*Review Article***Infant and Young Child Feeding**

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(Received on 02 June 2016; Accepted on 15 June 2016)

Nutrition during the entire life cycle is a key driver of growth and development. Foetal life and early childhood years are the phases when growth and development are maximum, coinciding with a period of great vulnerability to sub-optimal environment, with early as well as long-term consequences. It is in this context that optimal feeding of infants and young children is critically important. This chapter describes the recommended practices of breast-feeding, and the recommendations for vulnerable subgroups such as low birth weight and HIV infected infants. It also emphasizes on strong lactation support for mothers and describes ways for promoting optimal practices. Feeding of complementary foods after 6 months of age, the guiding principles for complementary feeding of the breast-fed children and the nutritional requirements from complementary feeding are also covered. As non-dietary determinants such as water, sanitation, hygiene, and other factors influence nutritional status of children, integrated interventions are likely to have a greater impact on stunting, rather than individual components alone.

Keywords: Breast-Feeding; Complementary Feeding**Introduction**

Nutrition during the life cycle is a key driver of growth and development. Foetal life and early childhood years are the phases when growth and development are maximum, coinciding with a period of great vulnerability to sub-optimal environment with early, as well as, long-term consequences. It is in this context that optimal feeding of infants and young children is critically important. It bears recognition that mother's nutrition is also critical to foetal growth and development and effective nurturing of the young infant. There are clearly non-dietary determinants such as water, sanitation, hygiene and other factors that influence the nutritional status of the child, as well as, infant feeding behaviours. Progress in children's nutrition requires effective integration and convergence in design and program delivery for future progress.

How Detrimental is Early Life Poor Nutrition from a Long-term Perspective?

Impaired growth and development at birth and during the initial 2-3 years of life and anthropometry around

2 years of age correlate significantly with adult educational and economic attainment, as well as health, particularly; the risk of chronic disease (Victora *et al.*, 2008). Recognising the importance of nutrition throughout the life cycle, this chapter focuses on infant and child feeding. In the first two years of life, impaired growth is easier to prevent and correct through catch-up during this period; the latter is relatively more difficult to accomplish later in childhood. The growing brain at this age is also vulnerable to nutrition related insults with potential long-term concerns (Georgieff, 2007).

Are We Making Progress and At What Rate?

Infant and child feeding is sub-optimal in large parts of the world and this is reflected by the slow progress in decline of wasting and stunting in many countries, as well as the growing trend towards obesity in developed and indeed emerging in many developing countries. The decline in different nutritional indicators in under-threes in two national surveys is shown in Fig. 1 (Sachdev, 2012). A recent rapid survey in

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children aged 0 to 59 months in 28 states shows improvements in indicators, but the rates are still high with overall stunting [height-for-age (HAZ) below -2 standard deviation (SD)] at 38%, wasting [weight-for-height (WHZ) below -2 SD] at 15.1% and underweight [weight-for-age (WAZ) below -2 SD] at 29.4% (Government of India, 2015).

Breast-Feeding

Recommended Practices

Research has conclusively demonstrated the importance of optimal breast-feeding practices for survival, growth and development in the first two years of life. The World Health Organisation (WHO) and United Nations Children's Fund (UNICEF) global recommendations are early initiation of breast-feeding within one hour of birth, exclusive breast-feeding (EBF) for first 6 months i.e. 180 days and continued breast-feeding up to 2 years of age or beyond (WHO, 2009).

Early Initiation of Breast-feeding

Early initiation of breast-feeding means initiation of breast-feeding within one hour of birth. A systematic review suggests that breast-feeding initiation within 24 hours of birth is associated with 44% reduction in all-cause neonatal mortality (Debes *et al.*, 2013). A recent pooled analysis from three large randomised trials reported that initiation of breast-feeding in the first one hour of life leads to large reduction in neonatal mortality; 29% when compared to those who initiated at 2 to 23 hours and 44% when compared to those initiating at 24 to 96 hours (Neovita Study Group, 2016).

