

Undernutrition in Infants and Young Children in India: A Leadership Agenda for Action

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Abstract In India, child undernutrition happens very early in life; 30 per cent of Indian infants younger than six months old are underweight and 58 per cent of children in the age group 18–23 months old are stunted; moreover, 56 per cent of severe wasting in India happens before children are two years old. Recognising the centrality of the first two years of life to respond to India's nutrition challenge, the Coalition for Sustainable Nutrition Security in India called on an Expert Task Force on Infant and Young Child Nutrition to identify the ten evidence-based, high impact, cost-effective interventions with the greatest potential to reduce rates of undernutrition in infants and young children (0–23 months old) in India. These ten Essential Interventions are the evidence base for a broad-based Leadership Agenda for Action to Reduce Undernutrition in Infants and Young Children in India.

1 India: undernutrition happens very early in life

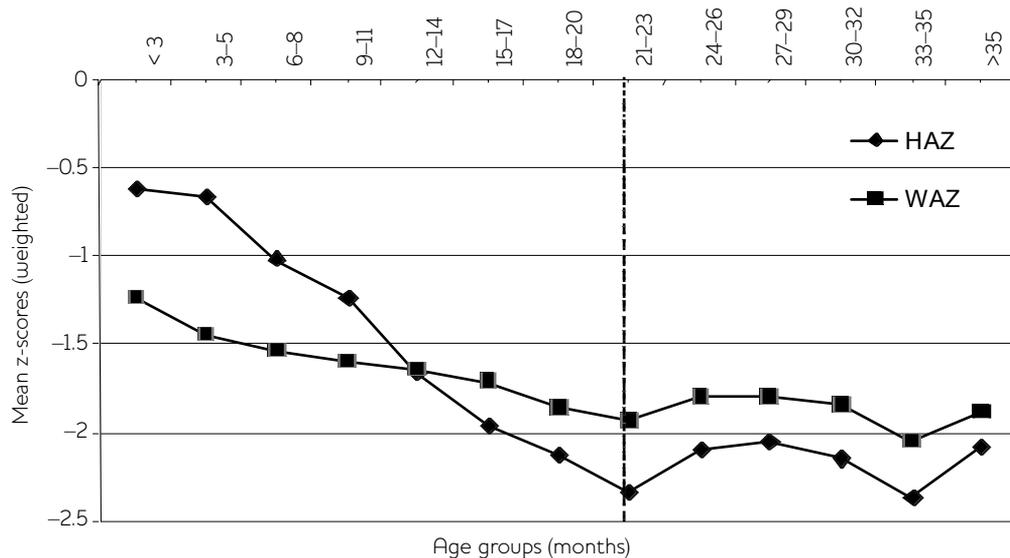
Undernutrition remains a major threat to the survival, growth and development of Indian children. The latest National Family Health Survey (NFHS-3, 2005–06) shows that 20 per cent of Indian children 0–59 months old are wasted and 48 per cent are stunted (IIPS 2005–06). In absolute figures this means that of the 125 million under-fives in India (UNICEF 2008b), 25 million children are wasted (acutely undernourished) and 61 million are stunted (chronically undernourished). Rates of child undernutrition in India are among the highest in the world. The prevalence of child underweight in India (43 per cent) is almost twice as high as the average prevalence of child underweight in sub-Saharan Africa (24 per cent), and seven to eight times higher than that in China (6 per cent) or Latin America (5 per cent) (UNICEF 2009).

The 'development paradox' in India is that despite a booming economy growing at nearly 10 per cent annually (Chatterjee 2007), the nutrition situation of children has not shown any significant improvement over the last decade. According to NFHS-2, the prevalence of underweight in children 0–35 months old in

1998–9 was 43 per cent (IIPS 1998–9); NFHS-3 reports that in 2005–06, the prevalence of underweight in this same age group is 40 per cent; therefore, over the seven-year time span between the two most recent National Family Health Surveys, the average annual reduction in the prevalence of child underweight was less than 0.5 per cent points per year. In view of this situation, India's Prime Minister has referred to rates of child undernutrition as 'a matter of national shame' and has appealed 'to resolve and work to eradicate malnutrition'.¹

