



# National Center for Children's Vision and Eye Health

Prevent Blindness

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## Introduction

Children with undiagnosed vision disorders may experience delays in physical, cognitive, and social development.

- ❑ 1 in 4 school-age children and up to 1 in 17 preschool-aged children have a vision problem requiring treatment.
- ❑ Amblyopia can lead to a permanent vision loss if not treated before age 7.
- ❑ 75% of blindness and vision impairment is either preventable or treatable.
- ❑ Children with certain health conditions are at higher risk for vision disorders:
  - Neurodevelopmental disorders
  - Diabetes mellitus, juvenile idiopathic arthritis, and neurofibromatosis
  - Intrauterine alcohol or drug exposure (including methadone)



## Disparities and Gaps

- African American and Hispanic children experience a greater prevalence of refractive errors and strabismus
- The risk for not identifying vision problems is increased for children from low-income families and minority populations.

There are no MCH National Performance Measures or Outcomes regarding children's vision and we lack uniformity in frequency, referral criteria, or follow-up in current vision screening systems.

An evidence-based vision screening system:

- Identifies children at risk for vision disorders
- Educates parents and caregivers
- Provides appropriate referrals for eye care
- Ensures completion of a comprehensive eye examination and treatment for vision disorders.

MCH programs need to integrate children's vision screening and referrals into current priorities.

## Methods

This poster reports on the following:

- ❑ Results of the 2018 National Survey of Children's Health survey, an annual cross-sectional survey conducted by the U.S. Census and funded by HRSA/MCHB; completed by parents about 1 child. It is representative of US households with children up to 18 years of age.
- ❑ Results presented for this question: **"During the past 12 months, has this child had his or her vision tested, such as with pictures, shapes, or letters?"**
- ❑ An analysis of state legislation and **regulations** regarding vision screening for preschool-aged and school-aged children was conducted by the NCCVEH.

Table 1. Vision Testing in the United State 2018

## Results: Vision and Eye Care

Age Group (years)	Total (%)	% Tested by Racial/ethnic group				
		Hispanic	White	African American	Asian	Other/Multi-racial/non-Hispanic
0-5	42	40	43	46	32	41
6-11	77	73	80	75	75	77
12-17	75	74	74	75	71	77

- ❑ 388,807 children had to forgo needed vision care in the last 12 months, including 43% of Hispanic children
- ❑ Children who had a preventive medical check-up in the last year had significantly higher rates of vision screening (64%) compared to those who did not (54%)
- ❑ Children with special health care needs are more likely to receive vision testing than typically developing children.

