

Social Determinants of Vision and Health as it Relates to Learning



MODERATED SESSION



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Focus on Eye Health Summit:
Our Changing Vision



Social Determinants of Vision and Health as it Relates to Learning

Iheoma U. Iruka, Ph.D.

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THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Social Determinants of Vision and Health as it Relates to Learning

Centering Health Equity in the Early Years

Iheoma U. Iruka, PhD

Research Professor, Department of Public Policy

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Founding Director, Equity Research Action Coalition at FPG

Presenter at the 2021 Focus on Eye Health National Summit

July 15, 2021



Equity Research Action Coalition

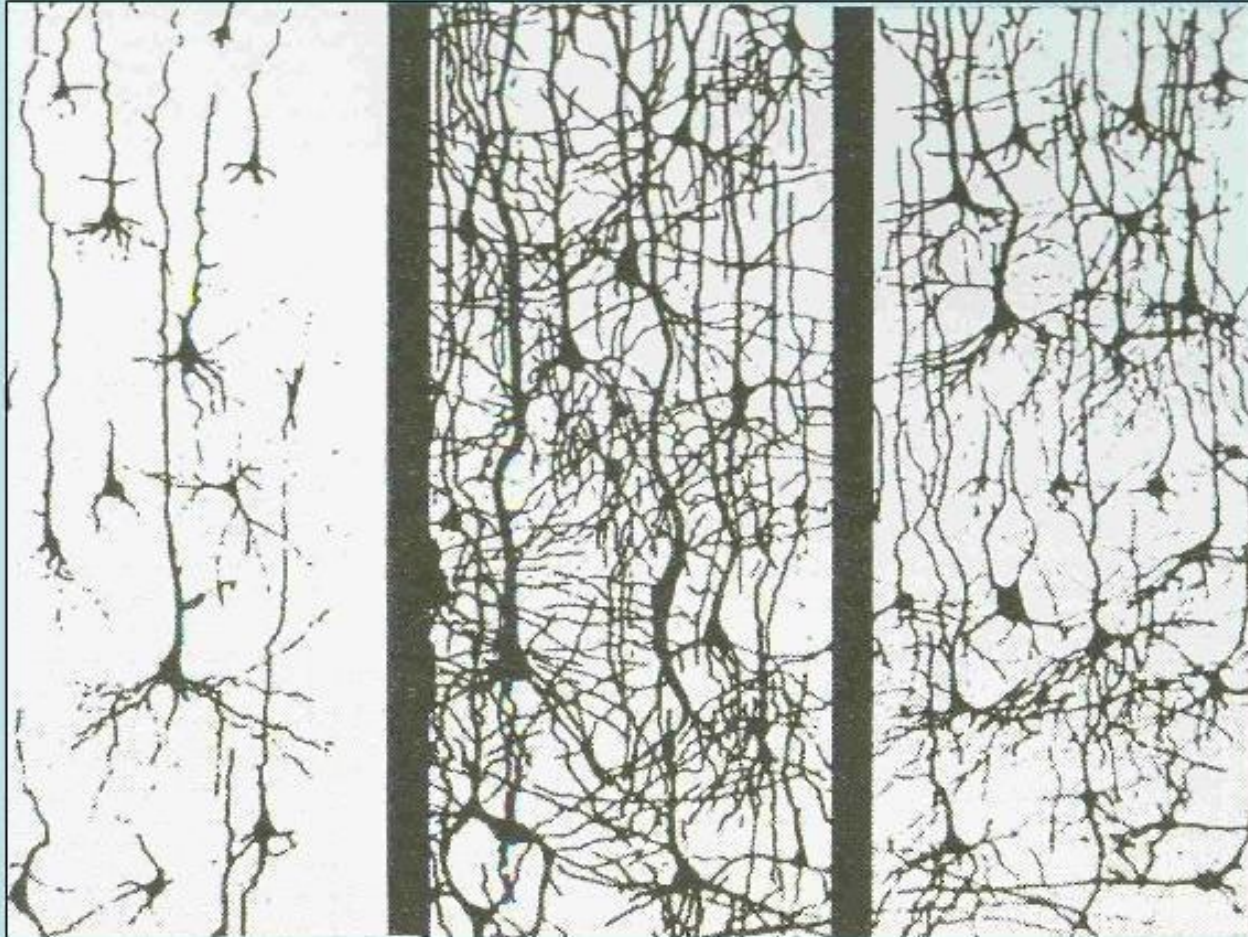
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Synaptic Density

At birth

6 years old

14 years old



Synaptic density from birth to 14 years old.

Source: Rethinking the Brain, Families and Work Institute, Rima Shore, 1997; Founders Network slide

