

# Pursuing a Common Vision:

## Opportunities for Collaboration Between the Eye Health and Nutrition Sectors

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### **Bridging the gap between eye health and nutrition**

Considerable progress has been achieved over the past decade in combating the leading causes of avoidable blindness and malnutrition. Nevertheless, the most common approach to addressing these problems in developing countries, vertical programs that focus on a single disorder, may not be the most cost-efficient or effective means to fulfilling the goal of eliminating avoidable blindness by 2020, or addressing the pervasive problem of malnutrition and child mortality highlighted in the Millennium Development Goals.

Currently, in most developing countries, there are grossly insufficient human and financial resources to adequately staff and support public health efforts in many areas, including eye health and nutrition. In order to bridge this gap, opportunities for integration of our efforts in eye health and nutrition that utilize complementary program platforms need to be fully explored to build synergies and improve cost-effectiveness. There are some nutrition programs that offer the potential to address and expand our support to needy populations in eye health, while at the same time there are eye health programs that offer the same for nutrition. This brief article highlights promising opportunities for collaboration between the nutrition and eye health sectors.

### **Opportunities for promoting eye health through nutrition and related programs**

Given their broad penetration within the poorest communities in the developing world, programs addressing malnutrition and its major causes can potentially serve as a valuable vehicle to identify, refer, and treat

individuals in need of eye care. A number of community-based as well as institution-based nutrition-related program platforms in the health and education sectors may provide a viable, cost-effective means of reaching individuals also at risk for blindness and low vision. Depending on the program, child as well as adult populations can be reached. A number of program experiences from the health and education sectors that have used nutrition-related entry points to deliver eye health services are summarized below.



Vitamin A Supplementation

## Through the health sector

**Reaching children through periodic vitamin A supplementation events:** The eye health benefits of vitamin A supplementation (VAS) are widely recognized, as are the positive impacts on mortality reduction in vitamin A deficient child populations. In many developing countries, significant investments have been made to ensure that children under five receive twice yearly distributions of vitamin A capsules through regular, periodic events such as Child Health Days,<sup>1</sup> during which an integrated package of services which can include VAS, immunizations, de-worming, and nutrition education are provided. This child nutrition-health program platform could serve as a means to identify children who suffer from easily recognizable eye problems, such as conjunctivitis or pediatric cataract, in situations where the capacity exists to properly treat and provide the care needed to achieve good outcomes.

These routinely held Child Health Days also offer an opportunity to provide eye health education and conduct basic screening and referral of children with eye health needs. However, there are challenges that also need to be considered, including overloading the Child Health Day, or not being able to provide adequate follow-up services to children identified with complicated cases of cataract or other complex vision disorders. This will be a challenge, and should not be pursued, in areas where secondary and tertiary pediatric eye care capacity is currently inadequate. Similar challenges may be found in addressing uncorrected refractive error in regions where it is highly prevalent, but the capacity to properly examine children and provide affordable, high quality eyeglasses may not yet exist. Operational research, therefore, would be needed to investigate the feasibility in different situations of adding eye health interventions to Child Health Days without compromising the quality and cost effectiveness of the services delivered.

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**Reaching adults and children through nutrition education for diabetics:** With the burgeoning problem of diabetes across both developed and developing countries, and the recognition that a massive increase in eye health problems due to its associated retinopathy is likely, there is an urgent need to encourage more healthy eating habits in at-risk groups to prevent and control the problem. Nutritional counseling sessions

for diabetics should be explored as an entry point to promote the routine eye health screening of diabetics for retinopathy.<sup>2</sup> At a minimum, messages that promote routine annual eye exams should be incorporated into the nutrition education materials and education sessions targeting diabetics.

## Through the education sector

**Reaching children through school health-nutrition programs:** Schools are a logical entry point to providing health and nutrition interventions, because they outnumber health facilities in the developing world, they offer an existing and sustained infrastructure, and the teachers are educated, skilled human resources who are in close contact with the community. Furthermore, school health programs serve as a valuable example of successful integration, and one in which the inclusion of nutrition and eye health services has already been achieved, although in significantly varying degrees. While nutrition education and nutritional supplementation have long served as core components of successful school health programs, eye health services have not been adopted on an equally broad scale. However, progress is now being made with the emergence of program models that include eye health as a central component of school health services. A few experiences are described below.

**Framework for an Effective School Health and Nutrition Program (FRESH):** The FRESH model, launched at the World Education Forum in 2000, is supported by WHO, UNICEF, UNESCO, and the World Bank to promote a core group of cost-effective activities which should lead to greater educational returns in terms of student health and performance. The FRESH framework incorporates the provision of eyeglasses as a key component, and this provides a valuable opportunity for eye health organizations to partner with NGOs who traditionally focus on school health, but do not have the technical capacity to address the vision needs of schoolchildren.<sup>3</sup>

**Helen Keller International (HKI)'s school health and nutrition activities:** HKI has integrated refractive error screening for children in a variety of school health-nutrition program models in both Asia and Africa. An integrated approach to providing nutrition education, micronutrient supplementation, de-worming, trachoma education, primary eye care, vision screening, and, as needed, eyeglasses was tested by HKI in Dodoma, Tanzania. Given the relatively low prevalence of refractive error among children in rural Sub-Saharan Africa, an integrated approach, where

refractive error services are embedded in a broader school health package, offers a more cost-effective means of addressing this issue than stand-alone vision screening programs. In Mozambique, in partnership with the Ministry of Education, HKI introduced a similar package of interventions termed Essential School Health Activities. Refractive error screening has not yet been included in this package, although government partners have expressed interest in doing so.

