Early Intervention in Paediatric Myopia

Policy Brief

IAPB

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1 Introduction

Myopia has become one of the most significant public health challenges of the 21st century, affecting an estimated 30% of the world's population in 2020 and projected to affect 50% by 2050, with 10% developing high myopia and facing a substantially elevated risk of irreversible sight loss.[1] The rise of myopia is driven by a complex interplay of genetic, environmental, and behavioural factors, including intensive near-work demands, reduced time outdoors, and changing patterns of early childhood development and education.[2] Children are at the greatest risk of long-term vision impairment: earlier onset accelerates axial elongation and substantially increases the lifetime risk of myopic macular degeneration, retinal detachment, glaucoma, and cataract.[3-4] As prevalence rises - and in some regions, accelerates - there is growing global consensus that a coordinated, system-wide response is needed.

The consequences for children extend well beyond blurred distance vision. Myopia can affect learning, physical activity, community participation, and psychosocial well-being, and children who develop myopia early face the highest risk of progressing to levels of refractive error that cause irreversible eye conditions. These complications can lead to permanent vision loss during adolescence or adulthood, limiting educational attainment, affecting future employment and quality of life, and generating long-term health-care costs. Globally, the economic impact of myopia - including productivity losses and the costs of treating myopia-related complications - is already measured in the billions of dollars each year and will continue to rise as prevalence increases.

Early intervention for paediatric myopia refers to the set of evidence-based, preventive, behavioural, screening-based, and clinical strategies that are applied before or soon after myopia onset, with the aim of:

Delaying or preventing onset	**Identifying children at risk early**	**Slowing progression once myopia develops**

In this brief, early intervention is defined to include prevention, early detection, clinical myopia control, and systems-level actions that support these goals. Importantly, the scope intentionally excludes refractive correction (i.e., glasses for visual acuity correction alone). While correction is essential for learning, function, and well-being - and is a critical part of comprehensive child eye health - it is not designed as a strategy to prevent myopia onset or to actively control progression, and therefore sits outside the focus of early intervention

as defined in the International Myopia Institute (IMI) framework.[5-6] To avoid conceptual overlap, refraction and spectacle correction are addressed through other established policy and service-delivery guidance, while this brief focuses on interventions that directly influence the epidemiology and trajectory of paediatric myopia.

This policy brief synthesises the strongest available evidence from the IMI White Papers (2019–2021) on the definition and classification of myopia, risk factors, prevention of onset, clinical management, ethical considerations, and population impact. It provides a coherent framework, structured into four Core Action Areas, to support countries in making context-appropriate and evidence-informed policy decisions for early intervention in paediatric myopia. The guidance reflects global best practice, drawing on randomised trials demonstrating the protective effect of time outdoors,[7-8] the robust evidence base for pharmaceutical and optical control interventions,[9-10] and international consensus on systems-level enablers such as trained workforce, regulatory pathways, and monitoring systems.[11-12]

The brief was prepared through a consultative process led by the International Agency for the Prevention of Blindness (IAPB), drawing on input from more than 70 individuals across more than 25 countries, representing government, ophthalmology and optometry, school health professionals, global health agencies, NGOs, researchers, professional associations, and industry partners. The guidance that follows reflects the collective insights of this global group and aims to provide practical, evidence-based options that countries can adapt, sequence, and apply according to their prevalence, system maturity, and policy environment.

Importantly, this policy brief is accompanied by a complementary Advocacy Guide, which translates these technical recommendations into practical messaging, stakeholder engagement strategies, and tools to support national and regional advocacy for early intervention in paediatric myopia.

This work was sponsored by Santen, whose interest in early intervention and paediatric myopia helped catalyse a global conversation across diverse regions and practice settings.

2 Framework for Action: Core Action Areas

This brief proposes four Core Action Areas that together provide a structured and comprehensive approach to early intervention in paediatric myopia: Prevention, Early Detection, Control, and Systems Integration. These areas reflect the full continuum of population-level and clinical strategies needed for early intervention in paediatric myopia. They are designed to be used flexibly and in combination, with countries selecting and sequencing actions according to their context. Practical examples of how countries with different epidemiological and system profiles might apply this framework are provided in the annexes.

2.1 Prevention: Delaying Onset

Prevention focuses on reducing the likelihood that children who develop myopia in the first place. As age of onset continues to shift earlier in many countries, prevention is now recognised as one of the most important public health strategies for reducing lifetime risk of high myopia and its complications.

Why does it matter? Age of onset is a critical determinant of long-term refractive error: children who develop myopia earlier progress for longer and have a far higher likelihood of reaching high myopia. Delaying onset by even one or two years can meaningfully reduce lifetime risk of severe eye conditions, including myopic macular degeneration and retinal detachment.[13] Prevention also tends to be more equitable because school-based and public health measures can reach all children regardless of ability to pay.

What is the evidence? A substantial body of evidence shows that increased time outdoors significantly reduces the risk of incident myopia. Randomised controlled trials in China, for example, found that adding 40 minutes of outdoor time at school each day reduced new cases by 23% over three years.[14-15] Observational studies in Australia, Singapore, and Europe confirm that outdoor exposure is protective.[16] Evidence also links prolonged near work, digital device use, and intense educational pressure with increased risk of onset.[17]

What does this mean in practice? Prevention strategies focus on modifying environmental and behavioural factors associated with onset. In practice, this means increasing daily time outdoors in schools and early childhood education; promoting balanced screen use; addressing excessive near work and homework loads; and implementing public campaigns linking eye health to overall child well-being. These measures require policy attention and systems coordination but can be implemented at relatively low cost.

2.2 Early Detection: Identifying Children at Risk Early

Early detection ensures that children at risk of developing myopia, or already showing early refractive changes, are identified before significant sight loss occurs. This makes intervention more effective and reduces missed opportunities during crucial developmental years.

Why does it matter? Children with pre-myopia often progress quickly once onset begins. Detecting risk early enables preventive measures (such as increased outdoor time or behavioural modifications) or, where appropriate, early clinical review. Early detection also strengthens links between schools, families, and health systems, building referral pathways and embedding eye health within routine child health services. Finally, early detection pathways not only support timely intervention for myopia, but help identify other childhood eye conditions that may affect learning and development.

