

IMPROVING THE INTEGRATION OF HEALTH AND NUTRITION SECTORS IN INDIA

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EXECUTIVE SUMMARY

It is a critical time for India to prioritize nutrition in its health and development agendas. While dismal nutrition indicators persist, and the country's levels of hunger are considered “alarming” on an international index, India is expected to miss the Millennium Development Goals targeting hunger and undernutrition. Without a targeted, multi-sectoral approach to nutrition, India is still struggling to deliver evidence-based interventions during the most important windows of opportunity.

At the same time, the National Rural Health Mission (NRHM) and its Accredited Social Health Activists (ASHA) are gaining ground in delivering critical, community-based health services for women, children, and families. The current period of service delivery innovation and quality improvement presents an important opportunity to better integrate nutrition into health, and to push nutrition programming reform in the country. Recognizing this critical opportunity for nutrition programming innovation and integration in India, this report will examine the following research question: *How can a nutrition strategy be better integrated into health programming?* In pursuing this question, the paper intends to explore mechanisms for better integration in health planning at national, state, and district levels, and strengthened operational integration between frontline health workers and their supervisory structures. It will also examine how current nutrition efforts, namely Integrated Childhood Development Services (ICDS), can be more functional and thereby be better integrated into maternal and child health services.

This report draws largely upon field visits throughout the country, and a field survey conducted in Chhattisgarh, Bihar, Uttar Pradesh, and Rajasthan with anganwadi workers (AWW), Accredited Social Health Activists (ASHA), and young mothers. Our findings from the field highlight strong needs for nutrition-focused outreach to families, and more structured collaboration between health and nutrition initiatives at community, block, district, state, and national levels.

With these findings, we recommend actions to be taken within policy, human resources, and operations:

- We argue that India requires nutrition leadership at national, state, district, and community levels. A concrete, proactive national nutrition policy is needed to unite fragmented nutrition initiatives, hold relevant departments to nutrition outcomes, and drive nutrition programming in high-focus districts. A similar push has already been initiated by the Department of Women and Child Development.
- We recommend that states reinforce this commitment to nutrition by creating inter-ministerial councils to emphasize political will towards state nutrition policy and planning.
- We strongly recommend the creation of a community advocate for nutrition, termed an *Accredited Nutrition Activist* in this paper, to assume outreach operations from the anganwadi centre. This role would serve as a critical point person for community-based nutrition and an intermediary between the anganwadi worker and ASHA. This role would also seek to close critical gaps in nutrition, particularly infant feeding.

- We advocate mechanisms for improved targeting of nutrition interventions, particularly infant feeding. Targeting the most critical beneficiaries includes focusing on the age group under 24 months (e.g. the 1000-day window of opportunity between pre-pregnancy and two years), and high-risk families through improved outreach operations. Targeting also involves innovative approaches to delivering interventions most effectively (e.g. demonstration-education for families, home-based action), and capturing beneficiaries at critical moments for nutrition counselling and support (e.g. when a child is sick, newborn feeding and care post-delivery).
- We reiterate calls for an overhaul of ICDS operations, particularly in anganwadi worker supervision, training and support, food supply and distribution, infrastructure, centre timings, oversight, and data management and use for action.

The recommendations presented in this paper will also be piloted within the Earth Institute/MOHFW Model District project in Assam, and in due course we will be reporting back on our findings.

Roadmap

The paper proceeds as follows. The *Introduction* presents an overview of our paper's discussion on how to better integrate nutrition into existing health programming, particularly as NRHM gains traction in community-based service delivery and mobilization. Our *Background* presents a discussion of intervention approaches to integrate nutrition and health around the world, and on malnutrition in India and how programming has addressed problems to date through regular programming and local innovations throughout the country. Our *Findings* discuss the results of field surveys with anganwadi workers, ASHA, and young mothers. The findings focus on ICDS operations, nutritional knowledge and practices in households, and nutrition-related knowledge as reported by ASHA and AWW. Our *Recommendations* focus on actions to be taken within policy, human resources, and operations and infrastructure, in an effort to maximize India's opportunity to better integrate nutrition into health programming. The *Appendix* contains details about sampling methods and the questionnaires used in field surveying.

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ACRONYMS

ADC	Assistant district collector
ANA	Accredited nutrition activist (<i>proposed</i>)
ASHA	Accredited social health activist
AWC	Anganwadi centre
AWH	Anganwadi helper
AWW	Anganwadi worker
BINP	Bangladesh Integrated Nutrition Program
BMI	Body mass index
BPM	Block Programme Manager (NRHM)
CMAM	Community management of acute malnutrition
DALY	Disability-adjusted life year
DC	District collector
DPM	District Programme Manager (NRHM)
ICDS	Integrated Child Development Services
IEC	Information, education, and communication
IFPRI	International Food and Policy Research Institute
IGMSY	Indira Gandhi Matritva Sahyog Yojana
INHP	Integrated Nutrition and Health Project (CARE India)
MAM	Moderate acute malnutrition
MCWD	Ministry of Child and Women Development
MDG	UN Millennium Development Goals
MMS	Midday meal scheme
MOHFW	Ministry of Health and Family Welfare
MP	Madhya Pradesh, India
MUAC	Mid-upper arm circumference
NFHS	National Family Health Survey
NRHM	National Rural Health Mission
PDS	Public distribution system
RUTF	Ready-to-use therapeutic feeding
SAM	Severe acute malnutrition
TINP	Tamil Nadu Integrated Nutrition Program
TSC	Total sanitation campaign
UNICEF	United Nations Children's Fund
UP	Uttar Pradesh, India
WHO	World Health Organization

SECTION 1: INTRODUCTION

India has more hungry people than any country in the world. The IFPRI 2010 Global Hunger Index designates national levels of hunger as “alarming,” and India scores lower than many sub-Saharan African countries despite having a higher GDP (von Grebmer *et al* 2010). Indeed, India remains an enigma in global hunger: how can a country have shining economic growth and strong agricultural productivity without commensurate reductions in the incidence of hunger?

Millennium Development Goal 1 aims to halve the proportion of people suffering from hunger, and indicators include: (a) percentage of children under 5 who are underweight, and (b) proportion of the population below minimum level of dietary energy consumption. India is widely expected to miss the MDG hunger target by a significant margin (Svedberg 2009; Chhabra & Rokx 2004).

Indicators of child and maternal undernutrition are particularly dismal. The percentage of children under age three who are underweight has virtually not changed between 1998-1999 and 2005-2006, hovering under 50%. The percentage of women who are underweight decreased only marginally, from 36.2% to 33.0%, during the same period (NFHS-III). More than 75% of the population lives in households with per capita calorie consumption less than the daily minimum requirements¹ (Deaton & Dreze 2008).

Nutrition interventions are spread among several government programmes and social safety nets, including the Integrated Child Development Services (ICDS) programme, the Public Distribution System (PDS), the Midday Meal Scheme (MMS), the Total Sanitation Campaign (TCS), and some activities within National Rural Health Mission (NRHM). However, India lacks a comprehensive, national nutrition strategy—and linkages between planning, managing, and implementing these interventions are often weak or ineffective.

This is a critical time for India to utilize national experience from ICDS and NRHM² and international experiences in nutrition programming as a springboard for an innovative, targeted national nutrition strategy.

Our field surveys with anganwadi workers (AWW), Accredited Social Health Activists (ASHA), and young mothers in Assam, Chhattisgarh, Bihar, Uttar Pradesh, and Rajasthan³ examined community-based service delivery, nutrition knowledge, and health-seeking practices. This field survey was commissioned to examine the following research question: *How can a nutrition strategy be better integrated into health programming?*

This paper presents recommendations for new mechanisms to coordinate nutrition goals at community, block, district, state, and national levels, and evidence-based innovations to improve ICDS’ functionality and impact.

¹ Daily caloric requirements are 2,100 calories in urban areas and 2,400 in rural areas.

² *Mid-term Evaluation of the National Rural Health Mission* (March 2010, SAGE India) available at: http://www.earthinstitute.columbia.edu/cgsd/documents/FINAL_NRHM_Report.pdf

³ Please see ANNEX 1 for further information on survey methodology and sampling.

SECTION 2: BACKGROUND

2.1 MALNUTRITION IN INDIA

Over half (54%) of all childhood deaths in India are related to malnutrition. Nearly 30% of the global childhood deaths attributed to stunting, severe wasting, and intrauterine growth restriction-low birthweight occur in India—a total of 24.6 million DALYs (Black *et al* 2008).

In 2005-06, about 44% of Indian children under five were underweight, and 48% were stunted due to chronic malnutrition (FIGURE 1). Due to the country's size, this means India is home to 42% of the world's underweight children (FIGURE 2) and 31% of the world's stunted children (von Grember *et al* 2010; UNICEF 2009; NFHS-III). The proportion of stunted and undernourished children is 19-21 times higher than expected for a healthy, well-nourished population according to international child growth standards (UNICEF 2006).

High levels of child undernutrition are driven by the low nutritional and social status of women (von Grember *et al* 2010; Ackerson & Subramanian 2008; Sinha 2006). Forty percent of women in India have low body mass, a factor in low birthweight (NFHS-III; Dharmaligham *et al* 2010). Twenty-eight percent of children born in India are low birthweight, indicating intrauterine undernutrition. Nearly half of low birthweight babies are currently stunted or underweight, compared to one third of normal birthweight babies (NFHS-III). Nearly 40% of all low birthweight babies in the world are born in India (UNICEF 2006).

Undernutrition indicators in India also follow lines of inequity—undernutrition is substantially higher in rural than urban areas, and children from scheduled tribes have the poorest nutritional status on nearly every measure and the highest prevalence of wasting⁴ (28%) among under-fives.

FIGURE 1. Prevalence of stunting, underweight, and wasting in children under five years.

