

# Targeted Universalism Case Study: Vision for Baltimore

Wendy Ake



The Othering & Belonging Institute at UC Berkeley, formerly the Haas Institute for a Fair and Inclusive Society, is a vibrant hub of researchers, community leaders, policy-makers, artists, and communicators that advances research, policy, and work related to marginalized communities. It engages in innovative narrative, communications, and cultural strategies that attempt to reframe the public discourse around marginality and inclusion and respond to issues that require immediate and long-term action.

**Authors**

Wendy Ake lectures and advises groups applying Targeted Universalism in multiple contexts including local government, advocate groups and funders interested in Targeted Universal Philanthropy. She also focuses in research and policy related to Belonging Economies and economic justice.

**Copy Editor**

Stacey Atkinson

**Design & Layout**

Studiosilog

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**Contact**

Othering & Belonging Institute at UC Berkeley  
460 Stephens Hall  
Berkeley, CA 94720-2330  
Tel. 510-642-3326  
[belonging.berkeley.edu](https://belonging.berkeley.edu)

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# Introduction

**VISION FOR BALTIMORE** (V4B) is a successful program at Baltimore City Schools (BCS) designed to provide annual vision screenings for all students and, when necessary, to provide follow-up eye exams and eyeglasses at no cost to families. Maryland’s state standards require schools to provide routine vision screenings for first and eighth graders. If a student failed a vision screening, a notification would be sent to the parents or guardians directing them to follow up with an eye exam and access corrective lenses.

The current system design did not present a problem if a student did not have any vision problems or if a student had vision problems but received routine high-quality health care outside of school, the current system design didn’t present a problem.

However, that system was not working for all BCS students. Some children who failed the grade 1 or 8 vision screenings were not able to get a follow-up eye exam. Some children could not afford eyeglasses. Some families were not able to navigate available services that would have provided no-cost care. Some students developed vision problems between grades 1 and 8.

V4B—and other school-based vision programs (SBVPs) or school-based health centers (SBHCs)—is designed to make sure all students are getting adequate vision screening and necessary corrective resources. The aspiration is to make sure there is a pathway for all students to have vision health care.

V4B was not designed through a deliberate application of targeted universalism (TU) principles. However, the program is an excellent example of defining features of TU. In the language of TU, V4B is a targeted strategy that

helped students who were not getting vision screening and the follow-up care they needed. At the same time, the program helped students who were failed by existing systems, as the resources were made available to everyone and ended up serving even more students.

The V4B program exemplifies these defining features of TU. In this case study, aspects of the program are described as they match TU features.

1. The program is a strategy to reach a very clear universal goal. In this case, the V4B targeted strategy helps reach a few different universal goals. This helps to see how narrow or broad a universal goal can be and the implications of those decisions.
2. V4B is a targeted strategy that creates structural, systemic, and institutional change. It is a great example of how transformational change can be practical, SMART, and successful.
3. The success of any strategy is born out of outcomes and a program assessment. V4B is uniquely strong in these two areas. A focus on outcomes of the program is how we know it worked. And a strong focus on program assessment and documentation is how the program discovered the need for tweaks that would improve the program in real time.

We begin by describing the program itself then discuss aspects of the program in greater detail to illuminate design principles of TU. The TU framework can be a road map to getting to targeted strategies that serve uniquely situated groups, help reach goals we all share, and create practical, structural, and institutional change.



# Targeted Strategy: Vision for Baltimore

**PROGRAM PARTNER** The Baltimore City Health Department described the program to the public:

We estimate that, of the more than 60,000 pre-K through 8th-grade students served by Baltimore City Public Schools (City Schools), 15,000 may need glasses—but significant barriers prevent many from getting them.<sup>1</sup>

That’s why, between the fall of 2016 and the summer of 2020, Vision for Baltimore—a partnership convened by the Baltimore City Health Department (BCHD) with City Schools, Johns Hopkins University (JHU), nonprofit provider Vision To Learn (VTL), and Warby Parker—is screening all elementary and middle school students and offering eye exams and glasses to any student who needs them.<sup>2</sup>

Screenings are provided by BCHD. Students who do not pass the screening are able—with the consent of a parent or guardian—to get eye exams in VTL’s mobile vision clinic, which comes right to schools. If students need glasses, they pick the style and color of their frames in the mobile clinic. The glasses are then manufactured by eyewear provider Warby Parker and delivered to students in their schools.<sup>3</sup>

All services are available regardless of the ability to pay, and parents are not charged. If a student is enrolled in Medicaid, their Medicaid provider may be billed.<sup>4</sup>

Maryland law already mandates that we screen students in their first year of school, 1st grade, and 8th grade. With Vision for Baltimore, we’re



Photo courtesy of JJ McQueen, Baltimore City Mayor’s Office

expanding these school-based screenings to all students in pre-K through 8th grade.<sup>5</sup>

A universal consent approach started in 2019. A parent or guardian should sign the consent form and mark yes or no to whether they want their student who fails the screening to get an exam and glasses.<sup>6</sup> Exams are conducted in VTL’s mobile vision van right outside each school. Glasses are delivered to students in schools.<sup>7</sup>

The program relies on a collaboration between the public and private sectors, including corporate and private foundations, a national nonprofit providing support for SBVPs across the country, and local anchor institutions. The Baltimore City Health Department operates the vision screenings, which under V4B occur annually beginning in kindergarten through eighth grade.<sup>8</sup> Vision To Learn runs mobile vision clinics and manages follow-up care across the

US, and their Maryland work—where V4B is situated—is funded by the Abell Foundation, the Eli and Edythe Broad Foundation, Congressman John K. Delaney and April McClain-Delaney, Capital Source Foundation, Johns Hopkins University, and Warby Parker Foundation.<sup>9</sup> Local anchor institutions supporting the program include the Annie E. Casey Foundation and the Center for Research and Reform in Education at the Johns Hopkins School of Education and the Wilmer Eye Institute at Johns Hopkins Medicine.<sup>10</sup>

Vision To Learn itself operates programs similar to V4B in 325 cities after starting in 2012 by providing five students at Napa Street Elementary in Northridge, California, with necessary glasses.

Since then, Vision To Learn has gone on to help more than two million kids in low-income communities spread across more than 750 cities in 15 states and the District of Columbia. We found a way to solve a problem that was hidden in plain sight.<sup>11</sup>

After an eye exam, a letter is sent home to parents summarizing the results, including explaining whether or not eyeglasses are prescribed. Additional information about the wear and care of eyeglasses is sent home to parents when the eyeglasses are dispensed.<sup>12</sup>

Recognizing that students will only benefit from their eyeglasses when they are wearing them, the V4B program also has a strong emphasis on monitoring eyeglass usage and retention. This directly addresses the potential stigma around wearing glasses. Teachers are provided a list of students prescribed eyeglasses to help ensure regular wear through reminders and small token incentives, such as stickers or pencils. Teachers report that the stigma associated with wearing eyeglasses is reduced—in one case, a teacher said that students feel that wearing glasses is the cool thing and that the program has made the

whole school feel like getting students eyeglasses is a collective project.<sup>13</sup> Another deliberate feature of the program is recruiting teachers and parents to remind students to wear their glasses.

Reflecting the fact that the program is designed by experts in children's needs, students receive two pairs of glasses, and the frames come with their name permanently labeled.<sup>14</sup> The student is allowed to select which frames they would like as another attempt to increase the likelihood students will want to wear the glasses. This final program detail is far from trivial. In many cases, access to no-cost health-care services and equipment entail a bare minimum

**“I will be able to tell people and say it proudly that I’m the 10,000th person to get glasses. I was excited to get glasses because I’ve been frustrated since I couldn’t really see some of the [math] problems written on the board. I had to move closer to look at the board and try to answer the problems.”**

**—Romeo Merritt, seventh grader, November 2022**

Source: “Vision for Baltimore Celebrates Providing 10,000 Pairs of Eyeglasses for Baltimore City Students,” Hub, November 1, 2022, <https://hub.jhu.edu/2022/11/01/vision-for-baltimore-10000-eyeglasses/>.

standard and do not provide the experience of consumer choice extended to those who are able to pay for service. If one has ever been involved in wearing eyeglasses, the importance of having a lot of options from which to choose is obvious. Warby Parker is one of the program's sponsors, and rather than prepare a bare minimum option, they extend the same selections to students in this program that they would extend to any of their other child consumers.

Between 2016 and 2019, V4B screened over 64,000 students, performed over 11,000 eye exams, and provided over 7,900 pairs of eyeglasses.<sup>15</sup> The program serviced 45 schools a year as it began, and in November 2022, it received additional financial support—including a \$1 million grant from the state—to expand to serve 62 schools.<sup>16</sup>

# Complementary Strategy: Baltimore Community Schools

**THE V4B PROGRAM** is a great way to show that TU strategies can be practical and precise. It is also helpful to understand the ways in which the program can be situated within a larger context to enrich the lives of BCS students. To understand this aspect of V4B, we will discuss other initiatives and services students receive through their schools and other strategies to improve educational outcomes.

As we shared earlier, it was said to be common sense to match elementary students with rigorous vision screening and, if necessary, corrective glasses. It was feasible and practical. The right agencies and skills were able to come together to fill this gap in services for students—the schools, health department, an eyeglass manufacturer, and a team to measure outcomes to ensure the program was reaching its goal—to make sure that every student would be screened for vision problems and every student who needed glasses would get them. But this strategy was also situated in a much larger system of strategies attempting to improve access to opportunities for BCS students.

Many BCS are part of the community school model. This model is oriented to care for the whole student—part of the “whole child” approach. The approach expands a school’s mission to help students succeed in pursuing academic instruction by also caring for the ecosystem upon which students depend. The Baltimore Community School Initiative has grown from 50 schools in 2019 to 128 in 2021.

Community schools are public schools that provide services and support that fit each neighborhood’s needs, created and run by people who know

our children best.”<sup>17</sup> Community schools for the whole child approach understands that students’ education and life outcomes are dependent upon their access to safe and welcoming learning environments and rich learning experiences in and out of school.<sup>18</sup> Shifting toward a whole education has far-reaching implications for the education system.<sup>19</sup> The “whole school, whole community, whole child” model is similarly acknowledged as a critical component of child well-being from a physical health perspective as well.<sup>20</sup>

In addition to a culturally responsive and engaging curriculum, other key components of community schools are comprehensive services, community engagement, and a welcoming culture to support students’ nonacademic needs.<sup>21</sup>

The Baltimore Community School Initiative has a strong focus on strengthening student health. Ensuring that children are healthy—both physically and mentally—is crucial to their success outcomes, skills achievement and academic growth. A student who comes to school hungry, sick or stressed will be unable to focus on learning. Students in poverty can be ready to learn if school-based health centers are available to mitigate students’ health and hunger needs. Baltimore Medical System, one of the city’s community school health partners, operates eight school-based health centers (SBHC) in the school district. Judi Lockett, SBHC project manager at Baltimore Medical System, notes that SBHCs offer a way to provide a breadth of services, including well-child exams, common illness treatment, sports physicals, medication delivery,

# Baltimore City Public School District Information

Baltimore City Public Schools (City Schools) is one of the largest 50 school districts in the US, serving just under 80,000 students from pre-K to twelfth grade.