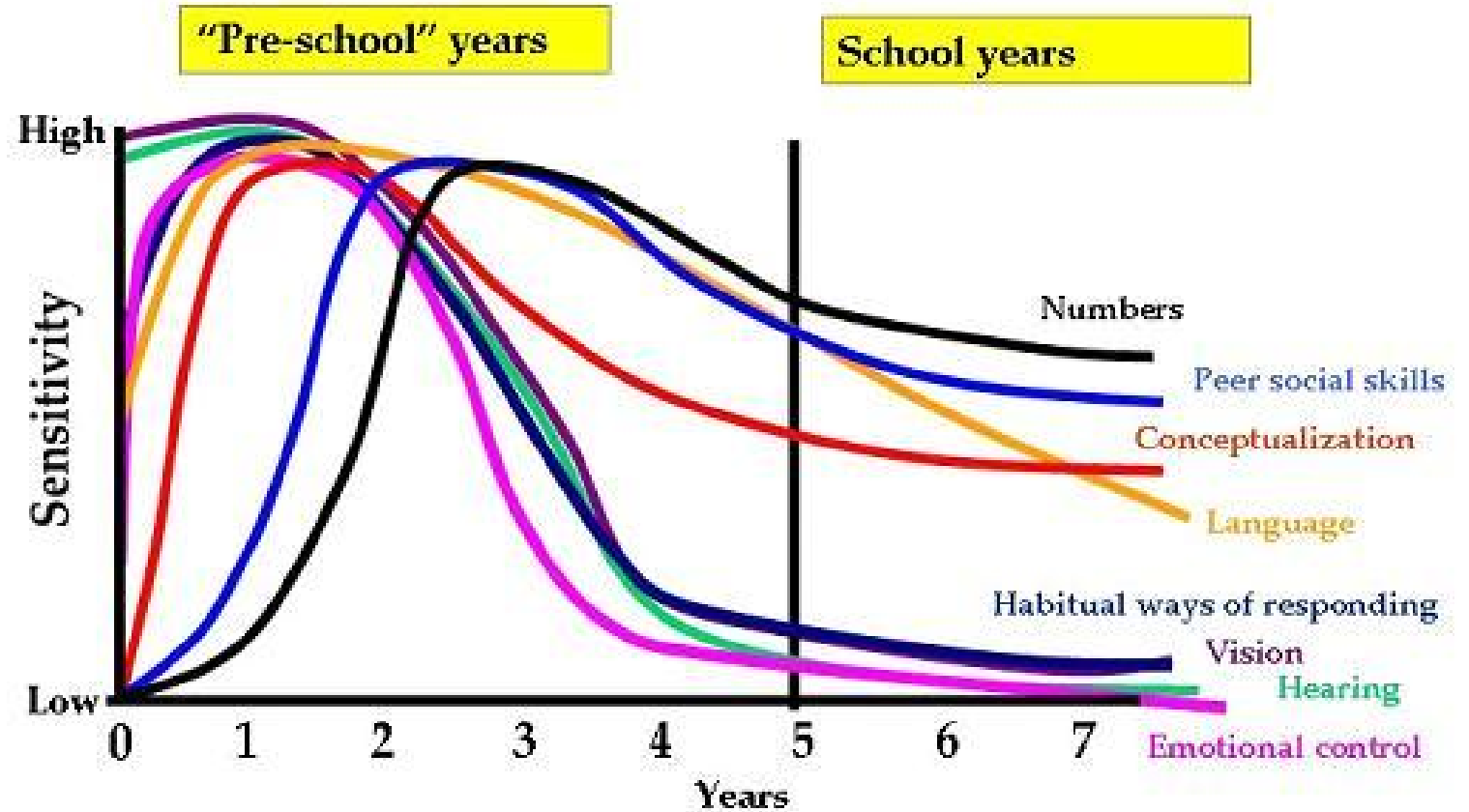


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'Sensitive Periods' in Early Brain Development

First 1,000 days are critical.

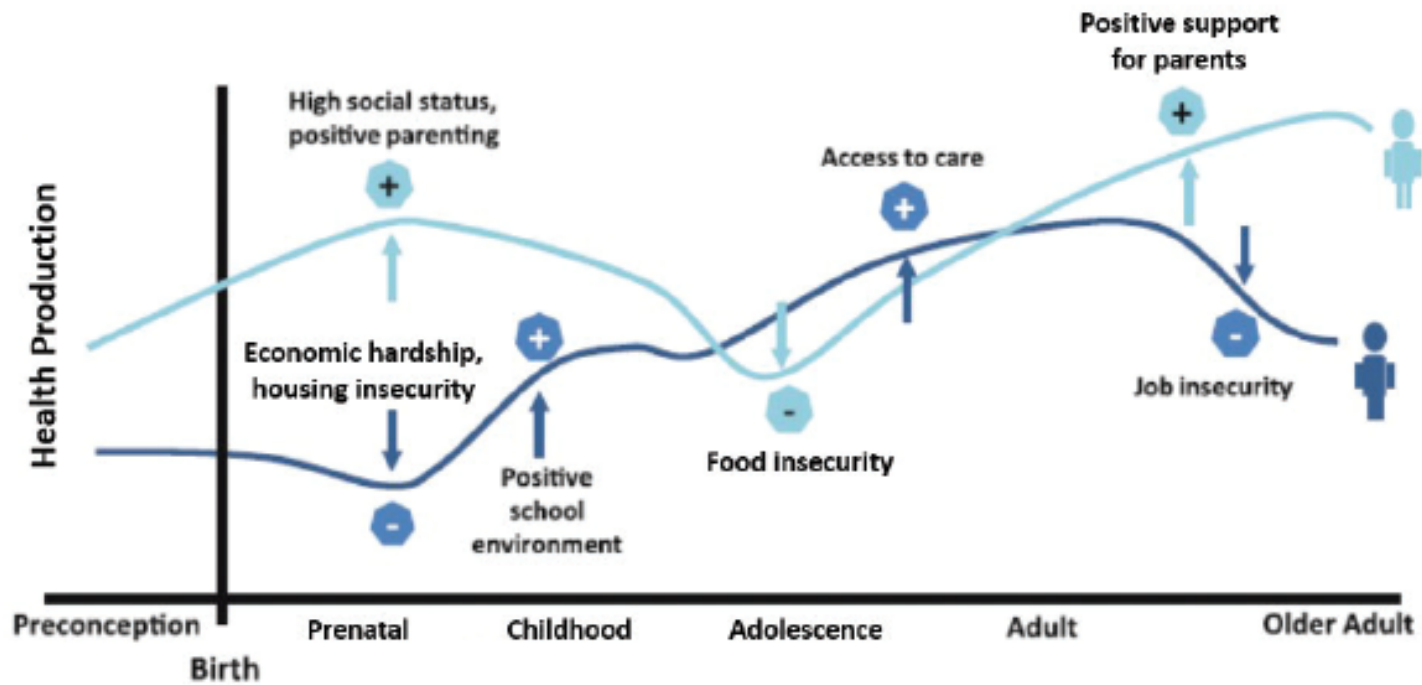


Graph developed by Council for Early Child Development (ref: Nash, 1997; Early Years Study, 1999; Shonkoff, 2000.)