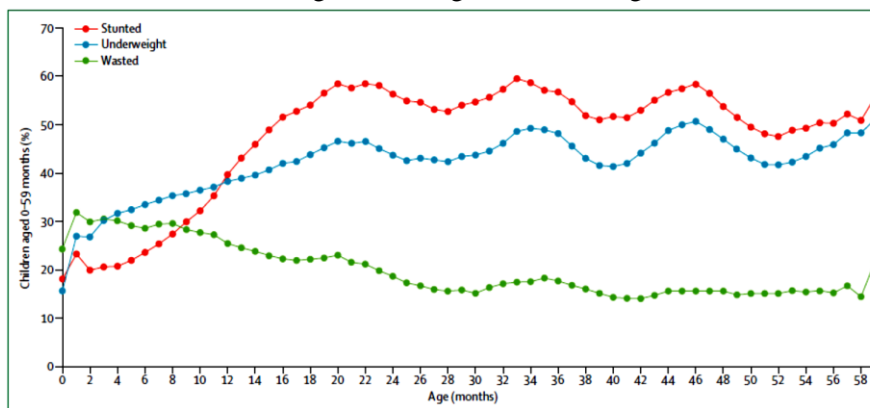
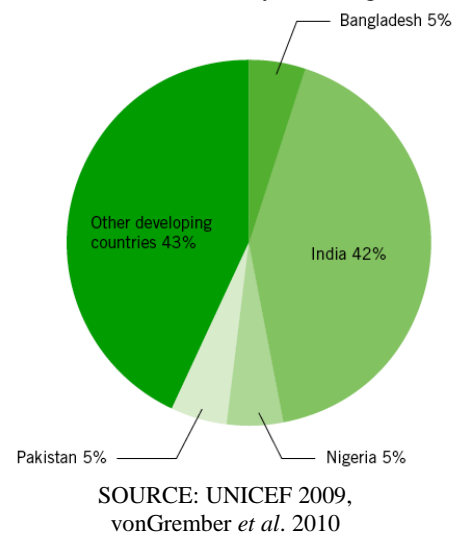


Figure 4: Prevalence of stunting, underweight, and wasting in children (age <5 years)
Reproduced with permission from International Institute for Population Sciences.¹

SOURCE: Paul *et al*, 2011

FIGURE 2. Share of underweight children under five years of age.



SOURCE: UNICEF 2009, vonGrember *et al.* 2010

⁴ Wasting is a clinical sign of severe malnutrition.

The proportion of severely underweight children is nearly five times higher among children whose mothers who have no education than mothers who have 12 or more years of school. However, undernutrition is a considerable issue even among wealthier families; even in households within the highest wealth quintile, 25% of children are stunted and 20% are underweight.

This points to widespread poor feeding practices in India, particularly during the 1000-day window of opportunity from conception until the child's second birthday (NFHS-III; Bhandari *et al* 2002). NFHS-III reports that while breastfeeding is nearly universal, it is not done correctly. Only 25% of newborns breastfed within one hour of birth, less than half of infants under six months were exclusively breastfed, and only 20% of children 6-23 months of age are fed according to recommended practices. A sampling of nutritional indicators for each of the states included in our field surveys is in TABLE 1.

TABLE 1. Maternal and child nutrition indicators within states selected for field surveying.

		STATE					
		Bihar	Rajasthan	MP	UP	Chhattisgarh	Assam
Initial breast feeding <i>% of children under 3 classified by when breastfeeding was initiated</i>	Ever breastfed	95.4	96.8	96.7	96.3	97.1	97
	Started within 1 hour	3.6	11.8	13.4	6.3	22.3	47.3
	Started within 1 day ^s	26.8	45.8	46	20.4	57.3	68.1
	<i>All children</i>	3694	2065	2185	6928	698	852
Median duration of breast feeding <i>(months)[^]</i>	Any breastfeeding	-	25.8	32.5	31.1	-	-
	Exclusive breastfeeding	0.7	1.4	0.6	2.4	5.8	3.6
	Full breastfeeding	3.3	5.5	5	4.9	6.4	4.5
	Number of children	3198	1774	1889	5895	614	771
Nutritional status of children under five <i>Percentage of children under 5 by anthropometric indices, as compared with median of NCHS/CDC/WHO international reference</i>	Height-for-age < -3 SD	23.7	19	23.3	27.2	19.8	16.3
	Height-for-age < -2 SD	49.3	39.2	44.2	51.1	47.7	40.5
	Height-for-age mean Z-score	-2	-1.6	-1.8	-2	-1.9	-1.6
	Weight-for-height < -3 SD	4	3.9	6	2.1	2.5	2.1
	Weight-for-height < -2 SD	23.4	18.3	31.3	11.1	16.1	11.3
	Weight-for-height mean Z-score	-1.4	-1.1	-1.5	-0.9	-1.1	-0.9
	Weight-for-age < -3 SD	23.5	15.7	25.6	15.6	15.1	10.6
	Weight-for-age < -2 SD	60.6	46.5	62.8	48.1	52.2	40.8
Weight-for-age mean Z-score	-2.2	-1.8	-2.3	-1.9	-2	-1.7	
Number of children	5433	2961	3257	8716	1037	1162	
Women's height and Body Mass Index (BMI)[@]	Height percent < 145 cm.	16.7	5.8	8.7	15.2	11.9	16
	BMI percent < 18.5	48.7	39.9	44.8	38.5	49.5	41.4
	BMI mean	19	19.6	19.1	19.8	19	19.5
Iodization of household salt <i>(iodine content of</i>	% of households with no salt	1.7	0.4	0.6	0.7	0.6	0.5
	None (0 ppm)	5.3	36.7	41.2	23.4	21	2.8

<i>tested salt</i>	Inadequate (<15ppm)	28.6	22.5	22.4	40.2	24.1	25.4
	Adequate (15+ ppm)	66.1	40.8	36.3	36.4	54.9	71.8
Anemia status of women (15-49 years)	Mild anemia	50.5	35.2	40.8	35.1	39.9	44.8
	Moderate anemia	15.9	15.4	14.1	13.2	15.7	21.2
	Severe anemia	1	2.5	1	1.6	1.9	3.4
	Any anaemia	67.4	53.1	55.9	49.9	57.5	69.4

\$ Children who started breastfeeding within one day include children who started breastfeeding within one hour.

^ Median durations (in months) of any breastfeeding, exclusive breastfeeding and full breastfeeding among children under 3 years of age. Full breastfeeding refers to either exclusive breastfeeding or breastfeeding and plain water only.

* The percentage below -2 SD includes children who are below -3 SD.

@ The body mass index (BMI) is the ratio of the weight in kilograms to the square of the height in meters (kg/m²). The BMI excludes pregnant women and those who are less than three months postpartum.

Source: NFHS-111. Macro International Inc, 2010. MEASURE DHS STATcompiler. <http://www.measuredhs.com>, Feb 6 2010.

2.2 INTERNATIONAL APPROACHES

This section will examine international innovations in nutrition programming, and possibilities for further integration into health services delivery. Nutrition intervention and policy approaches can be profiled as:¹

- a. Prevention- and treatment-based approaches
- b. Food production-based approaches
- c. Multi-sectoral approaches
- d. Innovative safety net approaches

India's current programming has several components of these approaches within various programmes, as to be discussed in Section 3 of this review. This Section 2 will briefly review international examples of these approaches utilized within national programming and community-based interventions.

2.21 BANGLADESH: PREVENTION- AND TREATMENT-BASED APPROACHES

The *Lancet's* 2008 series on child and maternal undernutrition outlined a range of proven, cost-effective interventions (TABLE 2). These interventions particularly emphasize a 1000-day window of opportunity from gestation to 24 months of age, as a period of rapid growth, and because damage during this period can potentially be permanent (Bryce et al 2008). Undernutrition under the age of two impacts not only child growth and nutrition, but also cognitive development (Barker et al 2008), and has a particularly strong correlation with lower human capital in adulthood (Victora et al 2008). Thereby, prevention- and treatment-based approaches are especially targeted towards this period of life.

Preventative approaches to undernutrition are often of lower priority, even while the FAO estimates that the developing world spends \$30 billion USD every year on sickness and hunger, the "direct damage of hunger" (FAO, IFAD, and WFP 2005). Components of preventative interventions have been implemented—with varying success—in a number of countries and communities.

TABLE 2. Evidence-based interventions for maternal and child undernutrition.

Prevention-based interventions	Exclusive breastfeeding for children under 6 months of age
	Improved complementary foods and feeding practices for children 6 months to 2 years
	Vitamin A supplements for children 6 to 59 months
	Preventative zinc supplementation
	Iron and folic acid supplementation for pregnant women
	Iodized salt or iodized oil capsules when salt is not available for households
	Fortification of staple and complementary foods with iron and other micronutrients
	Multiple micronutrient and calcium supplementation
	Safe water source, hygiene and waste disposal
Treatment-based interventions	Treatment of severe acute malnutrition (SAM) with ready-to-use therapeutic foods (RUTF) of children under 5 years
	Treatment of moderate acute malnutrition (MAM) with improved, fortified foods of children under 5
	Deworming for children
	Zinc, complemented with rehydration, for managing diarrhoea in children under 5

SOURCE. Lancet series 2008

Bangladesh has made considerable effort to address hunger and undernutrition within a national prevention programme. The proportion of children who are underweight has fallen from 67% in 1990 to 46%; however the numbers of children who are underweight remains high (UNICEF 2009). Bangladesh launched its Integrated Nutrition Project (BINP) in 1996, considered the first large-scale government nutrition initiative and a nutrition-focused extension of the Bangladesh Rural Advancement Committee (BRAC) (World Bank 2005). BINP focused on changing care practices, and included national-level nutrition activities, a multi-sectoral nutrition programme (garden and poultry raising), and community-based nutrition interventions. These community interventions aimed to reduce child malnutrition growth monitoring of children 6-24 months, programme enrolment and supplementary feeding for severely malnourished children, and supplementary feeding for pregnant and breastfeeding women. Caregivers of children receiving supplementary food were required to visit the local nutrition centre for counselling.

Early evaluations have reported improvements of nutrition-related knowledge and use of micronutrients in project areas, but the evidence on children nutritional status, weight gain during pregnancy, and reductions in low birthweight has been mixed, with controversy over research findings and methods (Nahar 2009; World Bank 2005; Hossain et al 2005; Levinson & Rohde 2005; Sack *et al* 2005). Others have suggested that the nutritional improvements in Bangladesh can be attributed to the rise in daily energy supply by 10% from 1995 to 2000, largely from increases in rice production (White 2005). The World Bank (2005) emphasized several lessons from BINP for future preventative, multi-sectoral nutrition programmes at scale: (a) ambitious projects need clear and finite objectives at all planning and implementation levels, and (b) projects require mechanisms for ongoing evaluation and operations research that can be immediately used to take action in re-design, programme innovation, and policy.

