



Nutrition

at a glance

Why tackle malnutrition?

Reducing malnutrition is a cornerstone of poverty reduction. General malnutrition and specific micro-nutrient deficiencies contribute to infant, child and maternal morbidity; decreased learning capacity; lower productivity and higher mortality. Studies from Ghana, for example, show that stunted children lose years of education because they enter school at later ages. Over 50% of the nearly 12 million child deaths in 1995 were associated with low weight for age. Anemia causes 7% of all maternal deaths in Asia, 6% in Africa and 3% of all maternal deaths in Latin America.

Malnutrition remains widespread.

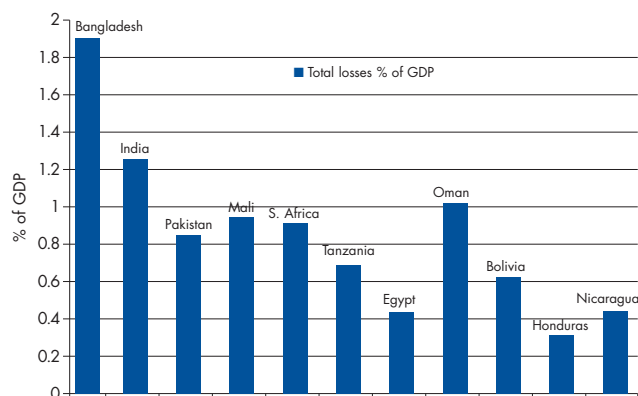
- Annually, some 30 million infants – around 82,000 every day – are born with intra-uterine growth retardation (IUGR), due mainly to poor nutritional status.
- 1 in 3 children under five in the developing world are stunted (nearly 182 million).
- More than 250 million children under five are affected by sub-clinical vitamin A deficiency.
- More than a billion people are at risk of iodine deficiency disorders.
- An estimated 3.5 billion people are affected by iron deficiency and anemia.

In most regions, nutrition rates are slowly improving, but in Eastern Africa, malnutrition rates and absolute numbers are increasing – from 22 million malnourished children under five in 2000, to a projected 24 million in 2005.

The gains from malnutrition reduction are substantial. In Pakistan, school enrollment rates increased substantially (2% for boys, 10% for girls) with a relatively small improvement in height for age. Addressing vitamin A deficiency can reduce mortality among children under six by nearly 23%. Universal salt iodization can eliminate the severe mental retardation associated with iodine deficiency, and can add as many as 11 IQ points, on average, to every person in a country. Giving iron to children aged 6-24 months will help prevent cognitive changes that reduce school performance. Nutrition education, vitamin A supple-

mentation and breast feeding promotion are among the most cost-effective public health interventions, in terms of disability adjusted life years (DALYs) gained.

Estimates of economic costs of anemia (cognitive + productivity) as % of GDP



What to do about malnutrition?

While income growth is a key factor in reducing malnutrition, recent studies confirm that malnutrition persists even where rapid income growth occurs, unless additional direct measures are taken.

The proven effective core interventions are summarized in the table. Because malnutrition is often due to a combination of inadequate diet and disease, and compounded by inadequate care of women and children, a comprehensive strategy that cuts across sectors is required.

- Mobilize community groups and leaders to recognize and demand good nutrition for women and young children in particular;
- Base direct actions in the community and focus on counseling for behavior change;
- Combine fortification and supplementation, including iodized salt, iron/folic acid and vitamin A supplements, and promote micro-nutrient rich diets;
- Improve delivery of nutrition services as a part of core MCH services;
- Improve water and sanitation services;
- Educate girls and women;
- Provide livelihood strategies for women; and
- Assure a supportive food and nutrition policy environment.

This table summarizes the core nutrition interventions, their intended beneficiaries, and indicators to track achievement of primary nutrition objectives

