

## **D2 | UNICEF AND THE 'MEDICALISATION' OF MALNUTRITION IN CHILDREN**

### **Extent and spread of malnutrition**

As a result of the current global food crisis, it is estimated that 925 million people do not have enough to eat, i.e. more than the entire populations of the USA, Canada, and the European Union together. Ninety-eight per cent of the world's hungry live in developing countries and 65 per cent of the world's hungry live in only seven countries: India, China, the Democratic Republic of Congo, Bangladesh, Indonesia, Pakistan, and Ethiopia (World Food Programme 2010).

Our nutritional status is influenced by five interrelated factors: political instability; poverty and/or inequality; biased and ineffective development policies; changes in the environment (including climate change); and lack of health, care, and household food security. Sub-Saharan Africa has been under the influence of all these factors, either singly or in varying combinations. Of the countries in sub-Saharan Africa, from what we know objectively, five in particular – Niger, Zambia, Malawi, Rwanda, and Madagascar – are showing rapid deterioration, particularly in stunting, according to recent Demographic and Health Surveys (DHS) (Teller and Alva 2008).

Simultaneously, the rate at which malnutrition had been improving has also declined. In 2001–03, FAO estimated that there were still 854 million undernourished people worldwide, of which 820 million were in the developing countries. Since 1990–92, the undernourished population in the developing countries declined by only 3 million people, from 823 million to 820 million. This contrasts starkly with the reduction of 37 million achieved in the 1970s, and of 100 million in the 1980s (FAO 2006).

Amongst the hungry, the issue of child malnutrition has particular significance as a veritable human rights emergency and a continuing scourge befalling upon humanity. Child malnutrition, an indicator of both the level of food insecurity, care and health in a community and of the nutrition status of future adults (because of malnutrition's intergenerational consequences), continues to be widespread in a population of almost 200 million children under five (one in three children) in developing countries. Twenty-four countries bear 80 per cent of the developing world's burden of undernutrition as measured by stunting (an indicator of chronic hunger). In Africa and Asia, stunting rates of under-fives are particularly high, at 40 per cent and 36 per cent respectively. More than 90 per cent of the developing world's stunted children live in Africa and Asia (UNICEF 2009a).



**37** Two malnourished Nigerian children during the Nigerian-Biafran civil war, 1968: Not enough has changed in many parts of the world in the last 3 decades (CDC/Dr. Lyle Conrad; <http://phil.cdc.gov>)



**38** Homeless woman with child in New Delhi, 2007 (© Paul Prescott | Dreamstime.com)

The global food crisis has brought about a slowing in the improvements of the nutritional status of under-fives, increasing inequalities (including those in gender), as well as threats to the livelihoods of poor and marginalised groups across the developing world. Once and for all, it becomes imperative to think in terms of much more comprehensive strategies to address child malnutrition. We are talking about strategies that address not only specifically the immediate nutritional needs of children (their right to nutrition), but also the complex socio-economic and political root causes of malnutrition.

### **Strategies to combat malnutrition**

A fair amount of consensus exists on the basic conditions required to improve child nutrition and to prevent malnutrition overall. There is consensus, for instance, that the last trimester of pregnancy and the initial period after birth are the most important; it is proven that interventions should concentrate



39 Child in Senossa, Mali (© Attila Jandi | Dreamstime.com)

on children under two years of age; exclusive breastfeeding for six months is essential; complementary feeding must begin at six months of age; and children require good-quality diverse foods to thrive. However, there is still a debate on the best way of achieving these goals and on the relative investments that must be made foremost in preventive and promotive, as well as in curative, strategies. Therefore, while one end of the debate focuses on technical interventions, the other end emphasises decentralised social interventions that allow for community control. Most people would argue for a judicious mix of these elements. Recent trends, unfortunately, point to a shift in the balance in favour of technical interventions and a neglect of other community-based and social interventions.

### **The medicalisation of malnutrition – the RUTF story**

There has been a relatively recent global focus on severe acute malnutrition (SAM); it has engaged the energies and funds of the most active institutions working in this area, especially led by UNICEF. SAM is a severe and acute condition that increases the risk of mortality significantly and demands urgent action. Some have called it a ‘medical emergency’, thus linking it to medical interventions such as hospitalisation and foods-given-as-medicines, i.e. standardised, commercial, Ready to Use Therapeutic Foods (RUTF).