City Schools includes 159 schools with 52.3 percent of its students receiving free or reduced-price lunch.

A total of 75.7 percent of City Schools' students are Black African American, 14.2 percent are Hispanic Latino, 7.5 percent are white, and 1.3 percent are two or more races.

A total of 5.7 percent of students are English learners.

A total of 81.3 percent of teachers have three or more years of experience.

The district revenue per student is \$21,337 and expenses per student are \$16,182; and 34 percent of its funding comes from local revenue, and 56 and 9 percent from state and federal, respectively.

As of the 2022–2023 academic year, City Schools have 119 elementary schools and 87 middle schools and 54,020 students in elementary and middle school.

Source: "Baltimore City Public Schools," US News, at <https://www.usnews.com/education/k12/maryland/districts/baltimore-city-public-schools-107947#:~:text=Overview%20of%20Baltimore%20City%20Public,159%20schools%20and%2077%2C856%20students.>

## 2023-24 Schools and Programs

# 162

### Total schools and programs

1	Pre-K/ Kindergarten School
41	Elementary Schools
72	Elementary/Middle Schools
5	Middle Schools
9	Middle/ High Schools
32	High Schools
2	Elementary/Middle/ High Schools
11	Programs (Not schools)

## 2023-24 Student Enrollment

<b>75,811</b>	<b>37,709</b>
Total Enrollment	Students in Pre-K to Grade 5
<b>16,321</b>	<b>21,781</b>
Students in Grades 6 to 8	Students in Grades 9 to 12

## 2023-24 Student Demographics

<b>71%</b>	<b>18.6%</b>	<b>7.1%</b>
African American	Hispanic/Latino	White
<b>≤ 5%</b>	<b>≤ 5%</b>	<b>≤ 5%</b>
Asian	Multiracial	American Indian
<b>≤ 5%</b>	<b>72.1%</b>	<b>12.5%</b>
Pacific Islander	Low income	English Learner

Source: Schools and programs in Baltimore City Public School District <https://www.baltimorecityschools.org/o/bcps/page/district-overview>



vaccinations, health education and reproductive health services. “This piece of education is huge,” emphasizes Lockett. With reproductive education and access to birth control options, teen pregnancy rates have decreased 36 percent across the city. The B’More for Healthy Babies initiative, another partner in the Baltimore Community School Initiative, is also playing a crucial role through its focus on awareness and access to health supports.<sup>22</sup>

Meeting the needs of community schools and the changes to the role of the school implied by this framework requires relationships beyond institutions traditionally associated with orthodox public schools. For example, local funding agencies like the Family League of Baltimore supports community schools in Baltimore.<sup>23</sup>

Community schools, out-of-school-time programs (learning opportunities that take place outside the typical school day), and wraparound services have long existed, separately, in order to meet the needs of Baltimore youth and families. In the early 2000s, these various efforts were uncoordinated, which limited their impact. In 2012, the mayor’s office and Baltimore City Public Schools (BCPS) adopted the Family League of Baltimore’s Community and School Engagement strategy to align the resources and goals of the schools and community. The strategy engaged community-based organizations, such as Elev8 Baltimore and the Y in Central Maryland, to coordinate community school and out-of-school-time efforts. Today, BCPS has approximately 50 community schools engaging with a variety of community partners. The Family League (<http://familyleague.org/>), a Baltimore-based nonprofit organization, currently manages funding, partnerships and development, as well as convenes the community school initiative coordinating community partners at the city level. Marietta English, president of the Baltimore Teachers Union (BTU), and her members play a key role at school sites as well as at the district and city levels, helping serve the whole child and helping achieve the city’s community school vision.<sup>24</sup>

An even larger effort across BCS is to focus on reading and literacy skills. For example, the American Federation of Teachers and private corporations created the First Book program that builds up a student’s home library and care closets at schools that supply students with basic needs and personal hygiene.<sup>25</sup> The V4B program is situated as one of many strategies to meet health and reading and academic goals for students by making sure students have access to very specific health-care services and necessary medical equipment.

SBHCs and community schools where they are located are contributing to positive results for students in Baltimore community schools. Elementary and middle school student attendance has increased by 41 percent and 48 percent, respectively. These community schools have also decreased chronic absenteeism from 27.4 percent to 19.3 percent for elementary school students and from 23.8 percent to 17 percent for middle school students. This success is a result of schools identifying the underlying causes of absenteeism and putting in place relevant supports.<sup>26</sup>

Studies show that SBHCs can improve student outcomes in a variety of ways, such as improving academic expectations, school engagement and school climate. Students who receive counseling and care from SBHCs have decreased absenteeism and tardiness rates. Lockett reflects that SBHCs have reduced absenteeism by mitigating the impact of chronic disease in Baltimore, where the children’s chronic disease rate is 20 percent—double the national average. Asthma is one such prevalent disease in the city’s schools. To combat asthma (which contributes to absenteeism), SBHC nurses educate families on the proper way to use inhalers and ensure that students have their inhalers on hand. At Collington Square, students were having persistent and threatening asthma attacks. Through teacher, administrator, and SBHC staff collaboration, the school determined that unclean classroom vents were a cause of the asthma attacks, which subsided significantly after the vents were cleaned. Similarly, three years after opening the SBHC at Tench Tilghman, the chronic absenteeism rate there dropped from 17 percent to 11 percent.<sup>27</sup>

In addition to the SBHCs, out-of-school-time (OST) programs have played an integral role in addressing the problem of absenteeism. OST services are “formal and structured opportunities for school-age youth that complement the regular school day. Most programs engage youth and provide learning, enrichment, and leadership opportunities designed to support [students’] academic success and overall development.”<sup>28</sup> OST programs often require students to be in school that day to attend the after-school portion, so by making OST programs engaging and exciting for students, they are more motivated to attend school. Many of Baltimore community schools’ OST programs also provide students with hot meals; this helps increase student participation in the program and in school. Elementary students who attended OST programs were 32 percent less likely to be chronically absent, while middle school students in OST programs were 77 percent less likely to be chronically absent, than students who did not participate in OST programs. Through nurturing the whole child, resources and programs are having a real impact, and students are able to deepen their relationships and connections to the school community.<sup>29</sup>

Community schools’ nonacademic services are “critically important resources because they allow teachers to focus on teaching” rather than on issues such as health care, in which they are not trained experts, says Chandra [Carriere, Baltimore Teachers Union field representative and community schools liaison]. As a community schools liaison for BTU, she stresses the necessity of teacher and school staff voices in crafting strategies and support within the community schools, to best fit the needs of the educators, students, families, and the community. Along with caring for children’s academic well-being, teachers play a vital role in connecting the students to the resources, says [Khalilah Slater Harrington, the director of youth initiatives for the Family League of Baltimore’s Community and School Engagement strategy]. Teachers and school staff are essential in supporting and advocating for community schools. They are indispensable within the schools, but their voices are also crucial in advocacy efforts within

the community. BTU members testify in front of the school board, at the State House in Annapolis, and on Capitol Hill touting the opportunities and successes of community schools. By engaging the voices of the community, supporting a deep focus on academics, and providing resources for the specific needs of students, families, and schools, the BCS community school initiative is strengthening the community—student by student. With partners and resources continuing to align in new ways, the future of the initiative is promising for Baltimore. BTU will continue as an ardent community schools advocate. As President English affirms, “The work of the union is to follow the action of the community and to address its needs accordingly.”<sup>30</sup>

V4B is part of a larger effort across the US to design SBVPs.

In an effort to address health care disparities in pediatric eye care, and as part of a larger movement to utilize school-based care to advance health equity, SBVPs have been established across the US. While the total number of children served through SBVPs is unknown, they typically operate in disadvantaged communities and have been started at both the individual school and district level in at least 20 states. SBVPs may vary in the grade levels served [e.g., elementary and middle school (ages four to fifteen) versus high school (ages fourteen to twenty)], they typically provide vision screenings, eye exams, and eyeglasses directly in the school setting at no out-of-pocket costs to students and families. The programs are supported by school personnel, often in partnership with local health departments and eye care providers and funded through a combination of philanthropy and insurance billing. Part of the rationale for involving schools in vision care delivery is the recognition of the inter-relatedness between health and education, including how poor vision can impact learning.<sup>31</sup>

# How to State the Universal Goals

**TU HAS TWO ANCHORS.** The first is universal and reflects an aspiration that we all share—for pathways to the universal goal to be marked out by pathways shaped by systems in which we all live. The second anchor in TU is difference and inequity. People have such vastly different experiences in systems, and it is obvious that people are situated differently within the same systems. Consider an education system, employment markets, or the food system. These systems are doing work, and they are making different paths for different groups of people. We are in the same systems but on different paths, and some of those paths are easier, and some are hard, and some are violent. Those systems are doing work; they are active and they shape the day-to-day realities of people when they are students, when they are sick, and when they are hungry. The second anchor of TU requires us to pay attention to those different paths—and let those paths tell us where to intervene and design new paths to enjoy reaching a goal. Others may have a very easy path to that goal, and it may be a very quick path. While other groups of people need to have entirely new paths engineered. This is the structural change work of TU and the way TU can help us write blueprints.

The goals of the V4B program are shown in the research and public education material. The goals are stated as universal, but there are different universal goals.

## All sighted BCS elementary and middle school students see clearly

In describing the rationale for V4B, Dr. Leana Wen, then Baltimore City Health Commissioner, stated, “We know, based on common sense, that giving glasses for kids is important for education [and] health.”<sup>32</sup> In an exchange at Jefferson Elementary School in Sacramento, California, Jerry Brown, former Governor of California, once reflected, “I always like to come back to basics, and I can’t think of anything more basic than a child being able to see the blackboard.”<sup>33</sup>

This first universal goal statement is specific, measurable, achievable, and relevant and can be assessed for outcomes—so it can be described as time-bound. In some cases when groups are designing a TU project, it can be difficult to find a goal that everyone agrees is something mutually beneficial. Here though, Dr. Wen’s opinion is so true—it’s hard to find someone who would disagree that all sighted children should be able to see clearly.

