

HKI's Tsunami Response – Supplementation with vitamins and minerals for tsunami survivors in the provinces of Nanggroe Aceh Darussalam (Aceh) and North Sumatra (Nias Islands), Indonesia.

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Introduction

The overwhelming humanitarian emergency facing countries affected by the Indian Ocean tsunami on 26 December 2004, as well as the Nias island earthquake on 28 March 2005, led international, regional and national-level groups to assist in short, medium and long-term recovery from the disaster. Indonesia was hit hardest, particularly the provinces of Nanggroe Aceh Darussalam (Aceh) and North Sumatra (Nias Islands). Indonesia's victims numbered nearly 230,000 (1), as documented in the months immediately following the tsunami. Relief operations were focused on preventing a second wave of casualties from disease and malnutrition among the displaced and homeless survivors (numbering over 750,000 (1) in Indonesia).

At a global experts' meeting in late 2004, to which Helen Keller International (HKI) was invited to contribute its expertise, the importance of vitamins and minerals (V&M) in emergency situations was highlighted. It was concluded that V&M offer an unparalleled combination of six key advantages as a first-line response in disaster situations, where poor sanitation and limited food are serious problems: 1) high impact, 2) low cost, 3) minimal storage needs, 4) minimal or no preparation, 5) easy transportation, and 6) providing a gateway for assessment of additional need.

Recognizing this, HKI initiated assistance focusing on Supplementation with Micronutrients (SUM) (2) in Aceh and North Sumatra, Indonesia, to assist in the overall relief, rehabilitation and reconstruction effort led by the Government of Indonesia (GOI) and the

United Nations. Several factors enabled HKI to rapidly initiate the SUM within weeks of the tsunami. Firstly, HKI had access to and knowledge on how to distribute, administer and promote vitamin A capsules (VAC) through its years-long involvement in the nationwide mass media and social marketing campaign to promote the national VAC supplementation program (3). HKI was also able to obtain a large donation of dispersible zinc tablets from Nutriset for distribution to medical and other health personnel. Another critical factor was HKI's previous work in conducting pilot studies on iron fortified soy sauce and the multivitamin-mineral sprinkles, testing their acceptance among target groups and impact on nutritional and health status, which allowed HKI to mobilize resources for using these innovative, new products to enhance the nutritional quality of survivor



Ruins in the city of Banda Aceh.



Woman on Simeulue island.

populations' food aid rations. Furthermore, HKI's partnerships with Heinz ABC and Akzo Nobel in the above-mentioned pilot studies enabled local production of these V&M preparations and their rapid deployment to Aceh and North Sumatra through partnerships with other NGOs.

Partnerships

HKI has worked in Indonesia for over 30 years and has had partnerships with many organizations, including the Ministry of Health, UNICEF, Church World Service (CWS), CARE, and WFP. With a mobile team consisting mainly of experienced Indonesian staff, HKI was able to rapidly start up SUM operations in early January, assess the situation in Aceh and begin providing V&M preparations. The immediate funding support from its partners in the field as well as internationally, from governments and private sector organizations such as SIGHT AND LIFE en-

abled HKI to provide assistance in the early phase of the emergency through its SUM relief initiative.

Supplementation with micronutrients (SUM)

The objective of HKI's SUM relief initiative (4) is to lower the risk and severity of morbidity, to reduce mortality, and to increase the ability to reconstruct and rebuild livelihoods in the tsunami-affected areas of the provinces of Aceh and North Sumatra.

Vitamin A and zinc are two key nutrients for children under 5 years of age that are proven to reduce mortality from diarrhea and measles by 30–50% (5), and to reduce the incidence and severity of diarrhea, pneumonia, and malaria by 30–40% (6,7). Multi-micronutrient sprinkles complement food aid, improve health and prevent V&M deficiencies (8). Iron fortified soy sauce reduces anemia, especially among adults, and makes

the diet, which is largely based on food aid, more palatable.

In January 2005, VACs, sprinkles and zinc tablets, together with informational materials and guidelines, were immediately made available to tsunami-affected communities. Because these V&M preparations were small and light, they could be taken in large quantities as luggage on planes to Aceh and Nias Island by HKI staff from Jakarta. Also, as these V&M preparations do not require special containment, they could be stored in any available space, however limited.

HKI teams conducting SUM activities among the displaced and homeless survivors administered VACs to children aged 6 months to 12 years who had not yet received these from the Ministry of Health/GOI and UNICEF health teams conducting combined measles immunization and VAC supplementation.

Table 1. Supplementation with Micronutrients (SUM); distribution update until 28 September 2005.

