



## COVID-19 Pandemic Highlights Urgency of Addressing Children Missing School: Poor Vision Alone Accounts for Missing 135 Days of School Content Annually

Nearly all tasks a child performs in the classroom depend on healthy visual skills. Research indicates that students with undetected and untreated vision disorders (i.e., one in four students), miss a shocking 75-90 percent of all learning (the equivalent of 135 days of school content annually) due to hidden vision challenges (i.e., binocular vision challenges and refractive errors) that make them unable to cognitively process classroom information.<sup>i ii iii</sup> These same children are now struggling through remote home and hybrid learning with hidden vision challenges, contributing to reduced learning and growing emotional or mental health concerns. Nearly three in 10 parents (29%) say their child is "already experiencing harm" to their emotional or mental health.<sup>iv</sup> COVID-19 has led to changes not only in schooling but also in health services delivery, and other disruptions of normal routines that will likely affect children's vision health and well-being.<sup>v</sup> For example, service utilization among Medicaid and CHIP child beneficiaries declined 49% during the early months of the pandemic.<sup>vi</sup> Medicaid, which provides health coverage for nearly 40% of children in the US, is allowing the use of telehealth for Medicaid-funded well-child visits and services; however, these visits, allowed in 15 states, are unable to offset declines in needed in-person visits.<sup>vii</sup>

Current estimates show that by 2050 half of the world's population is expected to be myopic, with a disproportionate impact on our children.<sup>viii</sup> Myopia and myopia progression, as a result of extended near use of tablets and computers used while remote learning or virtual learning during the COVID-19 pandemic, may now speed this prevalence estimate. All the while other refractive errors and binocular vision disorders may make attention to the cognitive demands of distance learning more difficult or impossible for many children.

As U.S. schools reach the end of severely disrupted 2019-2021 academic years, administrators will need to comprehensively address students' learning loss after months of remote schooling and this should include addressing children's need for vision care.<sup>ix</sup> Problems with children's vision have been shown to preclude or limit their lifelong academic, extracurricular, and social success. Vision problems are correctable with timely diagnosis and treatment; however, current approaches to prevention often fall short of ensuring that all children have timely access to comprehensive and high-quality care.<sup>x</sup>

Children's vision problems go undetected for three reasons:

1. Most vision disorders are not symptomatic. The general absence of signs and symptoms leaves many students unaware they are impaired. These students have no frame of reference of how

others process visual information and rarely make a complaint. Also, their parents and teachers do not know they are seeing or processing vision information any worse than other students.

2. When signs and symptoms are present, they are often not recognized as “vision” related. Instead, the signs and symptoms associated with not being able to fully participate in class are misidentified as behavioral issues which become confused with attention-deficit hyperactivity disorder (ADHD) and/or the need for an Individualized Education Plan (IEP).
3. A reliance in the U.S. on “vision screening” in schools has compounded this problem. Significant numbers of children with vision disorders, apart from severe amblyopia (lazy eye), are not identified by the screening. They are returned to the classroom with a supposedly clean bill of eye health and vision, even as their vision system is not functioning properly for learning. Also, it is alarming that students who fail these vision screenings rarely receive needed care, including diagnosis and treatment.

*“A framework for equitable allocation of comprehensive eye examination for all children is not only realistic, it is sustained by current law and adequately funded.”*

Ocular conditions that are more prevalent in the disadvantaged populations which are not detected by vision screening include hyperopia (farsightedness), myopia (nearsightedness), significant astigmatism (irregular curvature of the eye), significant strabismus (eye turn), binocular vision difficulties, and perceptual visual-motor and developmental disorders.<sup>xi</sup> When these conditions go undetected and untreated, they can cause permanent, negative implications to learning for children.<sup>xii</sup> The fundamental reason school screenings miss most vision disorders is that they rely primarily upon assessment of distance vision with eye charts with no consideration of near vision, or the ability of a child to use his or her eyes together; skills essential to reading and reading comprehension. Behavioral health experts are now finding a significant percentage of

children labeled with ADHD have undiagnosed vision conditions that are mistaken for ADHD. Discoverable through eye examination by an eye doctor, many disorders of vision are found at triple the typical rates among individuals labeled with ADHD.<sup>xiii</sup> Research also shows children with IEPs and juvenile offenders have high rates of non-nearsighted, undiagnosed and untreated eye problems including hyperopia (farsightedness) affecting reading speed and comprehension. In fact, a child’s COVID-19 pandemic re-acclimatization to school and in-person learning should include assurance of good vision performance.