Exclusive Breast-feeding

EBF means that an infant receives only breast milk from his or her mother or a wet-nurse, or expressed breast milk, and no other liquids or solids, not even water, except oral rehydration solution, drops or syrups consisting of vitamins, minerals and medicines (WHO, 2008).

Breast-feeding practices in major states of India from two national surveys are shown in Table 1 (International Institute for Population Sciences and Macro International, 2007; International Institute for Population Sciences, 2016).

Non-breast-fed infants are more likely to die, the risk being 14 times higher compared to infants who are exclusively breast-fed from 0 to 5 months (Sankar *et al.*, 2015). The risk of death from infections in partially breast-fed infants 0-5 months of age was 4.56 times the risk for exclusively breast-fed children; this increased to 8.66 times for those who did not receive any breast milk (Sankar *et al.*, 2015). EBF reduces incidence of diarrhoea and hospitalizations for diarrhoea and lower respiratory tract infections in the first 2 years of life year by 32% (Horta and Victora, 2013). EBF for first 6 months shows 43% reduction in acute otitis media in the first 2 years of life (Bowatte *et al.*, 2015). EBF for more than 3 to 4 months is associated with 26% reduced risk of eczema in children aged less than 2 years (Lodge *et al.*, 2015).

Breast milk contains many anti-infective factors that explain these protective effects. These are secretory IgA, lactoferrin, lysozyme, alpha-lactalbumin and lactadherin (Goldman, 2007). Breast milk contains a wider variety of sugars than other mammalian milks; these promote healthy gut

Table 1: Trends in breast-feeding practices in major states of India

	Haryana		Tamil Nadu		Bihar		Maharashtra		Madhya Pradesh	
	NFHS 4	NFHS3	NFHS4	NFHS3	NFHS4	NFHS3	NFHS4	NFHS3	NFHS4	NFHS3
Children under age 3 years breast-fed within 1 hour of birth ^a (%)	42.4	22.3	54.7	55.2	34.9	4	57.5	51.8	34.5	14.9
Children under age 6 months exclusively breast-fed ^b (%)	50.3	16.9	48.3	34.1	53.5	28	56.6	53	58.2	21.6

^aBased on the last child born in the 5 years before the survey

^bBased on the youngest child living with the mother

Source: International Institute for Population Sciences (2016) NFHS 4 fact sheets for key indicators based on final data, http://rchiips.org/nfhs/factsheet_nfhs-4.shtml

colonization (Victora *et al.*, 2016). Human milk oligosaccharides also block adhesion of microbial pathogens to epithelial surfaces; this is critical for repair during enteric infections (Jantscher-Krenn and Bode, 2012).

EBF for the first 6 months of life meets the energy and nutrient needs of the majority of infants and no other foods or fluids are necessary (WHO, 2002a). As breast milk itself is 88% water, it is enough to satisfy a baby's thirst and exclusively breast-fed babies do not need additional water during the first 6 months of life even in hot and humid weather (Linkages/AED, 2002). Fluids given to breast-fed babies displace breast milk (Sachdev *et al.*, 1991). In India, however, water, tea, honey and a range of other fluids are commonly given to infants starting soon after birth and this practice is associated with an increased risk of diarrhoea (Upadhyay *et al.*, 2012; Hajeerbhoy *et al.*, 2014).

Continued Breast-feeding

A longer period of breast-feeding is associated with 26% reduction of childhood and adolescent overweight or obesity and 35% reduction in incidence of type-2 diabetes (Horta *et al.*, 2015a). Breast-feeding is associated with higher performance in intelligence tests in children and adolescents (Horta *et al.*, 2015b). The risk of long-term diseases that have an immunological basis is increased in artificially-fed children. These include type 1 diabetes (Sadauskaite-Kuehne *et al.*, 2004), celiac disease (Akobeng *et al.*, 2006), ulcerative colitis and Crohn disease (Klement *et al.*, 2004). Breast-feeding is associated with a 19% reduction in incidence of childhood leukaemia (Amitay and Keinan-Boker, 2015).