It is such a good goal also because it’s measurable for outcomes. TU is outcomes oriented, which means that the worth of a strategy is judged only by what outcomes it yields. If the desired effect does not appear, then the strategy is flawed. For example, if the only data the program generated was an increase in the number of vision screenings and eye exams, then that wouldn’t be enough. The strategy needs to

raise the number of children who can see clearly. The outcome is the measure to watch (e.g., increasing the number of children who can see clearly). The input itself is not the success (e.g., increasing the numbers of screenings and exams). In this case the inputs are critical, of course. But the outcome is the success to track over time.

In stating the goal of this section as all sighted BCS elementary and middle school students see clearly, it sounds a bit wonky. Why couldn't the goal just be stated more simply, for example: All students are able to see clearly. That is a goal simply stated, for sure. The way that goal statement would be understood is likely to line up with the program. However, in TU the targeted strategies directly and precisely tie to the goal statement. In this case, V4B doesn't provide resources for blind students, and it is very likely that the blind community would not feel an aspiration to "see clearly." Furthermore, while V4B does not yet serve every child in BCS, it is carefully constructed to be sustainable—and expandable—over time. It is making progress in that direction. However, the program is not designed to expand into high schools; it is strictly designed to serve elementary and middle school students. This is not a limitation or shortcoming of the strategy design. This kind of program feature is supported by research demonstrating biophysical and educational relevance.

To make sure the universal goal precisely ties to outcomes measurement—to be specific and measurable—that level of precision is necessary even if it ends up with a goal statement that might sound a bit overly precise.

Further explanation here is seen in the example of the Massachusetts' provision of universal health-care insurance. It was described sometimes as a program to provide everyone with health care. At other times, it was a program designed to provide everyone with health insurance. It was much closer to meeting the standard of providing health-care insurance. There is much research showing that many groups of people, including Massachusetts residents, need a lot more resources than insurance to access health care. Research also shows that access to health care for poor and communities of

color actually decreased. Even if the goal is kept to the more modest aspiration of providing health insurance—one of many ingredients for health-care access—the inequalities in insurance coverage between different racial and income groups grew while insurance rates increased overall. This further demonstrates why it is important to be precise about the goal statement, to be explicit that there is an anchoring goal of a strategy, and to make sure outcome measurements are closely tied to figuring out if the strategy is making changes to see progress to the goal.

Information about age, gender, parental income, and race/ethnicity each correlate to the different ways students are situated in the systems of health care, vision care, education, and more. It should be a highlight of TU that it emphasizes very practical and measurable strategies. TU also helps pile up and create relationships out of those pointed and focused strategies alongside, and in coordination with, other strategies to reach higher level goals as well.

The V4B program has a solid support base for sustaining and expanding the program to reach its goal to serve all elementary and middle school students. And one of its partners, Vision To Learn, is working on a program designed to meet the needs of all elementary and middle school students. They are meeting outcome goals that demonstrate the efficacy of their design strategy as well, and V4B is one of the projects. Their academic partners from Johns Hopkins are working on their own applied research goals to support the expansion and outcomes research of iterative program designs that advance similar outcomes. Other programs within BCS are also served and advanced by V4B, like the community schools briefly discussed here. The program is an excellent example of aligning many moving parts that seek ambitious structural change, in a tactical, practical, and strategic way.

Next, we discuss different universal goal statements that are implicit or explicit within discussions of the V4B or programs served by that program.

## All BCS elementary and middle school students exceed grade-specific reading proficiency standards

Johns Hopkins University researchers in Baltimore asked a seemingly simple straightforward question:

Could the persistent gap in reading performance between poor students and wealthier ones be closed if they gave the poor students eyeglasses? They knew that poorer students were less likely to have glasses than wealthier white children, but data were limited on whether simply helping children better focus on the page in front of them might improve their ability to master a skill essential for early learning. They screened several hundred second- and third-graders, gave two pairs of eyeglasses to the ones who needed them (about 60 percent of the group, based on a uniquely liberal prescribing standard) and then they tracked their school performance over the course of the year. The outcomes were notable even with the small sample size—reading proficiency improved significantly compared with the children who did not need eyeglasses.<sup>34</sup>

V4B fits into a larger district plan for improving literacy skills, expanding access to health-care services, and improving overall academic performance. All of these “higher scale” goals are helpful to plan for how different students are going to need different services to get to these larger goals. A student who needs glasses gets them because of V4B. Goal reached! After the glasses, they can be off to reading success—the next goal. Because of the participation of professional researchers, the program was seen to move the needle on some of these larger goals. But in some cases, a specific, narrow goal can lead to measures that are more fine grained and easier to track for impact. Furthermore, the role professional researchers played opens up the space for some programs to proceed with confidence that these higher scale outcomes will flow from a strategy, all while tracking and monitoring outcomes that are easier to measure.

## All BCS students access all the resources to thrive as a whole child

The Baltimore community schools effort is oriented around a high-level goal. This universal goal, though, is functioning in the background of several more specific, measurable, and time-bound goals. These strategies can stack up or align together. There is another goal: opening access to opportunity structures, including health and education, and the lifelong benefits of accessing opportunity.<sup>35</sup>

V4B was able to work with a fine-tuned goal to get every student vision screening and to get every student who needed it an eye exam and glasses. That goal is ambitious in and of itself. And it was clearly measurable. And it was feasible to make it happen given the resources of Vision To Learn and local public health and education leaders. Because the goal is so narrow and specific, decisions on how to assess the program were straightforward.

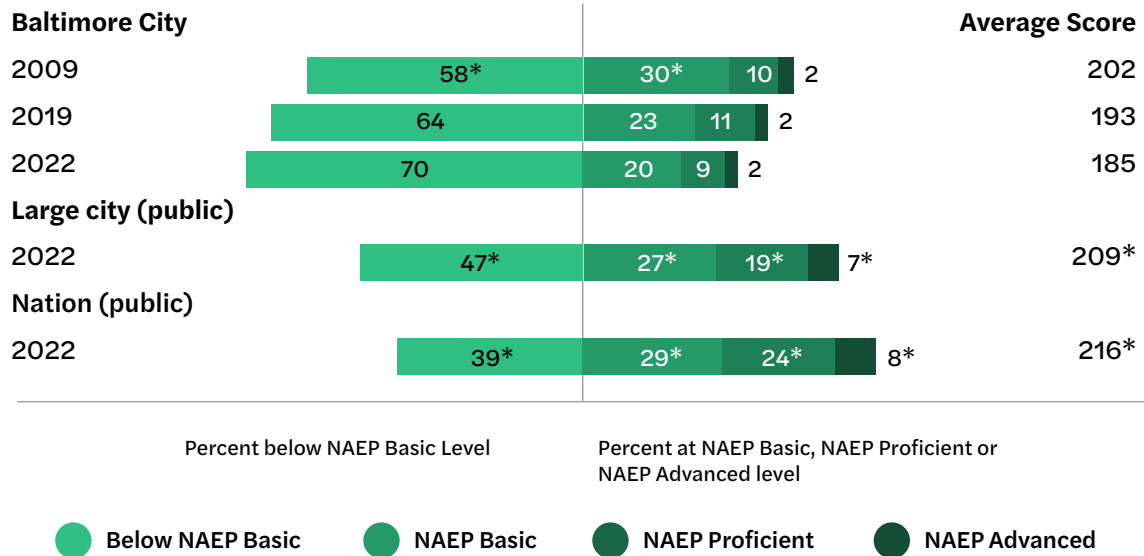
The goal could be stated in many ways: it may be a universal goal to help every student in need of glasses to access them, it may be a goal oriented to children’s health—in which case the program would be one element—and it may be a goal to advance reading performance of students in the school district or state. There are many goals that the V4B strategy advanced for students whose reading difficulty was, at least in part, due to not having proper eyeglasses.

## All BCS elementary and middle school students are on track for high school graduation

V4B is a great example of how a specific intervention to reach a specific, narrow goal can be placed alongside and aligned with many other similarly specific, narrow strategies to reach even more ambitious “higher order” goals. The V4B program is helpful to explain TU because it is situated within many



## Reading proficiency results for 4th graders in Baltimore City Schools, Large city schools, and all schools in the US (2022 data, measured by NAEP)



\* Significantly different ( $p < .05$ ) from the district's results in 2022. Significance tests were performed using unrounded numbers

Note: NAEP achievement levels are to be used on a trial basis and should be interpreted and used with caution. Detail may not sum totals because of rounding

Source: <https://nces.ed.gov/nationsreportcard/subject/publications/dst2022/pdf/2023010xm4.pdf>

This data shows systemic problems. Throughout the US, 4th graders are not meeting reading proficiency standards. Nationwide only 61 percent of students meet the standards, only 54 percent of students in large public city schools meet the standard, and only 31 percent of Baltimore City School students are meeting the standard. From this data it is clear that Baltimore City School students are farther off from the universal goal of enabling all 4th graders to meet reading proficiency. Getting these students what they need is critical for all the reasons detailed in this report. Targeted universalism is instructive in that the aspiration is for all of 4th graders in Baltimore's public schools to be at the proficient level—not to only have 53 or 61 percent there. The goal is to succeed and thrive—not just to reach the standards achieved by other school systems. Other large city school systems and schools across the US need to reach higher standards—and

the systemic challenge to meet these outcomes speaks to a systemic problem. Some schools and students are closer to meeting a proficiency standard. However, if the national average of students meeting proficiency is only 61 there is a lot of work to be done for most schools—not only BPS or large city schools. Everyone needs to get to 100 percent of students having proficiency. It is possible given systemic, structural, and institutional changes. It is helpful to consider the ways different students within a school experience educational and healthcare systems.

**Reading proficiency results for 4th graders in Baltimore City Schools, disaggregated by race/ethnicity, gender and poverty (2022 data, measured by NAEP, poverty as measured by eligibility for national school lunch program)**

Reporting Groups	Percentage of Students	Avg. Score	Percentage at or above NAEP		Percentage at NAEP
			Basic	Proficient	Advanced
<b>Race/Ethnicity</b>					
White	6	‡	‡	‡	‡
Black	70	186	30	10	1
Hispanic	21	171	21	6	1
Asian	#	‡	‡	‡	‡
American Indian/ Alaska Native	1	‡	‡	‡	‡
Native Hawaiian/ Pacific Islander	#	‡	‡	‡	‡
Two or More Races	2	‡	‡	‡	‡
<b>Gender</b>					
Male	49	180	26	9	2
Female	51	189	35	12	2
<b>National School Lunch Program</b>					
Eligible	66	181	26	7	1
Not Eligible	33	193	39	18	4

# Rounds to zero. ‡ Reporting standards not met.

Note: Detail may not sum to totals because of rounding, and because the “information not available” category for the National School Lunch Program, which provides free/reduced-price lunches, is not displayed. Black includes African American and Hispanic includes Latino. Race categories exclude Hispanic origin.