2.22 CHINA: FOOD PRODUCTION APPROACHES

Food production approaches to undernutrition seek to target food availability and diet quality by enhancing local production and agricultural biodiversity. This approach is outside of the traditional scope of nutrition interventions, thereby research on the impact of scalable food production on clinical nutrition outcomes is under-developed and not well understood (Fanzo et

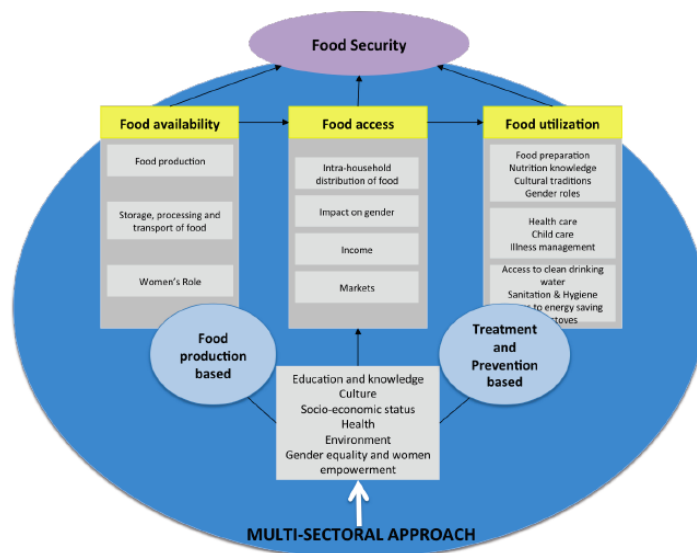
al 2010, Frison et al 2006). Farm production approaches potentially have both supply and demand side benefits. On the supply side, diversification of crops—particularly those with high nutritional value—can potentially provide essential micronutrients to entire communities (Stein et al 2006). On the demand side, increasing small shareholder productivity can help increase household income and purchasing power for improved nutrition. While production-based approaches can be nationally-driven strategies, they must be accompanied at community level with improved agricultural tools for small shareholders, and nutrition interventions for families (Bajpai et al 2005; UN Hunger Task Force 2004).

China has had huge progress in reaching the MDG 1 hunger target, due in part to the country’s concentrated efforts to increase smallholder farmer output and distribute land equitably. During the 1980s, land was redistributed to small shareholder farmers and a national stimulus package concentrated on improved infrastructure, creating grain reserves, and increased spending on agriculture research (Naryan et al 2003). In addition to food production, China invested considerable public expenditures in health and created an expansive public health infrastructure (Svedberg 2009; Allen & Gillespie 2001).

2.23 MILLENNIUM VILLAGES: MULTISECTORAL PROGRAMMING

There have been growing calls for multi-sectoral action in health and development initiatives, and research has suggested that multi-sector approaches instigate a wider scope of benefit than single-sector approaches acting in isolation (Kim *et al.* 2009; UN Millennium Project 2005). There is wide recognition that efforts to address hunger and undernutrition must integrate technical interventions with action to address the underlying causes of food insecurity and poor nutrition—gender and educational inequality, poor infrastructure, inadequate purchasing power, and poor health, water, and sanitation services (FIGURE 2) (IFPRI 2010; Pinstrup-Anderson 2009; Morten 2008; Ramachandran 2006; Smith et al. 2003).

FIGURE 3. Integrating a broader multi-sectoral approach to improve food security.



SOURCE: Fanzo et al. 2010

One such initiative has been the Millennium Villages established in “hunger hotspots” within ten African countries. The Millennium Village model focuses on critical development issues across

sectors, including infrastructure, health, education, agriculture, and livelihoods. The project's integrated approach to hunger and undernutrition includes clinical interventions focused on primary healthcare and treatment of undernutrition, education targeting behaviour change at community and household levels, and community- and livelihood-based interventions to increase agricultural productivity, diet diversification, and long-term food stability (Smith & Haddad 2000; Sanchez *et al* 2007).

Early evidence from a pilot village in western Kenya have had dramatic gains as related to hunger and nutrition. Maize yields tripled, and overall production in the village increased by over five fold, in the first two years after interventions. Households report that average food security and diet diversity have increased. The proportion of children under five that were underweight decreased dramatically (from 26% to 3.9%) and stunting decreased from 62% to 38% (Fanzo *et al*, under review 2010). The Millennium Village model is scaling up based on these results, emphasizing the cost efficiency of comprehensive, preventative, and localized interventions for health and nutrition.

2.24 BRAZIL AND MEXICO: SOCIAL NET PROGRAMMING

Brazil's *No Hunger* initiative and Mexico's *Oportunidades* programme are national safety nets aimed at family undernutrition. Regular cash transfers are provided to mothers on the condition that their children are in school, pregnant women attend ANC and postnatal checks, and families attend scheduled health visits. While the link between conditional cash transfers and nutrition indicators is poorly understood, the conditional cash transfers serve as a pillar in Brazil and Mexico's social welfare programming and evaluations have reported significant nutrition outcomes (Fanzo *et al* 2010; FAO 2009).

Brazil's nutrition strategy under the No hunger initiative targets poor households' access to food. A national conditional cash transfer programme was launched as the Bolsa Familia in 2004, and it now serves the quarter of Brazil's population under the poverty line, an estimated 42 million people. At the household level, it provides a basic income to around 11.1 million families but the transfer is only made if the family meets certain conditions. To qualify and remain in the program, all of the household's children must be vaccinated against certain communicable diseases, school-age children must regularly attend school, and pregnant women and young mothers must attend health appointments and follow nutrition advice. These conditions have also linked families into health services (Graziana de Silva 2007).

Between 2001 and 2005, the number of malnourished people in Brazil dropped from 16.6 million to 12.0 million, and the national proportion share of undernourished children decreased; from 10% to 6% during the same period. Child malnutrition indicators improved dramatically, for example, stunting in the marginalized Northeast region dropped from 22.2 to 5.9% (FAO 2009). The FAO (2009) has estimated that malnutrition has been reduced by 73% in the last six years. To what extent the Bolsa Familia programme directly contributed to dramatic decreases in undernutrition is yet to be determined, relative to other social advances made during this period, while the Minister of Social Development and Fight Against Hunger reports that 90% of families reported an improvement in their eating habits, 70% of families report that the variety of foods had increased, and 90% of children ate three or more meals a day (Graziana de Silva 2007).

Similarly, Mexico's cash transfer programme was one of the first of its kind in a developing country, and offered direct, bimonthly cash transfers to women to improve the quality, quantity

and diversity of food in the household. The programme’s outreach wing also provides an additional supplement—a milk-based, fortified food offering 20% of calorie requirements and 100% of micronutrient requirements—to infants between 6 and 23 months, undernourished children between 2 and 5 years, and pregnant and breastfeeding woman (Behrman 2000; Leroy *et al* 2008). In Mexico families are enrolled in *Oportunidades* for three years, and children are also provided with nutritional supplementation through village outreach (IFPRI 2008). In an effort to converge nutrition and education efforts, the programme offers educational grants and incentives for remaining in and finishing school, as well as basic medical services, and health education. By 2008, the program had assisted 5 million families in 93 thousand districts in all of the country’s most marginalized municipalities (Gobierno Federal de Mèxico 2008). Evaluations of *Oportunidades* found that the program has had a positive effect on childhood growth, with an increase in mean growth of 16% in the critical period of twelve to thirty six months (Behrman *et al* 2005, 2006).

2.3 NUTRITION PROGRAMMING IN INDIA

High levels of chronic malnutrition in India—particularly among women and children—emphasizes need for long-term, multidimensional interventions (NFHS-III). National programming and social safety nets include the Integrated Child Development Services (ICDS) programme, the public distribution system (PDS) for below-poverty line (BPL) families, the Mid-day Meal Scheme (MMS) in public schools, and nutrition-focused activities within the National Rural Health Mission (NRHM), particularly in community-based delivery through the ASHA. Interventions include components from several of the approaches discussed in the previous section (TABLE 3). While these interventions have potential, they have yet to form a comprehensive, multi-sectoral nutrition strategy.

TABLE 3. Current national nutrition-related programming in India.

<i>Prevention and treatment-based approaches</i>	Most key interventions (page 8) are covered by ASHA, ANM, or AWW, to varying levels of actual implementation.
<i>Food production-based approaches</i>	Households without land, and those with land that is not irrigated, have higher levels of undernutrition.
<i>Multi-sectoral approaches</i>	National programming between health, nutrition, agriculture, education, and other key development initiatives is fragmented. ICDS is multi-sectoral in design, but not widely implemented as such.
<i>Innovative safety net approaches</i>	Indira Gandhi Matritva Sahyog Yojana (IGMSY) conditional cash transfers for pregnant women and young mothers, to focus on nutrition. We commend the implementation of this scheme and await pilot results.

2.3.1 INTEGRATED CHILD DEVELOPMENT SERVICES

This paper will focus on ICDS operations (FIGURE 4). ICDS was launched in 1975 under the Government of India, with assistance by UNICEF and the World Bank. ICDS operates as a nutrition safety-net program through village *anganwadi* centres (AWC), and workers (AWW)⁵ are sanctioned to provide: cooked meals and informal preschool activities for children under 6; supplementary food and nutrition counselling for adolescent girls, pregnant women, and

⁵ Please see Appendix for the official outline of an anganwadi worker’s roles and responsibilities

breastfeeding mothers; home visits and growth monitoring of children; and community programming, such as the village health and nutrition days (VHND) in collaboration with the ANM and ASHA.

FIGURE 4. ICDS planning, management, and oversight structure.



ICDS is considered well designed—and well situated as the only national program operating at village level—to address malnutrition’s multidimensional factors. However, significant gaps exist between design and implementation, undermining the programme’s potential to address undernutrition “effectively, efficiently, and equitably” (Gragnotati *et al* 2005). Longitudinal data from ICDS attendees reports no impact on nutritional status, and NFHS-III (TABLE 4) highlights unsatisfactory ICDS coverage and service delivery (Bhasan & Bhatia 2001). We also acknowledge that ICDS has evolved over years, and its budget and coverage by number of villages has grown.

TABLE 4. NFHS-III data on AWC service delivery.

26%	Children under 6 receiving supplementary food from AWC in 12 months preceding survey. <i>Of those that did, 33% received supplements less than once a week.</i>
20%	Children under 5 who were weighed at AWC anytime in preceding 12 months. <i>Of those weighed, only 50% of their mothers were counselled by AWW at time of weighing.</i>
21%	Women reporting to receive food supplementation during pregnancy.
17%	Women reporting to receive food supplementation while breastfeeding.

SOURCE: NFHS-111 (2005-2006).

Poor targeting & programmatic focus

ICDS is widely criticized for poor targeting, focusing on children from 3-6 years of age instead of the particularly critical window of opportunity from conception to 24 months (Bryce *et al* 2008). Informal preschool activities are often prioritized over health programming, and nutrition interventions focus almost exclusively on the supplementary food provision. Some of the most effective interventions for child nutritional outcomes—behaviour change around family care and feeding practices—are lost when home visits, counselling, and demonstration-education are not prioritized or supported (Gragnotati *et al* 2005).