RUTF are basically energy-dense foods with added minerals and vitamins, and are recommended for the short-term management of SAM (for about six

to eight weeks). They lend themselves well to community-based treatment – a major advance over earlier practices, where those suffering from SAM needed to be hospitalised. Not only do RUTF help children to recover from the effects of SAM, they also reduce the requirements for hospitalisation. UNICEF, along with WHO, now recommend that cases of SAM not suffering from complications be managed at home and treated with RUTF.

The debate on the use of RUTF has centred primarily around the introduction of the proprietary product called Plumpy’nut, which was developed in the 1990s by a French paediatrician, André Briend. Briend was later to transfer the know-how to a French company called Nutriset, which now holds all intellectual property rights related to the product (see Box D2.1). The product came to prominence when it was used in 2005, by the international relief NGO Médecins sans Frontières (MSF), in famine-ravaged Niger. MSF distributed Plumpy’nut to 60,000 children and MSF’s data showed that 90 per cent of the children who were fed Plumpy’nut completely recovered, and only 3 per cent died (Defourny 2007). In 2007, the World Health Organisation and UNICEF declared that this kind of treatment was the best for severe and acute malnutrition in children aged between six months and two years (WHO et al. 2007).

Plumpy’nut was soon being aggressively distributed by UNICEF. In 2009, it bought 10,500 tonnes compared with 4,000 tonnes in 2005. In 2009/10, UNICEF procured 14,500 tonnes of RUTF from Nutriset, France – 63 per cent of its entire procurement of RUTF. Consequently, Nutriset’s profits ballooned – in 2009, Nutriset’s sales were €52m compared with €16m in 2005 (Arie 2010). While Plumpy’nut quickly emerged as the next big thing in child nutrition, so did the controversies.

However, some country governments have refused to go along with UNICEF’s aggressive promotion of Plumpy’nut. In 2009, UNICEF ordered a shipment of Plumpy’nut for use in India without any consultation with concerned Indian ministries. The Indian government reacted by asking UNICEF to send back the entire consignment. A Health Ministry official in India commented: ‘RUTF is used in war-torn countries like Africa. We do not approve of the strategy as there are other low-cost alternatives available in the country itself’ (Thacker 2009).

### **Are RUTF the only solution?**

Doubts have been expressed regarding the need to procure an expensive (about \$30/month) commercial product, largely produced by one company based in France, when there appears to be evidence that similar results can be obtained through treatment with community-produced RUTF (cRUTF). The evidence regarding the superior effectiveness of the Plumpy’nut strategy comes primarily from African studies on populations displaced either through conflict or poverty. There is, however, other evidence that suggests that RUTF

like Plumpy'nut are not necessarily superior to other community-based interventions that depend on and use local foods.

Studies report that, on an average, weight gains with Plumpy'nut range from 3.5g per kg of existing weight per day to 8g/kg/day (Gaboulaud et al. 2007; Diop 2004). The largest weight gain reported so far with this product was 15.6g/kg/day (Diop 2003). This was achieved in a hospital setting, and was not duplicated in any other study. In comparison, a study from Bangladesh provides evidence of the efficacy of home foods in treating SAM even without any nutrient supplements being given. Intensive nutrition counselling during home visits was found to achieve weight gains of 9.9g/kg/day (Ahmed et al. 2002). Another study in Bangladesh reported that 'F100' (Formula 100 – a therapeutic milk product designed to treat severe malnutrition) given along with home food resulted in an average weight gain of 7.7g/kg/day (Hossain et al. 2009). In India, the Child in Need Institute in Kolkata has been using a rice/wheat and legume mix called Nutrimix with micronutrient supplementation in home settings. They report weight gains of 9g/kg/day. Nutrimix is prepared in the community by women's groups (International Baby Food Action Network 2009).