Source: <https://nces.ed.gov/nationsreportcard/subject/publications/dst2022/pdf/2023010xm4.pdf>

The significant gaps that exist between Hispanic and Black students, between Male and Female students, and between students that are in poverty speak to unique problems experienced by groups with lower proficiency outcomes. These numbers provide another demonstration that in targeted universalism there is an emphasis that everyone needs to have better outcomes—not only groups farther off. The goal isn’t to close a gap—it’s to make sure strategies are in place to raise outcomes for everyone. Black 4th graders in Baltimore schools are 13 points higher outcomes than Hispanic

students. But a program to lift reading proficiency outcomes in the schools has to lift the outcomes for Black and Hispanic students.



Photo courtesy of JJ McQueen, Baltimore City Mayor's Office

different strategies and is trying to take care of many needs among BCS students.

Getting students everything they need is so ambitious and requires so many moving parts that breaking down goals into measurable, implementable, and practical components is extremely useful.

The near-term goal is getting every sighted student clear vision. There is another goal: raising every student's reading skills or other measures of academic progress that prepares students for the academic success of high school graduation. The ultimate marker of academic success may be college preparedness or exceeding the current level of an assessment standard.

The V4B program is part of a larger ongoing strategy to help BCS meet the needs of students academically, including a focus on developing the reading skills of students. It is easy to see how V4B is a targeted strategy to help make sure every student has routine vision screenings and glasses if needed. It is also one of many other targeted strategies that help to meet student needs. V4B helps some students move forward to goals of academic performance in reading, for example.

There are many other strategies other students will need—or additional strategies that are needed in addition to eyeglasses—and the aspirations of community schools are ambitious and work to change the communities in which the students are situated. This involves bringing together the key partners that Vision for Baltimore required—the health department, the school students and parents, Warby Parker, and researchers to document outcomes. Also, the V4B program is part of a larger ongoing strategy to help City Schools meet the needs of students academically—including a focus on developing the reading skills of students.<sup>36</sup>

There are many other strategies other students will need—or additional strategies that are needed in addition to eyeglasses—[and] the aspirations of community schools are ambitious and work to change the communities in which the students are situated. This involves bringing together the key partners that Vision for Baltimore required—the health department, the school students and parents, Warby Parker, and researchers to document outcomes.<sup>37</sup>

## All Maryland (or US) sighted children see clearly

A Baltimore Vision Screening study in the 1993 to 1994 school year found that 11 percent failed the vision screening and received an eye exam. In total, 68 percent of children given eye exams were in need of corrective lenses.<sup>38</sup> The study found that this was a “relatively high frequency” compared to other comparable school districts,<sup>39</sup> where studies have shown consistently unmet needs for children’s eye-care, especially in high-poverty communities.<sup>40</sup> This study supported the consistent recommendation for frequent and “comprehensive vision screening programs that integrate follow-up care.”<sup>41</sup> The study also noted that children with limited access to specialized eye care—beyond that which can be provided within the V4B program—also need assistance mechanisms to obtain necessary eye care.<sup>42</sup>

## All Maryland (or US) public schools provide resources for the whole child

Experts attribute the glasses gap to Maryland law, which requires screening only for pre-K, first- and eighth-graders. A child who develops eyesight issues in second grade could wait years before being examined again, falling further behind peers. But even with mandatory screening, parents may not follow through. Parents might not be able to afford the glasses if they don’t qualify for Medicaid. (Maryland’s Medicaid system covers one pair of eyeglasses for minors per year, and will replace them in some cases.)<sup>43</sup>

In some cases, the type of test frequently used by schools and public health departments hampers the detection of vision problems. Vision screenings that exclusively screen for visual acuity missed 75.5% of children found to have other vision problems that were detected by a complete visual examination.<sup>44</sup> Another study found that 41 percent

of children who did not pass a full vision screening would have passed if the screen was based only on visual acuity.<sup>45</sup>

SBVPs removed financial barriers to care, alleviated logistical concerns such as parents identifying an optometrist or taking time off work for an appointment, and increased students’ comfort with wearing eyeglasses.<sup>46</sup>

## All Maryland (or US) children access health care

The use of corrective lenses suggests that correctable visual impairment is the most common treatable chronic condition of childhood. Income, gender, and race/ethnicity, depending on insurance status, are associated with having corrective lenses. The underlying causes and the impacts of these differences must be understood to ensure optimal delivery of eye care.<sup>47</sup>

Although 80 percent of individual states in the US mandate vision screening for school-age children, there are notable challenges with community follow-up for an eye exam. Follow-up rates are often lower for children from low-income communities where vision problems are reported to be more than double the national average and children face greater difficulties with access to care. These disparities in accessing pediatric eye care are compounded with the projected increased burden of vision impairment among minority populations in the US.<sup>48</sup>

Approximately 25% of school-aged children in the United States have vision abnormalities that can be corrected with spectacles. Limited follow-up adherence after failed school-based vision screening led to an increase in school-based eye care programs that provide screening, eye examinations, and spectacle prescription at the school. These programs address the access barrier and often provide the first point of contact between children and eye care.<sup>49</sup>

# Using Data

**WITHIN THE TU ROAD MAP**, two parts explicitly rely on data. Step 2 identifies what the current outcomes are relative to the goal overall for the general population in aggregate. Step 3 then asks what the outcomes are relative to the goal for specific groups.

Sometimes there are significant limitations on available data for either step, or it is hard to understand the problem by looking at existing data. Sometimes it is necessary to rely on what is at hand to meet the demands of programs or available resources. In such a case, it is sometimes necessary to build into the program itself an element that can respond to some of those limitations. Sometimes it's possible—and necessary—to take time and build a new data tool. This was not the case with V4B. It is a data-rich program.

It is helpful to look at V4B to understand the ways in which data can inform Steps 2 and 3—aggregate and disaggregated outcomes relative to the goal. It is also helpful to look at the ways data can inform other parts of TU, including the process to design a strategy (Step 5) and understand the pathways and barriers between different groups and the goal (Step 4).

Finally, data plays a large role in ongoing assessment, which for TU is looking at outcomes and making sure the strategy is making progress for groups to reach the goal. In addition to tracking outcomes, it is helpful to also use data to design an assessment of the program in real time—or tracking the way the program is benignly implemented and seeing if it is helpful to make any tweaks to the program itself.

## Understanding the need: Evidence of an institutional and structural problem

Vision impairment is one of the most disabling conditions facing children today, according to The Centers for Disease Control and Prevention. Vision impairment negatively affects neurological, cognitive, and emotional development by limiting children's exposure to a range of experiences and information. Between 70% and 80% of what a child learns is visually acquired. This places children with vision problems at a tremendous disadvantage before they enter the classroom. It is estimated that 25% of all students in the United States have undiagnosed vision problems significant enough to affect their performance in school and in life. This represents approximately 18 million children, with the rates increasing as the age of children increases. Despite this large number, less than one-third of the affected children have their vision screened before the age of 6. Of these, only about half of preschool-aged children receive comprehensive eye examinations before entering first grade.<sup>50</sup>

One set of national-level figures is particularly relevant for the project and the student population in BCS. A research study estimated that overall, just over 25 percent of children between six and eighteen years of age will need glasses.<sup>51</sup>

Vision skills, not only reading, are important from the standpoint of educational achievement. “Undiagnosed or uncorrected [visual disorders] in children can lead



to developmental, academic, and social challenges and in some cases permanent vision loss, which has lifelong complications.”<sup>52</sup> Studies have shown that visual skills are a predictor of reading and academic achievement.<sup>53</sup> One study found that some visual skills were a better predictor of a state standardized test score than socioeconomic status or race.<sup>54</sup>

Vision skills include skills beyond reading that can impact learning. They include more skills including eye-hand coordination like “the ability to use visual information to monitor and direct the hands when drawing a picture or trying to hit a ball,”<sup>55</sup> or eye tracking that includes the “ability to keep eyes on target when looking from one object to another.”<sup>56</sup> As students progress through school, there are increasing demands placed on their vision skills.

Studies over the past decade suggest that students who perform badly in school are misdiagnosed with behavioral disorders or special education needs when the culprit was their poor eyesight.<sup>57</sup>

Vision issues, whether myopia or amblyopia (lazy eye), can affect almost every aspect of a child’s development from academics and athletics to social interactions and self-esteem. School screenings don’t always catch the more subtle issues, so parents and educators may incorrectly assume there’s no problem if a child passes. Without a comprehensive eye exam from an optometrist or ophthalmologist, children’s vision disorders may go undetected or misdiagnosed. If misdiagnosed as ADHD, dyslexia, learning disabilities, or behavioral problems, those labels may affect a child for life without addressing an underlying visual issue that could be corrected.<sup>58</sup>

Eye and vision disorders can lead to problems in a child’s development, school performance, social interactions, and self-esteem. Vision disorders that occur in childhood may manifest as problems well into adulthood, affecting an individual’s level of education, employment opportunities, and social interactions. Early detection of visual disorders is especially important in children with developmental and intellectual disabilities. Children with disabilities are reported to have significantly more

**“In late 2015, a conversation between Dr. Leana Wen, the new Baltimore City health commissioner, and Johns Hopkins President Ronald Daniels about areas of potential collaboration quickly focused on students’ eyesight. Vision screening by the health department had already identified an unmet need for thousands of children; the research seemed to confirm the value of addressing it in the school setting.**

**In May 2016, the Baltimore Health Department assembled a public-private coalition made up of the city’s public school system, Johns Hopkins Wilmer Eye Institute, Johns Hopkins School of Education, eyeglass retailer Warby Parker, and a national nonprofit called Vision To Learn.**

**The data officials expect to glean could radically alter how school systems across the country approach one of the most difficult and consequential problems in modern education. It may well be that the solution to the persistent gap in reading proficiency is not instructional, but a simple health issue that could be addressed with a pair of eyeglasses that could cost a couple of hundred dollars at the mall.”**

Source: Sarah Gamard, “How Free Eyeglasses Are Boosting Test Scores in Baltimore,” Politico Magazine, August 17, 2017, <https://www.politico.com/magazine/story/2017/08/17/how-free-eye-glasses-are-boosting-test-scores-in-baltimore-215501/>.

eye and vision problems than children without these disabilities.<sup>59</sup>

From 2016–2019, approximately one-third of BCS students failed vision screening, with higher failure rates in grades that the state did not mandate vision screening in schools.<sup>60</sup>

In addition, data on reading proficiency is an indicator that is impacted by vision skills. In BCS, elementary school students’ mathematics and reading score proficiency is 15 and 18 percent, respectively.<sup>61</sup> Vision skills become more and more relied upon as students progress through school, so catching any problems early on can impact likelihood for graduation and academic achievement. In the schools, high school college readiness and high school graduation rates are 14.3 and 63.4 percent, respectively.<sup>62</sup>

## Current outcomes: Aggregate and disaggregate

This study specifically generated overall population performance and information about different groups. “One in five preschoolers in the US have vision problems, and by the time they enter school one in four will need or wear corrective lenses.”<sup>63</sup>

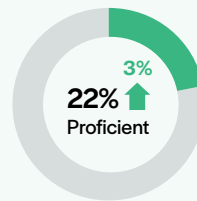
From the overall aggregate information, the study details disparities between race/ethnicity, age, gender, and family income. These different outcomes suggest a systemic problem.