Anganwadi centres are often located in wealthier parts of town, making them poorly situated to target vulnerable children in poor households or lower castes living in remote areas. Centres in priority tribal areas have been difficult to reach and monitor, and ICDS has not been able to fully target girls, poorer households, and lower castes (Haddad & Zeitlyn 2009; Gragnolati *et al* 2005).

Infrastructure & operations

There are wide disparities in funding, and the poorest states and states with the highest rates of undernutrition still have much lower levels of funding and programmatic coverage (Bajpai *et al* 2005; Gragnolati *et al* 2005). States are responsible for procuring supplementary food; while Tamil Nadu spent 167 Rupees per child in 1999-2000, states lower on the spectrum spent less than 53 Rupees (Bajpai *et al* 2005). Even as food procurement and distribution was shifted to the states in an attempt to solve distribution issues, supplies are sporadic, often of poor quality, and largely cereal-based, thereby lacking in essential macro and micronutrients.

Major programs are plagued with severe operational problems, particularly in governance. The lack of monitoring and evaluation, supervision, accountability, and transparency results in unspent funds, corruption, leakages, and poor reporting (Saxena 2009; Srinivasan *et al* 2007; Haddad and Zeitlyn 2009). There is significant need for improved oversight, supportive supervision, focused training, and performance management (USAID 2008). Finally, ICDS evaluation systems are not used to rapidly inform action at the community and district level, and there is too little emphasis on assessing the quality of service delivery and impact of the programme (Adhikari & Bredenkamp 2009). Anganwadi workers tasked with data keeping report that it is tedious, and they do not understand how it is being used (Gragnolati *et al* 2005; NCAER 2001).

2.32 INNOVATIONS TO ICDS

Several local innovations to ICDS have demonstrated that small changes in project design and priorities can improve programme impact on child nutritional outcomes. This is shown both in studies that have successfully implemented ICDS as designed, and in studies of innovations to ICDS projects (SIDA 2000; Johri 2004; Gragnolati *et al* 2005). These innovations include mechanisms for community mobilization, services outreach, and community oversight.

Behavioural change agents at community level

CARE India's Integrated Nutrition and Health Project (INHP) sought to converge the ICDS programme with the Reproductive and Child Health (RCH) initiative, in an effort to localize nutrition and health interventions. INHP focused on training volunteer "change agents" within the community, assigned to families to provide health and nutrition information and mobilize ICDS participation. Change agents were trained to advise on newborn care and conduct regular home visits until the child is two years old. These visits were intended to coincide with important milestones in the child's development, like weaning, so that the mother could be counselled as necessary.

The INHP also facilitated Nutrition and Health Days (NHD), during which the AWW and ANM provided immunizations, antenatal care, take-home supplementary food, micronutrient supplements, and health talks. These NHD have now been formalized with the NRHM as

Village Health and Nutrition Days (VHND), intended to be a collaborative event with the ASHA, AWW, and ANM.

Programme assessments showed promising changes in health-seeking behaviours. In the intervention areas, 65% of women reported initiating breastfeeding within an hour of delivery, compared to 38% in non-intervention areas. Higher proportions of children were breastfed exclusively for six months, properly introduced to complementary feeding (and given more nutritious complementary foods), and received Vitamin A supplementation and measles vaccination by 12 months. Some of the largest differences between control and intervention areas were within the lowest socioeconomic groups (Gragnotati *et al.* 2005).

The Dular programme has pursued a similar strategy in Bihar and Jharkhand, with assistance from UNICEF. In targeted districts, the AWW in every village teams with a small group of local resource people (LRP) that are trained in the basics of nutrition, childcare, and hygiene. This team visits pregnant women and young mothers to give information about safe delivery, breastfeeding, immunizations, and important care practices. Evaluations indicate significant results in Dular villages on major health indicators measured; of particular importance, rates of severe malnutrition in Dular communities were 45% lower, and children were four times more likely to receive colostrum, than control villages (Dubowitz *et al.* 2007). Families report that they are comfortable with the team, as they are community members, and an early evaluation reports an 8% decrease in the prevalence of underweight children under three, a 20% increase in colostrum feeding within one hour of birth, and a 20% decline in diarrhoeal episodes in under threes in the three months prior to the interview (Gragnotati *et al.* 2005).

Since 2005, the ASHA has assumed a more formal role as a community change agent, delivering these same interventions. Evaluations of the INHP have emphasized the important mobilizing role of change agents, and has emphasized that these positions need clear roles and expectations, targeted means of reporting activities and outcomes, supportive oversight, and remuneration, particularly when they are expected to come from communities that are poorer or marginalized (Bongiovanni *et al.* 2007). As we argue in our companion paper *Improving ASHA performance in India*, these are still important issues for managing and improving ASHA performance, and any other nutrition-focused change agents that might work in the community. We will later argue in our Recommendations for the need for a similar change agent that focuses exclusively on nutrition.

Local committees & operations oversight

In 1998 Andhra Pradesh began establishing mothers' committees in villages with AWC, in an effort to better stimulate community ownership, participation, and demand for high-quality service delivery. Eight nominated village members serve three-year terms on the mother's committees, developed in line with the existing ICDS guidelines to establish *Mahila Mandals* in all areas where ICDS serves. Mother's committees were registered as local committees in order to allow formal participation in ICDS and foster legitimacy and accountability.

In 2005, more than 50,000 committees had been created, covering 95% of AWCs in the state. Committee members are given training focusing on nutrition, health, education, economic empowerment and self-help group formation, and state-specific issues (e.g. social and legal). Mother's committees were established within a World Bank-assisted ICDS project. When the committees' role focused on selecting construction sites for AWC and monitoring construction,

over 15,000 AWC buildings were completed under committee supervision. The committee scope has evolved to include AWW and AWH recruitment and honoraria payment, monitoring community-based indicators of AWC performance, organizing local food units for supplementary nutrition preparation and distribution, follow-up to ensure service delivery to beneficiaries, and mobilization of adolescent girls to assess services.

The World Bank evaluation of the mother's committee reinforced that the committees need a formal role within ICDS instead of organizing as a separate group (only 40% of committees were formally involved in ICDS programme), and wider community roles (only 31% of mothers knew of the committees). The World Bank recommended that the committee members receive more training, especially in specific roles within health promotion, to further their role as local change agents. They also advocated for the committees to have more decision-making power in ICDS operations (e.g. improving AWC infrastructure, appointing AWWs, organizing food distribution) and more scope for community participation. AWWs also need clarity in their responsibilities, and need to know for what tasks they are accountable (Gragnolati *et al* 2005).

Improved programme targeting & management: the Tamil Nadu Integrated Nutrition Program

The Tamil Nadu Integrated Nutrition Program (TINP) is a variation of ICDS, with a tighter focus on high-risk groups and a smaller number of interventions. Activities focus on nutrition education, regular growth monitoring, health check-ups for all children, and supplementary nutrition only to children moderately and severely malnourished, children (particularly under 36 months of age) losing weight or slowing growth, and high-risk pregnant and breastfeeding women. A Community Nutrition Worker is responsible for 1,500 clients.

TINP also placed greater emphasis on training, supervision, and managerial capacity of workers, and using an information system to make project changes. A management system has instated Community Nutrition Supervisors per every 10 CNWs, and a Block Community Nutrition Instructress per every four to seven supervisors. A system of warning signs within key indicators was used to generate notices to community nutrition centres (CNC) when performance fell below an expected level. Supervisors were expected to take weighing sample surveys to monitor data validity. At one point in the programme, when reported that families were not changing the way they fed children under two years of age, TINP prioritized this age group for nutrition education and family behaviour change. Community participation was also prioritized, including collaboration with local women and girls' groups. While TINP halved the prevalence of severe malnutrition in programme villages, it did not reach goals in reducing moderate nutrition. The project evaluation recommended that TINP focus on home-based actions, and the integration of nutrition interventions into the health system (Heaver 2002).

2.33 INTEGRATING HEALTH AND NUTRITION

Nutrition has not been a national priority in India, and has lacked political will in the past. Decision-making in nutrition programming is fragmented among several national initiatives and departments, fuelling widely acknowledged bureaucratic delays and the lack of central expertise and leadership (Gupta & Khaira 2008; Morris *et al* 2008). Nutrition objectives are diluted during absorption into maternal and child health, poverty reduction, and food security programming (Gupta & Khaira 2008). A number of countries, including Indonesia and Bangladesh, found

themselves in similar situations, and systematically reviewed and mapped nutrition-related interventions throughout departments before putting forward a concise national policy.

To date, nutrition has not been effectively integrated into a larger health strategy, which is reflected in all levels of planning, management, and implementation. Despite some efforts to integrate nutrition into NRHM and converge efforts with ICDS, nutrition components have largely taken a backseat to other interventions geared towards infant and maternal mortality (Gupta & Khaira 2008; Shrinivasan&Shekhar2007). For one example, ASHAs are not remunerated for specific nutrition programming outside of hosting VHND, and these incentives for VHND are not bound by service delivery or nutritional outcomes (Scott, in review).

Existing nutrition interventions require considerable reform, and India should utilize the evidence base from in-country pilots and other country experiences as a springboard for innovation. As NRHM gains traction, there is considerable opportunity for India to better integrate nutrition into targeted, community-based delivery. Considerations for these targeted interventions—and needs in national policy and community-level programming—are further explored in our field survey results.

Urgent changes are needed to bridge the gap between the policy intentions of ICDS and its actual implementation.

This is probably the single biggest challenge in international nutrition, with large fiscal and institutional implications and a huge potential long-term impact on human development and economic growth.

World Bank, 2005

2.34 NUTRITION REFORM INITIATED IN 2010

The Prime Minister's National Council on India's Nutrition Challenges⁶ met for the first time on 24 November 2010. The meeting was an important recognition of the seriousness of nutrition issues in India, and we commend its key decisions:

- ICDS requires strengthening and restructuring, with a particular focus on pregnant and breastfeeding mothers and children under three, and with strong convergence with NRHM and the Total Sanitation Campaign (TCS).
- Design of a multi-sectoral programme targeting maternal and child undernutrition in 200 high-burden districts. This programme's design is to emphasize institutional and programmatic convergence of existing health and nutrition programming at national, state, district, block, and village levels.
- Initiating a nationwide information, education, and communication (IEC) campaign targeting key messages in maternal and child nutrition (e.g. breastfeeding, care of pregnant women and children under two, household hygiene).
- Ministries associated with health, drinking water supplies, sanitation, school education, agriculture, and food and public distribution should integrate a concrete nutrition focus to programming.

