1, 2013.
10. Holmes JM, Lazar EL, Melia BM, Astle WF, Dagi LR, Donahue SP, Frazier MG, Hertle RW, Repka MX, Quinn GE, Weise KK. Effect of age on response to amblyopia treatment in children. Arch Ophthalmol 2011;129:1451-7.