PUBLIC HEALTH FOUNDATION OF INDIA
INDIA HEALTH BEAT
Supporting Evidence-based Policies and Implementation
THE WORLD BANK
Volume 5 Number 7
June 2011

ROLE OF HEALTH SYSTEMS IN IMPROVING CHILDHOOD NUTRITION IN INDIA

Rajani R. Ved[†] and Anuradha Jain[†]

The status of child undernutrition in India continues as an area of concern. There are significant opportunities within the health system to address this issue. Allocating clear tasks to workers while building their knowledge and skills with mentoring, establishing mechanisms to manage severe acute malnutrition, and effective program monitoring coupled with ongoing nutritional surveillance, will significantly improve the ability of current health programs to impact undernutrition.

Persistently high levels of undernutrition among women and children and its sluggish decline (refer to data presented in Policy Note# 1) reflects the dichotomy in India's growth story. The complexity of proximate and distal determinants of malnutrition calls for convergent actions in poverty reduction, agriculture, health services, education, and women's empowerment. While this note focuses on the role of health systems in improving child malnutrition, it acknowledges that unless all of these determinants are adequately addressed, governance improved, and civil society action for accountability enhanced, progress towards improving child malnutrition is likely to be slow, limited and iniquitous. The note argues that in the context of the existing nutrition interventions and institutional mechanisms along with the Integrated Child Development Services (ICDS), the health system can and must play a greater role to improve nutrition. It briefly examines existing policy and program commitments to improve child undernutrition and the status of ongoing interventions from recent reviews and evaluations. Finally, it identifies actions critical to strengthening and expanding nutrition interventions of the health system.

Augmenting the role of the health system in improving child undernutrition

Effective interventions to improve nutrition lie within the realm of health systems: The interventions in Table 1 are adapted from the Lancet series on Maternal and Child Undernutrition, Special Series, January, 2008.[1] The table includes only those interventions from the Lancet list that have demonstrated impact on maternal and child undernutrition and nutrition-related outcomes, and are currently delivered through public health and nutrition programs in India. Sufficient evidence exists to confirm that the 'window of opportunity' to prevent undernutrition lies between the period from conception to when the child is two years old, a span of 1,000 days in which these interventions, if implemented effectively and at scale, make a significant impact[i] (refer to Policy Note# 3). Additionally, since Low Birth Weight (LBW) is a significant determinant of nutritional status in childhood, and given that a third of the Indian children are born LBW, it is important to also implement interventions for adolescent girls and non-pregnant women in the reproductive age group. Interventions delivered through the health system to address adolescent nutrition are currently limited to iron supplementation and nutrition counseling.

Table 1: Interventions to improve maternal and child undernutrition

Maternal and birth outcomes
• Iron folate supplementation
• Balanced energy and protein food supplementation (for food insecure populations)*
• Reduction in tobacco consumption and indoor air pollution
Newborn babies
• Promotion of breastfeeding (through individual and group counseling)
Infants and children
• Promotion of breastfeeding (through individual and group counseling)
• Behavior Change Communication for improved complementary feeding
• Zinc supplementation (therapeutic and preventive)
• Vitamin A supplementation
• Universal salt iodization
• Promotion of hand-washing and hygiene interventions
• Treatment of Severe Acute Malnutrition (SAM)
• Food supplementation (for food insecure populations)*

*In India, food supplementation is provided to all pregnant, nursing mothers and children up to six years of age.

[†] National Health Systems Resource Center, New Delhi

With the exception of food supplementation, the health system, in one way or the other, is associated with the delivery of all of the above interventions and holds primary responsibility for several. These include micronutrient supplementation; health check-ups; antenatal, natal and post-natal services; immunization; treatment and management of infections; and treatment of Severe Acute Malnutrition (SAM). It also has several contacts with mothers and children during the 'window of opportunity'. Therefore, the health system, through two major programs that lie within the ambit of the Ministry of Health and Family Welfare (MoHFW), i.e., the National Rural Health Mission (NRHM) and the Reproductive and Child Health 2 (RCH 2) program, can play a more effective role in the delivery of nutrition interventions.[2]