⁶ This council is intended to meet annually and was recommended to be set up by Bajpai et. al. 2010. Minutes from this meeting are available at <http://www.bjni.org/documents/PM-Minute-of-the-Meeting.pdf>

The Ministry of Women and Child Development, in consultation with the Planning Commission and relevant ministries, will be responsible for taking necessary action, and reviewing implementation progress in three months' time.

SECTION 3: METHODOLOGY

Five states within the NRHM high-focus states were selected for regional sampling: Assam (Northeast), Bihar (East), Uttar Pradesh (North), Chhattisgarh (Central), Rajasthan (West). These are among the poorest and most populous states in the country; populations in Bihar and UP are highly dense. One district in each state was selected in consultation with programme officials. From the selected districts, two blocks (taluks) were selected for geographical spread within the district. In Bihar and Chhattisgarh three blocks were selected. The same districts were also sampled for our accompanying paper about ASHA performance. Districts were selected in consultation with programme officials using criteria including population size, distance from capital, and proportion of special groups; blocks were selected under the same criteria.

Methods

Questionnaires (see Appendix) were developed for households, ASHA, AWW, and state officials. All surveys were used in this paper; while the ASHA questionnaire and sample was targeted towards our accompanying paper, the ASHAs also answer questions about nutrition and interactions with ICDS and the AWW.

The ASHA and AWW questionnaires were translated into Hindi; in Rajasthan, Bihar, UP and in most part of Chhattisgarh, Hindi or a minor variant of Hindi is the local language. Questionnaires were circulated to all ASHAs or AWWs separately, and as each question was explained the ASHA or AWW was asked to fill in their answers. Supervisors were available to ensure participants did not copy or consult each other while writing responses. For any clarifications on any word or phrase, women who could speak local languages were available to translate. Local educated women (e.g. from NGOs or have field research experience) conducted questionnaires for households.

Sampling

ASHA (n=1004), AWW (n=432), and mothers of young children (n=412) were sampled across sites (see Appendix). ASHA and AWW lists were provided by PHCs (in Rajasthan the ICDS coordinator provided both lists), and a meeting was called, usually at the PHC, with randomly selected ASHAs and AWWs from the list. Households were selected from two to three villages from selected blocks. Young mothers with children were identified, and over 50 were selected at random. In Chhattisgarh, five responses were incomplete and were disregarded.

SECTION 4: FINDINGS

3a. Inadequate coverage of anganwadi centres

Nationally, 76.2% of sanctioned AWCs are actually operational (TABLE 5). In no state are 100% of sanctioned AWCs operational, and the national range is from 39.2% (Uttarakhand) to 97% (Kerala). The situation in the states selected for this study is that Bihar (87.2%), Rajasthan (79.1%) and UP (80%) are above the national average, and Chhattisgarh (49.3%) and Assam (61.7%) are below the national average of Operational AWCs. This requires further analysis, particularly to establish where procedural bottlenecks exist if the programme is going to reach its intended coverage, and if bottlenecks are attributable to the programme growing at scale.

TABLE 5. Number of Anganwadi Centres (AWCs) Sanctioned and Operational

States/UTs	Number of AWCs		
	Sanctioned	Operational	% Operational
Andhra Pradesh	91307	72035	78.9
Arunachal Pradesh	6028	4277	71.0
Assam	59695	36849	61.7
Bihar	91968	80211	87.2
Chhattisgarh	64390	31721	49.3
Goa	1212	1112	91.7
Gujarat	48617	43718	89.9
Haryana	25699	17192	66.9
Himachal Pradesh	18925	18248	96.4
Jammu and Kashmir	28577	18797	65.8
Jharkhand	38186	32114	84.1
Karnataka	63377	54260	85.6
Kerala	33115	32115	97.0
Madhya Pradesh	90999	68973	75.8
Maharashtra	110486	81363	73.6
Manipura	11510	7621	66.2
Meghalaya	5115	3337	65.2
Mizoram	1980	1682	84.9
Nagaland	3455	3194	92.4
Orissa	71134	41697	58.6
Punjab	26656	20169	75.7
Rajasthan	61119	48356	79.1
Sikkim	1233	988	80.1
Tamil Nadu	54439	47265	86.8
Tripura	9878	7351	74.4
Uttar Pradesh	187517	149998	80.0
Uttarakhand	23159	9079	39.2
West Bengal	117170	91372	78.0
Andman and Nicobar	720	672	93.3
Chandigarh	500	370	74.0
Delhi	6606	6106	92.4
Dadra and Nagar Haveli	253	219	86.6
Daman and Diu	107	102	95.3
Lakshdweep	107	87	81.3
Puducherry	788	688	87.3
INDIA TOTAL	1356027	1033338	76.2 (average)

SOURCE: Ministry of Women and Child Development, Govt. of India. Data as of 31.03.09

3b. Human resources gaps at AWCs

Anganwadi centres suffer from staffing gaps (TABLE 6). Nationally, 74% of sanctioned AWW are in-position, and 79.6% of sanctioned anganwadi helpers. When comparing data on in-position staff and AWCs classified as operational, up to 3% of India's centres are without an anganwadi worker. Bihar has a particularly worrisome 25% gap of both AWW and AWH. If state data on operational facilities is accurate, then many AWCs are running with only an anganwadi helper, or only an anganwadi worker. This hinders AWC operations, as a centre should not function solely with an AWH. This points to a systemic gap in recruiting, training, and supporting AWC staff.

TABLE 6. Numbers of anganwadi workers and helpers by state.

State	No. Anganwadi Workers (AWW)			No. Anganwadi Helpers (AWH)			% of Operational AWC with no AWW	% of Operational AWC with no AWH
	Sanctioned	In-position	% Gap	Sanctioned	In-position	% Gap		
Andhra Pradesh	91307	71665	21.5	80481	70700	12.2	0.5%	1.9%
Arun. Pradesh	6028	4277	29	6028	4277	29	0.0%	0.0%
Assam	59695	36849	38.3	56728	36849	35	0.0%	0.0%
Bihar	91968	60041	34.7	86528	59797	30.9	25.1%	25.5%
Chhattisgarh	64390	33786	47.5	55709	32859	41	-6.5%	-3.6%
Goa	1212	1183	2.4	1212	1094	9.7	-6.4%	1.6%
Gujarat	48617	42237	13.1	47491	42141	11.3	3.4%	3.6%
Haryana	25699	17263	32.8	25187	17112	32.1	-0.4%	0.5%
Himachal Pradesh	18925	17652	6.7	18386	17630	4.1	3.3%	3.4%
Jammu & Kashmir	28577	16409	42.6	28577	18474	35.4	12.7%	1.7%
Jharkhand	38186	31216	18.3	35635	31163	12.5	2.8%	3.0%
Karnataka	63377	53658	15.3	60046	54037	10	1.1%	0.4%
Kerala	33115	32217	2.7	32986	32216	2.3	-0.3%	-0.3%
Madhya Pradesh	90999	68161	25.1	78929	67520	14.5	1.2%	2.1%
Maharashtra	110486	81885	25.9	97475	80048	17.9	-0.6%	1.6%
Manipur	11510	7621	33.8	9958	7621	23.5	0.0%	0.0%
Meghalaya	5115	3377	34	3881	3377	13	-1.2%	-1.2%
Mizoram	1980	1682	15.1	1980	1682	15.1	0.0%	0.0%
Nagaland	3455	3194	7.6	3455	3194	7.6	0.0%	0.0%
Orissa	71134	43475	38.9	60918	42763	29.8	-4.3%	-2.6%
Punjab	26656	21465	19.5	25436	21465	15.6	-6.4%	-6.4%
Rajasthan	61119	49955	18.3	54915	47403	13.7	-3.3%	2.0%
Sikkim	1233	981	20.4	1233	969	21.4	0.7%	1.9%
Tamil Nadu	54439	46638	14.3	49499	43707	11.7	1.3%	7.5%
Tripura	9878	6413	35.1	9878	6612	33.1	12.8%	10.1%
Uttar Pradesh	187517	145980	22.2	165331	143016	13.5	2.7%	4.7%
Uttarakhand	23159	8844	61.8	18039	8493	52.9	2.6%	6.5%
West Bengal	117170	86935	25.8	117170	8430	92.8	4.9%	90.8%
Andaman & Nicobar	720	672	6.7	689	672	2.5	0.0%	0.0%
Chandigarh	500	370	26	500	370	26	0.0%	0.0%
Delhi	6606	6097	7.7	6606	6106	7.6	0.1%	0.0%
Dadra & Nagar Haveli	253	247	2.4	219	219	0	-12.8%	0.0%
Daman and Diu	107	102	4.7	107	102	4.7	0.0%	0.0%
Lakshadweep	107	87	18.7	96	87	9.4	0.0%	0.0%
Puducherry	783	685	12.5	788	684	13.2	0.4%	0.6%
INDIA TOTAL	1356027	1003319	26.01 <i>average</i>	1242096	988779	20.39 <i>average</i>	2.9% <i>average</i>	4.3% <i>average</i>

SOURCE: Ministry of Women and Child Development, Govt. of India. Data as of 31.03.09

3c. AWW workload and location

AWW work an average of 26 hours per week, 6 days a week, in the surveyed states (TABLE 7). Weekly hours vary by day, and the AWW is paid a monthly honorarium. Bihar, Chhattisgarh, and Rajasthan reported numbers of AWW commuting to work at AWC in communities outside of their own. Literature on community-based health interventions reiterates the importance of advocates like the AWW working within their own communities.

TABLE 7. Average AWW profiles across states.

	Bihar	Chhattisgarh	Rajasthan	UP
1. Av. age of AWW	33	31	38	40
2. Av. completed class	10	9	9	11
3. Av. number of days/week AWC is open	6	6	6	6
4. Av. number of hours/week AWW works	25	24	24	31
5. Av. number of AWHs working at AWC	1	1	2	1
6. % AWW who report a second job	11%	2%	2%	2%
7. % AWW that belong to the same community as AWC	91%	83%	78%	100%

SOURCE: 2010 Earth Institute and IIM-Ahmedabad field survey.

3d. Nutritional supplementation for children under 3 years

ICDS is widely criticized for poor targeting, focusing on children from 3 to 6 years of age instead of the window of opportunity from birth to 24 months. As ASHAs are intended to serve as community-based advocates for AWC attendance, they were surveyed for perspectives on poor targeting and attendance of children less than 3 years.

