

# Childhood Blindness: Beyond VISION 2020 and the COVID-19 Pandemic

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## Abstract

The World report on vision in 2019 found it difficult to evaluate VISION 2020's impact on childhood blindness and VI since data on prevalence and causes were scarce. Considering the high chance of the global initiative missing its desired goal in children, we recommend that a sustainable version of it be launched soon. Central to this new initiative shall be better data collection on prevalence and causes of childhood blindness and VI, eye care provision and an updated and uniform system of reporting. Complete and updated data can better reflect the burden and monitor the impact of interventions. However, data collection will continue to be difficult due to the COVID-19 pandemic so the initial phase shall be tailored to the current situation.

## Keywords

COVID-19, eye health, low middle-income countries, pediatric, VISION 2020

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The global initiative VISION 2020 aimed to reduce avoidable blindness and visual impairment (VI) by 2020 including in children.<sup>1</sup> However, the World report on vision in 2019 found it difficult to evaluate the initiative's impact on children since data on prevalence and causes of blindness and VI remain scarce.<sup>2</sup> In 2007, the estimated number of blind children was 1.4 million or 3% of the global blind with a significant portion caused by avoidable eye diseases.<sup>3</sup> The number looks small compared to the latest data on the global burden of blindness and VI. However, blindness in children, compared to adults, has more profound and widespread life-long implications on their quality of life, health, sustainable development, and the economy.<sup>3</sup> In the past 2 decades, VISION 2020 has reportedly reduced significantly the incidence of xerophthalmia and eye diseases associated with infection in children.<sup>3</sup> This, in addition to improved general health care and reduced child mortality, resulted in a shift to non-communicable eye diseases as common causes of pediatric blindness.<sup>3</sup> The shift highlighted the need for increased access to affordable and improved eye care. Recognized by VISION 2020, it included in its recommendations efficient approaches in the use of the different eye care levels and training of more eye care personnel.<sup>1</sup>

This year marks the end of VISION 2020 and the over-all assessment of the initiative's impact. However,

with the COVID-19 pandemic, it will be again difficult to achieve that. Conducting population-based studies for children will be challenging due to school closures and to safety issues in doing community surveys. Eye care provision is similarly difficult to assess although access to affordable and quality eye care remains a huge challenge especially in Low Middle-Income Countries (LMIC) even prior to the pandemic. The COVID-19 pandemic will also not just make assessment difficult but it will worsen the burden of VI itself. School closure forced Filipino children to online education and made the use of gadgets or laptops a must from kindergarten to high school students. Unregulated use of these technologies predispose them to different eye problems especially myopia, an already huge public health concern in Asia.<sup>4</sup> Staying indoors has also been associated with sedentary

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lifestyle and obesity which predispose children as they grow older to other non-communicable diseases with associated eye findings.<sup>5</sup>

Similarly, the pandemic affected pediatric eye care delivery. Filipino children needing close medical follow-up due to amblyopia had their consult delayed due to postponement of clinic schedules which negatively affected visual rehabilitation. Over 170 000 children are similarly affected in Bhutan. Children with eye malignancies such as retinoblastoma needing additional treatment (eg, chemotherapy or radiotherapy) had their scheduled treatment delayed as well not just because hospitals were made COVID-19 centers but it was difficult for them to get transportation to the hospitals too.<sup>6</sup> While life threatening conditions were prioritized, children requiring follow-up for ROP screening were postponed in Bhutan. The pandemic also made eye care services less affordable. Children needing urgent surgeries but are not considered emergent cases had to undergo, together with their watcher in some hospitals, the RT-PCR test for COVID-19 prior to admission. Medical personnel dealing with them during their admission need to don personal protective equipment (PPE) every time personnel attend to them. Both the test and the PPE drive up further an already high hospitalization costs in the Philippines.

Considering the high chance of VISION 2020 missing its desired goal especially in children, we recommend that a sustainable version of it has to be launched soon. Central to this initiative shall be better data collection on prevalence and causes of childhood blindness and VI, eye care provision and an updated and uniform system of reporting. Complete and updated data can better reflect the burden and monitor the impact of interventions. Data collection will continue to be difficult so the initial phase shall be tailored to the demands of the COVID-19 pandemic. Options include developing mobile applications that can conduct electronic survey and record self-administered visual acuity testing similar to the RAAB app used in Bhutan. Another is hospital-based chart reviews as temporary alternative like in the Philippines where the hospital electronic medical record database was used to determine local prevalence and causes of childhood blindness and VI. These may not be the best alternatives to population-based studies but they are safer and more updated than those conducted in schools for the blind.

Reduction thru early screening and intervention shall remain a priority in the new version of VISION 2020 and the WHO global health agenda. Policy changes focused on integrating pediatric eye health in national and international child health initiatives to

address childhood blindness are needed. The National Vision Screening Act is already a big move forward for the Philippines. However, its implementation is delayed due to school closure. A policy though suggesting the limitation of screen time of the students by the Department of Education is a welcome alternative. Beyond the COVID-19 pandemic, eye health shall be included in the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) which will lead to earlier detection and management of congenital and developmental blinding eye abnormalities.<sup>7</sup> To combat the emerging epidemic of refractive error, particularly myopia, policies shall be continuously introduced to promote proven interventions such as prolonging outdoor play among students in Taiwan.<sup>8</sup> A proposal had already been made to have out-patient visits and spectacles be covered by the Philippine national health insurance to reduce the burden of uncorrected refractive errors. Training primary health workers and school teachers for the vision screening at well-baby clinics and school eye health programs shall be continued. Training and hiring of more pediatric ophthalmologists in government hospitals will help provide affordable and quality pediatric eye care. Research and development of effective but affordable ophthalmic equipment, surgical, and medical supplies shall be continuously promoted thru government grants similar to what India has done.<sup>9</sup> This has continuously provided low cost ophthalmic equipment, surgical, and medical supplies in the Philippines and other LMIC. Emphasis should also be given on preventing disability and improving quality of life through education and rehabilitation as non-avoidable causes would increase.

### Authors' Note

This submission has not been published anywhere previously and that it is not simultaneously being considered for any other publication. This paper has not been previously submitted to any journal.

### Author Contributions

The authors equally contributed to the conceptualization, writing and final approval of this manuscript.

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