There is an increasing tendency to shorten duration of breast-feeding from the recommended levels of up to 2 years of age. Breast milk helps to improve dietary quality in settings where complementary feeds are largely cereal-based, and during the second year of life, any amount of breast-feeding is protective against infections such as shigellosis (Clemens *et al.*, 1986, Lindsay *et al.*, 2015).

Breast-feeding and Maternal Morbidity

Breast-feeding is associated with 26% reduced risk of breast cancer and 37% reduced risk of ovarian

carcinoma. Breast-feeding for more than 12 months provides additional protection against both breast and ovarian cancer (Chowdhury *et al.*, 2015). Breast-feeding is associated with 32% lower risk of type 2 diabetes (Aune *et al.*, 2014). EBF and predominant breast-feeding are associated with 23% higher probability of amenorrhea at 6 months (Chowdhury *et al.*, 2015). A shorter duration of breast-feeding is associated with higher risk of postpartum depression (Dias and Figueiredo, 2015).

Recommendations for Low Birth Weight Infants

Low birth weight (LBW), defined as birth weight less than 2500 g, can be a consequence of pre-term birth (defined as birth before 37 completed weeks of gestation) or small for gestational age (SGA), defined as weight for gestation. LBW directly or indirectly may contribute up to 60% to 80% of all neonatal deaths (Lawn *et al.*, 2005). Infant mortality rates in countries can be substantially reduced by improving the care of this highly vulnerable group. The recommendations on optimal feeding of LBW and very low birth weight (VLBW; birth weight between 1 and 1.5 kg) infants are that they should be fed mother's own milk, and donor human milk for those who cannot be fed mother's own milk. LBW infants should be exclusively breast-fed until 6 months of age. Infant formula should be fed only if mother's or donor milk is not available. VLBW infants who cannot be fed mother's own milk or donor human milk should be given preterm infant formula if they fail to gain weight despite adequate feeding with standard infant formula. Additionally, VLBW infants should be given vitamin D supplements (until 6 months of age), calcium (first month of life), phosphorus (first month of life) and iron (from 2 weeks to 6 months of age) (WHO, 2011a).

HIV and Infant Feeding

Mothers known to be HIV-infected (and whose infants are HIV uninfected or of unknown HIV status) should exclusively breast-feed their infants for the first 6 months of life, introducing appropriate complementary foods thereafter, and continue breast-feeding for the first 12 months of life. In HIV-infected infants, mothers are strongly encouraged to follow the recommendations for the general population. When mothers known to be HIV-infected decide to

stop breast-feeding at any time, infants should be provided with safe and adequate replacement feeds (WHO, 2010).

Support for Breast-feeding Mothers

Lactation support is important for mothers to prevent and manage lactation failure. Factors that lead to lactational failure may be delayed initiation, infrequent breast-feeding, no night feeding, problems in positioning and attachment or use of bottles and pacifiers. Mother's lack of confidence, depression, anxiety and stress, sore nipples, breast abscess, maternal alcohol and smoking are important maternal contributing factors. Promoting lactational support services is particularly important in India where LBW and prematurity are common (Periera *et al.*, 2015).

Promotion of Breast-feeding

Countries have adopted several measures to protect and promote breast-feeding on a universal basis, for all socio-economic classes. These include; legislation, promotion of essential newborn care through community health workers, nurses and physicians, communication and advertising, maternity leave for working mothers and crèches at the workplace. The challenge now is to accelerate universal achievement of breast-feeding indicators across India.

Promotion of breast-feeding using a combination of settings i.e. at home, facility and community have shown higher improvements in breast-feeding rates. Greatest improvements in early initiation of breast-feeding, EBF and continued breast-feeding rates, were seen when counselling or education was provided concurrently in homes and community, health systems and community, and health systems and home settings. The baby friendly hospital support at the health system was the most effective intervention to improve rates of any breast-feeding (Sinha *et al.*, 2015).