ASHAS largely report that children 6 months to 3 years do not go to the AWC. ASHA most frequently cited that the suitable services are not available, raising questions about how operational AWC are in most communities, and that AWC timings (usually early to mid-morning) are inconvenient, presumably for caregivers absorbed with household tasks. The poor quality of food available in the AWC was a reported factor in all states besides Chattisgarh.

ASHAs also report that children do not go to the AWC because people are unaware of the AWC services, or that there is no demand from parents and they do not see a need to go. This raises questions about the ASHA's role in mobilizing families to access services at the AWC, or to hold AWW accountable for service availability and quality. The gap in the AWC outreach activities could be addressed by incorporating an Accredited Nutrition Activist (ANA) who would be an intermediary between the AWW and ASHA and facilitate in mobilising the community to access services at the AWC. Involvement of community members in the activities of the AWC would to a large extent ensure service availability and quality. Both topics are further discussed in our *Recommendations* section.

TABLE 8. ASHA perspectives of *anganwadi* services for children under 3.

	Bihar	Chhattisgarh	Rajasthan	UP
1. % ASHA reporting that children 6 mo–3 yr do not go to AWC	76%	51%	76%	78%
2. % of ASHA reporting the following as reasons children (6 mo – 3 yr) do not go to AWC				
<i>Difficult to access</i>	19%	8%	32%	19%
<i>Suitable service unavailable</i>	41%	22%	32%	36%
<i>Time is inconvenient</i>	40%	15%	38%	37%
<i>Social discrimination</i>	14%	4%	11%	10%
<i>No need to go</i>	33%	35%	42%	31%
<i>Bad quality of food available</i>	20%	3%	18%	13%
<i>People are unaware about AWC</i>	24%	8%	27%	24%

SOURCE: 2010 Earth Institute and IIM-Ahmedabad field survey.

Nutritional Services for Women and Children at the AWC

Our survey findings in the four states were inconclusive on the beneficiary coverage and issues with supply or distribution of food products (Table 9). AWW in Rajasthan, Chhattisgarh and UP report to prepare food packets on a weekly basis for pregnant and breastfeeding women, and children between 6 months and 3 years. These food packets contained mixtures of semi-cooked mixture cereals and pulses, which were prepared by the AWWs using predefined proportions. The quantity of these food packets differed marginally for women, but was uniform for children in the three states.

Children aged three to six years are usually provided cooked food (e.g. khichdi, dalia, snacks), though the field survey highlighted the highly varied quantities provided across states. This should be addressed, as all children should receive food that is optimal for their age and necessary for healthy growth and development. In Bihar the AWC provides food grains (rice and dal) in predefined quantities for home consumption, instead of the semi-cooked food. If food is not delivered directly to the beneficiary, it risks misuse and it will not have its intended nutritional impact.

Bihar also predetermines a national quota of food grains per beneficiary category at each AWC. While a mechanism for setting and reporting on supplies is necessary, a beneficiary cap can be misused at the AWC level, and demands oversight.

TABLE 9. Supplementary nutrition available in AWC, as reported by AWW.

Details	Bihar	Chattisgarh	Rajasthan	Uttar Pradesh
Food Packets for Pregnant Women and Lactating Mothers (gms per week)	-	960	900	900
<i>Avg. No. of Women per AWC</i>	-	16	17	26
Total No. of pregnant women and lactating mother in village as per AWW	-	18	27	26
Food Packets for Children 6mts to 3yrs (gms per week)	-	750	750	750
<i>Avg. No. of Children per AWC</i>	-	39	36	51
Total No. of Children 6mts to 3yrs in a village as per the AWW	-	41	40	51
Foodgrains (<u>Rice</u>) for Pregnant Women and Lactating Mothers (gms per month)	3000	-	-	-
Foodgrains (<u>Dal</u>) for Pregnant Women and Lactating Mothers (gms per month)	1500	-	-	-
<i>Avg. No. of Women per AWC</i>	16	-	-	-
Total No. of pregnant women and lactating mother in a village as per the AWW	29	-	-	-
Foodgrains (Rice) for children 6mts to 3 yrs (gms per month)	2500	-	-	-
Foodgrains (Dal) for children 6mts to 3 yrs (gms per month)	1250	-	-	-
<i>Avg. No. of Children per AWC</i>	29	-	-	-
Foodgrains (<u>Rice</u>) for severely undernourished children 6mts to 3 yrs (gms per month)	4000	-	-	-
Foodgrains(<u>Dal</u>) for severely undernourished children 6mts to 3 yrs (gms per month)	2000	-	-	-
<i>Avg. No. of Children per AWC</i>	11	-	-	-
Total No. of Children 6mts to 3yrs in a village as per the AWW	44	-	-	-
Cooked food (<u>Khichdi</u>) for children 3yrs - 6yrs (gms per day)	150	105	80	80
<i>Avg. No. of Children per AWC</i>	40	37	24	52
Cooked food (<u>Porridge</u>) for children 3yrs - 6yrs (gms per day)	-	-	80	80
<i>Avg. No. of Children per AWC</i>	-	-	19	53
Cooked food (<u>Snacks</u>) for children 3yrs - 6yrs (gms per day)	-	55	-	60
<i>Avg. No. of Children per AWC</i>	-	36	-	54

SOURCE: 2010 Earth Institute and IIM-Ahmedabad field survey.

3e. AWW, ASHA, and household surveys indicate sub-optimal breastfeeding practices and knowledge gaps

In our survey, we examined knowledge level of AWWs and ASHAs on proper nutrition and feeding practices for infants and children. We also measured the knowledge level of young mothers to determine if the appropriate information is being transferred.

Data from our questionnaire on AWW knowledge (Table 10) suggests that there are several gaps in understanding feeding best practices for newborn children. Given that appropriate feeding for newborns is critical to health and development, it is essential that we recognise these gaps. First, newborns should ideally be breastfed within the first half hour of life, yet many AWWs (as high as 27% of AWWs in Rajasthan) indicated that the initiation of breastfeeding should be between 30 minutes to one hour after the baby is born. While in practice, circumstances may cause a delay in initiation from the first 30 minutes to the first hour, all AWWs should know and be able to convey the recommended guidelines. Second, anywhere from 20% (Rajasthan) to 54% (Chhattisgarh) of the AWWs surveyed believed that it was appropriate to feed water to a newborn child under six months of age; in other words, at *least* one out of every five AWWs do not understand that exclusive breastfeeding for the first six months of life is critical.

AWWs' lack of understanding of the two most basic standards in newborn nutritional practice—Initiation of breastfeeding within the first 30 minutes of life and exclusive breastfeeding for the first six months of life—raises red flags about their ability to convey correct information to mothers. There are several possible reasons contributing to their lack of knowledge: 1) improper selection of motivated, capable AWW, 2) sub-optimal training, 3) inadequate assessment of information retained from training, and 4) lack of refresher training. All these issues must be investigated and mitigated in order to ensure that AWWs are positively contributing to feeding interventions for young infants.

TABLE 10. Reported AWW nutritional knowledge.

	Bihar	Chhattisgarh	Rajasthan	UP
% of AWW who said that the initial breast milk should be given to the newborn	100.00	98.08	96.61	98.04
% of AWW who believe that after birth, a baby should be first breastfed at the following time:				
Within half an hour	87.04	98.08	67.80	82.35
Half an hour to one hour	12.96	1.92	27.12	17.65
1 hour to 1 day	0.00	0.00	5.08	0.00
2 to 7 days	0.00	0.00	0.00	0.00
After 7 days	0.00	0.00	0.00	0.00
Never	0.00	0.00	0.00	0.00
% of AWW who believe that for a newborn in first 6 months, the following should be given:				
Breast milk	90.74	90.38	84.75	98.04
Water	24.07	53.85	20.34	41.18
Special tea, honey, or other fluid	14.81	30.77	6.78	37.25
Other	7.41	11.54	0.00	5.88
% of AWW who believe that for a newborn over 6 months of age, the following should be given:				
Breast milk	64.81	55.77	16.95	60.78
Water	70.37	90.38	81.36	94.12
Special tea, honey, or other fluid	72.22	73.08	79.66	80.39
Other	59.26	21.15	28.81	13.73

	Bihar	Chhattisgarh	Rajasthan	UP
% of AWW who believe that mothers should start giving supplementary water to an infant at the following time:				
Soon after birth/within 1 day	1.85	7.69	1.69	9.80
1 day to 1 week	0.00	0.00	0.00	1.96
1 week to 1 month	0.00	0.00	0.00	3.92
1 to 3 months	0.00	5.77	8.47	7.84
3 to 6 months	7.41	23.08	25.42	43.14
6 to 9 months	88.89	63.46	62.71	33.33
After 9 months	1.85	0.00	1.69	0.00
% of AWW who understand it is important to eat iron/vitamin pills during pregnancy	98.15	98.08	96.61	100.00
% of AWW who believe the mother should not be 'blamed' for a birth of a girl child	94.44	96.15	91.53	98.04
% of AWW who understand that a child should be breastfed even when s/he has diarrhoea	94.44	90.38	100.00	70.59

SOURCE: 2010 Earth Institute and IIM-Ahmedabad field survey.

Data on ASHAs' knowledge of proper nutritional practices for newborns and young children also revealed several gaps in knowledge, specifically on four key issues: exclusive breastfeeding, appropriate cessation of breastfeeding, feeding of children during diarrhoeal illness, and use of contraceptives during breastfeeding (Table 11). As high 72% of ASHAs in UP do not understand that infants between the ages of 3 months to 6 months should be exclusively breastfed. Up to 85% of ASHAs in Chhattisgarh believed it was healthy for a breastfeeding mother to take oral contraceptives, which is not a recommended practice. When asked at what age should an infant no longer breastfeed (given the choices of *never*, *6 months*, *1 year*, and *3 years*), only 31% of ASHAs in Rajasthan chose one year as the best answer. Though there may have been some level of confusion in the way the question was phrased, this suggests that ASHAs do not have an appropriate understanding of basic, optimal breastfeeding practices. Furthermore, ASHAs in Bihar and UP were unaware that children with diarrhoea should still be fed food and water regularly. This is a critical practice to manage diarrhoea and reduce the risk of mortality, and should be a key tenant of ASHA practice.

TABLE 11. Percentage of ASHAs answering correctly on key nutrition questions.