### **The food–drug confusion**

There is a race to the middle between pharma and food. The opportunity is big. The risk is big. The reward is big. (Luis Cantrell, head of business, Nestlé SA [Bagla 2010])

One of the concerns that have accompanied the vigorous promotion of RUTF is that centralised manufacture of packaged RUTF threatens to replace local foods (and thereby livelihoods). As a response, it has been counter-argued that RUTF are meant only for a small percentage of children who are affected by SAM, and even for them, it is recommended that it be used for a brief period, till the affected children overcome the acute phase of malnutrition. However, there is now a discernible push for RUTF to be distributed and used freely as a food, thereby enabling the emergence of a mass market. This 'food–drug confusion' has been successfully exploited by commercial interests to promote the production and adoption of RUTF and has been expanded to the use of Ready to Use Foods (RUF) for all degrees of malnutrition, as well as for its prevention! Therefore, a huge market is being envisaged by the food industry in the management of malnutrition. One of UNICEF's global suppliers of RUTF, Diva Nutritional Products, South Africa, markets its product as Imunut. Its website promotes the product by declaiming:

Traditionally children in this age group have been treated for malnutrition in therapeutic feeding centres, a long process that requires the presence of a care-giver – usually the child's mother – which leaves other siblings unat-

tended at home and the fields untilled. Ideally the child should be treated in their own home environment, but access to clean drinking water – which is required for any water-based nutritional formula – is hugely problematic, and because of unsophisticated home environments, storage and feeding of the formula is difficult to monitor. Simplicity is the key to the solution – an easy to dispense RUTF which is both palatable and effective. Supply and maintenance of the product is simple – it requires no refrigeration, the product has been hermetically packaged and has a shelf life of two years.<sup>1</sup>

While introducing another Nutriset product, Plumpy'Doz, to very young children in Somalia, UNICEF has asserted:

The brown paste supplement is made from vegetable fat, peanut butter, sugar, milk, and other nutrients, and is designed to taste good to kids. Critically, it also has a longer shelf life than previous diet supplements and doesn't need to be mixed with water (just like Plumpy'Nut). Three teaspoons of Plumpy'Doz three times a day provides each young child with additional energy, including fats, high-quality protein and all the essential minerals and vitamins required to ensure growth and a healthy immune system. (UNICEF 2008)

The World Food Programme and MSF also use this supplement, not to treat SAM, but unfortunately to provide supplementary nutrition to prevent severe acute malnutrition from developing.

Such an approach, clearly, does not address the underlying structural causes of chronic hunger. Malnutrition has complex roots and any long-term, sustainable solution absolutely needs to address these. In the past, malnutrition was wrongly viewed as a function of shortfalls in agricultural production. However, over the years, it has become clear that, in many situations, access to food in sufficient quantity and quality is not related primarily to agricultural production, but to poverty, i.e. a lack of economic access to food. Equally important as causes are a) the promotion of trade in staple foods over its use for domestic food security, b) the role of futures trading in food commodities, i.e. dealing in food for profit, c) political instability, and d) the lack of political resolve on the part of states to tackle the problems of malnutrition. These causes have led to a spiralling rise in food prices across the globe (discussed at greater length in Chapter C1). Therefore, the overriding priority for programmes aiming to prevent and treat moderate malnutrition has to be to ensure access to the already existing food supply. Without such a focus, no amount of dependency-creating feeding programmes can prevent the disastrous slide into malnutrition. While UNICEF's focus on RUTF is relatively recent, one of its oldest programmes on supplementary nutrition has been the Vitamin A prophylaxis programme. This programme has now been criticised for being premised on inadequate evidence and for actually doing more harm than good in many situations (see Box D2.3).

In a recent article, Jeffrey Sachs and others criticised the use of RUTF to treat chronic hunger. They wrote:

It is critical, however, that we not confuse the many types of hunger and malnutrition (poor nutrition) around the world. Plumpy'Nut is not a miracle cure for global hunger or for global malnutrition. Plumpy'Nut addresses only one kind of hunger – acute episodes of extreme food deprivation or illness, the kind mainly associated with famines and conflicts. Plumpy'Nut is not designed for the other major kind of hunger, notably chronic hunger due to long-term poor diets. ... Plumpy'Nut comes into relevance when an emergency has struck. And while the \$30 per child per month is a very low cost for saving the child, it would in any event be an impossibly high cost for a 'solution' to hunger based on food aid! Suppose that the billion hungry people in the world were put on a permanent Plumpy'Nut diet (a totally misguided idea) at a cost of \$30 per month, or \$360 per year. The result would be a direct cost of some \$360 billion per year, an absurdly high cost compared to the real solutions of improved local agriculture, improved household dietary practices, and expanded access of the poor to basic healthcare. (Sachs et al. 2010)

### **'Hidden hunger' and the market for micronutrient supplementation**

The attempt to use Plumpy'nut or Plumpy'doz to prevent malnutrition is not an isolated misguided case. Rather it is part of a much larger design to mystify malnutrition and create spaces of profit-making opportunities for the food industry. Rather than looking at malnutrition as a result of chronic hunger, corporations are reducing it to deficiencies of small quantities of nutrients such as vitamins and minerals. Doing this provides them with several means of making profits by marketing these micronutrients as supplements. What is never mentioned is that these nutrients would also be available to the child if s/he were exclusively breastfed and, after six months of age, continued to breastfeed and got enough variety of locally available foods (fats, animal protein, green and yellow vegetables, fruits, etc.).