Institutional mechanisms incorporating nutrition within health systems: The country's flagship program for early childhood development, which includes child nutrition–the ICDS, under the ambit of the Ministry for Women and Child Development (MWCD), is an inter-sectoral program, at least as conceptualized. The frontline worker of ICDS, the Anganwadi Worker (AWW) is expected to provide health and nutrition education, growth monitoring and promotion, supplementary feeding, referral services for pregnant and lactating mothers and children under six at the community level. The health system too has a key role to play, including at the frontline level. While policy documents of MoHFW and MWCD acknowledge that effective nutrition interventions require convergence, several studies and evaluations have shown that this has been difficult to achieve.[3,4]

Several interventions listed in Table 1 require behavioral change in families and amongst caregivers. The Accredited Social Health Activist (ASHA) and AWW are expected to counsel and support such behavior change at the household level. Immunization and supplementation of Vitamin A, Iron and Zinc are provided through outreach services. Oral Rehydration Therapy (ORT) and management of Acute Respiratory Infection (ARI) and other illnesses rely on prompt and appropriate community level care as well as treatment in an accessible and affordable facility. Health functionaries at the community level are assigned this responsibility–the ASHAs on a day-to-day basis and the Auxiliary Nurse Midwives (ANMs) during their periodic visits. The management of SAM calls for either community or facility-based care following defined protocols. Counseling related functions are largely to be undertaken by the ASHA and the AWW, although in principle, this role now largely falls on the ASHA. The Government has recently approved a monetary incentive for ASHAs to promote breastfeeding, newborn and post-partum care and counseling for Infant and Young Child Feeding (IYCF) through a series of home visits.[5] For facility-based care, several states have established Nutrition Rehabilitation Centers (NRC) within secondary and tertiary health care facilities and assigned trained personnel to address SAM. The effective delivery of all of the above interventions essentially requires that providers have the necessary capacity, and that functional systems for procurement and supply chain management are in place for uninterrupted availability of supplements and other commodities.

A relatively recent innovation–the monthly Village Health and Nutrition Day (VHND), conducted by the AWW at the Anganwadi Center, is a village-based platform delivering most services listed in Table 1. The Village Health and Sanitation Committee (VHSC) which comprises stakeholders from the community, including the ASHA and representatives from the health and nutrition departments and local government institutions, primarily the Panchayati Raj Institutions (PRIs), is expected to provide institutional and supervisory support.

The status of delivery of nutrition-related interventions through the health system

Despite existing policies and programs to enable the delivery of key interventions, much remains to be achieved. This section draws upon key findings from recent reviews and evaluations of the health programs to highlight critical gaps and missed opportunities.

Role of the ASHA: A recent evaluation of the ASHA program component of the NRHM [5] points out several areas for improvement and highlights the need to incorporate nutrition topics into the ASHA training. It states:

> "But there are so many crucial elements of knowledge on nutrition counseling missing in the ASHA's training, that we cannot have too much of an expectation on change in other areas of malnutrition prevention on management. For example, on the issue of adding fats and oils for complementary feeding, the knowledge levels were very low, ranging from 1% in Orissa to 44% in Rajasthan. The higher data in Rajasthan is accounted for by the fact that the ASHA were part of the ICDS system, and probably had been trained with more rigour in nutrition topics. Even on the proportion of children who were given complementary feeds at six months of age–the figures are low in most states, except for Kerala and Andhra (about 72%). Clearly this is an area where despite the window of opportunity provided by the ASHA's functionality on household visits, the program has not taken off due to weak training and support." [5, page 90].

Functioning of the VHND: The gap between policy articulation and operationalization is demonstrated by the findings of the most recent Common Review Mission of the NRHM.[4] The report highlights the need for convergence of services as well as strengthening the participation of different departments in the VHND for it to truly serve as a medium of convergence:

> "Take home rations for the below 3 year old child are a major problem in some of the states–and the neglect of this age group where malnutrition is most likely to strike, persists". The report, commenting on the VHND, "(It) is meant as a medium of convergence between Health and the ICDS department, with the active participation of the VHSCs and PRIs. However, often

it remains as a platform for the ANM's services, and the ICDS component is not built in–except for the Anganwadi centre being a venue. Sometimes even this is not happening. Provision of supplementary nutrition in the form of Take Home Rations (THR) to children under three and for pregnant and lactating women, another important function of the VHNDs is accorded low priority during the VHND." [4, page 30]