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High quality early childhood experiences matter.

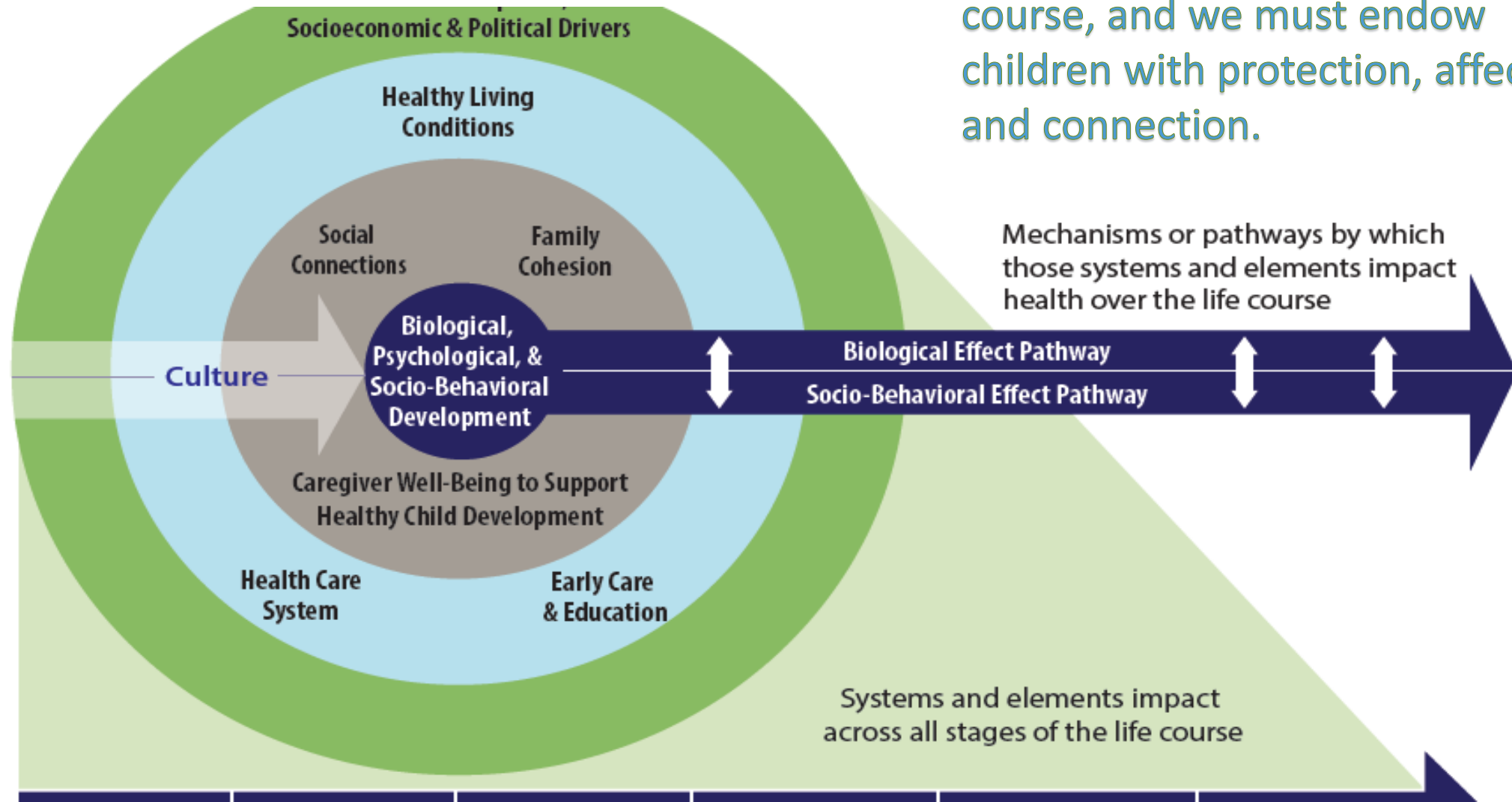
FIGURE 1-1 Variable health trajectories: Life course approach.

NOTE: This figure includes several examples; however, there are many other variables that impact health trajectories (see Chapter 3).

SOURCE: Adapted from Halfon et al., 2014.



Early childhood is part of the life course, and we must endow children with protection, affection, and connection.