Instead of working to ensure that such diverse foods are indeed available and accessible to every household, the solutions being offered are narrowly based on food fortification and micronutrient supplementation. These processes and technologies promote centralised production and procurement of foodstuffs and detract from local control and autonomy over diets. Sometimes, they even displace local livelihoods such as milling. They promote the notion that special and expensive food, sold as a 'medicalised' solution, is required to deal with micronutrient deficiencies. While governments and global agencies do not hesitate to spend large amounts on micronutrient supplements of this variety, they choose not to spend on promoting fair employment, kitchen gardens and the raising of small domestic animals, which would serve the same purpose as a non-dependency-creating and sustainable alternative solution.

Several groups, such as the Global Alliance for Improved Nutrition (GAIN), which are linked with food and baby-food corporations (the GAIN Business Alliance (BA) is currently chaired by Unilever<sup>2</sup>), are lobbying governments to introduce micronutrients distribution into national nutrition policies and programmes. The annual report of GAIN (2005/06) highlights that GAIN (along with food giants such as Groupe Danone, Unilever, and Cargill), unlike traditional aid providers, is working to fight ‘hidden hunger’ (a term used for micronutrient malnutrition) by building new ‘markets for nutritious foods’ (Rajalakshmi 2008). UNICEF has been especially supportive of GAIN and UNICEF’s website prominently displayed news about the launch of GAIN with the adulatory message: ‘The Global Alliance for Improved Nutrition (GAIN) – a new alliance of public and private sector partners – will be launched during the United Nations Special Session on Children on the 9th of May. It will work to leverage cost-effective food fortification initiatives that promise to improve the health and productivity of the poorest nations.’ GAIN has secured itself a place in decision-making processes that impact on UNICEF’s policies related to food and nutrition – a clear area of conflict of interest given GAIN’s proximity to the food and baby-food industry.<sup>3</sup>

UNICEF has been candid about its pursuing corporate partnerships. A mapping of UNICEF’s partnerships and collaborative relationships, conducted by the organisation in 2008, reported that a total of 628 different companies worldwide maintain active collaboration, partnerships and contacts with UNICEF (UNICEF 2009b). UNICEF now actively explores other areas of engagement with the corporate sector beyond resources mobilisation. For example, UNICEF is a partner with Unilever and the Synergos Institute in a programme on child nutrition in India – the Bhavishya Alliance (*ibid.*).

There is evidence that UNICEF’s focus on ‘quick-fix’ solutions not only does not promote long-term sustainable solutions, but also fails to achieve the stated goals of ensuring the best interests of the world’s hungry children. For instance, between 2001 and 2005 it implemented the Accelerated Child Survival and Development (ACSD) programme in 11 West African countries, but its evaluation showed no difference between intervention and non-intervention areas, despite the expenditure of many millions of dollars. As expected, the weak programmatic areas remained those related to malnutrition, community participation and a host of wider supportive measures. Significantly, there had been a deterioration in the overall socio-economic status in the ACSD focus districts, as well as greater food insecurity in many of the intervention areas (Prasad 2010). The study reported:

Interventions effective in combating under-nutrition, which underlies at least a third of child deaths, were reported by ACSD country teams as receiving low priority in their programme plans. Promotion of immediate and exclusive breastfeeding up to six months of age could have had a large effect on both



neonatal and post-neonatal mortality, but seems to have been promoted more heavily in control areas than in the ACSD focus areas ... There were substantial decreases in exclusive breastfeeding in the focus districts and increases in the control areas ...

It recommended that ‘... the design of child survival programmes should begin with assessing the evidence for the determinants and causes of child deaths ...’