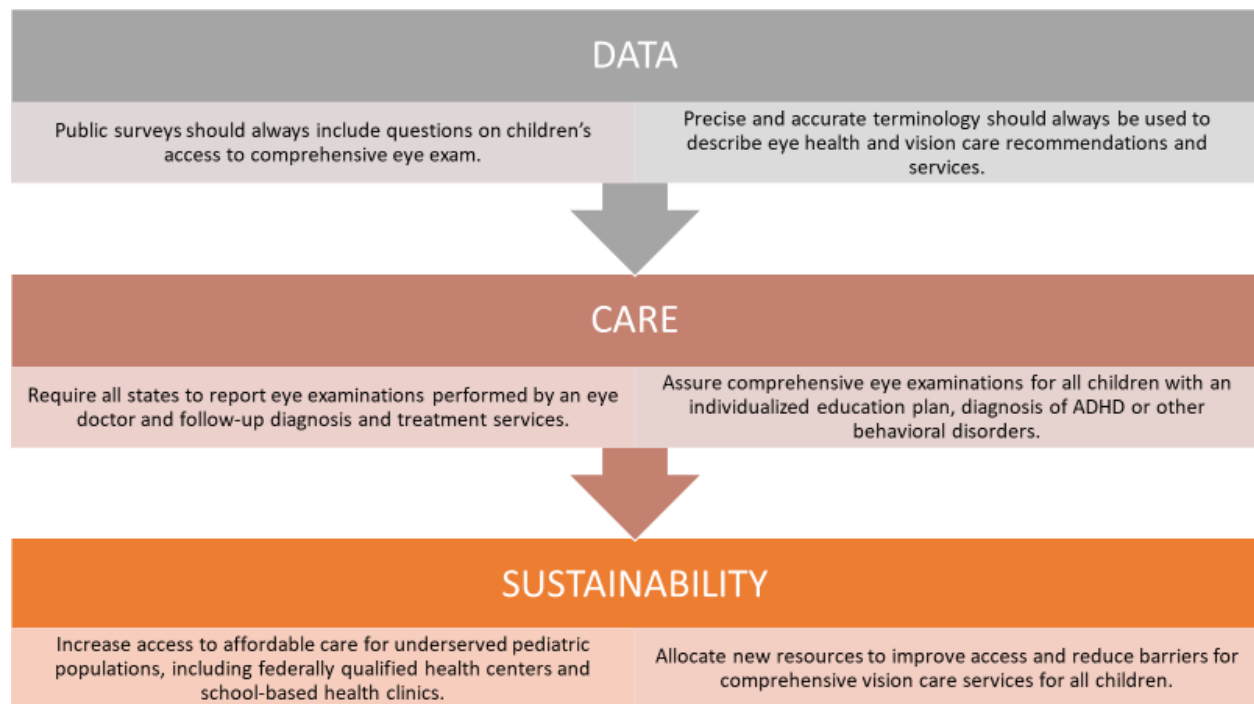
Unfortunately, only a small percentage of children receive an eye examination by an eye doctor. In the U.S. only 7% of children have had an eye examination, by an eye doctor, preceding the start of first grade.<sup>xiv</sup> Of importance, a National Association of Science Engineering and Medicine (NASEM) report *Making Eye Health a Population Health Imperative: Vision for Tomorrow (2016)* reveals “Avoidable vision impairment occurs as a result of outdated assumptions, missed opportunities, and shortfalls in public health policy and health care delivery...the more formidable challenge is lack of access to care (*i.e., eye examination by an eye doctor*).”<sup>xv</sup> To date, three forward-thinking states (*Nebraska, Illinois, and Kentucky*) require eye exams by an eye doctor for children before entering first grade.

Expanding this framework for equitable allocation of comprehensive eye examination for all children is not only realistic, it is sustained by current law and adequately funded.