What is the evidence? School-based screening programmes have been shown to detect early refractive changes reliably and cost-effectively, particularly when integrated into existing school health platforms.[18] Early referral and monitoring improve outcomes by enabling timely initiation of preventive or control interventions.[19] While visual-acuity–based school screening is effective for identifying children with functional vision impairment, it will not detect pre-myopia or early refractive change, particularly in younger children who may

still pass standard acuity thresholds. Nonetheless, the IMI definition of pre-myopia (≤ +0.75 D to > –0.50 D plus risk factors) provides an evidence-based framework for identifying children with high likelihood of imminent onset in settings where for guiding closer monitoring and follow-up in clinical or primary care settings.[20]

What does this mean in practice? Early detection includes school-based vision screening at key developmental stages; training teachers and primary health workers to recognise early signs; and establishing clear pathways to optometrists and ophthalmologists. Children with known risk factors – such as family history of myopia, early onset of near work, or rapid educational progression – may warrant closer monitoring or earlier referral using the IMI definition of pre-myopia to guide monitoring and referral, even if they pass visual-acuity screening. Data from screening programmes can also feed into national surveillance systems.

2.3 Control: Slow Myopia Progression Through Evidence-Based Interventions

Control interventions aim to slow myopia progression after onset in order to prevent or reduce the incidence of serious ocular complications associated with myopia. This is crucial for preventing high myopia and its associated complications.

Why does it matter? The risk of severe eye disease rises sharply once refractive error reaches –5.00 D or greater and is closely tied to axial length.[21] Slowing progression during childhood is therefore critical for preventing lifelong sight loss. Control interventions also reduce economic burden by preventing costly complications in adulthood.

What is the evidence? An expanding body of evidence base supports the effectiveness of pharmaceutical and optical interventions for myopia control. Low-dose atropine (0.01–0.05%) has been shown to reduce progression by 50–60% in multiple trials.[22-23] Myopia control spectacle lenses and multifocal or dual-focus contact lenses have been shown to produce moderate, clinically meaningful reductions in myopia progression.[24] Orthokeratology also slows axial elongation when appropriately monitored.[25]

What does this mean in practice? Control involves making evidence-based treatments accessible and affordable. In practice, this includes approving, subsidising, and prescribing low-dose atropine; approving and subsidising myopia control spectacle lenses or contact

lenses; establishing monitoring schedules (e.g., refraction and axial length); and developing national clinical guidelines. Ensuring informed consent is essential, particularly because some interventions remain off-label in many jurisdictions.

2.4 Systems Integration: Embed Myopia into Health and Education Systems

The systems integration action area focuses on the structure, policies, workforce, financing mechanisms, and governance arrangements needed to support myopia interventions at scale and sustain them over time.

Why does it matter? Interventions, no matter how effective, cannot achieve population-level impact without supportive and integrated systems. Systems integration supports geographical consistency, reduces inequities, and anchors myopia work within long-term health and education plans. It also enables scaling: countries can expand from prevention to detection to control as systems mature.

What is the evidence? Countries that have embedded myopia prevention and management into national strategies - whether through curriculum requirements, national clinical guidelines, or expanded universal health coverage (UHC) benefits - achieve broader reach and more sustainable coverage.[26-27] Effective systems require regulatory approval pathways for low-dose atropine, procurement systems, data platforms that track prevalence and outcomes, and trained workforce across both health and education sectors.

What does this mean in practice? Systems integration includes developing national strategies for early intervention in paediatric myopia; aligning myopia with broader child health, NCD, and UHC priorities; strengthening regulatory pathways for medicines such as low-dose atropine; expanding training for optometrists and ophthalmologists; financing spectacles and treatments; establishing monitoring indicators; and fostering coordination across ministries of health, education, and urban planning.

Why Parents Matter for Early Intervention in Paediatric Myopia

Parents and caregivers play a central role in shaping children's visual environments, health-seeking behaviours, and adherence to early intervention strategies. Daily decisions about outdoor time, screen use, eye examinations, and follow-up care strongly influence whether myopia is detected early and managed effectively.

While parents do not directly set national policies or health-system frameworks, they are critical to implementation, demand, and social norms. In many contexts, parental awareness and expectations shape how schools prioritise outdoor time, how health services are used, and how readily early intervention options are accepted.

For this reason, parents are a key audience for advocacy related to early intervention in paediatric myopia. Practical guidance, messaging, and engagement strategies tailored to parents and caregivers are provided in the accompanying Early Intervention in Paediatric Myopia: Guide to Advocacy, which complements this policy brief by supporting action beyond formal policy change.

3 Policy Recommendations

The following recommendations translate the four Core Action Areas into practical policy actions grounded in the evidence presented in Section 2. They are designed to support countries to act across the continuum of prevention, early detection, control, and systems integration. Each recommendation reflects findings from the IMI White Papers and global best practice, and can be adapted according to national prevalence, health-system maturity, and educational context.

A more detailed, operational breakdown of each recommendation - including example activities and implementation options - is presented in Annex A. This annex synthesises global evidence into a practical menu of actions that countries can tailor to their context.

3.1 Prevention: Delay the Onset of Myopia

Recommendation 1: Institutionalise daily outdoor time in schools and early childhood settings.

A large body of research shows that increased time outdoors reduces the risk of children developing myopia. Governments should formalise requirements for outdoor recess or structured outdoor activities, supported by practical guidance for schools.

Recommendation 2: Promote balanced near work and screen use through coordinated national guidance.

Prolonged near work, digital device use, and heavy homework loads are associated with earlier onset. Governments should issue age-appropriate recommendations on screen time and homework, reinforced through communication campaigns.

Recommendation 3: Integrate eye-healthy environments and behaviours into early childhood and school curricula.

Curriculum authorities should embed messages about outdoor play, balanced visual behaviour, and eye health habits into health, science, or wellbeing curricula, reinforcing prevention as a lifelong skill.

3.2 Early Detection: Identify Children at Risk Early

Recommendation 4: Implement school-based vision screening using standardised protocols.

Evidence shows that school screening is cost-effective and reliably detects early refractive changes. Programmes should recognise that visual-acuity-based school screenings will not detect pre-myopia and ensure pathways for further assessment where needed (e.g. in high-risk groups).

Recommendation 5: Build robust referral pathways connecting schools to trained eye-care providers.

Screening only improves outcomes when paired with timely referral. Ministries of Health should establish clear referral criteria, ensure families understand pathways, and integrate data into PHC systems.

Recommendation 6: Strengthen the capacity of appropriate school or primary-level personnel to identify children with potential vision problems and ensure timely referral.

Teachers, school nurses, or primary health workers may all play a role in early identification, depending on the setting. Screening is most effective when carried out by trained personnel who receive appropriate support and opportunities to maintain accuracy, and when simple quality-assurance measures are in place.