### **Structural causes of malnutrition and the need for a comprehensive approach**

Overall, in poor households, nutritional deficiencies are not related to a lack of will to give mothers and children the right foods in adequate quantities, year round. They are related to their economic inability to procure such foods. Short-term solutions, such as giving enriched foods or micronutrient supplements, are not the ultimate answer to the problems of malnutrition at hand. Instead, each family needs to be enabled to procure enough of the right foods through programmes aimed at eradicating poverty, controlling spiralling food prices, and encouraging the production of food crops (rather than cash crops, as part of neoliberal agricultural policies).

To improve livelihoods and to ensure food security, additional interventions to address child malnutrition need to be put in place. These need to be comprehensive and in line with broader socio-economic objectives, and not be based on centralised, top-down packaged solutions.

Breastfeeding is a major safeguard against early child malnutrition, but rates of exclusive breastfeeding are low in many resource-poor communities. Encouraging exclusive breastfeeding requires not only counselling and support, but also creation of enabling conditions for women to be able to exclusively feed babies for a period of six months. This includes their own nutrition during pregnancy and lactation. Programmes that promote exclusive breastfeeding must recognise women as workers and make provisions to ensure that their dual role as mothers and workers is respected as a matter of human rights during this period. Most poor women work in the informal sector and do not have access to maternity benefits in the form of paid leave, wage compensation, etc. These maternity benefits need to be put in place along with laws and policies that ensure baby-friendly workplaces.

It needs to be recognised that most poor families do not have the time and the resources to ensure a balanced and sufficient diet for children. In many cases, quality foods are not given to children, simply because quality foods are not affordable. In emergency or acute situations, supplementary feeding programmes play a role in providing nutritious supplements to families that do not have access to sufficient and good-quality food for their young children. They may also have a ‘demonstration’ effect by showing what complementary

### Box D.2.1 Plumpy'nut and patents

The patent for Plumpy'nut, the leading RUTF, is owned by Nutriset, a French family-run business, and by the Institute of Research for Development, a French public research institute. Manufacturers of similar pastes have been wary of challenging Nutriset. 'The patents are so broad that if you add one micronutrient into a jar of Nutella [a widely distributed brand of nut paste], it will fall within the patent,' said Stephane Doyon, leader of the Nutrition Team at Médecins Sans Frontières (MSF), not long ago.

Plumpy'nut was the first RUTF to be developed and is regarded as the industry standard. Several similar pastes have been developed, but can only be sold in countries where the Plumpy'nut patents are not registered. Nutriset has attempted to broaden the scope of its two patents. Manufacturers of peanut-based RUTFs have received legal letters. 'You have to keep reminding people [by sending letters],' said Nutriset spokesman Remi Vallet. 'We are not trying to protect a monopoly – there is no monopoly. There are other RUTF manufacturers in the market.'

In Kenya, where the Plumpy'nut patents are registered, Nutriset has threatened legal action against Compact, an Indian and Norwegian manufacturer, for storing 25 metric tons of its RUTF, eeZeePaste, which it intended for distribution in Somalia and the Democratic Republic of Congo (IRIN News 2009).

foods can be made locally. But supplementary feeding programmes are not even a medium-term solution for chronic malnutrition.

In the final analysis, the long-term and definitive elimination of malnutrition rests on consistent action to tackle the structural determinants of malnutrition – armed conflict, social injustice, and poverty. Any short-term strategy must, at the minimum, ensure that it does not postpone acting on the long-term goals of peace, right to nutrition, social justice and disparity reduction. Otherwise, short-term interventions risk disempowering poor people further or even compromising their livelihoods. Any minor trade-offs achievable through technical interventions must be accompanied by long-term, sustainable actions that tackle the violation of the right to nutrition, thus paving the way for robust gains for children's nutritional security.

Unfortunately, UNICEF seems to think otherwise. It is a matter of conjecture whether UNICEF's decisions to partner with industry to address child nutrition with proprietary products was in some measure a consequence of former Executive Director Ann Veneman's proximity to the food industry (see Box D2.2). UNICEF's new director, Anthony Lake, brings to the organisation his experience as a top diplomatic negotiator. Sadly, like Ann Veneman, he has

had little to do with strategies related to the core areas of UNICEF's work. It can only be hoped that he will learn fast on the job and do justice to UNICEF's mandate. Surely, the children of the world deserve nothing less!