- A total of 25.4 percent of the 52.6 million children between six and nineteen years old need (and have) corrective lenses.
- Insured children overall and uninsured white children had similar odds of having glasses.
- Uninsured white children and Black or Hispanic children with public or private insurance have greater use of glasses than uninsured Black or Hispanic children.
- In families with income over 200 percent of the federal poverty level, the odds of having glasses increased with age.

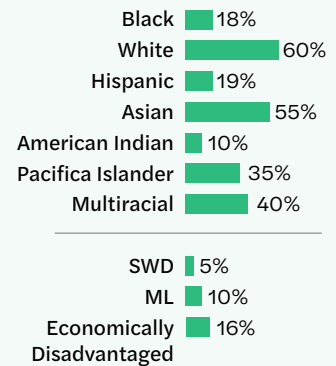
## Measuring overall and group-specific outcomes for language arts proficiency, by grade, race, and socioeconomic factors

### English Language Arts 3-5

#### Overall Performance

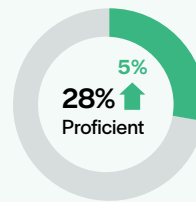


#### Performance by Student Group (≤ appears as 5% for privacy)

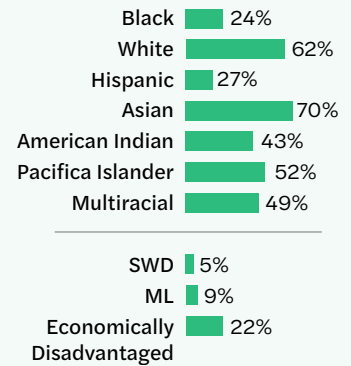


### English Language Arts 3-5

#### Overall Performance



#### Performance by Student Group (≤ appears as 5% for privacy)



Language to discuss the categories of race/ethnicity and gender in this report match the categories used in data collection. These categories are problematic and fortunately analysis and language to more accurately portray lived experience has progressed faster than has data collection methodologies. In this report where we are discussing data directly taken from data sources we use the categories reflected from the data collection.) has evolved faster than data collection.

Source: <https://www.baltimorecityschools.org/o/bcps/page/district-overview>

- However, in families with incomes under 200 percent of the federal poverty level, the odds of having glasses from twelve to fourteen years of age was similar to youth of fifteen to eighteen years of age.

Vision problems affect a disproportionately higher number of urban and minority youth. For children living in poverty, the percentage of those with undiagnosed vision problems is close to 50 percent, with many of these children coming from minority populations.<sup>64</sup>

A pressing need in education is to close achievement gaps in academic performance among these populations. Assuring that children receive professional eye examinations and remedial treatment could improve their academic performance and help close achievement gaps.<sup>65</sup>

## Assessment: Measuring outcomes

Approximately 75 percent of students examined required eyeglasses and only 3 percent were referred. Children in kindergarten and third grade and higher were statistically more likely to fail screening than those in first grade. Reduced visual acuity was the most common reason for failure (91 percent).<sup>66</sup>

Of the 51,593 students in 123 schools who were screened, 17,414 (33.8 percent) failed and were offered a school-based eye exam.<sup>67</sup> Follow-up eye exams showed that more than 90 percent of the failures were due to problems resolved with corrective lenses.<sup>68</sup>

During the program's first year, the 2016–2017 academic year, it conducted almost 18,000 screenings and distributed 2,000 pairs of glasses at no cost.<sup>69</sup>

That's on schedule of the program's goal to give out 8,000 glasses before the end of the study [in 2019]. They estimate that just 20 percent of screened children who need glasses subsequently get them, leaving as many as 20,000 children citywide staring fuzzily at the board in their classrooms.<sup>70</sup>

Over the program's first assessment period,<sup>71</sup> between 2016 and 2019,

- 51,593 students in pre-K to eighth grade in 123 schools received a vision screening<sup>72</sup>
  - BCS include 159 schools and 77,856 students<sup>73</sup>
- 17,414 (34 percent) students failed vision screening, consistent with studies in other schools and at the national level<sup>74</sup>
- over 11,000 eye exams were performed<sup>75</sup>
- 7,900 pairs of eyeglasses were dispensed at no cost<sup>76</sup>
- the rates of failing a vision screening varied by grade ranging from 28 percent to 38 percent<sup>77</sup>
- after failing a vision screening, 75 percent of students referred for an eye exam required eyeglasses; only 3 percent of students referred to an eye exam were referred for care that required vision care beyond what the V4B program could provide<sup>78</sup>
- while Maryland state requires vision screening in first and eighth grades, children in the V4B program were statistically more likely to fail screening in kindergarten and third grade<sup>79</sup>

In a two-year follow-up to the 2016–2019 study, many second and third graders in BCS had sustained vision improvement.<sup>80</sup>

Toward the end of the program's first year, one principal's school had 100 students who had received glasses. While there was no data detailing student academic performance or reading proficiency, teachers in the school noticed positive classroom changes in students who received and regularly wore glasses from V4B.<sup>81</sup> Teachers noted that

glasses have even boosted student self-esteem. [Teachers] spotlight the students for wearing their glasses on a bulletin board and none of them have been bullied. She attributes this to the way they promote the "coolness" of wearing them. "When the kids are wearing glasses and they're doing better, the attendance is higher, and the standardized test scores have improved, then you can really make the argument for why this needs to be built

into what schools do,” said Megan Collins, a lead researcher in the study. “We all know the need is there,” said Austin Beutner, chairman and founder of Vision To Learn. “We have a lot to come, not only in Baltimore.”<sup>82</sup>

In one study of second and third grade students participating in V4B, students receiving eyeglasses achieved better scores in reading than students in the control group.<sup>83</sup> This difference was greater for girls, students in special education programs, and students that were in the bottom 25 percent of scores. Positive impacts were also found on mathematics tests.<sup>84</sup>

[The results] were statistically significant and robust by education standards. In comparison to other educational interventions, the [effects of eye screenings] was more impactful than those measured from lengthening the school day, charter schools, or use of technology.<sup>85</sup>

## Ongoing program documentation

Documenting the implementation of the strategy is important. There may be real-time outcomes that will show areas for the implementation to be tweaked to reach everyone. While the TU planning process asks about identifying different groups within the overall population, there are limits to what is possible. The idea of disaggregating groups—of finding out where different groups are situated and what different needs they may have—is critical. But sometimes those differences won’t be revealed until the program is being implemented.

In addition to monitoring the outcomes of the V4B program, researchers also examined stakeholders’ opinions and insights about program details.

Participants identified five major factors decreasing participation in school-based vision programs: (1) challenges with the consent form, including distribution, collection, and literacy and language barriers; (2) having existing eye care; (3) misunderstandings about the program, especially related to cost and insurance; (4) difficulty raising

parental awareness of the program; and (5) certain attitudes towards vision, eye care, and school-based programs, including low prioritization of eye care, mistrust of the program, fear of sharing private information, not believing their child needs glasses, and reluctance accepting “subsidized” services. Parents and teachers identified important structural barriers to participation (i.e., consent form challenges and low parental awareness) and specific reasons for non-participation (i.e., attitudes, misunderstanding of the program, existing eye care) in school-based vision programs. Effective strategies are needed to facilitate return of consent forms and promote awareness of school-based vision programs among parents. Programs should also target services towards those currently without access to eye care and increase awareness about paediatric vision needs.<sup>86</sup>

As the V4B program unfolded, there was particular attention drawn to how to increase the rates of parental consent. Vision screenings and the V4B program require parental consent. In the first three years of the program, consent rate averaged 58 percent.<sup>87</sup> This is a higher rate compared to other SBVPs that have consent rates between 30 and 60 percent.<sup>88</sup> Securing parental consent for the program was an area of ongoing attention. The program adjusted different design elements to meet the unique needs of these students. In the course of the first years of the program, teachers were encouraged, and became more aware of their role, to become “program liaisons” to parents. That was a primary way to build trust between the program, parents, and their child’s health care. There was also increased outreach to share details of the program that described exactly how and why insurance information was needed even though there would not be a cost. As the program continued during COVID, the role of teachers to support parent outreach and engagement for this program was particularly important.

Parental consent rates are a common area of concern in SBVPs. In a study about a program in Chicago, extensive research with stakeholders and families showed two primary obstacles:





Photo courtesy of JJ McQueen, Baltimore City Mayor's Office

- structural barriers to participation, including consent form challenges and difficulty with parental awareness about the program and services offered<sup>89</sup>
- specific reasons for declining participation, including having an existing eye care provider, opting not to participate due to perceived costs or insurance eligibility, or specific attitudes about vision, eye care, and SBVPs<sup>90</sup>

In the V4B's fourth year, the program changed the consent mechanism to a "universal consent approach," where parents or guardians would mark yes or no to indicate if they would like their child to have follow-up care if the vision screening indicated the need.<sup>91</sup> The program also created an option to provide consent over the phone.<sup>92</sup> School-wide and back-to-school events were held that featured a staffed V4B informational booth.<sup>93</sup> Also the school and health department made a website and promoted information through a social media campaign.<sup>94</sup>

In the program's first year, one principal explained that "[t]rust was an issue. You have to have the relationship with the community in order for the consent process to work." They explained they often ha[d]

to "persuade reluctant parents to fill out the one-page consent form, which asks for the child's name, gender, birthdate, address, school and Medicaid identification number, as well as the parents' names and phone number." To address this at the start of the program's second year, the consent form was changed and did not ask for a Medicaid number so fewer parents will hesitate to turn it in.

In other studies, features of the school itself—not with parents—were associated with consent rates.