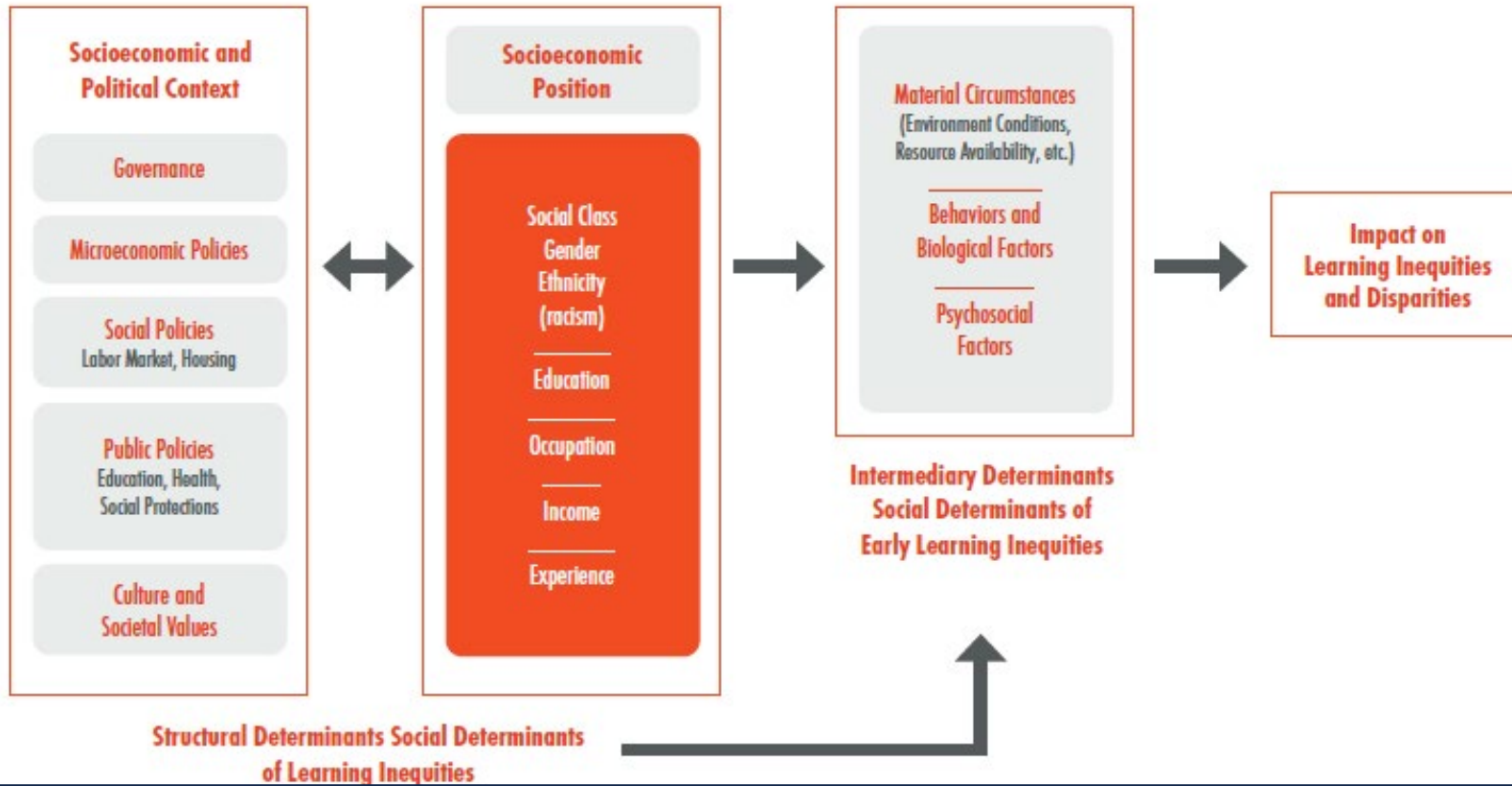
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Source. National Academies of Sciences, Engineering, and Medicine. 2019. *Vibrant and Healthy Kids: Aligning Science, Practice, and Policy to Advance Health Equity*. The National Academies Press. <https://doi.org/https://doi.org/10.17226/25466>

IDENTIFYING AND ADDRESSING ROOT CAUSES

Social determinants of early learning



Source. Iruka, I. U. (2020) Using a Social Determinants of Early Learning Framework to Eliminate Educational Disparities and Opportunity Gaps. In Foundation for Child Development (Ed.), *Getting it Right: Using Implementation Research to Improve Outcomes in Early Care and Education* (pp. 63-86). New York, NY: Foundation for Child Development.

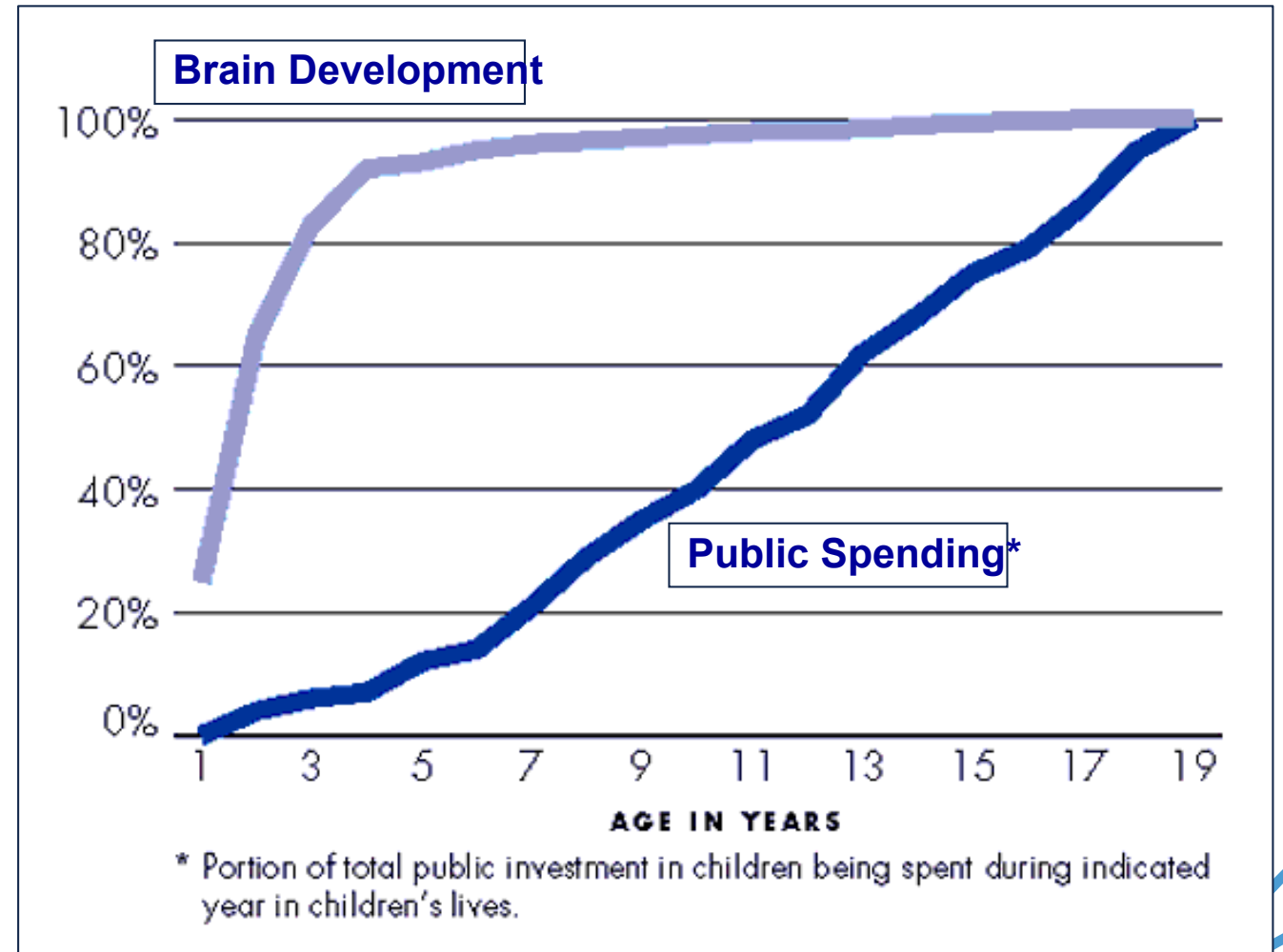
- Attention to Black-White gaps has not led to discernible improvement in Black children's health, well-being, and schooling outcomes
- Need to examine public policies, political will, centering of children's rights, examining our values



