

Nutrition

HKI has over two decades of experience implementing, monitoring and evaluating community-based health interventions at the community level. To date, HKI has implemented 40 such projects, 24 of which were funded by the United States Agency for International Development ([USAID](#)); seven of these were child survival projects. HKI was awarded one of the first Child Survival grants to promote vitamin A capsule distribution and social marketing in Indonesia and Bangladesh in 1985. HKI has leveraged funds for Child Survival activities from a steadily increasing number of non-federal sources over the years.

Overview of Vitamin A Problem

Globally, vitamin A deficiency is the leading cause of childhood blindness. Each year over three million children suffer from xerophthalmia, the clinical form of vitamin A deficiency (WHO, 1995). Xerophthalmia is when the eye is adversely affected. At its mildest, xerophthalmia is night blindness, or a reduced ability to see in dim light. At its most severe, xerophthalmia can lead to irreversible and total blindness.

However, blindness is not the most severe consequence of vitamin A deficiency; death is. Children who are vitamin A deficient are less able to recover from common childhood diseases, such as diarrhea and measles, than children who are not deficient. Children with xerophthalmia are 3 to 50 times more likely to die from these common maladies, depending on the severity of their deficiency, than children without xerophthalmia.

Children with xerophthalmia, however, represent only a small portion of the total who are at risk of higher mortality due to vitamin A deficiency. Many more have sub-clinical vitamin A deficiency. These children do not have xerophthalmia, but are nonetheless twice as likely to die as children who are not vitamin A deficient. Around the world, over 75 million preschool children are estimated to have sub-clinically vitamin A deficiency.

Even this figure may underestimate the extent of the public health problem caused by vitamin A deficiency. Vitamin A deficiency is also common in pregnant women; in some countries as many as 1 out of 10 women are night blind. Recent studies have shown that pregnant women who are vitamin A deficient are at a greater risk of dying during or shortly after delivery.

HKI's Interventions

Helen Keller International's programs to combat vitamin A deficiency began in the early 1970's and focused on preventing xerophthalmia. As the link between vitamin A deficiency and increased child mortality became clear, the Nutrition Department's mission expanded from preventing and treating xerophthalmia to preventing and treating all forms of vitamin A deficiency, including sub-clinical cases, in an effort to prevent not only blindness, but also the mortality which results from vitamin A deficiency. HKI's Nutrition Department now seeks to save the **sight and the lives** of nutritionally vulnerable children wherever the need is greatest.

The Nutrition Department's strategy is to develop sustainable interventions to break the generational cycle of nutritional deficiencies. HKI works with governments and local partners to design and implement programs to increase the intake of vitamin A in vulnerable populations.

Over four meta-analyses have concluded that increasing vitamin A intake through high-dose supplements, low-dose weekly supplements and food fortification reduce childhood mortality among preschool children by 23-34%. Additional studies have shown that weekly, low-dose supplements given to women during pregnancy can reduce maternal mortality by 50%.

HKI's interventions include: (i) distributing high-dose vitamin A supplements to children and women who have recently given birth; (ii) distributing low-dose vitamin A supplements to women during pregnancy; (iii) promoting home gardening to increase the production of vitamin A-rich foods for the whole family; and (iv) fortifying processed foods with vitamin A. All of these interventions are accompanied by nutrition education campaigns to inform communities of the need to increase their consumption of vitamin A.

Country Activities

HKI's Nutrition Department maintains programs in [Bangladesh](#), [Cambodia](#), [Indonesia](#), [Nepal](#), [Niger](#), [Mozambique](#) and [the Philippines](#).