Medicaid and CHIP cover eye examination (not just screening) and needed glasses as a benefit for all children. For the non-Medicaid and non-CHIP populations (e.g. for employer-based small group coverage and individual insurance market) the American Optometric Association (AOA) and more than thirty other organizations championed the “Essential Pediatric Vision Care Benefit.” This law (ACA 2010) and subsequent regulations provide annual eye examinations by an eye doctor for all children from birth through age 18, including coverage for needed glasses. Importantly, this integrated focus on vision redistributes resources of early childhood health, to better align with science and evidence.

Simply put, to avoid children missing the equivalent of 135 days of school content each academic year, and to proactively address the COVID-19 pandemic related psychological, educational, social, health and well-being needs of children, modifications to our systems of care and prevention (Table 1.0) should be made to assure all children receive a comprehensive eye examination. This examination should be performed by an eye doctor (doctor of optometry/optometrist) by age 5 and then annually, with the eye exam recorded in the child’s immunization record and reported to the child’s education system.<sup>xvi</sup> While agencies seek key measures for a successful COVID-19 lockdown exit strategy, they should consider the potential contribution of optometrists.<sup>xvii</sup>

**Table 1.0**



Importantly, the Centers for Medicaid and Medicare Services (CMS) has begun to include information on children’s eye exams in their missed care initiatives<sup>xviii</sup>; however, much more emphasis on connecting kids

to eye care will be necessary to empower parents with accurate knowledge of the importance of children's eye health and vision care, change referral patterns among providers, and fill wide gaps in care for children exacerbated by the COVID-19 pandemic.

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<sup>i</sup> Saw, S.M., et al., IQ and the association with myopia in children. *Invest Ophthalmol Vis Sci*, 2004. 45(9): p. 2943-

<sup>ii</sup> Association between reading speed, cycloplegic refractive error, and oculomotor function in reading disabled children versus controls, Patrick Quaid and Trefford Simpson, *Graefes Arch Clin Ophthalmology* (2013) 251:169-187.

<sup>iii</sup> [http://www.visionandhealth.org/documents/Child\\_Vision\\_Report.pdf](http://www.visionandhealth.org/documents/Child_Vision_Report.pdf)

<sup>iv</sup> <https://news.gallup.com/poll/312605/parents-say-covid-harming-child-mental-health.aspx>

<sup>v</sup> <https://news.gallup.com/poll/312605/parents-say-covid-harming-child-mental-health.aspx>

<sup>vi</sup> <https://www.kff.org/coronavirus-covid-19/issue-brief/childrens-health-and-well-being-during-the-coronavirus-pandemic/>

<sup>vii</sup> <https://www.kff.org/coronavirus-covid-19/issue-brief/childrens-health-and-well-being-during-the-coronavirus-pandemic/>

<sup>viii</sup> Holden et al *Ophthalmol* 2016; 123: 1036

<sup>ix</sup> Idoiaga N, Berasategi N, Eiguren A, Picaza M. Exploring Children's Social and Emotional Representations of the COVID-19 Pandemic. *Front Psychol*. 2020 Aug 12;11:1952.

<sup>x</sup> <https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2021/01/12/increasing-access-and-reducing-barriers-to-child-vision-care-services>

<sup>xi</sup> Evidence-based preschool-age vision screening: health policy considerations

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6739935/>

<sup>xii</sup> <https://pubmed.ncbi.nlm.nih.gov/12387562/>

<sup>xiii</sup> DeCarlo DK, ADHD and Vision Problems in the National Survey of Children's Health. *Optom Vis Sci*. 2016 May;93(5):459-65. doi: 10.1097/OPX.0000000000000823.

<sup>xiv</sup> 2002 National Health Interview Survey as cited in CDC MMWR, 54(17), 425-9

<sup>xv</sup> <http://www.nationalacademies.org/hmd/Reports/2016/making-eye-health-a-population-health-imperative-vision-for-tomorrow.aspx>

<sup>xvi</sup> <http://www.guideline.gov>.

<sup>xvii</sup> Dawoud D. Emerging from the other end: Key measures for a successful COVID-19 lockdown exit strategy and the potential contribution of pharmacists. *Res Social Adm Pharm*. 2021 Jan;17(1):1950-1953.

<sup>xviii</sup> <https://www.insurekidsnow.gov/>