Child undernutrition in India happens very early in life. NFHS-3 shows clearly that the average weight-for-age and height-for-age z-scores in Indian children are already sub-optimal at birth and deteriorate progressively through the first two years of life, stagnating thereafter (Figure 1): 30 per cent of Indian infants younger than six months old are underweight (insufficient weight-for-age) and 58 per cent of children in the age group 18–23 months old are stunted (insufficient height-for-age); moreover, 56 per cent of severe wasting in India – a life-threatening form of undernutrition – happens before children are two years old. Therefore the

Figure 1 In India child undernutrition happens very early in life. Weight-for-Age (WAZ) and Height-for-Age (HAZ) z-scores in Indian children 0–59 months old



Source National Family Health Survey 2005–06 (IIPS 2005–06).

first two years of life represent a critical window of opportunity to break the inter-generational cycle of undernutrition in India.

2 Task force on infant and young child nutrition

In response to the appeal by the Prime Minister and recognising the centrality of the first two years of life as the critical window of opportunity to respond to India’s nutrition challenge, the Coalition for Sustainable Nutrition Security in India – an increasingly larger group of leaders and stakeholders chaired by Professor M.S. Swaminathan² – called, in February 2008, on an Expert Task Force on Infant and Young Child Nutrition³ to identify the ten Essential Interventions to reduce undernutrition in infants and young children (0–23 months old) in India; these Essential Interventions would become the evidence base for a broad-base Leadership Agenda for Action to Reduce Undernutrition in Infants and Young Children in India. The Expert Task Force took the following steps:

- 1 Agreed on the goal of the Task Force: Develop an evidence-based leadership agenda for action to improve the nutrition situation of infants and young children (0–23 months old) in India.
- 2 Agreed on the objectives of the Task Force: Identify the ten evidence-based, high impact,

cost-effective Essential Interventions with the greatest potential to make a significant contribution to the reduction of undernutrition in infants and young children in India in the next five years.

- 3 Agreed on the methodology to be used: Review the existing global and national evidence on infant and young child nutrition, with a common understanding that the review of evidence would encompass research, epidemiological, and programme evidence.
- 4 Agreed on the expected outcome and timeline: An agreed upon *Leadership Agenda for Action to Reduce Undernutrition in Infants and Young Children in India* that includes for each of the ten Essential Interventions a summary description of the intervention (the ‘what?’), the rationale for the intervention in India (the ‘why?’), and approaches for scaling up each Essential Intervention (the ‘how?’); the agreed timeline was March–August 2008 (six months).
- 5 Agreed on a no conflict of interest statement: *‘I declare that I have no conflict of interest; the best interest of Indian children is the guiding principle in my contribution to the Expert Task Force on Infant and Young Child Nutrition’.*

3 Ten Essential Interventions to reduce rates of child undernutrition in India

The Expert Task Force identified the following ten Essential Interventions as those with the highest potential to make a major contribution to reducing the rates of child undernutrition in India in the next five years.

- 1 Timely initiation of breast-feeding within one hour of birth:** Every newborn starts breast-feeding within one hour of birth to take advantage of the newborn's intense suckling reflex and alert state and to stimulate breast milk production. Good breast-feeding skills – including proper positioning and attachment – are established to increase the newborn's suckling efficiency, mother's breast milk production, and infant's breast milk intake.
- 2 Exclusive breast-feeding during the first six months of life:** Every infant is exclusively breast-fed in the first six months of life. The infant is fed only breast milk and is not given any fluids, milk or foods, not even water. Exclusive breast-feeding, with frequent, on-demand feeds is established to ensure maximum protection against undernutrition, disease, and death, and contribute to child spacing and lower fertility rates.
- 3 Timely introduction of complementary foods at six months:** Every infant starts receiving complementary foods by the beginning of the seventh month of life while breast-feeding continues until 24 months and beyond. Timely introduction of complementary foods by the beginning of the seventh month is established while breast-feeding continues to ensure that all infant's energy and nutrient requirements are met; introducing complementary foods in the first six months of life is both unnecessary and dangerous.
- 4 Age-appropriate complementary foods, adequate in terms of quality, quantity and frequency for children 6–23 months:** Every child 6–23 months old is fed age-appropriate, energy and nutrient-dense, diverse complementary foods with increased quantities, nutrient density, and frequency as the child ages. Child feeding is responsive and active. Children are given prophylactic iron and folic acid supplements to prevent

anaemia. Hygienic practices are followed when feeding children.