The available opportunities provided by increasing institutional deliveries, home visitation by Accredited Social Health Activist (ASHA) workers to promote essential newborn care, community mobilization and mass communication approaches must be utilized better in the country to enhance quality and coverage of optimal breast-feeding as defined above.

Complementary Feeding

Complementary feeding refers to introduction of other foods and liquids, when nutritional requirements of an infant cannot be met with breast milk alone. WHO and UNICEF recommend nutritionally adequate and safe complementary feeding starting after 6 months of age with continued breast-feeding up to 2 years of age or beyond (WHO, 2009).

The high prevalence of malnutrition in countries like India is largely driven by inappropriate complementary feeding practices. Premature cessation of breast-feeding and introduction of complementary foods before 6 months leads to increased exposure to pathogens especially in environments with suboptimal water supply, sanitation and hygiene practices. Inappropriate complementary feeding practices include not starting complementary foods at 6 months of age, inadequate macro and micronutrient intakes from staple-based complementary foods especially, in vegetarian populations and failure to increase the amounts fed at each meal and frequency of feeding with increasing age. These practices have proven to be difficult to change rapidly in most parts of India, demanding new and improved strategies.

The guiding principles for complementary feeding of the breast-fed child are given below.

1. Practise exclusive breast-feeding from birth to 6 months of age, and introduce complementary foods after 6 months of age (180 days) while continuing to breast-feed.
2. Continue frequent, on-demand breast-feeding until 2 years of age or beyond.
3. Practise responsive feeding, applying the principles of psychosocial care.
4. Practise good hygiene and proper food handling.
5. Start at 6 months of age with small amounts of food and increase the quantity as the child gets older, while maintaining frequent breast-feeding.
6. Gradually increase food consistency and variety as the infant grows older, adapting to the infant's requirements and abilities.
7. Increase the number of times that the child is

fed complementary foods as the child gets older.

8. Feed a variety of nutrient-rich foods to ensure that all nutrient needs are met.
9. Use fortified complementary foods or vitamin-mineral supplements for the infant, as needed
10. Increase fluid intake during illness, including more frequent breast-feeding, and encourage the child to eat soft, favourite foods. After illness, give food more often than usual and encourage the child to eat more.

(Source: WHO/PAHO, 2001)

Complementary feeding should be timely i.e. all infants should be given foods in addition to breast milk from 6 months onwards. It should be adequate, meaning that complementary feeding should be given in amounts, frequency, and consistency, using a variety of foods to cover the nutritional need of the growing child while maintaining breast-feeding.

The complementary feeding practices in major states of India in two national surveys (conducted in Years 2005-2006 and 2015-2016) are shown in Table 2 (International Institute for Population Sciences and Macro International, 2007; International Institute for Population Sciences, 2016). The decline in the percentage of children age 6-8 months receiving solid or semi-solid foods and breast milk between the two

surveys is difficult to explain; some reasons may be changes in the ascertainment methods, an increase in the food inflation rate or other factors.

Responsive feeding is used to describe feeding methods that apply the principles of psycho-social care. In many communities in India, caregivers do not offer encouragement and young children are left to feed themselves. In such settings, a more active approach in which mothers feed the child recognizing signs of hunger and satiety improve dietary intakes. Foods should be prepared and given in a safe manner to minimize the risk of contamination with pathogens. They should be given in a way that the consistency is appropriate, i.e., texture is appropriate for age of the child. The quality, frequency and amount of food required between 6 months and 23 months of age are summarized in Table 3.