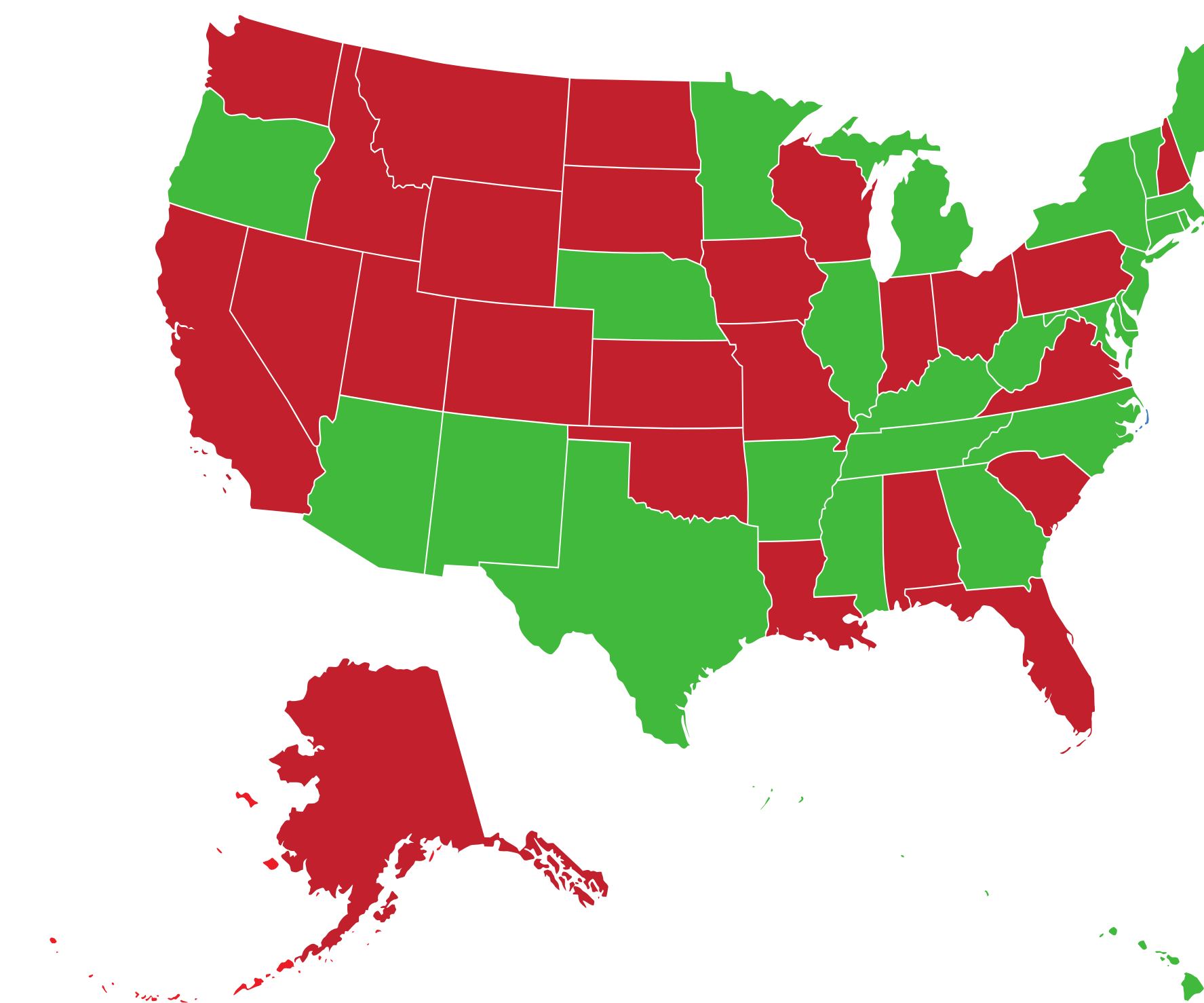
Table 2: Disparities in Vision Screening 2018

Covariate	% 0-17 Vision Tested	% Not Vision Tested	Covariate	% 0-17 Vision Tested	% Not Vision Tested
<b>Insurance Status</b>			<b>Primary Language Spoken at Home</b>		
Insured at time of survey	66	34	Not English	60	40
Not insured at time of survey	53	47	English	67	33
<b>Household Income</b>			<b>Medical Home</b>		
0-99% FPL (poor)	65	35	Care met medical home criteria	68	32
400% FPL or higher	68	32	Care did not meet medical home criteria	62	38
<b>Highest Education of Adult</b>			<b>Children with Special Needs</b>		
Less than high school	60	40	Special needs	76	24
High school degree or GED	62	38	Non-special needs	62	38
College degree or higher	68	32			