- 5 Safe handling of complementary foods and hygienic complementary feeding practices:** Every child 6–23 months old is fed using safe handling (preparation and storage) of complementary foods and hygienic complementary feeding practices by – among others – washing caregivers' hands before food preparation, washing children's hands before eating, serving foods immediately after preparation, and using clean utensils and avoiding feeding bottles.
- 6 Full immunisation and bi-annual vitamin A supplementation with deworming:** Every child is protected from vaccine preventable diseases through a full course of immunisation delivered through the routine immunisation system at set times in the child's first year of life. In addition, all children under five years old are further protected from mortality, morbidity, and undernutrition with preventive vitamin A supplementation (children 6–59 months old) and deworming (children 12–59 months old) twice yearly.
- 7 Frequent, appropriate, and active feeding for children during and after illness, including oral rehydration with zinc supplementation during diarrhoea:** Every child is fed, actively and frequently, with age-appropriate and nutrient dense foods, during and after illness, while frequent, on-demand breastfeeding continues to increase fluid and nutrient intake. Children with diarrhoea also receive appropriate rehydration therapy including a full course of zinc supplements as per national guidelines for the treatment of diarrhoea.
- 8 Timely and quality therapeutic feeding and care for all children with severe acute malnutrition:** Every child with severe acute malnutrition is provided with therapeutic foods and care in a timely manner, for life-saving rapid weight gain and recovery. Care for children with severe acute malnutrition requires early case detection – before the development of medical complications – and optimal therapeutic feeding and care protocols, and therapeutic foods, including ready-to-use therapeutic foods.

9 **Improved food and nutrient intake for adolescent girls particularly to prevent anaemia:** Every adolescent girl is protected against nutritional deficiencies and anaemia through dietary counselling, weekly iron and folic acid supplementation, twice yearly (six months apart) deworming prophylaxis, and life-skills development to avoid early marriage and early pregnancy.

10 **Improved food and nutrient intake for women, including during pregnancy and lactation:** Every woman has access to sufficient quality and quantity of food including during pregnancy and lactation. Every pregnant woman and lactating mother takes iron and folic acid supplements daily to reduce the risk of maternal anaemia and improve pregnancy and lactation outcomes. Universal regular consumption of salt with adequate levels of iodine (>15 ppm) is required especially for pregnant women in order to prevent the foetal brain damage associated with iodine deficiency.

4 Ten priority approaches to deliver the Essential Interventions

The Expert Task Force on Infant and Young Child Nutrition also identified ten priority approaches for taking these Essential Interventions to national scale, reach every child everywhere in India, and achieve an unprecedented impact on reducing child undernutrition and its associated ill health, poor growth, sub-optimal development, and waste of human capital. The ten priority approaches identified by the task force are:

- 1 **Evidence-based policy and programme action.** Promote an evidence-based approach to the design and re-design of programmes for maternal and child nutrition and development, giving priority to the replication and scaling-up of proven (evidence-based), high impact, cost-effective approaches and interventions from within and outside of India for maximum impact in reducing the burden of undernutrition, ill health, and poor development.
- 2 **Improved political advocacy, awareness raising, and public information.** Strengthen efforts to inform political leaders, decision makers, programme planners, opinion setters, civil society, and the general public about the extent and severity of undernutrition among infants and young children in India and – more importantly – the potential of this package of proven Essential Interventions to make a dramatic contribution to reducing the rates of child undernutrition and poor health in India.
- 3 **Quantified cost of inaction and benefits of action.** Expand the use of computer-based modelling to quantify – for each state and for the country – the potential benefits of these Essential Interventions as a powerful information and advocacy approach so as to build a common understanding among stakeholders on: (a) the human and economic cost of inaction; (b) the benefits and costs of timely and sizeable action; and (c) the implications for programme design and delivery.
- 4 **Integrated prevention and treatment through the continuum of care.** Give priority to the prevention of child undernutrition before birth and in the first two years of life; eight of the ten Essential Interventions aim at preventing child undernutrition. However, when children are sick or severely undernourished, programmes must ensure timely and adequate feeding, treatment, and care – including access to zinc supplements for the treatment of diarrhoea and adequate therapeutic foods for the treatment of severe acute malnutrition. Prevention and treatment of undernutrition must go hand in hand as part of the continuum of care for children.
- 5 **Harmonised, state-of-the art protocols and guidelines.** Harmonise protocols, guidelines, and core messages across programmes at central, state, and district levels and align them with internationally-agreed upon better practices and guidelines. Particular attention needs to be given to protocols and guidelines to (a) improve feeding and nutrition for children 0–23 months old and (b) improve feeding and care for sick and severely undernourished children in the training of workers who are involved with the delivery of programmes aimed at improving pregnancy, delivery, newborn, and child health and nutrition outcomes.

6 Expanded outreach and community-based delivery. Expand outreach to the broader community through *Gram Sabhas*, *Panchayats*, and mothers', women's, and self help groups. Support and scale up Village Health and Nutrition Days and expand their scope with the inclusion of these Essential Interventions as appropriate. Intensify communications efforts to make these ten Essential Interventions popular knowledge among communities, community leaders, and service providers in child health, nutrition, and development programmes. Consider collaboration with and capacity building of national non-governmental organisations to expand access to and demand for the Essential Interventions.

7 Strengthened human resource capacity. Improve the performance of primary level providers and counsellors in protecting, promoting, and supporting improved feeding, nutrition and care for infants and young children through results-focused capacity development approaches, negotiation and problem-solving skills and tools, easy-to-use results-oriented job aids and communications materials, and regular and supportive supervision.

8 Improved supply and logistics. Ensure that primary care providers and community-based health and nutrition workers and counsellors have timely access to good quality supplies in adequate quantities, including counselling tools on improved foods and feeding practices, locally-produced complementary foods, vitamin and mineral supplements, deworming tablets, oral-rehydration salts, therapeutic foods, and anthropometric tools. Attention needs to be given to increasing the domestic production capacity for these supplies.

9 Denominator-based planning and monitoring. Initiate denominator-based planning and monitoring to improve coverage, starting with community-based micro-plans anchored in good mapping of adolescent girls, pregnant women and lactating mothers, and infants and young children 0–23 months old in the community. Include denominator-based indicators as outcome indicators of progress and success in national, state, and district level information and surveillance systems

and surveys for child health, nutrition and development.

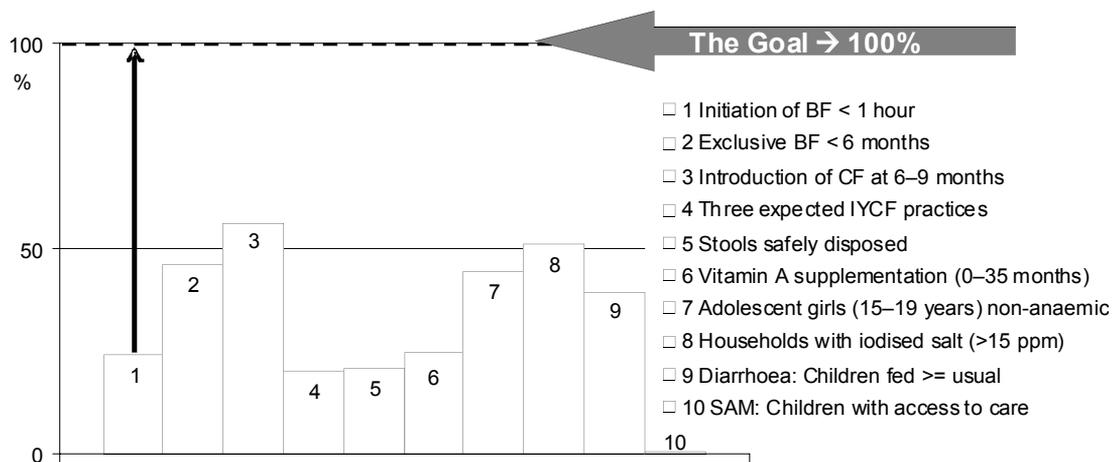
10 Coordinated synergy among programmes and actors. Expand coordination between child health, nutrition, and development programmes – including among stakeholders in flagship programmes, national private and non-governmental organisations, and international partners – particularly at block and district levels. Promote monthly coordination and convergence meetings between all those involved in scaling up access to and use of these Essential Interventions at the community, block, and district levels, including *anganwadi* workers, auxiliary nurse midwives (ANM), and accredited social health activists (ASHA).