Objectives	Core Interventions	Beneficiaries/ Target Groups	Indicators
Prevent and reduce general malnutrition	<p>Promote good maternal nutrition</p> <ul style="list-style-type: none"> ✓ Counseling on dietary intake, reduced energy expenditure, before, during, and after pregnancy ✓ Weight gain monitoring during pregnancy ✓ Anemia control and prevention of micronutrient deficiencies ✓ Targeted food supplementation for pregnant & lactating women, adolescent girls 	Adolescent and school-age girls, pregnant and lactating women, women of reproductive age	<ul style="list-style-type: none"> ✓ LBW rate and trends ✓ Weight gain during pregnancy ✓ % of women falling below cutoff for Body Mass Index
Prevent growth faltering and promote optimal growth/ reduce childhood malnutrition	<p>Promote optimal infant feeding</p> <ul style="list-style-type: none"> ✓ Counseling on infant feeding: <ul style="list-style-type: none"> - Exclusive breast feeding up to six months - Breast feeding with nutritionally adequate complementary feeding between 6 and 24 months - Feeding of sick and malnourished children ✓ Counseling on infant feeding options for HIV+ women <p>Promote optimal growth and reduce malnutrition</p> <ul style="list-style-type: none"> ✓ Growth monitoring and counseling ✓ Infectious disease control ✓ Micronutrient strategies – see below ✓ Targeted supplementary feeding <p>Treatment, monitoring and referral of severely malnourished and HIV positive children</p>	<p>Pregnant and lactating women, children under 24 months</p> <p>Children under 24 months, care givers</p>	<ul style="list-style-type: none"> ✓ % of population 6-36 months below -2Z scores weight for age, height for age, weight for height ✓ % immediate breast-feeding (within 1st hour) of birth ✓ Exclusive breast feeding rate in infants < 6 months ✓ Mean duration (in months) of breast feeding; ✓ Median age of introduction of complementary foods ✓ Adequacy score for quality of complementary feeding
Prevent and treat micronutrient deficiencies	<p>Communicate about diverse food sources rich in micro-nutrients; counseling on use of fortified food, and supplements</p>	Population wide	<ul style="list-style-type: none"> ✓ Blood levels of iron, vitamin A or clinical signs of deficiencies ✓ Urinary iodine
Vitamin A deficiency (VAD) prevention and treatment	<p>Fortify and Supplement with Vitamin A</p> <ul style="list-style-type: none"> ✓ Fortification of staples (e.g. sugar) with vitamin A ✓ Vitamin A supplementation: post-partum (within 60 days) and twice yearly for children 6-59 months. Also in treatment of prolonged diarrhea, measles, respiratory infections, severe Protein-Energy Malnutrition (PEM), other severe infections. ✓ High dose treatment for clinical signs of VAD 	<p>Population wide</p> <p>Mothers, immediately post-partum; young children</p>	<ul style="list-style-type: none"> ✓ Incidence of under-5 mortality rates ✓ Prevalence of night-blindness in the population ✓ % of children, 6-59 months, receiving vitamin A supplements
All deficiencies			

Objectives		Core Interventions		Beneficiaries/ Target Groups		Indicators	
Iron deficiency and anemia prevention and treatment	<ul style="list-style-type: none"> ✓ Iron Fortification and Supplementation ✓ Fortification of staples (e.g. wheat) with iron ✓ Iron and folic acid supplementation ✓ Anthelmintic treatment ✓ <u>Malaria</u>: insecticide treated bednets, & treatment for malaria as needed, as per national guidelines. <p>Pregnant women: intermittent presumptive treatment or chemoprophylaxis, consistent with national treatment policy, and insecticide treated bednets (see malaria at a glance)</p>	<ul style="list-style-type: none"> ✓ % of households consuming iron fortified food products ✓ Prevalence of anemia in pregnant women and children < age of 24 months ✓ % of target population receiving iron supplements ✓ % of target population receiving anthelmintic treatment ✓ % of children <5 and pregnant women sleeping under insecticide treated bednets ✓ % of pregnant women who have taken chemoprophylaxis or intermittent drug treatment, according to the national policy 	<ul style="list-style-type: none"> Population wide Pregnant women Children 6-24 months Adolescents, schoolchildren School age children Endemic areas: Pregnant women - after 1st trimester Children < 5 years and pregnant women (or all persons at risk in areas of low/moderate transmission) Pregnant women 	<ul style="list-style-type: none"> ✓ % households consuming iodized salt ✓ Proportion of population with urinary iodine level below 100mg/l or ✓ Proportion of school children 6-12 years of age with palpable enlarged thyroid 			
Iodine deficiency disorders prevention and treatment	<ul style="list-style-type: none"> ✓ Universal salt iodization (Use alternatives such as iodine supplements, iodized oil or water as short term measure where iodized salt is not available in iodine-deficient areas) 	<ul style="list-style-type: none"> ✓ % households consuming iodized salt ✓ Proportion of population with urinary iodine level below 100mg/l or ✓ Proportion of school children 6-12 years of age with palpable enlarged thyroid 	<ul style="list-style-type: none"> Population wide Young children; women of reproductive age 	<ul style="list-style-type: none"> ✓ % households consuming iodized salt ✓ Proportion of population with urinary iodine level below 100mg/l or ✓ Proportion of school children 6-12 years of age with palpable enlarged thyroid 			
Address underlying causes of malnutrition							
Household livelihood security	<ul style="list-style-type: none"> ✓ Food policy reforms Explicit consumer food policy, agricultural, trade and macroeconomic policy ✓ Food security strategies Targeted actions for food security – e.g. off-farm income generation, subsidized inputs, labor saving devices for women ✓ Safety nets, including targeted income transfers, e.g. targeted food subsidies, food stamps, micro-credit, farm input packages, skills training ✓ Income generation combined with nutrition education 	<ul style="list-style-type: none"> ✓ Mean daily calorie availability at household level ✓ % of households consuming < 80% of caloric requirements OR < two meals per day ✓ % of households with expenditure on food >50% of total household expenditure 	<ul style="list-style-type: none"> Population wide Lower income quintiles 	<ul style="list-style-type: none"> ✓ Mean daily calorie availability at household level ✓ % of households consuming < 80% of caloric requirements OR < two meals per day ✓ % of households with expenditure on food >50% of total household expenditure 			
Hygiene and sanitation	<ul style="list-style-type: none"> ✓ Improved access to adequate water and sanitation Hygiene education 	<ul style="list-style-type: none"> ✓ % of households with access to potable water ✓ % of households with access to latrines 	<ul style="list-style-type: none"> Population wide 	<ul style="list-style-type: none"> ✓ % of households with access to potable water ✓ % of households with access to latrines 			
Gender equity	<ul style="list-style-type: none"> ✓ Girls' education 	<ul style="list-style-type: none"> ✓ Female secondary school enrollment ratio 	<ul style="list-style-type: none"> School-age girls 	<ul style="list-style-type: none"> ✓ Female secondary school enrollment ratio 			