Feeding Non-breast-fed Children 6-23 Months of Age

Non-breast-fed children need extra food to compensate for not receiving breast milk, which can provide a half of their energy needs from 6 to 12 months and a third between 12 to 23 months (WHO, 2005). These children need to be fed a large quantity of foods containing high quality nutrients that would otherwise be covered by breast milk. This can be achieved by giving extra meals, meals of greater

Table 2: Trends in Complementary Feeding Practices in Major States of India

	Haryana		Tamil Nadu		Bihar		Maharashtra		Madhya Pradesh	
	NFHS 4	NFHS3	NFHS4	NFHS3	NFHS4	NFHS3	NFHS4	NFHS3	NFHS4	NFHS3
Children age 6-8 months receiving solid or semi-solid food and breast milk ^a (%)	35.9	42.6	67.5	81.2	30.7	54.5	43.3	45.5	38.1	46
Breast-feeding children age 6-23 months receiving an adequate diet ^{a,b} (%)	7	NA	21.4	NA	7.3	NA	5.3	NA	6.9	NA
Non-breast-feeding children age 6-23 months receiving an adequate diet ^{a,b} (%)	10	NA	47.1	NA	9.2	NA	12.2	NA	4.8	NA
Total children age 6-23 months receiving an adequate diet ^{a,b} (%)	7.5	NA	30.7	NA	7.5	NA	6.5	NA	6.6	NA

^aBased on the youngest child living with the mother.

^bBreast-fed children receiving 4 or more food groups and a minimum meal frequency, non-breast-fed children fed with a minimum of 3 Infant and Young Child Feeding Practices (fed with other milk or milk products at least twice a day, a minimum meal frequency that is receiving solid or semi-solid food at least twice a day for breast-fed infants 6-8 months and at least three times a day for breast-fed children 9-23 months, and solid or semi-solid foods from at least four food groups not including the milk or milk products food group)

Source: International Institute for Population Sciences (2016) NFHS 4 fact sheets for key indicators based on final data, http://rchiips.org/nfhs/factsheet_nfhs-4.shtml

Table 3: Practical guidance on the quality, frequency and amount of food to offer children 6–23 months of age who are breast-fed on demand

Age	Energy needed/day in addition to breast milk	Texture	Frequency	Amount of food an average child will usually eat at each meal assuming energy density of 0.8 to 1.0 kcal/g*
6-8 months	200 kcal/day	Start with thick porridge, well mashed foods Continue with mashed may be offered	2-3 meals per day Depending on the child's appetite, 1-2 snacks family foods	Start with 2-3 tablespoonfuls per feed, increasing gradually to ½ of a 250 ml cup
9-11 months	300 kcal/day	Finely chopped or mashed foods, and foods that baby can pick up	3-4 meals per day Depending on the child's appetite, 1-2 snacks may be offered	½ of a 250 ml cup/bowl
12-23 months	550 kcal/day	Family foods, chopped or mashed if necessary	3-4 meals per day Depending on the child's appetite, 1-2 snacks may be offered	¾ to full 250 ml cup/bowl

*If baby is not breast-fed, give in addition: 1-2 cups of milk per day, and 1-2 extra meals per day (WHO, 2005).

Source: WHO, 2009

energy density, and larger quantity of foods of animal origin or nutrient supplements if foods of animal origin are not available (WHO, 2005).

Requirements from Complementary Feeding in Early Childhood

After 12 months of age, complementary food should provide nearly 60% energy, 40% protein, and over 50% iron and 20% vitamin A of the total daily requirement. The large gap in breast milk for iron is noteworthy, and this explains the common occurrence of anaemia in early years of life. Complementary foods must therefore, provide adequate iron by fortification or by use of animal source foods. Absorption of pulses can be improved by providing vitamin C but some amount of animal source food or fortified food or supplement is needed by adopting one or more of several possible approaches. For infants and young children, fortification of staple foods such as wheat flour and rice is unlikely to close the “gap” in micronutrient intake from complementary foods, particularly for iron and zinc. This is because children under 2 years of age consume a small amount of complementary food. To meet their iron and zinc needs, the staple foods will need to be fortified at higher levels, so that the recommended intakes could be achieved with daily intake. For this reason, specialized products targeted at infants and young

children have been developed. Fortified products for complementary feeding have been categorized into three general types: a) fortified blended foods, b) micronutrient powders, and c) complementary food supplements (Young Child Nutrition Working Group, 2009). Each of these options has advantages and disadvantages, so the best choice depends on the context (Dewey and Vitta, 2013). The provision and/or marketing of fortified products should be coupled with educational messages on breast-feeding and complementary feeding.