Bangladesh

HKI has worked with the government of Bangladesh since the 1970's documenting a high prevalence of xerophthalmia. HKI provided technical assistance in instituting national vitamin A capsule distribution to preschool children. With HKI's assistance, the government integrated vitamin A capsule distribution into its bi-annual National Immunization Days in 1995 and achieved an 87% coverage rate. Based on this success, the government began a program to distribute vitamin A capsules on designated weeks during the year and has maintained coverage rates over 80%. Also, in Bangladesh, where vitamin A deficiency is caused by lack of availability of vitamin-A rich foods, poverty, small family land holdings and the low status of women within the family, HKI has developed a home gardening initiative to increase family-based production of vitamin-A rich foods. The project, which has served over 600,000 families, has improved the quality, quantity and diversity of vegetables grown in garden plots, ensuring that vitamin A-rich vegetables are included.

Cambodia

HKI persuaded Cambodia's Ministry of Health, UNICEF and the World Health Organization (WHO) to distribute vitamin A capsules during a nationwide polio campaign in March 1996. A dose of vitamin A was provided to 1.4 million preschool children, and the WHO estimates that coverage exceeded 90% in safe areas of Cambodia. HKI's continued support has convinced the Ministry of Health to pilot test vitamin A distribution through the WHO Expanded Programme on Immunization. The program to distribute vitamin A capsules has been accompanied by a nutrition education campaign. As well, HKI has begun pilot-testing a home gardening initiative based on prior success in Bangladesh.

Indonesia

HKI has a long history of providing technical assistance to the government's program to combat vitamin A deficiency. Since 1974, vitamin A capsules have been distributed to children under five years old. A 1992 survey found that clinical vitamin A deficiency was no longer a public health threat. However, sub-clinical deficiency is still prevalent. To further reduce mortality from sub-clinical deficiency, HKI has targeted more groups of the population. Specifically, HKI has prioritized providing vitamin A supplements to women within one month after giving birth and

to adolescent girls in schools.

Nepal

Nepal has set aside two days in April and October of each year to distribute vitamin A capsules to preschool children. Relying on female Community Health Volunteers, distribution has been progressively phased into an increasing number of districts since October 1993. The most recent data reveals that in the April 1997 distribution campaign, over 1.4 million children received vitamin A in 32 districts, representing a coverage rate of 90% in those districts. Additionally, In Nepal, HKI is testing strategies to provide women with high-dose vitamin A capsules following pregnancy and multivitamin supplements during pregnancy. This initiative is particularly important because of the high maternal mortality rates in Nepal. All of HKI's activities in Nepal are supported by a nutrition education campaign, and home gardening is being pilot tested.

Niger

Initially, HKI's strategy to distribute vitamin A capsules in Niger relied on existing health facilities. This strategy, however, was only able to achieve 20% coverage. In 1995, HKI succeeded in integrating distribution into the National Immunization Days and was able to achieve 70% coverage for infants 6-12 months old. However, coverage of preschool children 6-59 months old remained only 25%. With increased advocacy, technical support and financial support, the most recent distribution campaign in December 1997 achieved a 90% coverage rate for both age groups. HKI has also developed a successful nutrition education strategy using traditional village theater and radio messages. This strategy has led to substantial increases in consumption of liver and mangos, foods rich in vitamin A and beta-carotene. As well, HKI has recently begun pilot-testing home gardening in Niger.

Mozambique

HKI opened a country office in Mozambique in November 1997. The first-year goals are to conduct surveys to determine the extent of vitamin A and iron deficiency in Mozambique. To assess vitamin A deficiency, a survey measuring serum retinol will be conducted throughout the country. Additionally, in four provinces, Maputo, Gaza, Manica, Cabo Delgado, HKI will assess anemia and vitamin A intake.

The Philippines

HKI provided technical assistance to the Philippines Department of Health (DOH) in 1993 to integrate vitamin A distribution into National Immunization Days in April and National Micronutrient Days in October of each year. In 1996 over 8.6 million children received vitamin A doses. And in provinces where HKI provides continued assistance, HKI documented a coverage rate of 80% among preschool children in 1995.

For further information on international nutrition programs, contact: [USAID](#), [UNICEF](#), [OMNI](#).