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Our limited attention to and investment on very young children and their families is in contradiction with the science.



Unfortunately, early childhood opportunities are not early enough, equally effective, and race-centered.

- Black babies are more likely to die, be born preterm, be low birth weight, and also lose their mother during childbirth

Keating, K., Murphey, D., Daily, S., Ryberg, R., & Laurore, J. (2020). *Maternal and Child Health Inequities Emerge Even Before Birth*. Washington, DC: ZERO TO THREE

- Effect sizes for early intervention – home visiting & early childhood programs – range from negative (-.49), null to moderate effects (.69)

Karoly, L. A., Kilburn, M. R., & Cannon, J. S. (2005). *Early childhood interventions: Proven results, future promise*. Santa Monica, CA: RAND Corp.

Yazajian, N., Bryant, D. M., Hans, S., Horm, D., St. Clair, L., File, N., & Burchinal, M. (2017). Child and Parenting Outcomes After 1 Year of Educare. *Child Development*, 88(5), 1671-1688. <https://doi.org/10.1111/cdev.12688>



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Majority of infants and toddlers in non parental care, likely to live in poverty, and less likely to receive subsidy.

- 1 in 5 babies live in poverty with more poverty in the South
- Babies less likely to receive subsidies compared to preschool children

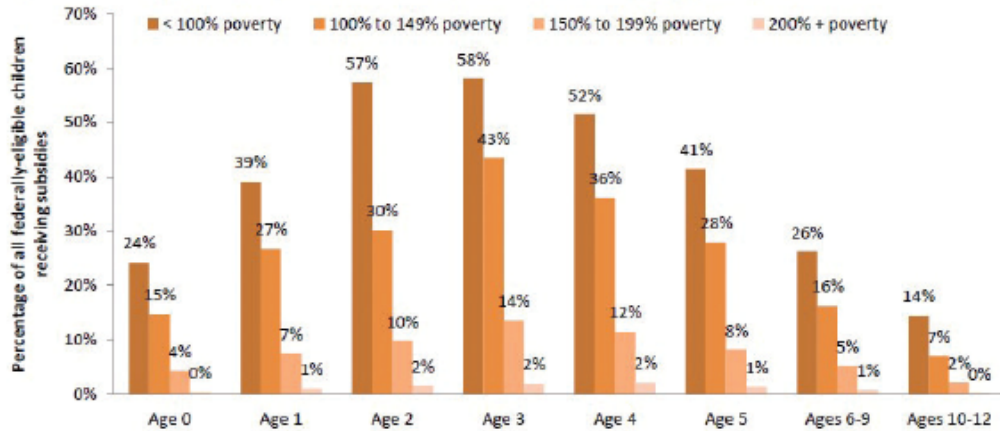
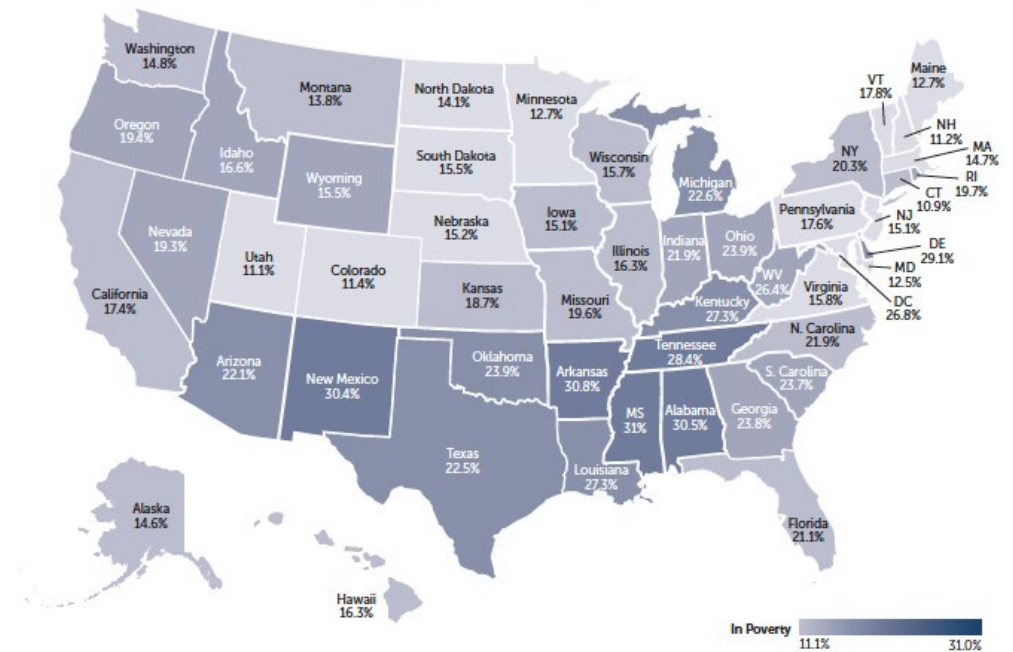


FIGURE 3-11 Percentage of federally eligible children receiving subsidies by age and income.