Recommendation 7: Ensure accurate diagnosis of myopia using refraction techniques that adequately control ocular accommodation.

Accurate diagnosis is essential between detection and treatment. Governments and professional bodies should promote diagnostic approaches that minimise accommodation and support reliable clinical decision-making, helping ensure that myopia control interventions are targeted appropriately and safely.

Recommendation 8: Strengthen eye-care practitioner skills and access to appropriate refractive equipment and consumables.

Accurate diagnosis depends on both practitioner competency and access to appropriate tools. Governments should support training in paediatric refraction and ensure availability of essential refractive equipment and consumables. Strengthening diagnostic capacity improves the quality, equity, and safety of early intervention and supports effective scale-up of myopia control services.

Recommendation 9: Embed parental engagement within early detection and referral systems.
Governments should ensure that school screening and referral frameworks are designed to actively engage parents and caregivers, including through clear communication, culturally appropriate information, and mechanisms that support shared decision-making. Strengthening parental engagement improves follow-up, early action, and continuity of care following screening.

3.3 Control: Slow Myopia Progression Through Evidence-Based Interventions

Recommendation 10: Ensure access to clinically proven myopia control interventions, including low-dose atropine and optical devices.
High-quality clinical trials consistently show that certain pharmaceutical and optical treatments can significantly slow myopia progression. Governments should ensure these treatments are available, affordable, and prescribed responsibly.

Recommendation 11: Develop and adopt national clinical guidelines for paediatric myopia management.
Guidelines should set out when to initiate treatment, monitoring schedules (including refraction and axial length), the use of combination treatments where appropriate, duration of therapy, and criteria for discontinuing therapy. National professional associations should endorse and promote these guidelines.

Recommendation 12: Protect children's safety and rights through informed-consent procedures and quality assurance.
As some interventions remain off-label in many jurisdictions, Ministries of Health should require informed consent, ensure practitioner competency, and monitor adverse events.

3.4 Systems Integration: Embed Myopia into Health and Education Systems

Recommendation 13: Develop a national myopia strategy or integrate myopia explicitly into existing eye health, child health, or NCD plans.
Countries that embed myopia into national policy frameworks achieve more sustainable impact. Strategies should articulate national goals, pathways, and financing commitments.

Recommendation 14: Include essential myopia services within Universal Health Coverage benefit packages.

UHC inclusion ensures equitable access to spectacles, screening, diagnosis, and myopia control treatments. This requires appropriate reimbursement codes, full public coverage, procurement systems, and equity safeguards, that ensure early adoption does not widen access gaps between communities or socioeconomic groups.

Recommendation 15: Strengthen and expand the eye-care workforce for prevention, screening, and management.

Countries should update competency frameworks, expand optometry training, and provide continuing professional development for child-friendly refraction and myopia control protocols.

Recommendation 16: Establish national monitoring systems to track incidence, prevalence, and access to services.

Countries should routinely collect data on myopia prevalence, high myopia in adolescents, referral completion rates, and treatment uptake. Data should inform ongoing strategy refinement.

Recommendation 17: Foster cross-sectoral coordination between health, education, and urban planning ministries.

Myopia prevention and early detection rely on schools; clinical control relies on health systems; and environmental determinants (e.g., access to outdoor space) rely on planning authorities. Countries should establish national coordination mechanisms, task forces, or working groups to align policies across sectors.

4 Case Studies

4.1 China

Policy context

China has treated childhood myopia as a major public health and education issue, affecting millions of children and adolescents and posing long-term risks to population eye health, productivity, and health system sustainability. By the mid-2010s, myopia prevalence among school-aged children had reached levels that prompted concern well beyond the health sector. In response, in 2018 the Chinese Government launched a comprehensive national plan for myopia prevention and control, positioning myopia as a shared responsibility across government, families, schools, and society. The plan involved multiple ministries, including education, health, and sports authorities, and explicitly framed myopia as both a health and development challenge, rather than a narrow clinical problem.

Policy challenge

Rapidly rising prevalence of myopia among school-aged children was linked to sustained near work, education practices, and limited time outdoors, particularly in urban environments. While eye exercises and vision checks had long been part of school routines, these approaches alone were insufficient to curb population-level trends or delay myopia onset. The challenge was not simply identifying effective interventions, but embedding prevention into everyday environments, particularly schools, in a way that was scalable, enforceable, and aligned with broader education objectives.

Policy action taken

China introduced a whole-of-society, school-centred policy package that combined prevention targets, accountability mechanisms, and changes to the education system. A central prevention lever was increasing time outdoors, reflecting growing evidence that outdoor exposure can delay the onset of myopia in children.

Analyses of China's national approach describe expectations of approximately 1-2 hours of outdoor time per day, delivered through curriculum adjustments, structured outdoor activities, and changes to the school timetable. These measures were complemented by

actions to improve classroom lighting, manage homework load, regulate screen use, and strengthen vision monitoring in schools. Importantly, responsibility for implementation was shared across schools, families, and local authorities, reinforcing myopia prevention as a collective societal task rather than an individual behaviour change alone.

Enablers of change

- **High-level political leadership and multi-sector mobilisation,** which elevated myopia from a clinical concern to a formal national priority. By engaging education authorities alongside health agencies, the policy was able to influence the environments where children spend most of their time.

- **A strong and growing evidence base** supporting outdoor time as a population-level prevention measure. This evidence helped justify system-wide interventions and supported the feasibility of implementation within schools, rather than relying solely on clinical or optometric pathways.

Implications for early intervention in paediatric myopia

By institutionalising outdoor time and school-based prevention, China demonstrates how primary prevention policies can delay myopia onset at scale, reducing the number of children who later require clinical myopia control interventions. The case highlights the importance of acting before myopia develops, particularly through policies that reshape children's daily environments rather than relying exclusively on downstream clinical solutions. For policymakers elsewhere, China's approach illustrates the potential of prevention-focused, education-linked strategies as a core component of early intervention across the myopia care continuum.

More information (optional – but recommended)

Global Eye Health Commission case study on China's national plan
How China is responding to the challenge of myopia
Review noting outdoor-time specifications in China's national programme

4.2 Singapore

Policy context

Singapore has long recognised childhood myopia as a major public health concern, with some of the highest prevalence rates globally. Given the early age of onset and the strong association between early myopia and higher risk of high myopia later in life, the Singapore Government has prioritised early detection and prevention as core public health strategies. Vision screening has therefore been embedded within a broader national response to myopia, led by government agencies and closely integrated with the education system.