Dietary Diversity

The standard of complementary feeding depends on amount and frequency appropriate for age, food diversity through staples, foods from animal sources, dairy products, pulses and through consumption of a range of coloured fruits and vegetables, and fats and oils. Dietary diversity is integral for balanced nutrition. Lack of diversity is common in Indian children between 6 months to 3 years of age (Bentley *et al.*, 2015). All animal foods, including eggs and fish are rich in high quality proteins, iron, zinc and most vitamins including vitamin B12; dairy products in protein, energy, minerals, particularly calcium and vitamins; pulses in protein, and some iron; coloured (especially orange, red and yellow) fruits and vegetables in β -carotene (provitamin A), and vitamin

C. Green leafy vegetables are rich source of most micronutrients- vitamins and minerals. Vitamin C-rich fruits like gooseberries (*Amla*), guava and citrus improve iron absorption from plant foods. Energy density of complementary food should be at least 0.8kcal/g.

Fats and oils provide required energy density and improve palatability of complementary foods.

Overall, good complementary feeding recommendations in a setting must yield a diet, rich in energy, iron, zinc, calcium, vitamins and folate. Staples such as; cereals, roots and starchy foods provide the basic ingredients of complementary foods. Care providers must be taught the skills of adding other foods to staple foods in a context-specific manner, to achieve quality and balance in complementary feeding.

Developing Feeding Recommendations for a Region

A protocol for adapting feeding recommendations is available, that enables program managers to identify locally available, energy-dense culturally acceptable foods, common feeding problems and developing a draft list of feeding recommendations for the area (WHO, 2002b). Household trials are used to test the improved feeding recommendation (WHO, 2002b). Post testing, a final list of recommendations for the area are developed and these are filled in a box that has recommendations for different age categories and specifies the frequency and amounts of the locally acceptable foods to be fed at different ages (WHO, 2002b).

Opti-food is a linear programming software application that allows public health professionals to identify the nutrients children obtain from their local diets and to formulate and test population-specific food-based recommendations to meet their special needs. Optimization analyses help specify the lowest cost combination of local foods that will meet or come as close as possible to satisfy the nutrient needs of the target group (<http://www.fantaproject.org/tools/optifood>).

WHO Recommendations for Micronutrients

In settings, where prevalence of anaemia in children under 2 years or under 5 years of age is 20% or higher,

home fortification of foods with multiple micronutrient powders is recommended to improve iron status and reduce anaemia among infants and children 6-23 months of age (WHO, 2011b).

Others support food-based approaches, including fortification as being more appropriate. In the local context, it is important to develop clear guidelines based on evidence and policies.

Rehabilitation of Severe Acute Malnourished (SAM) Children

This sub-group of children is a medical emergency as they require medical attention in addition to dietary rehabilitation for care. In India, about 1-5% children may suffer from SAM [WFH Z score below -3 SD], which is associated with 12-fold higher risk of mortality than having a normal anthropometric status; the risk increases to 20-fold with very severe wasting (WHZ below -4 SD) (Olofin *et al.*, 2013). The detailed management and rehabilitation strategy of this vulnerable sub-group of children has been described elsewhere, in another article of this special issue.