NOTES: Poverty figures are based on 2013 poverty thresholds published by the U.S. Census Bureau. For families with one adult and two children, 150 percent of poverty is \$28,154 (\$2,346 monthly).

SOURCE: Chien, 2017.

1 IN 5 BABIES LIVES IN POVERTY



Call of Action

| | |
|---------------------------------|--|
| Intervene | Intervene early |
| Support | Support caregivers |
| Create | Create supportive and stable early living conditions: |
| Maximize | Maximize the potential of early care and education to promote health outcomes. |
| Implement | Implement initiatives across systems to support children, families, other caregivers, and communities. |
| Integrate and coordinate | Integrate and coordinate resources across the education, social services, criminal justice, and health care systems, and make them available to translate science to action. |



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Thank you!

Questions?

Iheoma U. Iruka, Ph.D.

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Students, Social Needs, and Social Determinants of Health

Donna Mazyck

National Association of School Nurses

School Nurses – Partner in Vision and Eye Health

Promote health & wellbeing to facilitate student access to learning with focus on the health of student populations and focus on individual students.

Steps include

- Assessment
- Planning
- Implementation
- Evaluation



Student Vision and Eye Health: Impact on Learning



Child development

Challenges in the classroom

Early literacy and learning

Permanent vision loss

Cami et al., 2020; Wong et al., 2020

Social Needs:

Impact on Vision, Eye Health and Learning

- Multiple scenarios that impact vision screening
- Challenges to accessing vision care may include
 - Lack of flexibility with family work schedule
 - Transportation to and from office of eye care professionals
 - Lack of clarity on vision screening results
 - Unclear follow-up after screening

Social Determinants of Health: Impact on Vision, Eye Health and Learning

- Poverty or financial hardship
- Food insecurity
- Cultural factors
- Literacy and English language proficiency
- Access to primary care
- Hierarchy of needs
- And...

Resources

- National Center for Children’s Vision and Eye Health partnered with NASN to provide a resource for school nurses
12 components of a Strong Vision Health System of Care
<https://www.nasn.org/nasn/nasn-resources/practice-topics/vision-health>
- Local resources for eye care exams and corrective lenses

References

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- McClendon, S. & Zeni, M.B. (2019). Evaluation of vision referral program with school-aged children and their parent/guardians. *The Journal of School Nursing*, 36(4), 243-250. <https://doi.org/10.1177%2F1059840518821427>

References

- Schroeder, K., Malone, S.K., McCabe, E., & Lipman, T. (2018). Addressing the social determinants of health: A call to action for school nurses. *The Journal of School Nurses*, 34(3), 182-191. <https://doi.org/10.1177%2F1059840517750733>
- Wong, C.W., Tsai, A., Jonas, J.B., Ohno-Matsui, K., Chen, J., Ang, M., Ting, S.W. (2020). Digital screen time during the COVID-19 pandemic: Risk for a further myopia boom? *American Journal of Ophthalmology*, 223, 333-337. <https://doi.org/10.1016/j.ajo.2020.07.034>



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Vision for Baltimore: Lessons learned from school-based delivery of pediatric eye care

Megan E Collins, MD, MPH

Johns Hopkins University School of Medicine

Berman Institute of Bioethics

Johns Hopkins Consortium for School-Based Health Solutions

Overview

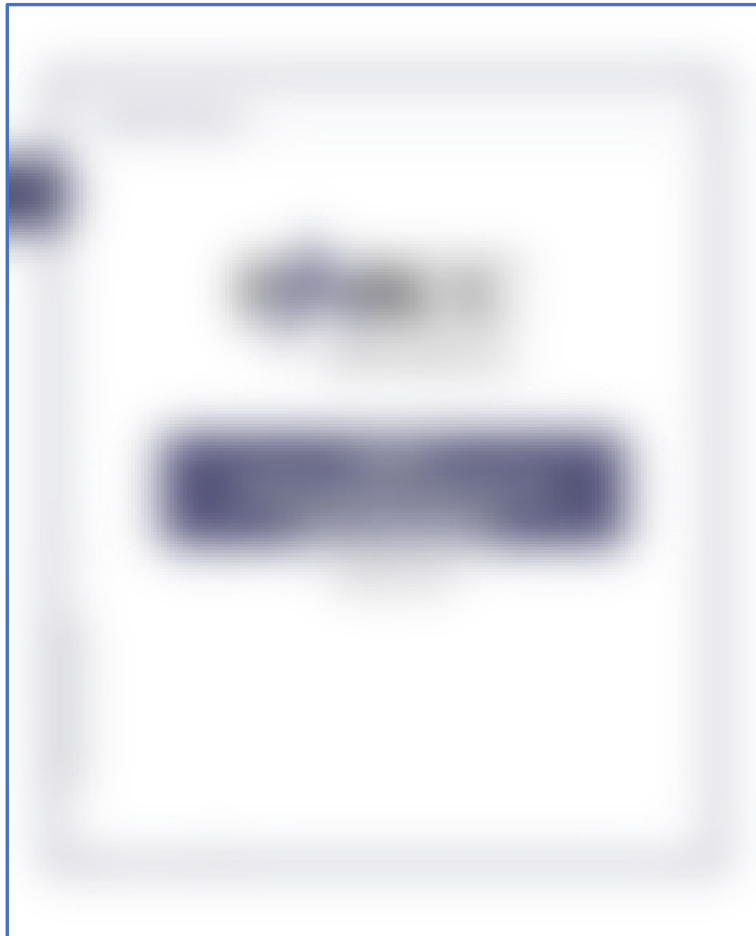
The Dana Center for
Preventive Ophthalmology



Wilmer Eye Institute
Johns Hopkins Medicine

- 1) Why do we need school-based vision care?**
- 2) How does Vision for Baltimore work?
- 3) What lessons have we learned?