Central to this approach is the National Myopia Prevention Programme (NMPP), overseen by the, Ministry of Health, Health Promotion Board in collaboration with the Ministry of Education and clinical partners. The programme positions childhood vision screening as a routine, population-wide public health function rather than an optional clinical service.

Policy challenge

With high rates of myopia developing at increasingly younger ages, Singapore faced the challenge of ensuring that refractive error was identified early and systematically, before progression accelerated. Reliance on ad hoc optometry visits risked delayed diagnosis, uneven coverage, and inequities linked to family awareness or ability to seek care.

The policy challenge was therefore to design a screening approach that achieved high coverage, consistency, and follow-through, while also supporting prevention behaviours and parental engagement. Screening needed to be acceptable to families, feasible at scale, and embedded within children's everyday settings.

Policy action taken

Under the NMPP, Singapore implemented government-led, school-linked vision screening for children, beginning in early childhood education and continuing through the primary school years. The Health Promotion Board teams conduct regular vision checks in preschools and primary schools, with screening schedules aligned to key developmental stages.

Children identified with suspected refractive error are referred for further assessment and management, while parents and caregivers receive information to support timely follow-up. Screening is complemented by health promotion and education activities, including parent workshops, teacher engagement, and public campaigns that reinforce eye health behaviours such as outdoor time, appropriate screen use, and regular eye checks.

By embedding screening within schools and early childhood settings, Singapore ensured that vision assessment became a routine and expected part of child development, rather than dependent on individual initiative.

Enablers of change

Several factors underpin the effectiveness of Singapore's screening approach:

- **Strong government stewardship**, with clear leadership from the Health Promotion Board and close coordination with the education sector, enabling near-universal reach and consistent delivery.

- **Strong clinical and research leadership**, including contributions from the Singapore National Eye Centre, Myopia Centre which provided a robust evidence base, specialist expertise, and links between population screening and tertiary eye care. This strengthened the credibility of the programme and supported alignment between public health action and clinical management.

- **Integration with prevention messaging**, ensuring screening was not a standalone activity but part of a broader package linking detection, behaviour change, and follow-up care.

- **Sustained investment in public health infrastructure**, allowing screening to be delivered at scale and over time, rather than as a short-term programme.

Implications for early intervention in paediatric myopia

Singapore's experience demonstrates how mandated, population-based screening can serve as a critical early intervention lever in paediatric myopia. By identifying refractive error early and linking screening to prevention education and referral pathways, the programme supports timely action to slow progression and reduce future risk of high myopia.

The case highlights the value of government-led screening embedded within education systems, particularly in settings with high myopia prevalence. For other countries, Singapore offers a model for how systematic screening can complement prevention and control strategies across the myopia care continuum.

More information

Singapore Health Promotion Board: National Myopia Prevention Programme
Singapore National Eye Centre: Myopia Centre

4.3 Netherlands and Belgium

Policy context

Across Europe, rising rates of childhood myopia have increasingly been linked to lifestyle changes, including reduced outdoor time, prolonged near work, and high levels of screen exposure.

In December 2025, the Netherlands adopted the Landelijke nota gezondheidsbeleid 2025-2028 (“Working Together on Health”), its four-year Memorandum required under Article 13 of the Public Health Act. Developed by the Ministry of Health, Welfare and Sport (VWS), the Memorandum sets national public health priorities and provides direction for municipal health policy implementation. Municipalities must reflect these priorities within two years in a local health policy note. For the first time, myopia (bijziendheid) is explicitly recognised within the national prevention framework. The policy describes myopia as an “invisible epidemic” and positions children’s eye health within mainstream public health priorities.

In parallel, Belgium’s Conseil Supérieur de la Santé (CSS), the national public health advisory body, published a national advisory report (December 2025) on screen use and social media among young people. While broader in scope, it explicitly highlights eye health risks, including myopia, linked to excessive screen exposure.

Together, these developments signal growing institutional recognition of paediatric myopia across Europe.

Policy challenge

The Dutch National Health Policy memorandum states that one in five children aged 5–19 in the Netherlands is nearsighted. It attributes rising prevalence to modifiable lifestyle factors such as reduced time outdoors, increased screen use, prolonged near work, and limited parental awareness of risks. The document emphasises that early-onset myopia can lead to serious eye complications later in life, reframing myopia from a benign refractive issue to a long-term public health concern.

Similarly, the Belgian CSS report identifies myopia, pre-myopia and digital eye strain as documented physical consequences of excessive screen exposure. It cites evidence of a link between screen time and myopia risk, reinforcing the need for preventive action.

Policy action taken

In the Netherlands, the 2025-2028 National Health Policy Memorandum marks a significant shift by formally embedding myopia within the country's statutory public health framework. For the first time, myopia is explicitly recognised as a national prevention priority and described as an "invisible epidemic," signalling political acknowledgement of both its scale and long-term consequences. Crucially, the policy goes beyond recognition: it integrates myopia into the broader prevention architecture that guides municipal health action. Stabilisation of myopia rates is identified as a desired outcome of local public health efforts, placing children's eye health alongside established priorities such as vaccination coverage, obesity prevention, youth alcohol and tobacco reduction, and the promotion of outdoor play. By situating myopia within this outcomes framework, the Netherlands effectively elevates it from a clinical concern to a measurable population health objective. This creates a clear expectation for municipalities to incorporate eye health into prevention programming and reinforces the role of environmental and behavioural determinants – particularly outdoor time and screen exposure – within national health strategy.

In Belgium, while the development takes the form of a scientific advisory rather than statutory policy, it represents an important institutional milestone. The Superior Health Council's December 2025 report explicitly identifies myopia as a documented physical risk associated with excessive screen use among young people and translates emerging evidence into practice-oriented recommendations. By advising systematic discussion of screen exposure during paediatric consultations and routine child health checks, the report outlines concrete entry points for early intervention within existing health systems. Although advisory in nature, such opinions frequently inform federal and regional health guidance and professional standards, thereby shaping policy and practice indirectly but meaningfully.

Enablers of change

The Dutch policy shift was enabled in part by the structure of the country's four-year statutory health policy cycle, which provides regular opportunities to integrate emerging public health challenges into national strategy. The prevention-oriented framing of the 2025-2028 note created a conducive environment for recognising myopia, particularly as the condition can be clearly linked to modifiable lifestyle determinants such as reduced outdoor exposure and increased screen use. This alignment with broader public health objectives, including physical activity promotion and healthy childhood development, made it possible to position myopia within an established prevention narrative rather than as a standalone ophthalmic issue. Furthermore, the decentralised Dutch public health system,

in which municipalities are responsible for implementing national priorities, provides a practical mechanism for translating strategic recognition into local action.

