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Strategies for Mitigating Vitamin A Deficiency in Mekelle, Ethiopia

The fourth United Nations Millennium Development Goal (MDG) is to reduce worldwide child mortality by two-thirds. In the impoverished African country of Ethiopia, child mortality has declined from 123 per 1,000 in 2004/2005 to 88 per 1,000 in 2011/2012 (World Bank, 2013). Yet the rate remains alarmingly high. Micronutrient deficiencies (including iron, zinc, and vitamin A) are contributing to the worldwide child mortality rate. Vitamin A deficiency is one of the most common micronutrient. Between 250,000 and 500,000 children with vitamin A deficiency become blind each year. Within 12 months of becoming blind, half of these children die (World Health Organization (WHO), n.d.).

The WHO supports three types of solutions to eliminate vitamin A deficiency; supplementation, dietary diversification, and food fortification. Worldwide, supplementation is the most common practice for providing micronutrients to communities. However, this practice is successful in mainly urban communities and excludes 45% of children around the world. Supplementation programs alone are not fiscally sustainable (Golden Rice Project, 2012). A study by Mekelle University public health faculty concluded vitamin A capsules are a short-term life saving intervention and a transition towards sustainable food-based interventions is needed. Additionally, an intervention to serve the diets of low-income individuals as well as the urban population is crucial (Kidane, Abegaz, Mulugeta, Singh, 2013).

In order to fulfill the practicum requirement for the graduate program in public health, Erika Strehl traveled to Mekelle, Ethiopia in June 2014. The objective of this project was to investigate strategies used for mitigating vitamin A deficiency within the Mekelle community. Specific learning objectives included identifying organizations working toward eliminating vitamin A deficiency, classifying the type of project (supplementation, food fortification, dietary diversification), exploring the current and potential barriers within these projects, identifying the gaps in education and supplementation, and identifying communities not receiving education or supplementation.

Supplementation of Vitamin A is provided by the Health Extension Workers (HEW), which is a recent program established by the Ethiopian government. The HEW's are the primary distributors for vitamin A and iron supplements. Infants receive a vitamin A supplement every six months at the Health Post and it is the responsibility of the mother return every six months. Each year thousands of HEW's are trained to treat various medical problems such as burns, cuts, maternal health, and malnutrition.

Food fortification in Mekelle is in the initial stages of implementation, Ethiopia is one of four countries in Africa without a legal food fortification program (Head, Getachew, 2014). The Ministry of Health has appointed a task force to investigate the use of food fortification and potentially propose a legislation to legalize food fortification. A Fulbright Scholar (Ms. Head) collaborated with the Chemistry department at Mekelle University to create technology for food fortification. Currently, there is a lack of locally available technology to fortify food and what is available is currently imported from other countries, which is accompanied by high import duties and a value added tax (VAT) of 15%. Producing the technology in Ethiopia would alleviate the

financial burden of importation. Ms. Head worked with local manufacturers to design and build equipment that would be replicable and cost effective.

For the past fourteen years Mums for Mums, a local non-governmental organization, has educated women on the importance of dietary diversification. Mums for Mums assists homeless women to learn income generating and life skills to become self-reliant. Food preparation training is accompanied by nutrition demonstrations, which focuses on locally available and highly nutritional food, such as the sweet potato. One cup of the boiled sweet potato everyday satisfies the requirement for vitamin A. Women are instructed how to incorporate the sweet potato into meals to provide a balanced diet for their families. The sweet potato is widely available in Ethiopia and not expensive (Asmelash, personal communication, June 2014).

Mekelle currently satisfies the three suggested strategies from the WHO, yet these programs work in isolation from each other. There is a lack of communication and information sharing between the aforementioned programs. With a heavy reliance on supplementation, a shift towards preventive strategies such as nutrition education is a crucial element needed to decrease the prevalence of vitamin a deficiency.

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