Integrated Interventions in the 1000-day Window

Growth in the first two years of life is driven largely by early infant feeding practices and the absence of significant morbidity. Exclusive and continued breastfeeding, energy and nutrient rich complementary foods, responsive feeding practices, safe water and sanitation prevent infectious diseases, such as diarrhoea; water, sanitation and hygiene practices are also associated with reduced risk of enteropathies and gut inflammation that may significantly impair growth potential. The concept of the 'first 1000 days' between conception and 2 years of age highlights the critical window of opportunity to deliver interventions that will improve the survival and health of children. Integrated interventions that combine nutrition, infection control and care for mothers and children are likely to have a larger impact on stunting, than any of these components alone.

The nutritional state of women in the pre-conception period influences early cell division, and the epigenetic state of infants at birth strongly predicts body composition in later childhood. These observations lead to a concept of integrated interventions as a continuum for "1000 days plus" – starting in pre-conception and continuing through

Source: Sachdev, Indian Paediatr 2012; 49 271-5

Fig. 1: Comparison of nutritional indices defined as per the WHO growth reference between 1998-99 and 2005-6 from the National Family Health Surveys in children below three years age

pregnancy, delivery and early infancy to improve growth at 2 years.

National Infant and Young Child Feeding Program

Comprehensive national policies and programs are required to ensure adequate nutrition, growth and development of infants, adolescents and pregnant women.

Such policies e.g., Guidelines for Enhancing Optimal Infant and Young Child Feeding Practices (Government of India, 2013) and programs like Integrated Child Development Services (<http://icds-wcd.nic.in/issnip/home.htm>) have led to a decline in severe malnutrition, and severe micronutrient deficiency, but moderate grades of under-nutrition and specific nutrient deficiencies are still widely prevalent in India.

Further improvements will require action on many facets - legislation, policy, equitable development, minimum assured wages and employment, protection of rights of women, strengthening of health systems and health services, policy and programs on nutrient fortification of relevant foods (salt, milk, and cereals), animal husbandry, home gardens and special micronutrient supplementation programs. Programs will need to be organized in a way so that high coverage is achieved, support is provided by skilled health and nutrition workers and efforts at rehabilitation are embedded within a program for prevention of under-nutrition. Additionally, breast and complementary feeding promotion must be linked to measures that prevent infection, safe water, sanitation, excreta disposal, hygiene and to timely recognition and treatment of sick children close to home, with early and adequate referral.

Countries have required a mix of counselling, supplementation, fortification, incentivisation of caregivers and workers, products of quality food and ways to make them accessible to achieve accelerated progress. Promotion of essential newborn care for institutional births and home visitation by ASHA workers has, and will further improve timeliness and exclusiveness of breast-feeding for the initial 6 months of life. Kangaroo Mother Care for LBW infants is closely linked to effective breast-feeding and must be promoted. Comprehensive policy reforms, strategies and delivery services with quality and equity are the only ways to accelerate the progress. Specific action must be embedded in a policy of equitable development so that there is a shift of lower social and economic groups to the middle level.

The critical window for complementary feeding is 6 to 24 months, and therefore community and home workers are critical in addition to *anganwadi* (ICDS)-based support and supplementation.

India is also making a determined effort to promote water, sanitation and hygiene practices. The

establishment of toilets in home was shown to reduce pathogen transmission and excreta disposal and hygiene behaviours are being additionally emphasized (Bloomfield *et al.*, 2012). Nutrition programs have to integrate interventions that address dietary and non dietary issues with quality and equity. Maternal education and income are important. A small proportion of children, who develop SAM need rehabilitation and sustenance, thereafter.

Acknowledgements

We are thankful to Indian Paediatrics for permitting us to reproduce Figure 1, originally published in the article “Overcoming challenges to accelerating linear growth in Indian Children” by HPS Sachdev; Indian Pediatrics 2012; 49: 271-5. We acknowledge the core support provided by the Department of Maternal, Newborn, Child and Adolescent Health, WHO, Geneva; and the Centre for Intervention Science in Maternal and Child Health (RCN Project No. 223269), Centre for International Health, University of Bergen (Norway).

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