### **Box D2.2 From Ann Veneman to Anthony Lake**

UNICEF is headquartered in New York, and it is curious that one of the most important and visible organisations in the UN system does not choose its top executive – the executive director – through a transparent and democratic process. Every executive director of UNICEF, since its inception in 1946, has been a US citizen. The appointment of the executive director of UNICEF, although officially made by the UN secretary-general, is traditionally in the gift of the US government (Horton 2009). In recent years the UNICEF executive director has essentially been a political appointee, with scant regard for past experience regarding the core business of UNICEF.

When Ann Veneman was appointed as the executive director of UNICEF in 2005 (chosen by the then Bush administration in the US), it caused consternation among many commentators. The People's Health Movement reacted by a statement which said (World Public Health Nutrition Association 2011):

Ms. Veneman's training and experience as a corporate lawyer for agribusiness is totally inadequate to the task of leading the agency most responsible for the rights of children. There is no evidence in her tenure as US Secretary of Agriculture, director of the California Department of Agriculture, or Secretary for Foreign Affairs of the US Department of Agriculture, that she has the least bit of interest in the world's children or their health and well-being. Indeed, her performance in these positions has been characterized by the elevation of corporate profit above people's right to food (UN Declaration of Human Rights, article 25). Put into practice at UNICEF, this philosophy and behavior will prove disastrous for the world's children.

Why the United States is allowed to choose the Director of UNICEF should in itself be a cause of major debate among all observers. As is well-known, the United States and Sudan are the only two countries who have refused to join the 189 other governments of the world as signatories of the UN Convention on the Rights of the Child. There is no evidence that Ms. Veneman has a negative view of this great failing on the part of her government or that she would work on behalf of the recognition, enforcement, or expansion of children's rights as Director of UNICEF.

Ann Veneman, after her tenure in UNICEF, has remained true to her corporate past. Barely a year after relinquishing her post as executive director of UNICEF, Ann Veneman has been appointed to the board of the Swiss baby food company Nestlé (ibid.). She has also served as a member of the Nestlé Creating Shared Value Advisory Board since 2009. It needs underlining here that Nestlé is not an ordinary company. It is a company that has been the subject of an international boycott for over 23 years – perhaps the longest standing boycott of a global corporation. It has been labelled by activist organisations as a ‘baby killer’ for persistent unethical marketing of breast milk substitutes.

*The Lancet*, in an editorial, had made a powerful plea that the next executive director of UNICEF should be chosen on merit and based on a transparent process. It said:

UNICEF’s Executive Director is an important global leader in health. The person appointed should not be in the gift of one powerful government. Instead, UN Secretary-General Ban Ki-moon should announce that the next Executive Director of UNICEF will be selected through a transparent, merit-based appointment process. Candidates, nominated by their governments or applying directly, should have to declare themselves, publish manifestos, and be available for public scrutiny and questioning. Most importantly, the next Executive Director of UNICEF should be someone with a proven track record in children’s issues, including child health. (Horton 2009)

Unfortunately, Ann Veneman was succeeded by another political appointee in 2010 – this time of the Obama administration. The new executive director of UNICEF, Anthony Lake, has been a foreign policy adviser to many Democratic US presidents and presidential candidates, and served as National Security Advisor under US president Bill Clinton from 1993 to 1997. Following President Clinton’s 1996 re-election, Lake was nominated to become the director of the Central Intelligence Agency (CIA), but his nomination was withdrawn owing to Republican opposition.

### **Box D2.3 The great vitamin A fiasco**

*[The analysis here is an abridged version of a detailed paper by Dr Michael Latham, published in the journal of the World Public Health Nutrition Association in May 2010 (Latham 2010). We take this opportunity to pay our tributes to Dr Latham, who passed away in April 2011.]*

*Introduction* Every year, roughly half a billion capsules of Vitamin A are distributed to around 200 million children in over 100 countries. Covered are children between the ages of six months and five years, in countries with a child mortality rate greater than 70 in 1,000 live births. A large proportion of the children who are receiving these massive doses do not suffer from vitamin A deficiency. The normal dietary recommendation for vitamin A in children aged 6–12 months is 600 IU a day; and for children between one and five years old it is 900 IU a day. The twice-yearly supplements being used to prevent deficiency are of 100,000 units for 6–12-month-old babies, and 200,000 units for children between one and five years.

