IAPB Programme Briefs can identify practical opportunities where eye health initiatives can be integrated into other programmatic platforms that deal with water, education, disability, disaster relief, nutrition and other public health issues. This may allow eye health practitioners to extend coverage of services to those most in need as well as to build programme synergies that benefit eye health as well as these other sectors. This IAPB Programme Brief reviews possible opportunities for eye health practitioners to partner with nutrition and related programmes.

Abstract:
Considerable progress has been achieved over the past decade in combating the leading causes of avoidable blindness and visual impairment. Nevertheless, the most common approach to addressing these problems in developing countries, vertical programmes that focus on a single disorder, may not be the most cost-efficient or effective means to fulfil our ultimate goal of eliminating avoidable blindness by 2020 and addressing the pervasive problem of low vision. Currently, in most of these countries, there are grossly insufficient human and financial resources to adequately staff and support eye health and vision efforts. In order to bridge this gap, opportunities for integration into the primary healthcare system and the use of other programme platforms to address blindness and low vision need to be fully explored.

Opportunities for Promoting Eye Health through Nutrition and Related Programmes

Given their broad penetration within the poorest communities in the developing world, programmes 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 programme 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
programme experiences from the health and education sectors that have used nutrition-related entry points to deliver eye health services are summarized below.

**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 is the positive impact 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, during which an integrated package of services such as VAS, immunisations, de-worming and nutrition education are provided. This child nutrition-health programme platform could serve as a means to identify children who suffer from easily recognizable eye problems, such as conjunctivitis or paediatric 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. These events may also provide an opportunity to integrate the mass drug administration of azithromycin to address trachoma where such an intervention is warranted.

  When adding on these eye health interventions, care must be taken not to overload the Child Health Day. Another challenge is the availability of adequate follow-up services for children identified with complex vision disorders. Screening should not be pursued in areas where secondary and tertiary paediatric eye care capacity is currently inadequate. Similar challenges may be found in addressing uncorrected refractive error in regions where refractive error 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.

- Reaching adults and children through Community Directed Treatment with Ivermectin: Community-directed treatment with ivermectin (CDTI) combats onchocerciasis by utilising community volunteers working with local health facility teams. The African Programme for Onchocerciasis Control (APOC) supports CDTI programmes in 16 African countries and reaches over 60 million people. These same individuals have been trained to provide VAS to children under five years as part of their service and early research has shown that this layering of programmes works well. These trained community-directed distributors (CDDs), who number in the tens of thousands, are already familiar with one aspect of eye health and represent an excellent opportunity to identify, treat and refer individuals with other eye diseases, such as conjunctivitis, refractive error and, in particular, cataract. This was explored by non-governmental organisations (NGOs) and the Ministries of Health in a number of African countries, including Cameroon, Guinea, Mali, Nigeria, Tanzania and Uganda. For example, in Cameroon, CDDs were trained to test for visual acuity and to refer those with poor vision to health personnel in health posts. Health staff were simultaneously trained in basic eye care,
such as treating conjunctivitis, testing visual acuity, providing reading glasses, and referring more complex cases (such as cataract) to specialised eye care workers in the province. In Cameroon, this three-tiered system based on community-directed distributors proved capable of handling a high proportion of eye diseases and brought services for the first time to very remote areas of that country. Similarly, in Nigeria, community-directed distributors were successfully trained to assess visual disability and detect cataract. Research showed that they performed comparably with trained Health Care Workers. Thus, CDTI offers a promising platform for extending basic eye care screening and referral to remote rural communities.

- 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 counselling sessions for diabetics should be explored as an entry point to promote the routine screening of diabetics for retinopathy. At a minimum, messages that promote routine eye exams should be incorporated into the nutrition education materials and education sessions targeting diabetics. Conversely, eye health professionals conducting diabetic retinopathy screening programmes should incorporate key messages on nutrition and exercise into their patient education activities and must recognise the vital preventive role they play in effectively managing diabetes and limiting further loss of vision due to diabetic eye disease.

**Through the education sector…**

- Reaching children through school health-nutrition programmes: Schools are a logical entry point to provide health and nutrition interventions because they outnumber health facilities in the developing world, 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 programmes 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 programme 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 Programme (FRESH): The FRESH model, launched in 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 organisations to partner with NGOs who
traditionally focus on school health but do not have the technical capacity to address the vision needs of school children.

- Helen Keller International’s (HKI) School Health and Nutrition Activities: HKI has integrated refractive error screening for children in a variety of school health and nutrition programme models in both Asia and Africa. An integrated approach to provide nutrition education, micronutrient supplementation, de-worming, trachoma education, primary eye care, vision screening and the provision of 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 hasn’t yet been included in this package, although government partners have expressed interest in doing so.

- Another entry point utilised by HKI to integrate eye health into school nutrition and health activities is through nutrition education activities that focus on diarrhoea 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 utilisation). 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. Similarly, trachoma school health activities, particularly efforts to improve access to water for face washing, latrines for the control of flies, and treatment with azithromycin have ancillary health and nutrition benefits by helping to reduce rates of diarrhoea and infection among children.

- Save the Children 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.

**Conclusion**

Viable opportunities exist to incorporate eye health into nutrition related programmes to extend the reach of eye health services. Each opportunity will require careful thought as to how to maintain cost-effectiveness and quality service delivery, particularly in the poorest and more remote communities. To move forward at the country level, some practical first steps should include holding discussions with government and non-government nutrition colleagues from the relevant sectors, most specifically health and education, to ascertain what current programmatic possibilities exist. These discussions should also assess the need for operational research to confirm the cost-effectiveness of any new delivery mechanisms to provide eye health services via nutrition related programmatic platforms.