Distribution	Vitamin A capsules (100,000 IU)	Vitamin A capsules (200,000 IU)	Zinc dispersible tablets (20 mg)	Vitalita Sprinkles sachets	Iron fortified soya sauce sachets
by HKI	1,817	35,946	860	4,217,187	*7,965,280
via partners**	108,487	795,562	573,080	1,453,345	1,753,180

*to 235,276 households

** Partners:

Ministry of Health, Republic of Indonesia; Provincial Health Offices, Nanggroe Aceh Darussalam and North Sumatra; District Health Offices of Banda Aceh, Aceh Besar, Aceh Selatan, Kota Lhokseumawe, Bener Meriah, Aceh Tengah, Pidie, Nagan Raya, Bireun, Aceh Jaya, Aceh Utara, Aceh Timur, Aceh Tamiang, Kota Langsa, Aceh Timur, Aceh Barat, Simeulue, and Nias; Terre des Hommes; SurfAid; CARE; Plan International; CWS; UNICEF; IOM; Indonesian Medical Association (IDI); Tengku Fakinah Hospital; Clinic Bantuan Kesehatan Dinas Kesehatan DKI Jakarta; Forum LSM; PMI Sragen; Relawan Bogor; IDI Batam; Clinic Walubi; Clinic Pangkalan TNI; PCC; Clinic Posko FUI Makassar; Clinic Kosgoro TM Budaya; Clinic TVRI Mata le; Clinic PT Sampoerna; Clinic Japan Lambara; Tim Bantuan Propinsi Sumatra Selatan; Indonesian Midwives Association (IBI); Zainul Abidin Hospital; various Puskesmas (Community Health Centers) in tsunami-affected areas; Indonesian Red Cross (PMI); Clinic Secapa Matai; Harapan Bunda Hospital; Malahayati Hospital; PKS; Clinic Posko Tenggara; Gerakan Kemanusiaan Indonesia; Habibi Center

Remarks

- Close collaboration with partners and a system of marking children with ink on the finger prevents double dosing with vitamin A supplements.
- Zinc supplements are distributed to health facilities for administration as part of treatment for diarrhea, as per the WHO/UNICEF guidelines and as supported by MOH.
- Guidelines and/or educational materials in Bahasa Indonesia are distributed along with all vitamin A, zinc, Vitalita Sprinkles and iron-fortified soy sauce
- Training and promotional materials have been produced in collaboration with MOH and are being provided to all partners who are distributing micronutrients.

The HKI teams also provided zinc tablets to medical and other health staff for use as an adjunctive treatment for diarrhea, in line with international recommendations from the WHO and UNICEF (9). Furthermore, HKI teams distributed sachets of multimicro-nutrient sprinkles, which are in a form that is ready for consumption and can be sprinkled over children's food.

The implementation of HKI's SUM relief initiative has been very quick and effective, aimed particularly at addressing the need for V&M preparations to enhance the compromised nutritional status of the tsunami survivors living in camps and host households. This was made possible through HKI's expertise in the field of V&M, as well as its specific and technical knowledge of the health and nutrition situation in Indonesia acquired through its partnership with the GOI in operating the Nutrition & Health Surveillance System (GOI/HKI NSS) from 1988 to 2004. During this period, over 1,000 employees were trained to collect health, nutrition and related data from 160,000 households annually in eight provinces of Indonesia (10).

With the transition of the emergency relief phase of assistance to longer-term rehabilitation – and eventually reconstruction – phases

of assistance, HKI has continued to provide VACs, zinc tablets and multivitamin-mineral formulations (sprinkles and iron-fortified soy sauce) to partners involved in the post-tsunami/earthquake assistance in Aceh and North Sumatra. HKI has also trained substantial numbers of its staff to distribute the V&M preparations, according to strict safety guidelines, to affected populations being reached by their services. Table 1, below, summarizes HKI's distribution of vitamin A capsules, zinc tablets, sprinkles and iron-fortified soy sauce sachets until 28 September 2005.

Capacity building and training

Among the major impacts of the 'tsunami' was the collapse of the health structure in the affected areas as well as a reduction in the number of health personnel. HKI's SUM relief initiative strongly emphasizes capacity building by providing knowledge and training on the importance of V&M in reducing morbidity and mortality among children. During the initial emergency phase, while visiting hard to reach areas in particular, HKI teams provided written international guidelines in Indonesian on vitamin A supplementation and the use of oral rehydration salts (ORS) solutions, together with zinc tablets as an adjunct

treatment for diarrhea, to health personnel and medical teams. In addition, social marketing and training materials in Indonesian, which had already been developed for HKI's ongoing vitamin A program, were available for immediate distribution in the tsunami-affected districts.