School-level characteristics also correlated with consent rates. In a secondary analysis of school-specific consent rates for each school participating in V4B during the first 3 years of the program, larger school population size and greater student mobility were both associated with lower consent return rates, while schools with higher levels of poverty had higher participation.<sup>38</sup> Recognizing that school-level factors can impact program participation, in either positive or negative ways, it is important for stakeholders to understand this for program planning and allocation of resources.<sup>95</sup>

Cost is a consideration for designing a program and determining its sustainability. This data was also considered.



During one year of Vision for Baltimore, 17,614 students received eyecare services...at a total cost of \$816,291. This includes costs of \$305,200 for vision screenings (17,614 students), \$260,659 for mobile vision clinic exams (2,920 students), and \$250,432 for school support. The program cost per student screened was \$46. If students were provided not one but two pairs of eyeglasses, the cost would increase by \$2 per student screened. By comparison, the average cost per pupil of education for a student attending a Maryland public school in 2016 was \$14,917. Conclusions: School-based vision screening and eyeglass provision for students in low income schools cost less than \$50 per student screened, 0.3% of the annual cost to educate a child. School-based care removes most barriers and allows for closer monitoring of eyeglass use by students. Additional research to determine the cost and benefit of school-based eyecare is warranted.<sup>96</sup>

## Program design details

According to the American Academy of Ophthalmology, every student should have a professional eye examination, which includes a test of visual acuity, by the age of five years. Ideally, this should be repeated every two years thereafter. Unfortunately, lack of resources limits the availability of professional vision examinations to children. For most children in the US, a school-based vision screening is the only vision service they will receive. Screenings are not diagnostic, but are intended only to identify potential problems. Without follow-up care, screenings are of little value. Students who live in urban areas appear to have more problems receiving follow-up eye care services after not passing a school-based vision screening. A study of a school district serving nearly 21,000 students in the BCS system found that only 17 percent of students who did not pass vision screening received follow-up care. Children who resided in urban areas were more susceptible to poverty, malnutrition, and poor vision than their peers in higher socioeconomic areas.

In a study conducted in a Connecticut school district,

researchers found that 29 percent of students who failed vision screenings did not receive follow-up eye care owing to parental unawareness of the results. Miscommunication and lack of clarity in screening results were the most prominent barriers for receiving follow-up. Another barrier identified was timeliness. When the follow-up care was not administered within two months of the screening, it was less likely the child would receive care. Other barriers identified in a study included financial (cost and money concerns, no insurance coverage), social and family issues (difficulty getting appointments because of work schedules, parents with mental or physical disabilities), logistical problems (trouble scheduling appointments, difficulty planning ahead), and perceptual barriers (vision problem not given a priority, mistrust of school nurse). Last, many parents may have the wrong perception that vision screening conducted by a school nurse is the replacement for comprehensive eye examinations by professionals.<sup>97</sup>

The V4B program was not constructed on a blank slate of understanding the eyecare needs of BCS students. Studies in the 1990s showed that the incidence of failed vision screenings and comprehensive follow-up care was needed—and needed more often than only in first and eighth grades.<sup>98</sup> In addition to the follow-up treatment and provision of glasses, the studies showed that only 30 percent of students who failed the vision screening were receiving follow-up care, such as eye exams and corrective lenses.<sup>99</sup> “Nearly two-thirds of the students had not complied with the recommended treatment or spectacle wear or both, despite providing immediate access to this care through the vision screening program.”<sup>100</sup>

Other studies showed that this lack of follow-up eyecare was a particular problem for “children with recognized difficulties in obtaining routine medical care.”<sup>101</sup>

A major difficulty in conducting these types of programs is the inconsistent follow-up encountered frequently in children identified by the screening program. The Baltimore Vision Screening Project was designed to address the issue of access to care for a group of inner city elementary school students by providing on-site evaluation and treatment.<sup>102</sup>

# Endnotes

1 “Vision for Baltimore,” Baltimore City Health Department, <https://health.baltimorecity.gov/VisionForBaltimore>.

2 “Vision for Baltimore,” Baltimore City Health Department.

3 “Vision for Baltimore,” Baltimore City Health Department.

4 “Vision for Baltimore,” Baltimore City Health Department.

5 “Vision for Baltimore,” Baltimore City Health Department.

6 “Vision for Baltimore,” Baltimore City Health Department.

7 “Vision for Baltimore,” Baltimore City Health Department.

8 For more technical details, “The mobile vision clinic, which comes directly to each school, is outfitted with equipment routinely found in an ophthalmology or optometry clinic. The eye exam consists of autorefractometry, distance acuity for all students, and near acuity, as needed, based on clinical presentation, plus a manifest refraction with a phoropter, slit lamp exam, and nondilated fundus exam. Since the program does not use dilating drops, measures are taken to maximize accuracy and minimize overminusing during manifest refraction. The primary goal of the V4B program is to detect uncorrected refractive error needs for students who fail a vision screening. Children with any nonrefractive pathology are referred to a community provider for a complete eye exam, including cycloplegic refraction. If eyeglasses are needed, students can select their own frames; students receive one pair of eyeglasses which are dispensed directly to them at school.” See <https://journals.lww.com/apjoo/Fulltext/2022/02000/>

[Lessons\\_Learned\\_From\\_School\\_Based\\_Delivery\\_of.3.aspx?context=LatestArticles](https://journals.lww.com/apjoo/Fulltext/2022/02000/Lessons_Learned_From_School_Based_Delivery_of.3.aspx?context=LatestArticles).

9 “Maryland,” Vision To Learn, <https://visiontolearn.org/where-we-work/maryland/>.

10 “Vision for Baltimore Celebrates Providing 10,000 Pairs of Eyeglasses for Baltimore City Students,” *Hub*, November 1, 2022, <https://hub.jhu.edu/2022/11/01/vision-for-baltimore-10000-eyeglasses/>.

11 “A Decade of Progress,” Vision To Learn (2022), <https://visiontolearn.org/wp-content/uploads/VTL-A-Decade-of-Progress.pdf>.

12 Megan E. Collins, Xinxing Guo, Michael Repka, Amanda J. Neitzel, and David S. Friedman, “Lessons Learned from School-Based Delivery of Vision Care in Baltimore, Maryland,” *Asia-Pacific Journal of Ophthalmology* 11, No. 1 (2022): accessed June 1, 2023, [https://journals.lww.com/apjoo/Fulltext/2022/02000/Lessons\\_Learned\\_From\\_School\\_Based\\_Delivery\\_of.3.aspx?context=LatestArticles](https://journals.lww.com/apjoo/Fulltext/2022/02000/Lessons_Learned_From_School_Based_Delivery_of.3.aspx?context=LatestArticles).

13 Alyssa M. Kretz, Hursuong Vongsachang, David S. Friedman, Jonathan Callan, Madison Wahl, M. Rani Mukherjee, Amanda Neitzel, and Megan E Collins, “Stakeholders’ Perceptions of a School-Based Eye Care Programme in Baltimore, MD,” *Ophthalmic Epidemiology* 29, No. 3 (2022): accessed June 1, 2023, [https://www.tandfonline.com/doi/pdf/10.1080/09286586.2021.1946825?casa\\_token=sLWixe5YWEYAAAAA:CQctUv5hQ-c6s9eV2Q-fl1QW2o8byyuCoAmPj0a7jZPR-p\\_q5p9S27T7hB-g0oU6PUOUWTqV7qvs2q3cc](https://www.tandfonline.com/doi/pdf/10.1080/09286586.2021.1946825?casa_token=sLWixe5YWEYAAAAA:CQctUv5hQ-c6s9eV2Q-fl1QW2o8byyuCoAmPj0a7jZPR-p_q5p9S27T7hB-g0oU6PUOUWTqV7qvs2q3cc).

14 “Two pairs of glasses were provided if they met prescribing criteria. Replacements were provided as needed.” See [https://journals.lww.com/apjoo/\\_layouts/15/oaks.journals/downloadpdf.aspx?an=01599573-202202000-00003](https://journals.lww.com/apjoo/_layouts/15/oaks.journals/downloadpdf.aspx?an=01599573-202202000-00003).

15 By means of scale, note that in the 2022–2023 academic year, there are 54,020 students in pre-K through eighth grade. See <https://www.baltimorecityschools.org/o/bcps/page/district-overview>. In a report dated November 2022 the figures are larger, which may indicate program functions after 2019. There it is said that “[s]ince its launch in 2016, Vision for Baltimore and its partners have conducted more than 75,000 vision screenings and 12,000 eye exams, and, as of today, have given away 10,000 pairs of eyeglasses.” See <https://hub.jhu.edu/2022/11/01/vision-for-baltimore-10000-eyeglasses/>.

16 For comparison, as of the 2022–2023 academic year, City Schools have 119 elementary schools and 87 middle schools and 54,020 students in elementary and middle school. See <https://hub.jhu.edu/2022/11/01/vision-for-baltimore-10000-eyeglasses/>.

17 National Education Association, “What Are Community Schools?” accessed June 2, 2023, <https://www.nea.org/student-success/great-public-schools/community-schools/what-are-they>.

18 Institute for Educational Leadership and Coalition for Community Schools, “Community Schools: A whole-child framework for school improvement,” (2017), <https://www.community-schools.org/wp-content/uploads/sites/2/2020/11/Community-Schools-A-Whole-Child-Approach-to-School-Improvement1.pdf>. This document details three case studies of implementing community schools as a whole child approach: Oakland Unified School District, Family League of Baltimore in partnership with Baltimore Public Schools, and United Way of Salt Lake.

19 Learning Policy Institute, “Whole Child Education,” accessed June 2, 2023, <https://learningpolicyinstitute.org/topic/whole-child-education#:~:text=A%20whole%20child%20approach%20understands,implications%20for%20the%20education%20system>.

20 Centers for Disease Control and Prevention, “Whole School, Whole Community, Whole Child,” accessed June 2, 2023, <https://www.cdc.gov/healthyschools/wsc/index.htm>. A number of philanthropic organizations have also supported this community school and whole child model for child well-being that focuses on the large ecosystem that determines child well-being. See, for example, the interest of national foundations including the Robert Wood Johnson Foundation, Chan Zuckerberg Initiative, and Annie E. Casey Foundation: Robert Wood Johnson Foundation, “Supporting the Whole Learner in Every School,” accessed June 2, 2023, <https://www.rwjf.org/en/insights/blog/2019/02/supporting-the-whole-learner-in-every-school.html>; Chan Zuckerberg Initiative, “Whole Child Approach to Education,” accessed June 2, 2023, <https://chanzuckerberg.com/education/whole-child-approach-to-education/>; and Annie E. Casey Foundation, “What Are Community Schools? How are they helping young people and families in Baltimore,” Annie E. Casey Foundation, September 29, 2001, <https://www.aecf.org/blog/what-are-community-schools-baltimore>.