In Belgium, the presence of a respected, independent public health advisory body played a critical enabling role. The Superior Health Council's mandate to synthesise evidence and provide recommendations to government and public institutions creates a formal pathway for integrating emerging research into health policy discourse. By situating myopia within the broader societal debate on digital exposure and youth wellbeing, the Council was able to bring eye health into mainstream public health discussions. Together, these institutional structures – statutory national strategy in the Netherlands and authoritative scientific advisory mechanisms in Belgium – demonstrate how governance frameworks can facilitate the elevation of paediatric myopia on the policy agenda.

Implications for early intervention in paediatric myopia

This case study demonstrates how formal recognition within national health strategies can catalyse early intervention efforts.

Key implications include:

- **Legitimisation of prevention:** Positioning myopia within national prevention strategies shifts focus toward early risk reduction
- **Municipal implementation pathways:** In the Netherlands, municipalities are explicitly tasked with developing local prevention policy in line with national priorities, creating opportunities for school-based and community-level action.
- **Integration into child health services:** Belgian recommendations highlight paediatric consultations as a practical channel for discussing screen exposure and eye health.
- **Lifestyle-based prevention narrative:** Linking myopia to outdoor time and screen exposure supports upstream interventions rather than relying solely on clinical treatment.

Together, these developments illustrate a shift from reactive management to proactive prevention in European paediatric myopia policy.

More information

Netherlands: Landelijke nota gezondheidsbeleid 2025-2028("Working Together on Health"), Ministry of Health, Welfare and Sport (VWS).
Belgium: Conseil Supérieur de la Santé (CSS), Report on the effects of screen use and social media on young people.

5 How to Use this Brief

This policy brief is designed as a practical tool for governments, ministries of health and education, and implementing partners. It provides both a framework for action and a list of policy recommendations that countries can select from and adapt to their own context. It is deliberately non-prescriptive: no country is expected to adopt every recommendation at once. Instead, the brief supports sequenced, context-sensitive decision-making.

The two primary factors that determine which core action areas and policy recommendations are most relevant for a given country are:

- The prevalence and epidemiological profile of myopia, and
- The maturity of the eye health system, including workforce, service delivery, regulatory mechanisms, and financing pathways.

Countries sit at different points along these two dimensions. For example, a country with high prevalence and an advanced eye-care system may prioritise clinical myopia control interventions such as low-dose atropine and myopia control lenses. On the other hand, a country where prevalence is rapidly rising but still moderate, and where the system is less developed, may focus on prevention and early detection, implemented through schools and primary care.

These examples are not meant to suggest that countries should focus on only one area or act within a narrow pillar. Prevention is beneficial everywhere, and early detection strengthens systems in all contexts. Rather, the intention is to illustrate how countries can sequence and prioritise actions in a way that responds sensibly to their specific needs, capacities, and stage of the myopia burden. The intention is to support countries to start where they are, building from feasible entry points and scaling up over time.

5.1 Key drivers and their implications

Driver	Key Questions	Implications for Selecting Core Action Areas & Policy Recommendations
Myopia prevalence & epidemiological profile	What is the current prevalence of myopia and high myopia? At what age is myopia typically emerging? Is prevalence rising, stable, or already high? Are there identifiable high-risk groups, such as children with a family history of myopia, who may benefit from earlier referral or closer monitoring? Are urban/rural or socioeconomic disparities widening?	High or rapidly rising prevalence: Prioritise control (atropine, optical interventions), plus early detection. Emerging prevalence: Focus on prevention (outdoor time, reduced near work) and early detection. Low prevalence: Emphasise health promotion, surveillance, and building system readiness.
Health system maturity (eye health + broader PHC)	Is there a trained optometry/ ophthalmology workforce? Are school health programmes or PHC platforms functional? Are regulatory and procurement systems strong enough to support access to atropine and devices? Are spectacles and refractive services affordable?	Mature systems: Broaden into high-impact control interventions and national guidelines; integrate myopia into UHC packages. Developing systems: Prioritise early detection via schools/PHC, strengthen referral pathways, and invest in workforce development, and address supply-chain readiness for essential equipment, medicines, and consumables. Limited systems: Focus on prevention and foundational systems strengthening; avoid interventions that risk inequity or poor quality.

5.2 Additional Factors to Consider

While prevalence and system maturity are the two core drivers, several additional contextual factors influence which core action areas and policy recommendations are feasible, impactful, and sustainable. These factors can accelerate or constrain implementation and should be considered during planning.

- **Political Commitment and Policy Windows**

  High-level political interest in child health, education reform, NCDs, or UHC can create opportunities to embed myopia actions into broader sectoral reforms. Countries undergoing curriculum changes or updating national health strategies, for example, may find it easier to adopt interventions such as outdoor time requirements or national guidelines for myopia management. Myopia prevention policies also benefit from strong alignment with broader child health and wellbeing priorities. Key behavioural recommendations for myopia – such as increasing time outdoors, reducing prolonged sedentary screen use, and promoting balanced daily routines – overlap closely with policy objectives related to childhood obesity, physical activity, sleep, and mental health. This alignment creates opportunities for integrated action across sectors and has been shown to resonate strongly with policymakers seeking co-benefits from single interventions.

- **Financing Capacity and Affordability**

  Different myopia interventions have very different resource implications, and these often determine what countries can implement and how quickly. Prevention is generally low-cost, but not cost-free: while increasing outdoor time may require little direct expenditure (depending on context), effective implementation still involves policy changes, communication campaigns, and adjustments to school practice. Early detection requires modest but consistent recurrent financing to support screening, referral pathways, and basic equipment. Control interventions demand sustained and often higher levels of investment to ensure equitable access to spectacles, low-dose atropine, and myopia control lenses. Control interventions also depend on the availability of skilled refraction and quality optical services as an enabling foundation. In all contexts, financing considerations strongly influence the pace and scale of adoption.

- **Education System Structure and Governance**

  Prevention and screening interventions rely heavily on school systems. Centralised systems may be able to mandate outdoor time nationally, while decentralised systems may need flexible guidance and local leadership. Teacher workload, school timetables, the presence of school nurses, and the availability of outdoor space also shape feasibility.

- **Cultural Norms and Parental Expectations**

  Attitudes toward outdoor play, academic pressure, screen use, or acceptance of medicalised interventions can support or impede implementation. High-intensity education cultures may find reductions in near work challenging, while communities with strong outdoor traditions may find prevention easy to adopt.