Academic Consequences of Vision Impairment



In Plain Sight: Reading Outcomes of Providing Eyeglasses to Disadvantaged Children

Robert E. Slavin, PhD^a, Megan E. Collins, MD^b, Michael X. Repka, MD, MBA^c,
David S. Friedman, MD, PhD, MPH^c, Lucy I. Mudie, MBBS, MPH^c,
Josephine O. Owoeye, O.D., MPH, FAAO^{b,1}, and Nancy A. Madden, PhD^a

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JESPAR, 2018

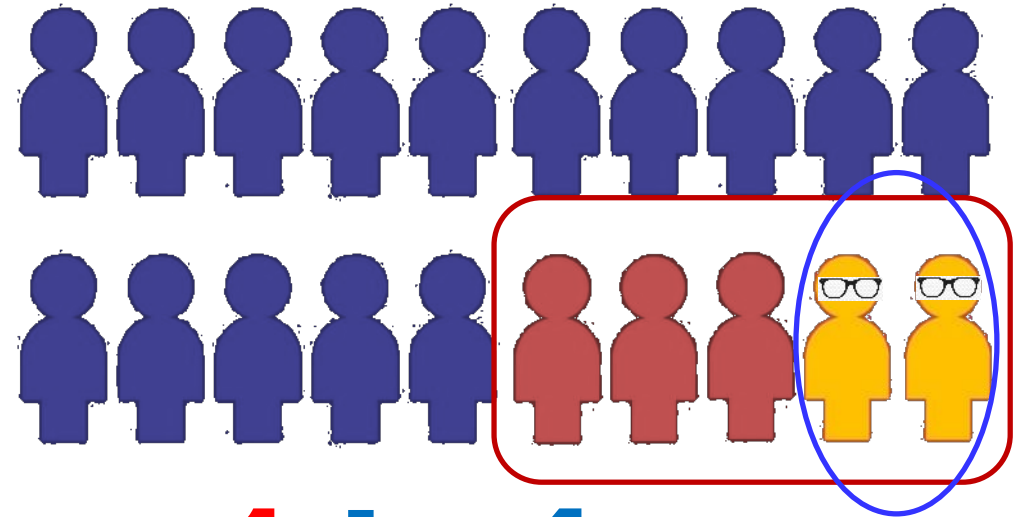
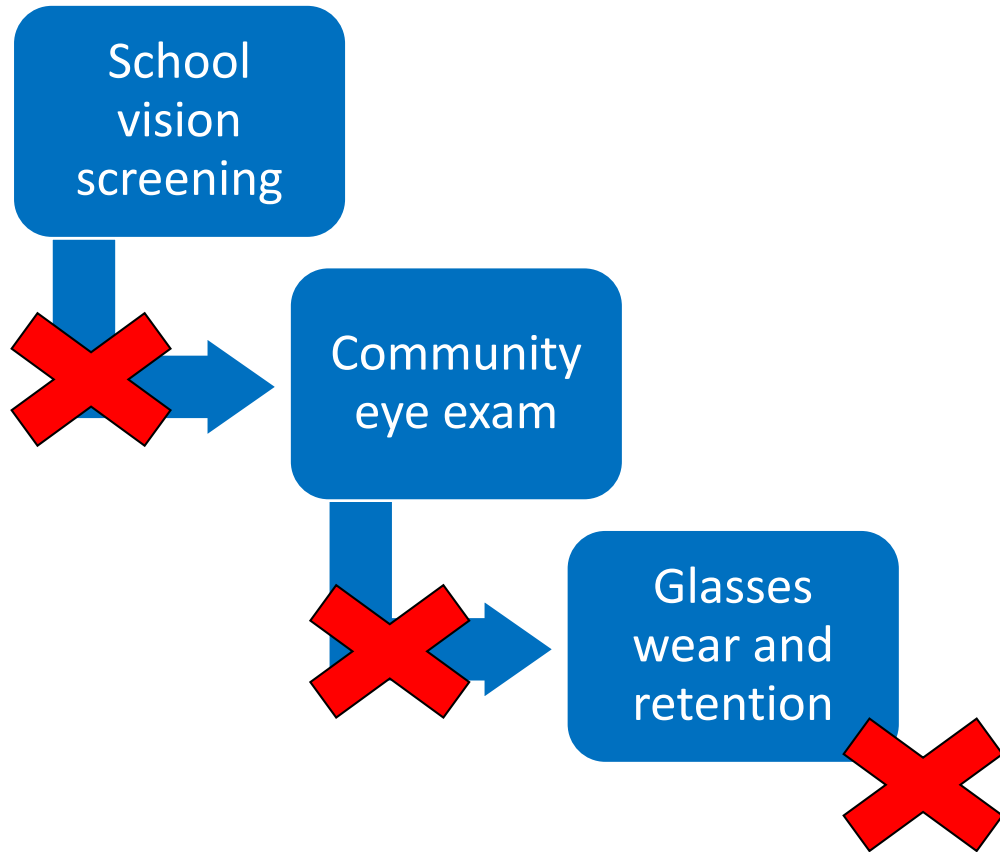
Impact of eyeglasses on academic performance in primary school children

Lisa A. Hark, PhD, RD,^{*,†} Avrey Thau, BS,[‡] Alexandra Nutaitis, BS,[§] Eileen L. Mayro, BA,^{*,†}
Tingting Zhan, PhD,^{||} Nooreen Dabbish, PhD,^{||} Judie Tran, BS,^{*} Linda Siam, BS,^{*} Michael Pond, BA,^{*}
Angela R. Rice, MBA,[¶] Alex V. Levin, MD, MHSc^{‡,***}

Canadian Journal of Ophthalmology, 2019

A Simple Solution?