	Bihar	Chhattisgarh	Rajasthan	UP
% of ASHAs who answered the following questions correctly (correct/best answer in parentheses):				
1. Should a woman's food intake increase during pregnancy? (YES)	86%	93%	87%	90%
2. Is it important to take vitamin/iron supplement during pregnancy? (YES)	97%	97%	100%	98%
3. Should the first breast milk (colostrum) be given to infants? (YES)	97%	96%	98%	93%
4. Should additional supplements be given to breastfeeding infants aged 0-3 months? (NO)	85%	95%	90%	81%
5. Should additional supplements be given to breastfeeding infant aged 3-6 months? (NO)	32%	53%	45%	28%
6. When should mother start gradual weaning? (AFTER 6 MONTHS)	96%	88%	89%	92%
7. Should breastfeeding be continued if the child has diarrhoea? (YES)	92%	99%	90%	68%
8. If a child has diarrhoea should food and water be continued? (YES)	55%	91%	93%	44%
9. Can oral contraceptives can be used along with breastfeeding? (NO)	43%	15%	69%	74%
10. Are green leafy vegetables are good for health? (YES)	98%	98%	98%	99%

SOURCE: 2010 Earth Institute and IIM-Ahmedabad field survey.

While ASHAs' primary role may not be focused on nutrition, ASHAs have a great deal of interaction with new mothers and must have knowledge on basic feeding practices for young

children should their advice or help be sought. As evident from the data, ASHAs were able to successfully answer many questions regarding nutrition during pregnancy and for infants prior to 3 months of age, but struggled to correctly answer questions about nutrition for infants over 3 months. If ASHAs have such a narrow scope of understanding on the fundamentals of nutrition for young mothers and newborns, all their efforts to increase appropriate health seeking behaviours will be for naught and the disconnect between health and nutrition will persist. As a result, ASHAs' training on basic nutrition must be re-examined, and an understanding of the linkages between appropriate feeding and overall health status must be established.

The lack of clarity around basic nutrition and feeding practices among AWWs and ASHAs translates into similar knowledge gaps among new mothers (Table 12). In UP, Rajasthan, and Bihar, approximately 20-40% of young mothers were not aware that a newborn child should be breastfed within the first 30 minutes of life. In these same states, the percentage of women who did not follow through with the recommendation to initiate breastfeeding within 30 minutes of delivery was even higher. In fact, in Rajasthan, only 6% of newborns were breastfed in this time interval. Furthermore, only approximately half of the women in Bihar and 75% of the women in UP believed that it was necessary to give colostrum to their newborns. Our data suggests that new mothers are not receiving the correct information, demonstration, and supportive, continuous counselling on newborn feeding, or are not convinced enough of the benefits to use recommended feeding practices.

TABLE 12. Young mother* survey on initiation of breastfeeding

	Bihar	Chhattisgarh	Rajasthan	UP
% reporting that a newborn should breastfeed within 30 minutes of delivery	60.4%	95.7%	65.4%	81.8%
% women who first breastfed their newborns:				
<i>During the first 30 minutes of life</i>	17.0%	60.9%	5.8%	58.2%
<i>Within 30 min – 1 hour</i>	41.5	26.1	34.6	20.0
<i>Within 1 – 24 hours</i>	30.2	8.7	17.3	7.3
<i>Within 2-7 days</i>	3.8	2.2	42.3	9.1
<i>After 7 days</i>	7.5	2.2	0.0	5.5
<i>Never</i>	0.0	0.0	0.0	0.0
% reporting of women who knew that it is necessary to give a full first breastfeed (colostrum) completely	52.8%	97.8%	94.2%	78.2%
% women who gave colostrum (first breast milk) to the newborn:				
<i>% completely, in its entirety</i>	54.7%	97.8%	57.7%	61.8%
<i>% after discarding first drops</i>	9.4%	2.2%	34.6%	21.8%
<i>% did not give it at all</i>	35.8%	0.0%	7.7%	16.4%
If the first breastfeeding was not given to the newborn at all, what was the reason?				
<i>Caesarean Operation</i>	1.9	0.0	3.8	1.8
<i>Mother was tired after delivery</i>	32.1	6.5	17.3	18.2
<i>Traditional practices</i>	22.6	26.1	9.6	16.4
<i>Breastfeeding unsuccessful despite trials</i>	7.5	6.5	34.6	5.5
<i>Other medical complications</i>	11.3	0.0	0.0	0.0
<i>Other reason</i>	7.5	0.0	28.8	0.0

*Young mother is defined as a woman who delivered in the previous 12 months.

SOURCE: 2010 Earth Institute and IIM-Ahmedabad field survey.

Mothers in the field survey exhibited a critical lack of understanding on exclusive breastfeeding (Table 13). In all states in our study sample, the percentage of mothers believing that infants can be given water in the first three months of life ranges from roughly 30-75%. The provision of

honey for infants under three months of age also ranges from 30-50%. These striking statistics indicate not only a misunderstanding of healthy feeding practices and poor communication from AWWs and ASHAs to new mothers, but deeply rooted traditions of culturally accepted feeding practices.

TABLE 13. Young mother* nutrition survey on exclusive breastfeeding, proper nutrition during pregnancy, and AWC visits

	Bihar	Chhattisgarh	Rajasthan	UP
% of women first giving water to the newborn:				
<i>Within 24 hours of birth</i>	35.8	28.3	17.3	5.5
<i>Within 1 day to 7 days</i>	1.9	2.2	11.5	10.9
<i>Within 7 days to 1 month</i>	9.4	15.2	26.9	1.8
<i>Within 1 to 3 months</i>	3.8	15.2	28.8	12.7
<i>Within 3 to 6 months</i>	9.4	17.4	11.5	50.9
<i>Within 6 to 9 months</i>	39.6	21.7	1.9	14.5
<i>After 9 months</i>	0.0	0.0	1.9	3.6
% of women who believe that an infant should be given the following within the first 3 months of age:				
<i>Breast milk</i>	86.8	97.8	57.7	100.0
<i>Water</i>	60.4	76.1	48.1	29.1
<i>Honey</i>	30.2	50.0	32.7	30.9
% of women who believe that an infant (3-6 months) should be given:				
<i>Breast milk</i>	79.2	89.1	55.8	96.4
<i>Water</i>	66.0	87.0	57.7	58.2
<i>Honey</i>	45.3	56.5	15.4	47.3
% of women who believe an infant 6 months and older should be given:				
<i>Breast milk</i>	67.9	82.6	90.4	87.3
<i>Water</i>	77.4	87.0	67.3	90.9
<i>Honey</i>	64.2	54.3	36.5	67.3
% of women who report that they should eat more nutritious food during pregnancy	43.4	80.4	76.9	61.8
% of women who report that they should take iron/vitamin tablets during pregnancy	41.5	95.7	86.5	85.5
% of women who took iron or vitamin tablets for at least one month during last pregnancy	43.4	100.0	73.1	85.5
% of women who go to AWC during:				
<i>Pregnancy</i>	67.9	69.6	75.0	90.9
<i>Breastfeeding</i>	56.6	69.6	51.9	87.3
% of women who take children of the following ages to AWC:				
<i>Child between 6m - 3 years</i>	71.7	84.8	26.9	85.5
<i>Child between 3 - 6 years</i>	56.6	41.3	19.2	67.3

*Young mother is defined as a woman who delivered in the previous 12 months.

SOURCE: 2010 Earth Institute and IIM-Ahmedabad field survey.

Overall, several problems contribute to the fact that young mothers lack an understanding of some basic nutrition practices for their newborns and furthermore, that their behaviours sometimes do not reflect whatever understanding they do have. First, our study revealed that a significant percentage of women do not even visit the AWC or take their young children to the centre. Therefore, it must be ensured that the quality and consistency of services offered at the AWC are beneficial and convenient enough that women avail them. Second, it is evident from the gaps in fundamental nutritional knowledge among both ASHAs and AWW that their training

must be modified in a way that enables them to retain this information. Current training materials are overwhelming and do not present these health and nutrition workers with concise, distinct key points that they must remember.

Lastly, training should be geared at not only the information itself, but how to appropriately convey the information to mothers when two significant barriers are present: 1) deeply-rooted cultural practices around feeding of babies are difficult to leave behind, and AWWs/ASHAs must be able to inform mothers of the benefits of current recommended practices, 2) there are high rates of illiteracy among women in several areas, and therefore health and nutrition information must be conveyed in palatable, lay terms. A key takeaway from our study is that there are unacceptable gaps in knowledge among AWWs, ASHAs, and therefore young mothers about several basics of nutrition, including initiation of breastfeeding, exclusive breastfeeding, cessation of breastfeeding, feeding during illness, and appropriate nutrition during pregnancy.

3f. Linkages between ASHA and AWW

Formal collaboration between the ASHA and AWW occurs during the monthly Village Health and Nutrition Days (VHND), when the AWW and ASHA lead group discussions on various health topics (e.g. nutrition, hygiene, pregnancy, special campaigns, etc.), mobilize children for immunizations, and meet pregnant women for registration and antenatal care. However, further linkages between the ASHA and the AWW must exist in order to improve the integration of the health and nutrition sectors given that ASHAs and AWWs represent these sectors at the ground level.

Table 14 indicates that ASHAs and AWWs are meeting approximately once a week in all states except Rajasthan, where they are meeting almost every day. This is due to the fact that ASHAs are often formally employed in the AWC as helpers, which suggests that this likely detracts from their original roles and responsibilities as an ASHA. Furthermore, the interaction between ASHAs and AWWs is only for the planning of VHNDs, for which they have individual, distinct responsibilities. As a result, a more meaningful interaction where the two stakeholders are cooperatively working towards a common goal would be beneficial for the integration of health and nutrition.

Another issue raised by our findings is that, in UP, the AWWs indicated that no ASHAs were following up with mothers to see if they were attending the AWC. While the ASHAs are following up in other states, it is likely that follow up may not be consistent due to the already heavy workload of ASHAs. In this case, an additional support may be necessary for home-based outreach to increase community participation in nutrition activities.

TABLE 14. AWW perspectives on ASHA's role in nutrition programming.