The programme of vitamin A dosing has been massively scaled up in recent years – between 1999 and 2004 the percentage of children in 103 targeted countries who received one dose of capsules a year increased from 50 to 68. UNICEF states: ‘Vitamin A programming is a pre-requisite for achieving MDG#4’. Yet this massive expansion has taken place in spite of clear indications that the vitamin A programme is based on inadequate evidence, and in many situations it may be doing more harm than good.

*1970s and 1980s: the story begins* The International Vitamin A Consultative Group (IVACG) was founded in 1975, with its secretariat in Washington DC. It was funded by the US government international aid agency USAID, with the involvement of UNICEF and WHO.

An Indonesian study, published in *The Lancet* in 1986, concluded that children who received massive dose vitamin A supplements, even those without ocular signs of xerophthalmia, had a 34 per cent lower mortality from all causes than those not receiving the supplement. Many researchers had serious questions about this study – randomisation was not done at the baseline; no placebos were used; children in the control group had more clinical signs of vitamin A deficiency and poorer growth to start with; and no causes of death were reported. The study was followed by eight other trials, and a meta-analysis published in 1993 showed that six found significant reductions in child mortality, and two did not.

Most of these studies were conducted in Asian countries with high prevalence rates for xerophthalmia, serious malnutrition, and low measles immunisation rates. A much-quoted VAST (Vitamin A Supplement Trial) study in Ghana using a very large sample reported about 500 deaths in the control children compared to about 400 in the supplemented children – a statistically significant difference.

However, suggestions were made that the statistical difference in deaths might disappear if measles mortality were excluded. Measles is the only

cause of childhood morbidity for which medicinal vitamin A supplements have been shown to reduce the severity of illness and case fatality rates. The most effective way to prevent measles is vaccination. The question asked was: 'Could it be that the significant reduction in mortality rates in children receiving vitamin A supplements in these studies was due to a reduction in measles deaths?' This question has never been answered.

*The Beaton report* From the early 1990s supplementation with massive medicinal doses of vitamin A became increasingly accepted as the main or even the only effective way to prevent deficiency, as well as the most effective way to save the lives of children throughout higher-child-mortality countries. The scientific basis for this change of policy was a report commissioned by the Canadian International Development Agency (CIDA) and published in 1993 (known as the Beaton report, after its lead author), which reviewed the studies undertaken up to that time. It concluded: 'These studies together suggested that vitamin A supplementation resulted in an average reduction of 23 percent in mortality rates in children 6–60 months of age.'

Unfortunately actions that followed were based on a selective reading of the report. One of its key comments, which was studiously ignored, said: 'We can offer no conclusion, based on the definitive mortality evidence, about the impact of vitamin A to be expected in populations where there is evidence of depletion but not evidence that depletion is severe enough to produce clinical lesions in at least a small proportion of individuals.' The report also specifically indicated that the impact it believed existed was not due to the provision of a medicinal dose of vitamin A at one time, and that more gradual, sustainable approaches would be equally effective. The report also concluded that 'improvement of vitamin A status cannot be expected to impact on incidence, duration or prevalence of general diarrhoeal and respiratory illness as seen in the community'.

So if, as claimed, the capsule programme does substantially reduce child mortality, it evidently does so without also reducing morbidity (with the exception of measles, which is most effectively prevented by vaccination). But how can this be possible? This is a conundrum that has not been resolved.

*Adverse effects on respiratory infections* There is also evidence that high doses of vitamin A may actually be increasing morbidity in children. A study conducted in Indonesia (published in 1996) concluded that high-dose vitamin A supplements increased the incidence of acute respiratory

illnesses by 8 per cent, and acute lower respiratory illnesses by 39 per cent. They also concluded: ‘These detrimental effects on acute lower respiratory illnesses were most marked in children with adequate nutritional status.’

A 2003 meta-analysis of the impact of capsule programmes on child morbidity from diarrhoea and respiratory infections examined nine randomised control trials. It concluded that ‘the combined results indicated that vitamin A supplementation has no consistent overall protective effect on the incidence of diarrhoea’. It also said that supplementation ‘slightly increases the incidence of respiratory tract infections’.

In spite of such clear evidence, there has been no outcry, or serious scrutiny of this issue. The majority of children receiving medicinal doses of capsules are not malnourished. Can we be certain that capsule programmes are ‘doing no harm’ in many countries?