In collaboration with the Ministry of Health, HKI also developed extensive guidelines, and training and promotional materials to raise awareness and educate health personnel, mothers and their children about the V&M preparations, its benefits and good nutrition practices. Guidelines, brochures, and flyers provide explanations about dehydration, diarrhea, vitamin A and iron deficiency anemia, as well as their causes, consequences and ways to combat them. They also provide information on who should receive V&M preparations, how these should be given and how frequently. Flipcharts using graphics and text were developed to be used for training and provide information not only on V&M preparations, but also on child health, nutrition and development, exclusive breastfeeding, complementary feeding, consumption of iodized salt and vitamin A-rich foods. Other materials carry key messages and benefits to introduce and promote the V&M preparations among the target groups. HKI was able to



HKI field worker giving a vitamin A capsule to a child.



Training and promotion materials.

Table 2. Guidelines, training and promotion materials that have been designed, developed and produced from April until August 2005. Number of materials about the various topics.

Materials	Vitamin A capsules	Zinc tablets and oral re-hydration salts	Sprinkles	Iron fortified soy sauce	Health, nutrition, vitamins and minerals	SUM relief initiative
Guidelines	1,000	1,000	1,000			
Brochures	30,000	30,000				
Flyers			150,000	150,000		
Flipcharts			1,500		1,500	
Stickers	30,000	30,000	30,000			
Posters	13,000	13,000	13,000			
Banners	500	500	500			
T-Shirts	500		500			1,000
Bags						2,800
Balloons	5,000		5,000			

rapidly design and produce the guidelines and materials as in-house expertise had been developed in promoting good nutrition practices over years of technical assistance to the GOI vitamin A program and other nutrition programs (Table 2).

From January to September 2005, a total of 2,767 people from provincial to sub-district levels were trained by HKI in 13 tsunami-affected districts in both Aceh and Nias islands, including Banda Aceh, Pidie, Bireun, Aceh Utara, Lhokseumawe, Aceh Timur, Aceh Jaya, Aceh Barat, Nagan Raya, Aceh Selatan, Simeulue, Nias, and Nias Selatan. These included staff from government health divisions (doctors, nutritionists and midwives), health volunteers from clinics and village health posts, staff from the Family Welfare

Movement, hospital staff, government officials, and local and international NGO staff.

As the SUM relief initiative continues, HKI has raised more awareness and conveyed greater knowledge in Indonesia on the use and benefits of zinc tablets. A zinc experts' meeting was organized in Jakarta by HKI, in collaboration with the Directorate General for Communicable Disease Control and Environmental Health, Ministry of Health, Government of Indonesia (CDC&EH) (11). Participants, who were specifically experts in nutrition and diarrhea control and prevention, represented government and UN agencies (UNICEF and WHO), academia and associations of health professionals. The participants reviewed the evidence for zinc as an appropriate adjunct treatment for

diarrhea and discussed the importance of providing zinc tablets to children suffering from diarrhea in tsunami-affected areas. The recommendations resulting from this meeting are summarized in Table 3.

SUM program monitoring

HKI closely monitors and evaluates its program to determine the coverage and need for micronutrients among various target groups who have been most affected by the tsunami, and to assess the impact of the distribution of micronutrients on their health status. In tsunami-affected districts, HKI visits camps, barracks and host communities where internally displaced persons (IDPs) are accommodated, and administers questionnaires to mothers,

Table 3. Recommendations of the zinc experts' meeting

- The participants endorsed the implementation of the WHO/UNICEF recommendation for diarrhea cases in tsunami-affected areas: Daily dose of 20 mg zinc supplements for 10–14 days for children aged 6 months to 12 years with acute diarrhea, and 10 mg per day for infants aged 2–5 months, to curtail the severity of the episode and prevent further occurrences in the ensuing 2–3 months.
- HKI was encouraged, in conjunction with CDC&EH and Health Promotion/MOH, to continue with the development of guidelines as well as educational and promotional materials for the use of zinc as an adjunct treatment for diarrhea among children.
- Participants recommended the formation of a working group (including MOH, HKI, UNICEF and WHO) to carry out operational research on the benefits and effects of zinc. Based on the outcomes of such research, the MOH will consider including zinc supplementation as adjunct therapy for diarrhea in its national health policy.



HKI field worker providing guidelines and zinc tablets to a health volunteer.



HKI field staff collecting data from a mother and her children.

caretakers and the heads of shelters, camps, barracks and clinics. Anthropometric measurements are also collected from mothers and their children.

Monitoring of the program also provides a gateway to assess additional needs. For example, HKI's recent monitoring data show that the prevalence of severe wasting, particularly among children aged 6–23 months affected by the tsunami and earthquake near Nias Island is very high and had increased from January until August 2005 (1). For that reason, current efforts such as therapeutic feeding and the provision of complementary foods to IDPs need to be continued, intensified and expanded urgently, in addition to supplementation with V&M preparations.