5 Reflections and next steps

The set of Essential Interventions recommended by the Expert Task Force are well within the general set of interventions recommended by the Lancet Nutrition Series (Bhutta et al. 2008), with the exception of the emphasis placed by the Expert Task Force on adolescent health and nutrition. This was driven by the well-documented phenomenon of early marriage and pregnancy among adolescents in India, and the implications of this for maternal and child nutrition. The set of interventions is also in line with those recommended by the Joint Working Group on Children Under Six (UNICEF 2007), with the exception of hygiene and sanitation, and pre-pregnancy interventions, which are not discussed explicitly in the Working Group's recommendations. The primary difference is that the strategies recommended by the Working Group on Children Under Six are focused on reforming the Integrated Child Development Services (ICDS) system to address child nutrition. The Expert Task Force's recommendations focus on those interventions that the current evidence base suggests are essential to reduce maternal and child undernutrition; the delivery of these interventions includes, but goes well beyond, the ICDS programme.

All expert group recommendations are invariably influenced by the composition of the group. In this case, the Expert Task Force was constituted through invitations following the Nutrition Conclave in August 2007, and received

Figure 2 The percentage of children reached by each Essential Intervention (IIPS 2005–06)



BF, breast-feeding; CF, complementary feeding; IYCF, infant and young child feeding; SAM, severe acute malnutrition

endorsement from many members of the wider nutrition community who were unable to participate in the Task Force. The members of the Expert Task Force – most of them Indian nationals, including those representing international organisations – are professionals with many years of policy and programme experience in different organisations and capacities in public health nutrition in India and abroad. All the members contributed to the deliberations of the Expert Task Force as individuals committed to the wellbeing of Indian children, rather than as representatives of their respective organisations.

The success of the recommendations by the Expert Task Force relies heavily on the influence these recommendations may have on the intervention and operational choices made by policy makers in the central and state governments in India. Through the endorsement and leadership by the Coalition and the agreement from the majority of the national and global nutrition community, these recommendations have strong backing. Thus, we are confident that they will take root in policy decisions and will be operationalised through national and state programmes and community-based initiatives, including – but not limited to – India’s flagship programmes for maternal and child health and nutrition and universal access to water and sanitation (ICDS, NRHM/RCH and TSC).

Last, but not least, the Expert Task Force recognises that many and often profound inequities lie in the way of ensuring that children have access to the Essential Interventions described in this article. This issue is discussed in another Coalition document, which forms the basis for a broad-based approach to tackle hunger and undernutrition in India (Coalition for Sustainable Nutrition Security in India 2008).

Nevertheless, the Expert Task Force on Infant and Young Child Nutrition emphasises that tackling child undernutrition in India requires a special focus on the infants and young children 0–23 months old and emphasis on a package of evidence-based, high impact essential nutrition interventions that can and must be delivered at large scale. If this critical window of opportunity is missed, child undernutrition will continue to self-perpetuate in India. Currently, the proportion of Indian children benefiting from all ten Essential Interventions is at most 20 per cent, with not more than 50 per cent for the interventions with the highest coverage (Figure 2; see also Menon *et al.* in this *IDS Bulletin*).