21 American Federation of Teachers, “Community Schools: Case studies of what works, Baltimore Maryland,” accessed June 2, 2023, [https://www.attendanceworks.org/wp-content/uploads/2018/08/Case\\_Study\\_Baltimore\\_MD\\_2018.pdf](https://www.attendanceworks.org/wp-content/uploads/2018/08/Case_Study_Baltimore_MD_2018.pdf).

22 American Federation of Teachers, “Community Schools.”

23 Family League of Baltimore, “Programs,” accessed June 3, 2023, <https://familyleague.org/our-impact/programs/>.

24 American Federation of Teachers, “Community Schools.”

25 American Federation of Teachers, “Community Schools.”

26 American Federation of Teachers, “Community Schools.”

27 American Federation of Teachers, “Community Schools.”

- 28 <https://www.unitedway.org/our-impact/focus/education/out-of-school-time#:~:text=OST%20program%20goals%20and%20content,academic%20success%20and%20overall%20development>
- 29 American Federation of Teachers, “Community Schools.”
- 30 American Federation of Teachers, “Community Schools.”
- 31 Collins et al., “Lessons Learned.”
- 32 Sarah Gamard, “How Free Eyeglasses Are Boosting Test Scores in Baltimore,” *Politico Magazine*, August 17, 2017, <https://www.politico.com/magazine/story/2017/08/17/how-free-eyeglasses-are-boosting-test-scores-in-baltimore-215501/>.
- 33 “A Decade of Progress,” Vision To Learn.
- 34 Gamard, “How Free Eyeglasses Are Boosting Test Scores in Baltimore.”
- 35 Cite OBI work on opportunity and maps and geography, link to TCAC maps also. Also link to reports on lifelong import of whole child approach, that concept generally.
- 36 American Federation of Teachers, “Community Schools.”
- 37 American Federation of Teachers, “Community Schools.”
- 38 Mark W. Preslan and Audrey Novak, “Baltimore Vision Screening Project,” *Ophthalmology* 103, No. 1 (1996): 105–109, accessed June 1, 2023, <https://www.sciencedirect.com/science/article/abs/pii/S0161642096307537>.
- 39 Preslan and Novak, “Baltimore Vision Screening Project,” 105–109.
- 40 Lucy I. Mudie, Xinxing Guo, Robert E. Slavin, Nancy Madden, Rebecca Wolf, Josephine Owoeye, David S. Friedman, Michael X. Repka, and Megan E. Collins, “Baltimore Reading and Eye Disease Study: Vision Outcomes of School-Based Eye Care,” *Canadian Journal of Ophthalmology* 57, No. 1 (2022): 36–40, accessed June 1, 2023, [https://www.sciencedirect.com/science/article/pii/S0008418221000624?casa\\_token=ARVmVZQC-q5oAAAAA:THGzsEN3hHKDhtCaDPcTOGFWMB-5M6a51VngGuxTcOjSYrg\\_3SWaOrSGdcOnx4chD-qro7WwDCnWyx](https://www.sciencedirect.com/science/article/pii/S0008418221000624?casa_token=ARVmVZQC-q5oAAAAA:THGzsEN3hHKDhtCaDPcTOGFWMB-5M6a51VngGuxTcOjSYrg_3SWaOrSGdcOnx4chD-qro7WwDCnWyx). “We reported the impact of refractive correction on vision outcomes over a two-year follow-up in the Baltimore Reading and Eye Disease Study. In the 206 students (84% African American) who completed the first follow-up, both distance and near presenting improved from the baseline assessment; children with more severe hyperopia showed improvement in near VA. Children who were prescribed glasses through a school-based research study had improved vision, which was sustained into the following school year....Many second and third graders in Baltimore schools needed refractive correction and benefited from provision of glasses with sustained vision improvement over the two-year observation.”
- 41 Preslan and Novak, “Baltimore Vision Screening Project,” 105–109.
- 42 Preslan and Novak, “Baltimore Vision Screening Project,” 105–109.
- 43 Gamard, “How Free Eyeglasses Are Boosting Test Scores in Baltimore”; and “[V]ision screenings required under Md. Code Ann., Educ. Sec. 7–404 shall be given in the year that a student enters a school system, enters the first grade, and enters the eighth or ninth grade,” [https://marylandpublicschools.org/about/Documents/DSFSS/SSSP/SHS/SHSGuidelines/VisionScreening\\_5.2023.pdf](https://marylandpublicschools.org/about/Documents/DSFSS/SSSP/SHS/SHSGuidelines/VisionScreening_5.2023.pdf).
- 44 American Optometric Association, “Comprehensive Pediatric Eye and Vision Examination,” (2015), 17, <https://aoa.uberflip.com/i/807465-cpg-pediatric-eye-and-vision-examination/5?m4=>.
- 45 American Optometric Association, “Comprehensive Pediatric Eye and Vision Examination,” 17.



- 46 R. N. Dudovitz, N. Izadpanah, P. J. Chung, and W. Slusser, "Parent, teacher, and student perspectives on how corrective lenses improve child wellbeing and school function," *Matern Child Health* 20, No. 5 (2016): 974–983, doi:10.1007/s10995-015-1882-z.
- 47 Alex R. Kemper, David Bruckman, and Gary L. Freed, "Prevalence and distribution of corrective lenses among school-age children," *Optometry and Vision Science* 81, No. 1 (2004): 7–10, accessed June 18, 2023, <https://pubmed.ncbi.nlm.nih.gov/14747754/>.
- 48 Collins et al., "Lessons Learned."
- 49 Ahmed F. Shakarchi and Megan E. Collins, "Referral to Community Care from School-based Eye Care Programs in the United States," *Survey of Ophthalmology* 64, No. 6 (2019): 858–867, accessed June 2, 2023, [https://www.sciencedirect.com/science/article/pii/S0039625718302248?casa\\_token=-UJeMfdVX2wAAAAA:vZqJJCh\\_P\\_HVPY-FKLe6yP3kW5UISJRIKENDKelFq8YXC8dz-3tALui6UPb3D6GrfNHXDGMl\\_qE5uw#bib39](https://www.sciencedirect.com/science/article/pii/S0039625718302248?casa_token=-UJeMfdVX2wAAAAA:vZqJJCh_P_HVPY-FKLe6yP3kW5UISJRIKENDKelFq8YXC8dz-3tALui6UPb3D6GrfNHXDGMl_qE5uw#bib39). "Nevertheless, several lower prevalence conditions, such as amblyopia, strabismus, and glaucoma, cannot be adequately treated in the school setting, and some require frequent and long-term follow-up, necessitating referral to eye care providers in the community."
- 50 Hans D. Schmalzried, Barbara Gunning, and Todd Platzer, "Creating a School-Based Eye Care Program," *Journal of School Health* 85 (2015): 341–345, accessed June 1, 2023, [https://www.researchgate.net/profile/Hans-Schmalzried/publication/274641978\\_Creating\\_a\\_School-Based\\_Eye\\_Care\\_Program/links/5e52a403a6fdcc2f8f5d65d9/Creating-a-School-Based-Eye-Care-Program.pdf](https://www.researchgate.net/profile/Hans-Schmalzried/publication/274641978_Creating_a_School-Based_Eye_Care_Program/links/5e52a403a6fdcc2f8f5d65d9/Creating-a-School-Based-Eye-Care-Program.pdf).
- 51 Kemper et al., "Prevalence and distribution of corrective lenses among school-age children," 7–10. This study is based on "5,141 children in the 1988 Medical Expenditure Panel Survey. There is no population-based data on school-age children with corrective lenses and this study was one of many designed to address this gap in information. Another study, for example, looked at a data set of 3,916 adolescents between 12 and 18 years who were included in the 1999–2002 National Health and Nutrition Examination Survey vision examination component. In that study, 32.2% reported wearing corrective lenses. Female and privately insured respondents were more likely to report wearing corrective lenses. Consistent with the findings from the other study, overall odds of having corrective lenses increased with age. And white respondents were more likely to have corrective lenses than Black or Hispanic respondents." Alex R. Kemper, James G. Gurney, Maya Eibschitz-Tsimhoni, and Montea Del Monte, "Corrective lens wear among adolescents: Findings from the National Health and Nutrition Examination Survey," *Journal of Pediatric Ophthalmology and Strabismus* 44, No. 6 (2007): 356–62, <https://pubmed.ncbi.nlm.nih.gov/18062494/>.
- 52 American Optometric Association, "Comprehensive Pediatric Eye and Vision Examination," 16.
- 53 Marjean Taylor Kulp and Paulette Schmidt, "Visual Predictors of Reading Performance in Kindergarten and First Grade Children," *Optometry and Vision Science* 73, No. 4 (1996): 255–262. Sarina Goldstand, Kenneth C. Koslowe, and Shula Parush, "Vision, Visual-Information Processing, and Academic Performance among Seventh-Grade Schoolchildren: A more significant relationship than we thought?" *American Journal of Occupational Therapy* 59, No. 4 (2005): 377–389, <https://research.aota.org/ajot/article-abstract/59/4/377/4945/Vision-Visual-Information-Processing-and-Academic?redirectedFrom=fulltext>.
- 54 W. C. Maples, "Visual Factors That Significantly Impact Academic Performance," *Optometry* 74, No. 1 (2003): 35–49, accessed June 4, 2023, <https://pubmed.ncbi.nlm.nih.gov/12539891/>. It must be noted in this passage that a body of literature finding that performance on standardized test scores correlates more closely with socioeconomic status than student ability places criticism on the assessment tool, how it is used, and what consequences are associated with its findings.