- **Competing Public Health Priorities**

  In settings where major health burdens (infectious diseases, malnutrition, maternal and newborn health challenges) dominate political and financial space, myopia interventions must be simple, low-cost, and integrated into existing platforms to gain traction. Failing to intervene early increases future financial risk for both families and health systems, as the costs of treating high myopia complications and resulting productivity losses escalate substantially over a lifetime.

Illustrative country scenarios demonstrating how different contexts may apply and sequence these recommendations are provided in Annex B. These examples are intended to support interpretation and adaptation of the policy guidance rather than to serve as prescriptive models.

Cultural Safety and Equity in Early Intervention

Early intervention strategies for paediatric myopia are most effective when they are designed and implemented in ways that are culturally safe, contextually appropriate, and responsive to the needs of diverse populations. Without attention to cultural safety, even evidence-based interventions risk low uptake, mistrust, or unintended harm.

This is particularly important for First Nation Peoples and other groups who have experienced historical and ongoing inequities within health and education systems. In these contexts, eye-health initiatives should be grounded in principles of self-determination, respect for local knowledge, and partnership with communities. Programs that are perceived as externally imposed or misaligned with cultural values are less likely to be accepted or sustained.

Culturally safe approaches may include co-designing interventions with communities; engaging First Nations health workers, educators, and leaders; adapting communication materials to local languages and worldviews; and recognising the broader social, cultural, and environmental determinants that shape children's visual behaviours, including relationships to land, outdoor activity, and schooling.

While First Nations communities often illustrate the importance of culturally safe practice, these principles apply more broadly. Migrant communities, ethnic minorities, and socio-economically marginalised groups may also face barriers related to language, trust, cost, or health literacy. Early intervention policies should therefore be flexible and inclusive, allowing for local adaptation rather than one-size-fits-all implementation.

Embedding cultural safety within national myopia strategies strengthens equity, improves effectiveness, and aligns early intervention with broader commitments to inclusive, people-centred health systems.

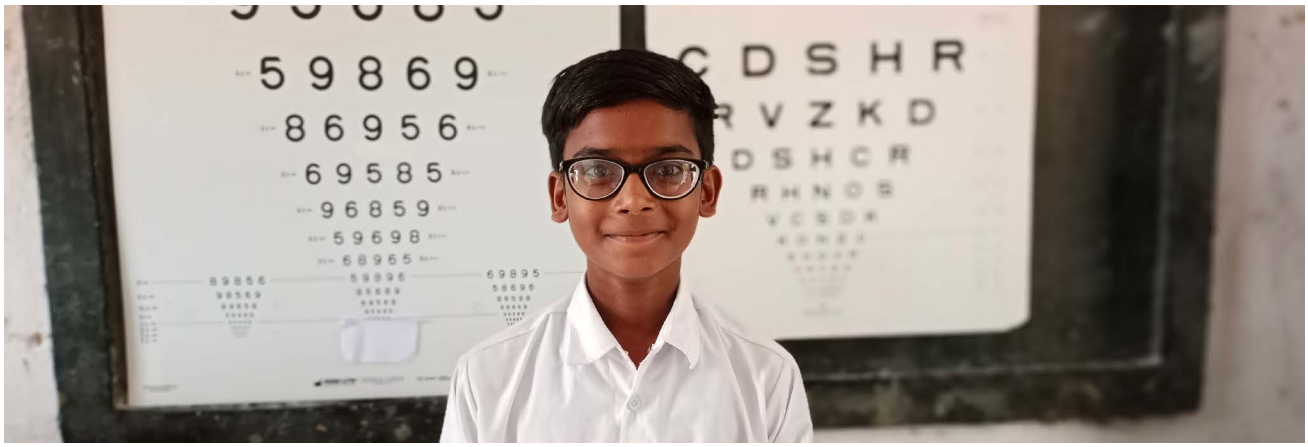
6 Conclusion

Myopia is rising at an unprecedented pace, placing millions of children at risk of avoidable sight loss and lifelong eye disease. The evidence is clear: delaying onset, identifying children at risk early, and slowing progression during childhood can dramatically alter long-term outcomes. These interventions not only reduce the likelihood of severe, blinding complications such as myopic macular degeneration and retinal detachment, but also protect children's education, wellbeing, and future economic opportunities.

This policy brief sets out a practical, evidence-based framework to support governments and partners in taking action across four interconnected areas: prevention, early detection, control, and systems integration. The recommendations presented here are intended to be adapted and sequenced according to national prevalence, system maturity, and available resources. No single pathway will suit all countries; rather, effective early intervention depends on selecting the right actions for the context and building from feasible starting points.

By acting early, countries can prevent avoidable blindness, strengthen child health and education systems, reduce long-term health-care costs, and support the next generation to thrive. The accompanying Advocacy Guide offers additional tools, messaging, and strategies to help stakeholders mobilise support, build coalitions, and secure the political commitment needed to implement this agenda.

The rise of myopia is not inevitable. With coordinated action, strategic investment, and sustained collaboration across health, education, and planning sectors, countries can reshape the trajectory of childhood myopia and safeguard children's vision for decades to come.



Annex A.
Operational Guidance: Core Action Areas, Recommendations, and Detailed Activities