Another entry point utilized by HKI to integrate eye health into school nutrition and health activities is through nutrition education activities that focus on diarrhea reduction in young children. These typically include basic messages on hygiene (especially hand washing after defecation, before meal preparation, and before eating), and sanitation (latrine building and utilization). A number of these same messages could easily be expanded to include, for example, the promotion of face washing, as a means to target specific eye health problems, such as trachoma.<sup>4</sup>

**Save the Children's school health and nutrition activities:** Save the Children's school health model includes vision and hearing screening, alongside micronutrient supplementation and de-worming, as well as health-related education on water, sanitation, and hygiene.<sup>5</sup>

### Opportunities for promoting nutrition through eye health and related programs

Eye health service delivery platforms can also provide a valuable means of conveying key nutrition messages to vulnerable groups. Through such existing opportunities, vital nutrition support can be provided in addition to addressing other related issues that have a significant impact on nutrition status, such as lack of access to clean water and sanitation. Opportunities for program integration include the following:

**Integrating vitamin A supplementation into community-directed treatment with ivermectin:** *Onchocerciasis* – or river blindness – is a parasitic disease caused by the filarial worm *Onchocerca volvulus*. It is transmitted through the bites of infected black-flies, which breed in fast-flowing streams and rivers. *Onchocerciasis* is a significant cause of blindness in many African countries, with approximately half a million individuals blinded or visually impaired due to the disease. Blindness is caused when *microfilariae* migrate to the eye and die, causing an inflammatory response. Over time, the affected area becomes opaque, leading to impaired vision, and eventually

blindness. The African Program for Onchocerciasis Control (APOC)'s primary strategy for the elimination of *onchocerciasis* is community-directed treatment with ivermectin (CDTI). The strategy relies on active community leadership and participation. It empowers communities to designate community volunteers, who work with local health facility teams, to lead the annual distribution of the drug ivermectin. APOC supports CDTI programs in 16 African countries and reaches over 60 million people<sup>6</sup> through a network of thousands of Community Directed Distributors (CDDs). These same individuals have been effectively trained to provide VAS to children under five years old as part of their service, and early research has shown that this layering of programs works well.<sup>7,8</sup> Recent studies have also found that VAS coverage levels can be improved when integrated into CDTI programs.<sup>9</sup> As more traditional vehicles for VAS, such as National Immunization Days, continue to be phased out, CDTI offers a highly cost-effective means of reaching the poorest children at greatest nutritional risk.

**Enhancing child nutrition status through trachoma school health programs:** Trachoma is a leading cause of preventable blindness in the world. It is an infectious disease of the eye, caused by the bacterium *Chlamydia trachomatis*, which is spread easily by contact with an infected person's hands or clothing, or by flies that are attracted to discharge from an infected individual's nose and eyes. The disease progresses gradually and is not immediately blinding. Repeated infections and scarring of the conjunctiva cause eyelashes to turn inward and scratch the cornea, leading slowly and painfully to complete blindness. Children are most susceptible to infection, and are the focus of most disease prevention efforts. Three key trachoma control strategies, the annual distribution of the antibiotic azithromycin for the control of the bacterium, the building of latrines for the control of flies, and the improvement of access to water needed for face washing, also provide ancillary health and nutrition benefits for children by reducing rates of diarrhea and infection.<sup>10</sup>

### Onchocerciasis is a significant cause of blindness in many African countries

**Using diabetic retinopathy screening to share key nutrition messages:** Eye health professionals conducting diabetic retinopathy screenings can incorporate key messages on nutrition and exercise into their patient education activities. By recognizing the vital preventive role that proper disease management



Community Directed Distributors of Ivermectin – Sierra Leone

and nutrition can play in effectively managing diabetes, and limiting further loss of vision due to diabetic eye disease, they can have a profound impact on their patients' overall health status.

### Conclusion and key messages

Viable opportunities exist to integrate eye health and nutrition related programs, and to extend the reach of these vital services to those most in need. However, in contemplating this approach, some points need to be considered, which include:

- Carefully assessing and analyzing each opportunity to determine how to maintain cost-effectiveness and quality service delivery, particularly in the poorest and more remote communities;
- Ensuring buy-in and involvement of country stakeholders by holding discussions with government and non-government eye health and nutrition colleagues from the relevant sectors, most specifically health and education, to ascertain

what current programmatic possibilities exist; and

- Assessing the need in each situation for operational research to confirm the cost-effectiveness of any new delivery mechanisms to provide eye health and nutrition services via these complementary programmatic platforms.

### References

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