Where to Start

Base action on an understanding of the nutrition situation, set realistic goals, and regularly assess performance and progress towards meeting the goals.

Nutrition indicators improve when interventions reach scale. Identify and work with partners who can eventually deliver at scale. Achieve visible impact with a limited set of activities while building capacity and support. Advocate inclusion of nutrition actions and indicators in other relevant areas (health, early childhood development, education, rural and community development, women's affairs).

For sustained impact, governments and key members of civil society must make political and social choices; and commit to and pursue a phased, multi-faceted strategy. Nutrition information generated for the strategy will also be useful for an understanding of the country's situation with respect to poverty and health.

How to choose a set of interventions

Adapt proven interventions, chosen after a critical review of:

- The nature, extent, and key determinants of the malnutrition problem in a particular country, region, or target population;
- Goals, targets and timeframe for malnutrition reduction set by the country;
- What is currently being done in the country with respect to nutrition and related areas;
- Country capacity to design, implement and sustain activities. Capacity building should be an integral part of the strategy.

Do's and don'ts in community based maternal and child nutrition programs:

Do:

- Obtain and maintain the support of community leaders.
- Focus on pregnant women and younger children, rather than all children under five – growth faltering occurs before birth and in the first 24 months.

- Include all children under 2 years in growth monitoring and promotion activities – not only malnourished children, and not only those who come to clinics.
- Focus on growth – the dynamic process – rather than on nutritional status only.
- Focus on counseling care givers, using messages designed with the intended audiences.
- Invest in training and supervision. Use appropriate ratios of workers to households and supervisors to workers.
- Write realistic job descriptions for community workers. Teams work better for nutrition than a single community volunteer.
- Ensure linkages with health facilities, and appropriate referral arrangements.
- Work with existing community structures in urban and rural areas e.g. women's / youth groups, religious and traditional healers and others.

Don't:

- Rush into food supplementation; establish that access to food and diet quality are constraints before deciding to include targeted supplementary feeding.

For more information

Nutrition Thematic Group (TG): Milla McLachlan
Food and Nutrition Policy TG: Harold Alderman
Nutrition Advisory Services: Please send e-mail to nutrition@worldbank.org

Key references

- World Bank. Nutrition Toolkit on the World Bank website: www.worldbank.org/nutritiontoolkit, or order by e-mail from nutrition@worldbank.org (US \$40 plus shipping costs)
- The Linkages Project (for information on infant and young child feeding) www.linkagesproject.org
- Stolzhus RJ and Dreyfuss M. Guidelines for the use of iron supplements to prevent and treat iron deficiency anemia. INACG/WHO/UNICEF (1998).
- BASICS, WHO, UNICEF. Nutrition Essentials. A guide for health managers (1999)
- WHO/UNICEF/ICDIDD. Recommended iodine levels in salt and guidelines for monitoring their adequacy and effectiveness. (WHO/NUT/96.13)
- WHO/UNICEF/IVACG Task Force. Vitamin A supplements: a guide to their use in the treatment and prevention of vitamin A deficiency and Xerophthalmia. Second Edition, Geneva: WHO, Nutrition Division (1997).

Expanded versions of the "at a glance" series, with e-linkages to resources and more information, are available on the World Bank Health-Nutrition-Population web site: www.worldbank.org/hnp