Core Action Area	Recommendation	More Specific, Evidence-Informed Actions (Examples)
Prevention	R1. Institutionalise daily outdoor time in schools and early childhood settings.	Set minimum daily outdoor time in national or subnational education policy (e.g. ≥60–90 minutes per school day). Encourage schools to schedule outdoor “eye breaks” after sustained near work. Ensure school infrastructure and urban planning provide safe, accessible outdoor spaces (playgrounds, shaded areas, green spaces).
	R2. Promote balanced near work and screen use through national guidance.	Issue age-specific national recommendations on recreational screen time and homework duration in early grades. Promote practical rules (e.g. frequent breaks during near work, adequate working distance). Integrate these messages into parent-focused communication campaigns, paediatric check-ups, and teacher training.
	R3. Embed eye-healthy environments and behaviours within early childhood and school curricula.	Include simple content on “healthy eyes,” outdoor play, and balanced visual behaviour in early childhood and primary curricula (health, science, wellbeing). Develop age-appropriate teaching materials and activities that reinforce time outdoors and responsible screen use. Integrate eye-health content into existing physical activity and wellbeing initiatives rather than as stand-alone topics.
Early Detection	R4. Implement school-based vision screening using standardised, evidence-based protocols.	Introduce vision screening at school entry and at regular intervals. Use simple, validated tools (visual acuity charts) with clear pass/fail thresholds and criteria for further assessment. Screening should be used to identify children who require further assessment rather than to diagnose refractive status. Programmes should explicitly recognise that visual-acuity–based screening will not detect pre-myopia or early refractive change, particularly in younger children who may still pass standard acuity thresholds. Where feasible, collect basic refractive data to identify children with early myopic shifts or “pre-myopia” for closer monitoring.
	R5. Strengthen referral pathways between schools and eye-care providers.	Develop referral guidelines specifying when and where children should be referred after screening. Use screening results in combination with age and known risk factors to guide referral and follow-up. Children who pass visual-acuity screening but are at higher risk - such as those with a family history of myopia, early or intensive near-work exposure, or early educational progression - may warrant closer monitoring or earlier referral for further assessment. Standardise referral forms and feedback loops so schools know whether children attended appointments and what follow-up is needed. Map available eye-care providers around schools and establish clear communication channels.
Early Detection (Continued)	R6. Strengthen the capacity of appropriate school or primary-level personnel to identify children with potential vision problems and ensure timely referral.	Provide short, competency-based training for the personnel best placed to do screening; this may be teachers, school nurses, or primary health workers, depending on context. Ensure trainees receive adequate and simple supervisory support to maintain accuracy. Where teachers are involved, keep their role limited to recognising common signs and making referrals rather than conducting full screening in low-support settings. Where feasible, use low-cost technologies to support consistency and reduce reliance on subjective judgement. Integrate simple quality-assurance steps (periodic checks, refresher training, or sampling re-tests).
	R7: Ensure accurate diagnosis of myopia using refraction techniques that adequately control ocular accommodation.	Use diagnostic protocols for children that minimise the influence of accommodation, particularly following school-based screening or referral. Clarify when additional assessment is required to distinguish pre-myopia from established myopia and to inform appropriate follow-up or treatment decisions. Where national guidelines exist, align diagnostic approaches with recommended paediatric refraction standards. Ensure that diagnostic expectations are clearly communicated to providers receiving referrals from schools or primary care.

Core Action Area	Recommendation	More Specific, Evidence-Informed Actions (Examples)
	R8: Strengthen eye-care practitioner skills and access to appropriate refractive equipment and consumables.	Support training and continuing professional development in paediatric refraction and myopia assessment, including management of accommodation and age-appropriate examination techniques. Ensure that eye-care providers have access to essential refractive equipment and consumables needed to apply recommended diagnostic approaches, particularly in public-sector and underserved settings. Where appropriate, establish supervision, referral, or mentoring arrangements to support diagnostic quality and consistency.
	R9: Embed parental engagement within early detection and referral systems.	Ensure that school vision screening and referral programmes include structured mechanisms to engage parents and caregivers. This may include providing clear, plain-language information on screening results and next steps; standardised referral communications that explain why follow-up is important; and culturally appropriate materials tailored to local contexts. Programmes should support two-way communication between schools, families, and eye-care providers to improve referral completion and continuity of care. Where feasible, integrate parental engagement into existing school health or child health communication platforms rather than creating parallel systems.
Control	R10. Ensure access to effective myopia control treatments, including low-dose atropine and optical interventions.	Add low-dose atropine (e.g. 0.01–0.05%) to the national essential medicines list where evidence supports use. Approve and list evidence-based myopia control spectacles and contact lenses. Negotiate pricing and bulk procurement to improve affordability and avoid inequalities.
	R11. Develop and adopt national clinical guidelines for paediatric myopia management.	Convene a national expert group to adapt international evidence into local guidelines. Define indications for starting treatment (e.g. level of myopia, age, rate of progression), follow-up intervals, and duration. Include guidance on use of combined modalities (e.g. atropine plus optical methods) and how to manage non-responders. Update guidelines periodically as new evidence emerges.
	R12. Protect children's safety through informed consent and quality assurance.	Develop standardised informed-consent templates explaining benefits, uncertainties, side effects, and off-label status where relevant. Require baseline eye examinations and appropriate monitoring (e.g. intraocular pressure, pupil size, accommodation where indicated). Establish simple adverse-event reporting and consider accreditation/minimum standards for providers offering myopia control services.
Systems Integration	R13. Develop a national myopia strategy or integrate myopia into existing eye-health/child-health plans.	Use existing data or conduct situation analyses to understand prevalence and service gaps. Set measurable national targets. Align myopia objectives with broader strategies (e.g. eye health, NCD, child and adolescent health).
	R14. Include essential myopia services within Universal Health Coverage benefit packages.	Define a child eye-health service package for myopia management. Establish reimbursement tariffs or subsidies for key services and products (children's spectacles, low-dose atropine). Prioritise financial protection for families with low incomes.
	R15. Strengthen and expand the eye-care workforce.	Update scopes of practice and competency frameworks to include myopia prevention and control (for optometrists, ophthalmologists, PHC workers). Integrate paediatric refraction and myopia control into pre-service curricula and continuing professional development. Support regional centres of excellence or mentor networks to build capacity.
	R16. Establish national monitoring systems to track incidence, prevalence, and service access.	Integrate simple myopia indicators into existing health and/or school health information systems (e.g. prevalence in key age groups, high myopia rates, screening coverage). Use periodic surveys or sentinel sites where routine data are weak. Disaggregate data by sex, geography, and socioeconomic status to monitor equity.
	R17. Foster structured coordination between health, education, and urban-planning sectors.	Establish an intersectoral working group or taskforce on child eye health and myopia, with clear terms of reference. Develop joint guidance for schools (health + education) on outdoor time, screening, and referral. Involve local government in ensuring safe outdoor spaces near schools and in aligning built-environment policies with child-friendly, eye-healthy design.

Annex B.
Applying the Policy Brief in Practice: Illustrative Country Scenarios

This section provides three fictional but realistic scenarios to demonstrate how countries with different levels of myopia prevalence and health-system maturity might use this policy brief to plan, prioritise, and sequence interventions. Although the examples below are fictional, they draw heavily on patterns, challenges, and system characteristics observed in real-world settings. Their purpose is to illustrate how stakeholders can apply the guidance provided in Sections 2–4 to make evidence-informed decisions that reflect national context rather than offering prescriptive templates.

Country One: Rising Prevalence, Mature Health and Education Systems

Country One is a high-income setting with a well-developed health and education system, where childhood myopia prevalence has increased steadily over the past two decades. While prevalence remains lower than in some East Asian countries, recent data indicate a significant and accelerating rise among school-aged children and adolescents, particularly in urban areas, with earlier age of onset than in previous generations.