Figure 1 shows the VAC coverage by HKI and others among children aged 6 months to 12 years in eleven affected districts, 4–8 months following the tsunami. Coverage by others, mainly the Ministry of Health/GOI and UNICEF health teams, was 12–66%. After sweeping by HKI in camps and host communities, coverage increased to 77–99 % in the majority of the districts. Due to the fact that older children have returned to school and therefore were likely to have missed VAC distribution, VAC

coverage was not increased to more than 95% in all districts. In three districts – Aceh Jaya, Aceh Utara and Lhoseumawe – HKI's sweeping activities increased VAC coverage to only 54–68%. This may have been caused by the postponement of sweeping in these districts from July to September, because of district health officials' concerns about children receiving a second dosage during the national vitamin A distribution effort in August.

Conclusions and Recommendations

- HKI's response to the tsunami disaster was very rapid and effective because V&M preparations were in stock and could be produced locally, and due to HKI's strong technical expertise in micronutrient programs, large-scale health and nutrition surveillance, and social marketing.
- For the first time, supplementation with V&M preparations was employed as a first-line

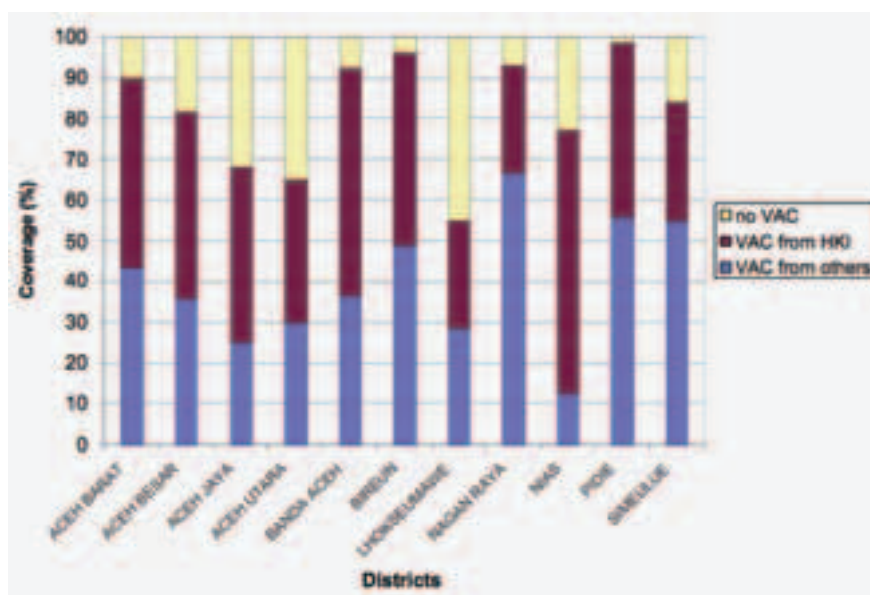


Figure 1. Coverage of VAC supplementation among children aged 6 months to 12 years in 11 tsunami-affected districts, as assessed 4–8 months after the tsunami, and whether from others or from HKI (n=22,896).




Participants in a course held in the district of Lhokseumawe.

emergency response in the aftermath of a natural disaster (i.e. the tsunami and the later earthquake in Nias): this should be applied to future emergency situations. Further research is needed to design and improve similar programs adaptable to various situations.

- Guidelines and promotional materials, as well as training and capacity building, are very important when introducing V&M preparations among various target groups in order to ensure their acceptance and successful distribution.
- Monitoring and evaluation is of utmost importance to assess coverage, need for V&M, and the impact of V&M on health and nutrition status, as well as to provide a gateway to affected communities in order to determine additional needs. Findings should be provided widely to support decision making based on sound evidence. M&E is also vital to assure the quality and effectiveness of program activities and document lessons learned.

Acknowledgements

We are very grateful to the heads and volunteers of the camps; the heads of villages (Kepala Desa) in the affected areas of Aceh and North Sumatra; the Head of the Provincial Health Office, NAD; and the heads of the District Health Offices for their cooperation and support. We also thank the national-level MOH, HKI staff, collaborating agencies and other organizations working to ensure that the nutrition and health as well as other needs of the displaced popula-

tions of Aceh and North Sumatra are addressed. We are especially grateful to the families and internally displaced persons who agreed to participate in the assessment. The distribution of V&M preparations and the assessments conducted until August were funded by donations from CARE Indonesia; PLAN Indonesia; SurfAid International; Terre des Hommes, Netherlands; Akzo Nobel Chemicals; Mees Pierson, Asia Pacific; the Ministry of Foreign Affairs, Royal Netherlands Government; HJ Heinz Company Foundation; SIGHT AND LIFE; the Government of Taiwan; Nutriset; Kimia Farma; Brother's Brother Foundation; and the Michael and Susan Dell Foundation. Donors had no involvement in the design, development, analysis, interpretation or reporting of the content of this paper. 

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