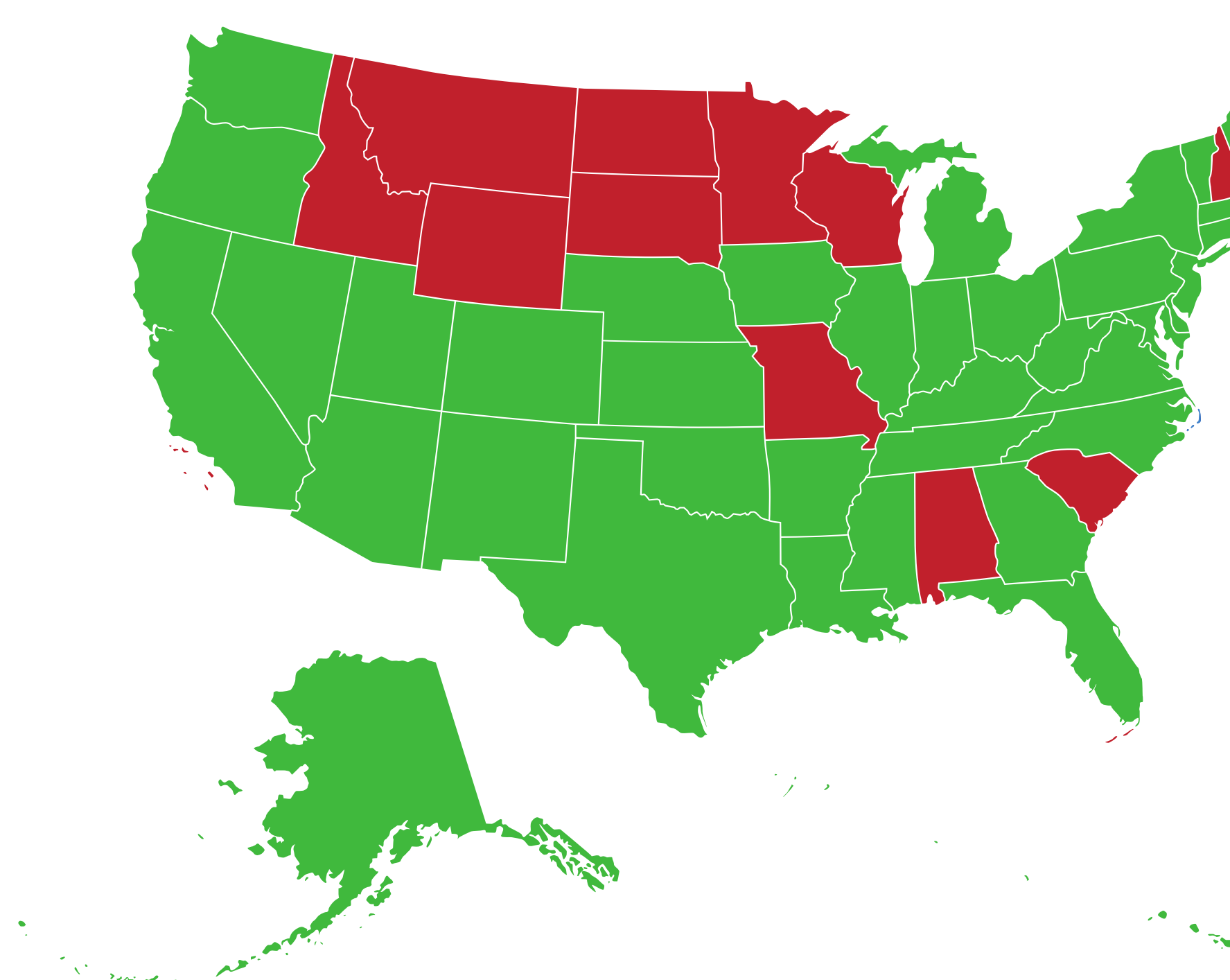
## Results: Legislation

States in green = legislation, rule, code or requirement for vision screening or an eye exam.

### 50% of states require vision screening for preschool-age children



### 78% of states require vision screening for school-age children



## Conclusion

Many groups of children are not receiving early detection and treatment for possible vision disorders. The effect is more significant based on income, health insurance status, and parent level of education. Additional research is needed on evidence-based guidelines for vision screening/early detection of significant vision problems among school-age children and to determine efficacy of referral completion interventions to support families in receiving affordable, quality vision care.

Within the public health system, state and local MCH programs need to collaborate with other sectors to ensure that children and families have access to information, vision screening, referrals to eye care, and an improvement in the systems for data collection and the development and tracking of performance measures related to children's vision and eye health.

## References

- Varma, R., Tarczy-Hornoch, K., & Jiang, X. (2017). Visual Impairment in Preschool Children in the United States: Demographic and Geographic Variations from 2015 to 2060. *JAMA Ophthalmology*, 135(6), 610. doi:10.1001/jamaophthalmol.2017.1021.
- Cotter SA, Cyert LA, Miller JM, Quinn GE. Vision Screening for Children 36 to <72 Months: Recommended Practices. *Optometry and Vision Science*, 2015; 92(1):6-16.

## For more information

- [NCCVEH, www.nationalcenter.preventblindness.org](http://NCCVEH.www.nationalcenter.preventblindness.org). Contact Donna Fishman, Director, National Center for Children's Vision at Eye Health, Prevent Blindness, [dfishman@preventblindness.org](mailto:dfishman@preventblindness.org), 312-363-6036.
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