The country has a strong optometry and ophthalmology workforce, high coverage of refractive services, and established school health programmes. Visual-acuity–based screening is routinely conducted at school entry and at key transition points, and access to spectacles is generally good. However, early-intervention approaches remain uneven, and preventive measures such as increased outdoor time are not systematically embedded within education policy.

Interest in myopia control interventions has increased markedly in recent years. In the absence of national clinical guidelines, uptake varies across regions and providers. Low-dose atropine is used by some clinicians, often off-label or under local protocols, but prescribing practices, duration of therapy, informed-consent processes, and monitoring arrangements are inconsistent.

How Country One Could Apply the Policy Brief

In this context, the policy brief would support Country One to move from fragmented adoption to coordinated, equitable implementation.

- **Strengthening prevention through policy alignment.**

  The brief would support education authorities to formalise outdoor-time requirements and balanced screen-use guidance, aligning myopia prevention with existing priorities related to physical activity, mental health, and child wellbeing.

- **Enhancing early detection by recognising children at risk sooner.**

  Although school screening is already in place, the brief would encourage Country One to incorporate markers of early refractive change and family history into its protocols. Earlier identification would support more targeted counselling and monitoring.

- **Strengthening governance of myopia control**

  The policy recommendations provide a framework for developing national clinical guidelines to standardise myopia control practice. This includes clear guidance on when to initiate atropine treatment, appropriate monitoring, recommended duration of therapy, tapering or discontinuation, quality assurance, strengthening adverse-event reporting, and considering steps toward regulatory approval of paediatric formulations. Standardisation would improve safety, equity, and public confidence while supporting sustainable scale-up.

- **Building a coordinated national strategy.**

  With strong services already in place, Country One could use the systems-integration recommendations to develop a national myopia strategy that unifies prevention, detection, and control under common goals and monitoring indicators. This would enable more strategic use of resources and better tracking of outcomes.

Country Two: Rising Prevalence, Developing Health-System Capacity

Country Two is a lower-middle–income country experiencing rapidly rising myopia prevalence in urban areas, where more than half of children aged 12–15 now show some degree of myopia. Rural and remote areas have much lower prevalence, but rates are increasing there as well. The country's high urban–rural gap reflects differences in academic pressure, screen exposure, and outdoor time.

The health system is mixed in capacity. Urban centres have well-developed optometry and ophthalmology services, while provincial areas rely more heavily on general practitioners and primary health workers. School health programmes exist nationwide, but implementation is uneven. Country Two is preparing both a new national child health strategy and reforms to its school health programme, which are timely opportunities to integrate myopia.

How Country Two Could Apply the Policy Brief

Country Two would use the brief to prioritise feasible, high-impact actions, starting where system capacity is strongest and scaling gradually.

- **Starting with prevention where reach is greatest.**

  The education ministry could introduce a simple national standard for minimum daily outdoor time, supported by teacher training and parent communication. A campaign promoting balanced screen use could target urban families, where the rise in myopia is most rapid.

- **Building a basic early-detection platform.**

  The brief's recommendations would help Country Two establish periodic school-based vision screening at school entry and key transition grades. Short training modules for teachers would improve recognition of common signs of visual difficulty. Even modest screening coverage would substantially increase early identification.

- **Piloting control interventions in urban hubs.**

  Rather than pursuing costly nationwide rollout, the brief would guide Country Two to pilot low-dose atropine and optical interventions in major city hospitals, supported by

specialist supervision and early-phase clinical protocols. Evidence from these pilots could then inform national guidelines.

- **Laying down the systems foundations for the future.**

  Country Two could embed myopia into its upcoming national child health strategy, define simple indicators for school health information systems, and establish a small interministerial working group on child eye health. These steps would create the policy and governance foundation needed for expansion over time.

Country Three: Low Prevalence, Low System Capacity

Country Three is a lower-income nation where overall myopia prevalence remains relatively low compared to regional neighbours. Most school-aged children in rural areas have limited near-work exposure, moderate levels of outdoor time, and limited access to digital devices. However, early signs of change are emerging: in several urban clusters, primary-school myopia prevalence has doubled in the past decade, reflecting rapid urbanisation, increased academic pressure, and expanded access to smartphones.

The health system in Country Three is stretched, with limited optometry services, occasional shortages of spectacles, and no formal school health programme. Teachers are highly engaged in child welfare, but most have not received training related to eye health, and there are no national referral pathways for children who fail informal vision checks. Resources are scarce and competing priorities are substantial, including nutrition, infectious diseases, and maternal health.

How Country Three Could Apply the Policy Brief

Country Three would use this brief to act early, before myopia becomes a widespread problem. The emphasis would be on interventions that have broad reach, low cost, and minimal workforce requirements.

- **Using prevention as the central strategy.**

  Country Three could adopt simple, high-reach prevention measures such as promoting outdoor play in early childhood centres and primary schools. Given the low prevalence and limited resources, the brief helps stakeholders focus on what is most feasible: protecting existing outdoor culture rather than allowing it to erode as urbanisation

accelerates. Education authorities could incorporate messages about outdoor play and balanced screen use into teacher training and parent engagement activities.

- **Introducing basic early detection where possible.**

  While a national screening programme may not be realistic initially, the brief encourages simple steps: ensuring teachers know common signs of visual difficulty; providing basic visual acuity charts to schools; and establishing low-cost referral pathways to district-level health facilities. Integrating vision checks into existing child-health days or immunisation outreach programmes could also serve as an efficient entry point.

- **Avoiding premature investment in clinical control interventions.**

  The evidence shows that clinical control interventions, while important for high-prevalence contexts, require a level of system maturity that Country Three does not yet have. The brief therefore helps Country Three avoid costly or inequitable investments prematurely, instead focusing on strengthening foundational systems.

- **Building basic governance and data systems.**

  Country Three can use the systems-integration recommendations to begin tracking simple indicators through school or health information systems, even at a basic level: number of children referred for suspected vision problems, number seen at district health facilities, and broad trends in urban versus rural prevalence. Establishing a small working group across health and education ministries would help ensure that early prevention and detection measures are coordinated, even with limited capacity.

- **Strategic, proactive approach**

  In this context, the brief helps Country Three prioritise low-cost, high-leverage actions now, laying the groundwork for more sophisticated interventions once prevalence rises or system capacity improves. It supports a proactive stance rather than a reactive scramble once high prevalence is entrenched.

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Authorship

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