*IVACG and the big agenda* Instead, by the 1990s the leadership of the International Vitamin A Consultative Group had almost exclusively come to embrace the top-down, ‘magic bullet’ capsule approach. In 2002, in a formal statement, IVACG declared that any diet-based approach was ‘inadequate to normalise vitamin A status’.

In 2006 IVACG was incorporated into the Micronutrient Forum, which focuses on several micronutrients. Of the 13 members of the steering committee, 10 are from the USA. The Forum secretariat of six people are all from the USA, either from USAID or else the Academy for Educational Development, funded by USAID and more recently by the Gates Foundation.

Two Micronutrient Forum meetings have been held, one in 2007 in Istanbul, and the second in 2009 in Beijing. The ‘platinum’ sponsors of the Beijing meeting included USAID and the International Life Sciences Institute. Its three ‘gold’ sponsors were the Gates Foundation, Coca-Cola, and Pepsi-Co.

*Do capsules actually reduce mortality?* The largest ever randomised controlled trial, on De-worming and Enhanced Vitamin A (DEVTA), included 1 million rural children above the age of six months in the state of Uttar Pradesh in North India. There was no significant difference in the death rates between children who received massive doses of vitamin A and those who did not. These results were disclosed at the 2007 Istanbul meeting of the Micronutrient Forum. Very remarkably, they still have not been published in a journal.

Donor-driven programmes, such as universal vitamin A capsule distribution, are rarely if ever ‘gifts’. There is always a gradual siphoning-off

of local funds to pay part of the costs for something a government often never really wanted in the first place. A 2009 report from the Micronutrient Initiative admits: ‘Supplementation remains largely a push-driven rather than a demand-driven intervention.’ A USAID-funded analysis published in 2007 points out that funding for capsule distribution will be threatened when governments are ‘allowed’ themselves to make decisions about how donor funds are spent.

*Neglect of sustainable solutions* The administration of medicinal doses of vitamin A is effective in cases of clinically evident xerophthalmia, which remains a public health problem and even an emergency in some lower-income countries. What is mistaken, and reprehensible, are the claims made for vitamin A capsule programmes, and the indiscriminate scale of these programmes. Evidence for the numbers claimed was never conclusive, and is increasingly embarrassingly lacking as implementation has expanded.

Worse yet is the consequent neglect of national, local and community-based programmes that give less-resourced governments a real chance of sustaining the prevention of vitamin A deficiency, and sustaining food and nutrition security. In 2010 it is indefensible that the huge vitamin A medicinal capsule programmes not only continue, but are being made even more colossal. Much of the nutrition world has simply failed to study and keep up with the evidence and the testimony of those with local knowledge, or, if they have, seem to be unable or unwilling to challenge the status quo. Now is the time for a concerted challenge to this authority.

## Notes

1 [www.imunut.com/](http://www.imunut.com/).

2 From GAIN’s website: [www.gainhealth.org/partnerships/how-gain-works-businesses](http://www.gainhealth.org/partnerships/how-gain-works-businesses).

3 The World Alliance for Breastfeeding Action (WABA), in an open letter to the UNICEF and the WHO, protesting against GAIN’s inclusion in the list of invitees for a meeting organised by the two organisations on ‘Strengthening actions to improve infant feeding in children 6–23 months of age’, said: ‘... we are deeply concerned that the Global Alliance for Improved Nutrition (GAIN) is participating in the meeting on *Strengthening actions to improve infant feeding in children 6–23 months of age*, taking place

in Geneva right now. They are thus in a position to influence the policy directions of WHO and UNICEF. The Board of GAIN includes among other food giants, DANONE, that systematically violates the International Code of Marketing of Breastmilk Substitutes. The WHO/UNICEF partnership with GAIN constitutes a conflict of interest and is in contradiction with WHO’s own *Guidelines on Interaction with Commercial Enterprises to Achieve Health Outcomes*, with Paragraph 44 of the *Global Strategy for Infant and Young Child Feeding*, and with WHA Resolutions 49.15 (1996), 58.32 (2005) and 61.20 (2008). The presence of GAIN in such



a meeting legitimises its declared aim to build markets for the commercial sector in the developing world especially for commercial foods for infants and young children.’ Available at: [www.bpni.org/AACI/Resources/Letter-to-WHO-UNICEF-COI.pdf](http://www.bpni.org/AACI/Resources/Letter-to-WHO-UNICEF-COI.pdf).

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