State level interventions for nutrition: A review of the annual Project Implementation Plans (PIPs) from 2007 to 2010 of various states for NRHM indicates that most, if not all, interventions enumerated in Table 1 find place in most plans.[6,7] An analysis of the 2010 annual PIPs shows that vis-a-vis nutrition, largely the following five areas are included: (i) NRCs; (ii) promotion of breastfeeding; (iii) IYCF program; (iv) management of pediatric anemia; and (v) prevention of malnutrition through convergent planning with ICDS. While most states specifically mention one or more of these areas, some states have not included any interventions for child undernutrition or anemia. Though IYCF as an area is included in most PIPs, it is rather cursory and its interpretation could vary. Often IYCF is limited to promotion of early initiation and exclusive breastfeeding through improved communication; other aspects of IYCF such as complementary feeding, feeding during illnesses etc., are under-emphasized.

The progress and experience of state health systems implementing nutrition interventions is mixed and uneven. For example, interventions for SAM are well established in states of Maharashtra, Madhya Pradesh, and Rajasthan; however, they are yet to be established in many others. While SAM specific structures are in place village level upwards in Maharashtra, these do not go below district levels in Rajasthan and Madhya Pradesh, thus constraining access, particularly for poor families. Despite the provision of Rs. 100 per day (compensation for possible daily wage loss) for the caregiver, it is a challenge to keep the admitted children for the full duration of treatment and rehabilitation.

Strengthening the delivery of nutrition-related interventions in the health system

Given this scenario, what then are the critical actions for the health system to prioritize and renew focus on? These will include actions at the individual/community level; outreach and facility levels; and for larger systemic changes within the health system which are enumerated below.

1. *Promoting Behavioral Change Interventions (BCI):* Both mass media and interpersonal counseling are essential to deliver messages for improving nutritional status. Health programs can leverage the ASHA's access to households to achieve this objective. Needless to say, building of ASHA's skills and her mentoring is important to effectively play this role.

   Providers within health care facilities need to be aware that despite the competing demands on their time and the heavy caseload, their interactions with mothers, families and children remain critical for the desired behavior change. The *Janani Suraksha Yojana* (JSY) offers a valuable opportunity for promoting early and exclusive breastfeeding. A cadre of facility-based counselors may be created or existing staff equipped with necessary skills must reach the captive audience of mothers availing institutional deliveries.

2. *Enhancing the role of the VHSC to address specific nutrition-related functions:* Building the capacity of the VHSCs for supportive supervision of ASHAs and the AWWs is necessary to expand their role beyond water and sanitation. In this context, the ongoing discussion on converting this forum into a VH*N*SC, with the 'N' denoting specific nutrition related functions, offers the potential to more effectively use the VHSC institution to facilitate convergent action of the different departments, as also for engaging with communities to address the social determinants of undernutrition, though the exact mechanisms would need enumeration.

3. *Expanding the scope of the VHND:* Serving largely today as platforms to deliver immunization and limited antenatal care services, VHNDs should be effectively used for group counseling, growth monitoring and micronutrient supplementation. Well-structured guidelines and protocols for the VHND, along with the active participation of the ASHAs, the AWWs and the VHSCs are needed for expanding the scope of the VHND.

4. *Institutionalized screening for iron deficiency anemia:* Measuring hemoglobin status of mothers and children for diagnosing iron deficiency anemia and monitoring response to treatment is crucial. Subjective parameters such as pallor and color of conjunctiva or even on the Talquist methodology are outdated and must be replaced by more modern and accurate methods. A system of routine hemoglobin testing backed by necessary resources and trained personnel must be considered.

5. *Strengthening growth monitoring and promotion:* While this falls within the realm of the ICDS, growth monitoring should be highlighted during the monthly VHND, and must also be integrated within the health system's service package for under twos. The Growth Chart, which should be put to more effective use, is a powerful instrument for communicating to mothers the growth trajectory of children. The recent joint introduction of the Mother and Child Protection Card by the Health system and the ICDS is a positive step in this context.