Progress towards scaling up these Essential Interventions must be monitored closely to chart the way forward and ensure accountability. For most interventions, coverage indicators can be derived easily from existing surveys such as the National Family Health Survey and District Level Household Surveys.

6 Conclusion

Following the careful participatory process described above, on 1 September 2008, the Expert Task Force on Infant and Young Child Nutrition submitted to the Coalition for Sustained Nutrition Security in India the *Leadership Agenda for Action to Reduce Undernutrition in Infants and Young Children in India*. The Leadership Agenda, includes the ten evidence-based, high-impact, cost-effective Essential Interventions with the greatest potential to make a significant contribution to the reduction of undernutrition in infants and young children in India in the next five years. The Coalition reviewed and endorsed this Leadership Agenda on 19 September 2008.

India's leadership in many fields is recognised globally. The questions now are: Will India show its strength and leadership in improving the nutrition, growth, and development of its

children, particularly the youngest and therefore most vulnerable? Will India ensure that its economic successes are shared more equitably so that none of its children suffer from undernutrition? Will India uphold the national and international commitments it has made to the fundamental right of children to nutrition and life?

Now is the time to combine the political will with the technical and programmatic knowledge to make child undernutrition history in India. This becomes even more pressing in the current context of likely increase in rates of child undernutrition due to the increase in food prices and deepening disparities (UNICEF 2008a). Among the challenges that India will need to face in the coming years, addressing undernutrition in children is one that can and must be overcome.

Notes

* On behalf of the Expert Task Force on Infant and Young Child Nutrition of the Coalition for Sustainable Nutrition Security in India. The Coalition for Sustainable Nutrition Security in India is a group of policy and programme leaders committed to raising awareness, fostering collaboration, and advocating for improved programmes to achieve nutrition security in India. The Coalition is Chaired by Professor M.S. Swaminathan.

- 1 India's Prime Minister's speech on India's 60th Anniversary of Independence (15 August 2007) can be found at www.pmindia.nic.in/speeches.htm (accessed 16 May 2009).
- 2 Members of the Coalition: Anbumani Ramadoss (Dr), Minister of Health and Family Welfare; Mani Shankar Aiyar (Shri), Minister of *Panchayati Raj* and Department of North Eastern Development; Renuka Chowdhury (Smt), Minister of State for Women and Child Development (Independent Charge); D. Purandeswari (Smt), Minister of State for Human Resource Development; G.K. Vasan (Shri), Minister of Statistics and Programme Implementation (Independent Charge); Jairam Ramesh (Shri), Minister of State for Commerce and Power; Subodh Kant Sahai (Shri), Minister of Food Processing Industries (Independent Charge); Brinda Karat (Ms), Member of Parliament; Shobhana Bhartia (Ms), Member of Parliament; Raman

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- 3 Members of the Expert Task Force: Victor M. Aguayo, United Nations Children's Fund (UNICEF); A.K. Gopalan, National Institute of Public Cooperation and Child Development (NIPCCD); Anne Philpott, UK-Department for International Development (DFID); Ashi Kathuria, The World Bank (WB); Deoki Nandan, National Institute of Health and Family Welfare (NIHFW), Dora Warren, CARE-India; G.N.V. Brahmam, National Institute of Nutrition (NIN); Luc Lavolette, Micronutrient Initiative (MI); Minnie Mathew, World Food Programme (WFP); Nita Bandhari, Society for Applied Studies and Action; Panna Choudhury, Indian Academy of Paediatrics (President); Purnima Menon, International Food Policy Research Institute (IFPRI); Rajan Sankar, Global Alliance for Improved Nutrition (GAIN); Rajesh Metha, World Health Organization (WHO); Rajiv Tandon, United States Agency for International Development (USAID); Sanjay Zodpey, Public Health Foundation of India (PHF); Sashi Prabha Gupta, consultant to the Expert Task Force; and Usha Kiran, Bill and Melinda Gates Foundation (BMGF).

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