~1 in 4 need eyeglasses



- 1) Why do we need school-based vision care?
- 2) How does Vision for Baltimore work?**
- 3) What lessons have we learned?

Vision for Baltimore Overview



- Launched in Fall 2016
- Provides vision screenings, eye exams, and glasses to kids directly in schools
- Serving all Baltimore City Public School students in PreK – 8th grade



BALTIMORE CITY
PUBLIC SCHOOLS



JOHNS HOPKINS
UNIVERSITY & MEDICINE

WARBY PARKER

All Care is Delivered Directly at School

- Screenings are performed by Baltimore City Health Department.
- Eye exams are provided by Vision To Learn optometrists.
- If glasses are needed, they are dispensed at school, where they will have the greatest impact on learning.



Vision for Baltimore Impact to Date

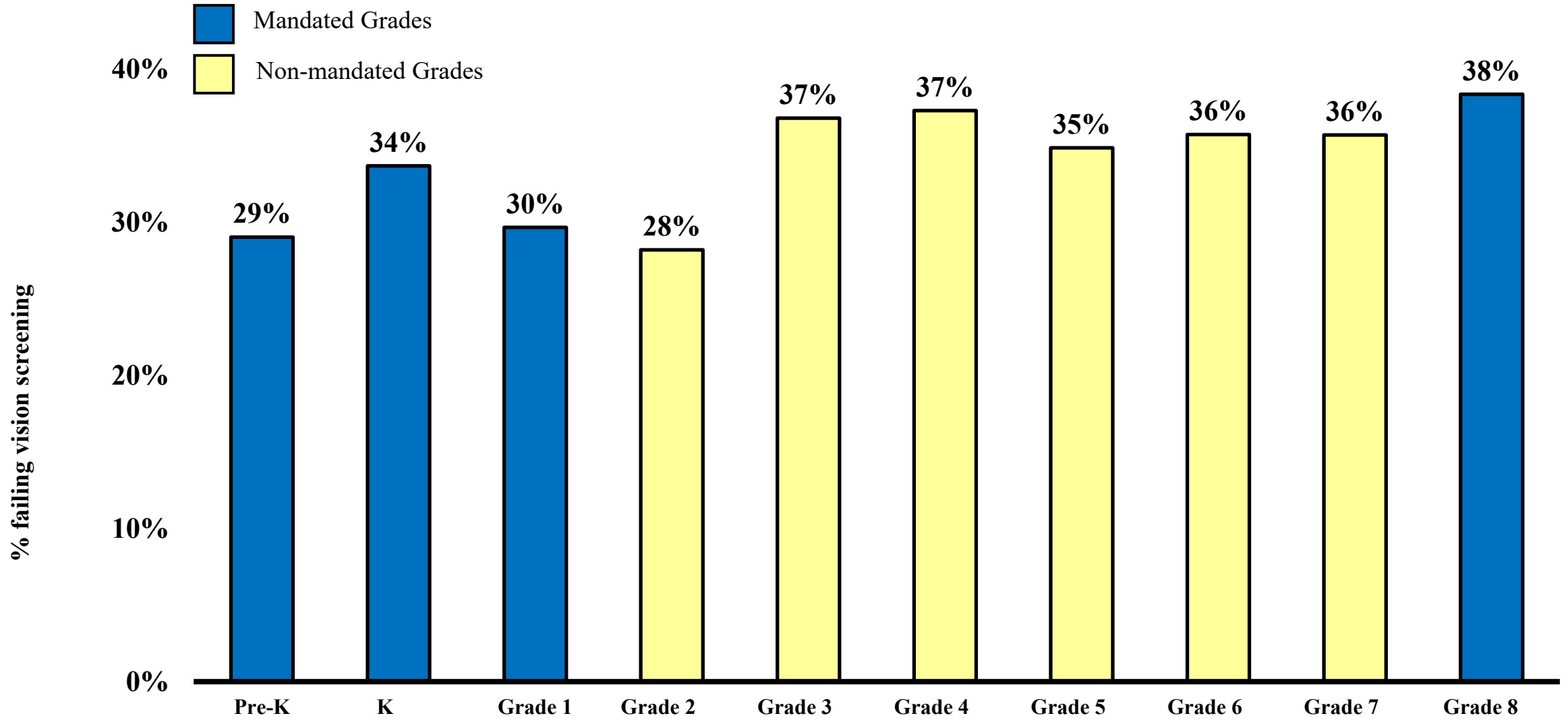


- 64,000+ students screened
- 11,000 eye exams completed
- **8,000+ students provided glasses**



- 1) Why do we need school-based vision care?
- 2) How does Vision for Baltimore work?
- 3) **What lessons have we learned?**

Vision Screening Failure Rate by Grade Levels



Pre-K = pre-kindergarten; K = kindergarten

Percentage showing proportion of students who failed among those enrolled per grade level



Study results show positive impact of eyeglasses on academic achievement

- Improved testing scores in English Language Arts
- Students in the lowest 25% at baseline and those with individual education plans had greatest improvement

Vision for Baltimore during COVID-19



- COVID-19 infection control precautions adopted
- Screening and exam protocols modified
- Exams provided by appointment on-site at schools
- Increased health education & outreach



Re-Imagining School-Based Vision Care in the Era of COVID-19

- Strengthen program communication and parental engagement
- Ensure continuity of care with community providers
- Expand the use of telehealth and other app-based technology

Thank you!

Questions?

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