6. *Prevention and management of illness and SAM:* Given the nutrition-infection interactions, the health system can be a key avenue to check growth faltering and enable nutrition improvement. In this respect, the ASHA can be tasked with the necessary community-based care, but her competencies need to be enhanced and her drug kit

stocked and regularly replenished with life-saving commodities such as ORS, chloroquine and insecticide treated materials for malaria. At the facility level, the health system must ensure the availability of functional facilities, skilled care providers and the requisite drugs and supplies for management of sick children. The management of SAM falls entirely within the domain of the health system. Appropriate facilities for treatment of SAM children across all states must be provided and guidelines and protocols for both community and facility-based approaches need to be reinforced and monitored to ensure appropriate implementation.

7. *Human resources for improving childhood nutrition:* Both the ASHA and AWW must work together to ensure that every household gets the full benefit of the nutrition and health service package during the 1,000 day window of opportunity through the VHND and household visits. Home visits of both workers must prioritize households with pregnant or lactating women, a newborn, a child under two, or a sick child as also households of marginalized groups, SC/ST families, female-headed households, migrant families and those with a disabled child. In this context, the issue of human resources and their specific functions are a particular challenge. Additional workers at the community level are required, e.g., in geographically dispersed areas or where the population exceeds 150-200 households, appointing a second ASHA must be considered. At the same time, clarifying roles and responsibilities, and supporting and monitoring the workers to enable change is important.

8. *Strengthening regular monitoring and supervision:* The existing Health Management Information Systems (HMIS) does not adequately capture nutrition-related interventions at various levels. The ICDS MIS is being revised to better capture nutrition-related elements. Data inter-operability between both systems is required to ensure equitable outcomes; the monitoring systems should especially track marginalized households. Besides, supportive supervision of ASHAs and AWWs too is essential. The VHSCs could play a role here. Therefore, community level planning and monitoring for nutrition should be integral to VHSC training.

Much of what has been recommended in the discussion appears to exist in the health system. The challenge lies in effective implementation, high quality capacity building, working procurement and logistics systems, supportive and regular monitoring and supervision, and surveillance. While none of this is easy, there are no short cuts or magic bullets. Implementing known interventions rapidly and at scale requires commitment, planning, monitoring and civil society advocacy. Health systems research is an area in which little investment has been made. Research on delivery of interventions and their relevance to local contexts so as to inform strategic and operational adaptations, is necessary for scaling-up programs. The NRHM provides an environment to realize these actions

[i] Inter-generation malnutrition is an important contributor to malnutrition, and interventions also need to encompass adolescent nutrition.

REFERENCES:

[1] Bhutta ZA, Ahmed T, Black RE, Cousens S, Dewey K, Giugliani E, Haider BA, Kirkwood B, Morris SS, Sachdev HPS, Shekar M. What works? Interventions for maternal and child under-nutrition and survival. Lancet 2008, 371:417–40.

[2] Reproductive and Child Health -2, (RCH2): National Program Implementation Plan, Ministry of Health and Family Welfare, Government of India; 2005.

[3] Ved, Rajani R. Scaling-up ICDS: Can universalisation address persistent malnutrition? in Lifting the curse: Overcoming persistent undernutrition in India. IDS Bulletin 2009 Jul 2; eds. Haddad L,Zeitlyn S.

[4] Fourth Common Review Mission, Ministry of Health and Family Welfare; 2010.

[5] ASHA: Which way Forward? An Evaluation of the ASHA program. National Health Systems Resource Center; 2010.

[6] State Program Implementation Plans (2005-2010), http://164.100.52.110/NRHM/Annual_Plan_Final.htm accessed on 24.5.2011.

[7] Analysis of child health plans 2006-2008.www.nhsrcindia.org (thematic area child health) accessed on 24.5.2011.

For further information on '**Role of health systems in improving childhood nutrition in India**' contact Dr. Anuradha Jain at anunhsrc@gmail.com

Editors: **Gerard La Forgia**, Lead Specialist, HNP Unit, The World Bank; and **Krishna D. Rao**, Public Health Foundation of India, New Delhi.

India Health Beat is produced by the Public Health Foundation of India and the World Bank's Health, Nutrition and Population unit located in Delhi. The Notes are a vehicle for disseminating policy-relevant research, case studies and experiences pertinent to the Indian health system. We welcome submissions from Indian researchers and the donor community. Enquiries should be made to Nira Singh (nsingh2@worldbank.org).