- 55 “School-aged vision: 6 to 18 years of age,” American Optometric Association, accessed June 8, 2023, <https://www.aoa.org/healthy-eyes/eye-health-for-life/school-aged-vision?sso=y>.
- 56 “School-aged vision: 6 to 18 years of age,” American Optometric Association.
- 57 Gamard, “How Free Eyeglasses Are Boosting Test Scores in Baltimore.”
- 58 “Kids’ Eye and Vision Problems: What school screenings might miss,” University of Utah Health, July 27, 2022, <https://healthcare.utah.edu/health-feed/2022/07/kids-eye-and-vision-problems-what-school-screenings-might-miss#:~:text=According%20to%20the%20American%20Optometric,during%20a%20comprehensive%20eye%20exam>.
- 59 American Optometric Association, “Comprehensive Pediatric Eye and Vision Examination,” 10. This passage is supported by citations number 10 through 20 detailed on pages 41–42.
- 60 Rachel R. Milante, Xinxing Guo, Amanda J. Neitzel, Alyssa M. Kretz, M. Rani Mukherjee, David S. Friedman, Michael X. Repka, and Megan E. Collins, “Analysis of Vision Screening Failures in a School-Based Vision Program (2016–2019),” *Journal of American Association for Pediatric Ophthalmology and Strabismus* 25, No. 1 (2021), accessed June 1, 2023, [https://www.sciencedirect.com/science/article/pii/S1091853121000252?casa\\_token=571yS\\_iN-lhEAAAAA:\\_OTVZVVOAWbUvNn5Y\\_Ey2YDS-3RFKIN\\_lbR64jv9mANjl-lIEAFIXH3crZpHQORY24vn-NbzfX87q](https://www.sciencedirect.com/science/article/pii/S1091853121000252?casa_token=571yS_iN-lhEAAAAA:_OTVZVVOAWbUvNn5Y_Ey2YDS-3RFKIN_lbR64jv9mANjl-lIEAFIXH3crZpHQORY24vn-NbzfX87q). “During school years 2016–2019, 51,593 pre-K to 8th grade students from 123 Baltimore City Public Schools underwent vision screenings, with 85% of the schools qualifying for Free and Reduced Price Meals. Assessments included distance visual acuity, Spot photoscreening, stereopsis, and cover testing. Screening failures were analyzed by grade using aggregate data. Failure rates for mandated and nonmandated grades were compared using a logistic regression model, and visual acuity distributions were analyzed using individual data. Results: Over the 3-year period, 17,414 (34%) of students failed vision screening. Failure rates by grade ranged from 28% to 38%. Failure rates were significantly higher in nonmandated grades than in state-mandated testing grades (34.7% vs. 32.5% [ $P < 0.001$ ]). Mean visual acuity of all students who failed vision screening was 20/50 in the worse-seeing eye and was 20/40 in the better-seeing eye.”
- 61 “Baltimore City Public Schools,” *US News*, at <https://www.usnews.com/education/k12/maryland/districts/baltimore-city-public-schools-107947#:~:text=Overview%20of%20Baltimore%20City%20Public,159%20schools%20and%2077%2C856%20students>.
- 62 “Baltimore City Public Schools,” *US News*, at <https://www.usnews.com/education/k12/maryland/districts/baltimore-city-public-schools-107947#:~:text=Overview%20of%20Baltimore%20City%20Public,159%20schools%20and%2077%2C856%20students>.
- 63 “School performance bridled by poor vision, visual disorders,” American Optometric Association, February 27, 2018, <https://www.aoa.org/news/clinical-eye-care/health-and-wellness/reading-proficiency-and-eye-exams?sso=y#:~:text=One%20in%20five%20preschoolers%20in,need%20or%20wear%20corrective%20lenses>. The statement in the article references Kemper et al., “Prevalence and distribution of corrective lenses among school-age children,” 7–10.
- 64 Schmalzried et al., “Creating a School-Based Eye Care Program,” 341–345.
- 65 Schmalzried et al., “Creating a School-Based Eye Care Program,” 341–345.
- 66 Milante et al., “Analysis of Vision Screening Failures.”
- 67 Megan E. Collins, Xinxing Guo, Ahmed F Shakarchi, Amanda Inns, Rachel Milante, Alyssa Marie Kretz, Jonathan Callan, Madison Wahl, Hursuong Vongsachang, Michael Repka, and David S Friedman, “Three-year Visual Outcomes for the Vision for Baltimore School-Based Eye Care Program,” *Investigative Ophthalmology and Visual Science* 61, No. 7 (2020): 4603, accessed June 3, 2023, <https://iovs.arvojournals.org/article.aspx?articleid=2768629>; Milante et al., “Analysis of Vision Screening Failures.”

- 68 Milante et al., “Analysis of Vision Screening Failures.”
- 69 Gamard, “How Free Eyeglasses Are Boosting Test Scores in Baltimore.”
- 70 Gamard, “How Free Eyeglasses Are Boosting Test Scores in Baltimore.”
- 71 Assessment of the V4B program between 2016 and 2019 is discussed in research literature as the Baltimore Reading and Eye Disease Study.
- 72 Collins et al., “Three-year Visual Outcomes,” 4603. “Assessments included distance visual acuity, Spot photoscreening, stereopsis, and cover testing. Screening failures were analyzed by grade using aggregate data. Failure rates for mandated and nonmandated grades were compared using a logistic regression model, and visual acuity distributions were analyzed using individual data.” Milante et al., “Analysis of Vision Screening Failures.” The following article reports over 64,000 student screenings. Collins et al., “Lessons Learned.”
- 73 “Baltimore City Public Schools,” US News. This doesn’t seem right. This figure has to include 9-12 grades—but 77k-51k = 26k....is that possible?
- 74 Milante et al., “Analysis of Vision Screening Failures.” “During the first 3 years of the V4B program, the overall vision screening failure rate for students in pre-K to eighth grade was 34% (range 28% to 38%). The failure rates, based on distance visual acuity cutoffs and Welch Allyn Spot Vision Screener, Model VS100 (Skaneateles Falls, NY) referrals, increased in higher grades with a shift toward worse visual acuities. Based on the high screening failure rates seen across all grades, we suggested that screening only at select grade levels, as is currently mandated in the majority of US states, may be inadequate for detecting children at risk for vision problems, especially in disadvantaged communities. In a secondary analysis of children who failed vision screenings while wearing eyeglasses during Year 1 of the V4B program, nearly all needed an updated prescription and had more severe refractive errors than those not wearing eyeglasses. These findings underscored that SBVPs could play an important role, even for students currently wearing eyeglasses, as they often appeared to be outdated.” Collins et al., “Lessons Learned.”
- 75 Collins et al., “Lessons Learned.”
- 76 Collins et al., “Lessons Learned.”
- 77 “Mean visual acuity of all students who failed vision screening was 20/50 in the worse-seeing eye and was 20/40 in the better-seeing eye.” Milante et al., “Analysis of Vision Screening Failures.”
- 78 Collins et al., “Three-year Visual Outcomes,” 4603.
- 79 Milante et al., “Analysis of Vision Screening Failures.” Collins et al., “Three-year Visual Outcomes,” 4603.
- 80 Mudie et al., “Baltimore Reading and Eye Disease Study,” 36–40. See footnote 37 for more details.
- 81 Gamard, “How Free Eyeglasses Are Boosting Test Scores in Baltimore.”
- 82 Gamard, “How Free Eyeglasses Are Boosting Test Scores in Baltimore.”
- 83 Collins et al., “Lessons Learned.”
- 84 Collins et al., “Lessons Learned.”
- 85 Collins et al. “Lessons Learned.” “The improved student’s academic achievement on i-Ready seen in Year 1 was also seen at Year 2 but did not reach statistical significance. We postulate that decrease in study size over time impacted the ability to achieve statistical significance at 2 years.<sup>33</sup> In addition, prior evidence suggests that students may wear eyeglasses less over time, thus impacting duration of benefit.<sup>34</sup> Ongoing research is exploring systems to ensure regular eyeglasses wear, as well as to identify barriers and aids to compliance. The V4B academic impact study demonstrated the positive impact eyeglasses provided through a SBVP can have on academic performance. The study was unable to measure impact for students below Grade 3 as the standardized tests assessed for pre- and post-measurements are not available at those grade levels. Future work is needed to explore the impact for younger students, i.e.,

PreK through Grade 2, as these are the grade levels learning to read and who may benefit from wearing eyeglasses for uncorrected refractive error.”

86 Hursuong Vongsachang, D. S. Friedman, A. Inns, A. M. Kretz, M. R. Mukherjee, J. Callan, M. Wahl, M. X. Repka, and M. E. Collins, “Parent and Teacher Perspectives on Factors Decreasing Participation in School-Based Vision Programs,” *Ophthalmic Epidemiology* 27, No. 3 (2020): 226–236, accessed June 2, 2023, <https://www.tandfonline.com/doi/abs/10.1080/09286586.2020.1730910?journal-Code=ioppe20>.

87 Collins et al., “Lessons Learned.”

88 Collins et al., “Lessons Learned.”

89 Collins et al., “Lessons Learned.”

90 Collins et al., “Lessons Learned.”

91 “Vision for Baltimore,” Baltimore City Health Department.

92 Collins et al., “Lessons Learned.”

93 Collins et al., “Lessons Learned.”

94 Collins et al., “Lessons Learned.”

95 Collins et al., “Lessons Learned.”

96 Alyssa M. Kretz, Moneesha Rani Mukherjee, Niral B. Gandhi, Robert Slavin, Nancy Madden, David S. Friedman, Michael X. Repka, Leana Wen, Gabriel Auteri, Evan Behrle, Kevin D. Frick, and Megan E. Collins, “Cost analysis of a school-based vision program in Baltimore, MD,” *Investigative Ophthalmology and Visual Science* 59, No. 181, (2018), accessed June 2, 2023, <https://iovs.arvojournals.org/article.aspx?articleid=2693989>.

97 Schmalzried et al., “Creating a School-Based Eye Care Program,” 341–345.

98 The study noted that the 3 percent of students whose vision impairments were not treated by a follow-up eye exam and corrective lenses needed referral for community care that could not be met by the V4B program services. “Amblyopia, strabismus, and refractive errors were found in relatively high frequencies for this population sample of inner-city

children. These findings underscore the necessity of comprehensive vision-screening programs that integrate follow-up care. Children with limited access to specialized eye care must be provided with a mechanism for obtaining these services.” See Preslan and Novak, “Baltimore Vision Screening Project,” 105–109.

99 The study noted that the 3 percent of students whose vision impairments were not treated by a follow-up eye exam and corrective lenses needed referral for community care that could not be met by the V4B program services. “Two hundred eighty-five children were screened during the 1994–1995 school year. Visual morbidity statistics from the follow-up year were similar to those of the previous screening: 5.3% diagnosed with amblyopia, 3.2% with strabismus, and 7.4% with refractive errors. Forty of the 68 children identified, examined, and treated in the previous year still were attending the school during the follow-up investigation. Compliance with recommended treatment was 30% in this group, with only 20% of the students passing the vision screening the following year.” See Preslan and Novak, “Baltimore Vision Screening Project,” 105–109.

100 Mark W. Preslan and Audrey Novak, “Baltimore Vision Screening Project: Phase 2,” *Ophthalmology* 105, No. 1 (1998): 150–153, accessed June 1, 2023, <https://www.sciencedirect.com/science/article/abs/pii/S0161642098918139>.

101 Preslan and Novak, “Baltimore Vision Screening Project,” 105–109.

102 Preslan and Novak, “Baltimore Vision Screening Project: Phase 2,” 150–153.



The Othering & Belonging Institute brings together researchers, community stakeholders, and policy-makers to identify and challenge the barriers to an inclusive, just, and sustainable society in order to create transformative change.