	Bihar	Chhattisgarh	Rajasthan	UP
1. Av. no. of ASHA working in AWC catchment area	2	2	1	1
2. Av. times/month ASHA interacts with AWW	5	4	23	4
3. % AWW providing medicines to ASHA	11%	8%	42%	22%
4. % AWW reporting that ASHAs held group discussions about health topics	96%	96%	100%	100%
5. Reported frequency of these group discussions				
<i>Twice/week</i>	9%	2%	15%	10%
<i>Once/week</i>	19%	23%	34%	10%
<i>Once in two weeks</i>	28%	23%	3%	13%
<i>Once in a month</i>	41%	44%	46%	65%
<i>Once in 2-3 months</i>	2%	8%	2%	2%
<i>Less than once in 2-3 months</i>	1%	0%	0%	0%
6. % AWW reporting that ASHA instruct women about optimal breastfeeding	96%	100%	98%	100%
7. % AWW reporting that ASHA provide the AWC information about pregnant and breastfeeding women in the community				
<i>No information</i>	4%	0%	2%	4%
<i>Provides statistics but no further details</i>	2%	0%	2%	12%
<i>Provides details about women (e.g. name) but do not follow-up to see if women are attending AWC</i>	9%	6%	10%	84%
<i>Provides details about women and follow-up to see if they are attending AWC</i>	85%	94%	86%	0%

SOURCE: 2010 Earth Institute and IIM-Ahmedabad field survey.

SECTION 5: SUMMARY OF FINDINGS & LESSONS LEARNED

Our findings largely emphasize gaps in community-level operations, including poor feeding practices, little home action around nutrition, minimal collaboration between the ASHA and AWW, and poor AWC operations.

Key findings from our study suggest the following:

1. District and block-level support is required to drive integration in health activities and joint planning.

While ASHAs and AWWs are meeting at least once a week, our field results indicate that this is usually limited to organizing the VHND together, during which the ASHA and AWW have pre-defined roles. This interaction does not provide the opportunity to develop a cooperative and meaningful relationship with regard to cohesion between nutrition and health activities.

2. There are significant gaps in knowledge and practice around infant feeding.

A considerable proportion of AWWs and ASHAs have knowledge gaps on key nutrition interventions, specifically on proper nutrition during pregnancy and infant feeding practices. This indicates potential issues related to supervision, supervisor knowledge, AWW training, and information retention.

Delays in initiation of breastfeeding and failures to exclusively breastfeed among young mothers in our survey can likely be attributed to socio-cultural practises and inadequate education, and reinforcement, of good feeding practises by ASHAs and AWWs. Poor feeding practises may also stem from a large number of mothers not attending AWC, the lack of home-based and outreach activities, and high rates of illiteracy. Current AWC timings are not suitable for the beneficiaries to access services. Furthermore, outreach activities for community mobilisation and awareness about AWC services are weak.

3. There is a serious lack of performance management and support within ICDS.

AWWs are inadequately supervised, and that supervisors do not visit the AWCs once a month as required. Increased oversight is necessary.

4. Planning must prioritize functional, safe AWCs.

A very significant number of sanctioned AWC are not available, nor are all operational centres adequately staffed with AWWs and AWHs. Furthermore, a more detailed definition of an operational AWC is required in order to ensure that all centres are fully functional, and that management can perform regular checks to ensure operational requirements are in place.

The quality and quantity of food provided to AWC beneficiaries is poor. Community investment in the nutritional activities could lead to increased quality and services provided by the AWW at the AWC.

SECTION 6: RECOMMENDATIONS⁷

We present recommendations both for better integrating nutrition into health programming, and improving existing nutrition interventions. These recommendations outline actions to be taken within policy, human resources, and infrastructure and operations.

These recommendations are informed by the gaps in community-level health and nutrition operations recognized in our findings section, but more significantly by our extensive and continuing field visits throughout the country. These field visits have reemphasized the gap in nutrition leadership, community-level outreach, supply chain management, and other issues that inform these recommendations.

FOCUS AREA: PRIORITIZING NUTRITION ON THE INTERSECTORAL POLITICAL AGENDA

ESTABLISH A NATIONAL NUTRITION POLICY

This should corroborate the current efforts to initiate a nutrition mission in 200 high-focus districts, a result from the November 2010 Prime Minister's Council on Nutrition Challenges in India. Policy efforts guiding this mission effort, and other nutrition programming in the country, should explicitly include:

- Recommendations and guidelines for key nutrition issues in the country, including: undernutrition in young children, nutrition education, access to AWC and other community-based interventions, female malnutrition, food production and diversification, food fortification, malnutrition treatment and management guidelines, and chronic disease as it relates to nutrition.
- Nutrition outcomes expected from relevant line departments

ESTABLISH A NUTRITION AUTHORITY LED BY THE CABINET SECRETARY

- Establish that this authority will follow through directives issued by the Prime Minister's Council on India's Nutrition Challenges.⁸ This authority will coordinate, supervise, and provide technical assistance to the government on targeted, critical nutrition interventions. Ensure that this national authority will meet twice a year.

ESTABLISH IN ALL STATES A COUNCIL ON STATE NUTRITION CHALLENGES, TO BE CHAIRED BY THE CHIEF MINISTER

- Ideally, states should have one minister holding the health and WCD/social welfare portfolios. If not, then institute an inter-ministerial council that is responsible for issuing state implementation directives and innovations from policy by the Prime Minister's Council and the national nutrition authority. Ensure that the represented ministries will mirror the Prime Minister's Council, and will include: Health, Social Welfare, Agriculture, Finance, Rural Development, Panchayat Institutions, and Food and Civil Supplies and HRD – Education. We recommend that the Health Ministry should assume authority over nutrition programming, and thereby is responsible for overseeing all council follow through. Ensure that the Chief Minister's Council is to meet three times a year.

⁷ The concepts presented in these recommendations will be piloted in the Earth Institute/MOHFW Model District in Morigaon, Assam. In due course we will be reporting to the IAP on outcomes and impact.

⁸ This council is intended to meet annually and was recommended to be set up by Bajpai et. al. 2010. The Council met for its first meeting on 24 November 2010; please see page 18 of this paper for a brief discussion of the meeting's key decisions.

**FOCUS AREA:
PRIORITIZE NUTRITION OUTREACH**

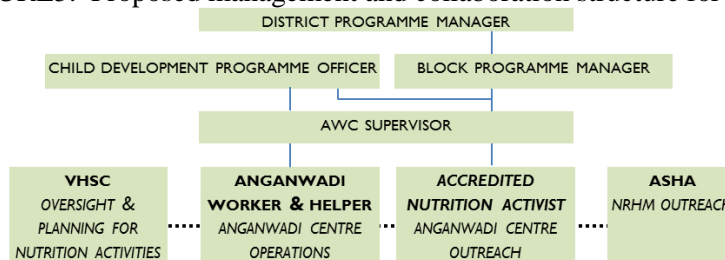
Our results indicate a gap in nutrition interventions that particularly require frequent follow-up and support, most notably safe infant feeding. At the same time, home visits are not the pillar of ICDS programming that they are intended to be.

SANCTION AN ACCREDITED NUTRITION ACTIVIST (ANA) PER EVERY 1000 PEOPLE

The ANA would serve as a joint appointment between ICDS and NRHM, as an intermediary between the AWW and ASHA.⁹ She will focus on the outreach needs of the AWC.¹⁰ Instituting a ‘second AWW’ is already being considered at national policy level, and we recommend that this worker focus exclusively on outreach operations. The ANA’s outreach work would focus on a finite list of critical nutrition interventions for: young women, pregnant women, breastfeeding mothers, infants, children under two, children under five, and heads of household. This should be immediately prioritized in difficult to reach and otherwise marginalized areas.

- Proposed ANA roles and responsibilities:
 - Monthly growth monitoring (MUAC, height-weight measurements) for all children under three years of age. This data is provided to AWC and supervisors for district reporting and AWC microplanning.
 - Identify cases of malnutrition that require referral for treatment.
 - Mobilize young mothers and young children to come to the AWC. Follow-up with mothers and children who have not come to the AWC.
 - Demonstration-education and counselling for mothers on key nutrition messages: exclusive breastfeeding, complementary feeding, diversifying diet with locally available foods, household hygiene, handwashing, and seeking care from ASHA/ANM during illness.
 - Mobilize nutrition programming in the village (e.g. VHND, public meetings).
 - Contribute outreach visit information to VHSC meetings, for planning purposes.
- Ensure that ANAs receive targeted training for specific nutrition interventions, with a focus on the 1000 days of opportunity. They should receive annual refreshers.
- Proposed incentives could involve: x% of beneficiaries accessing AWC services for an extended period of time, demonstration-education sessions (e.g. diversifying diets with locally available foods, infant feeding practices), or improvement in nutrition indicators within catchment area.

FIGURE5. Proposed management and collaboration structure for ANA.



⁹ Creating the ANA would look similar to how the ASHA was conceptualized in 2005. The ASHA was created to serve as outreach support to, and advocate for, the primary healthcare system. She absorbed the ANM’s outreach duties that were not being fulfilled due to demands in the facility. Similarly, critical outreach work tasked to the anganwadi worker is lagging, in large part because the AWW is focused on managing AWC operations, and she has not been properly managed her nutrition-focused outreach activities. Our recommendation would shift these important, yet largely unfulfilled, duties to the ANA.

¹⁰ Please see our companion paper for further discussions about a similar role created in Rajasthan, the Sahyogini, to serve as AWC outreach and support.

INCENTIVIZE & CLARIFY ASHA ROLE IN NUTRITION PROGRAMMING¹¹

- Provide ASHA incentive for motivating birth spacing between children, as short birth intervals are associated with higher levels of undernutrition.
- Revise ASHA roles and responsibilities to finite list, developed around a field job aid, that acknowledges collaboration between all relevant frontline workers (AWW, ASHA, ANM).

EXPLICATE DISTRICT PROGRAMME MANAGER IN ROLE NUTRITION ACTIVITIES AND OUTCOMES

- Explicate the management and evaluation of nutrition interventions as a responsibility of the NRHM District Program Manager (DPM) in order to encourage the convergence of health and nutrition agendas. The authority for the DPM to be involved in nutrition activities shall be derived from the District Collector (DC). With the ultimate goal of achieving overall health outcomes, the DPM will spend a portion of his/her time focusing on areas where nutrition and health intersect; for example, the DPM can become increasingly involved in the monitoring of activities at the AWC and communicate with the ICDS officer to report whether appropriate ANC is being conducted or if sufficient equipment/food/supplies are available.¹²
- Ensure that the DPM reports to both the DC and the ICDS officer regarding programme coordination, bottlenecks, and financing of nutrition and health related activities.
- Provide targeted training for DPM in nutrition knowledge, treatment and management guidelines, programme structures, and other necessary skills.
- Incentivize improvement in nutrition outcomes at district, block, and community levels (e.g. financial, recognition, or otherwise).

FOCUS AREA:

PROMOTE HEALTH AND NUTRITION CONVERGENCE IN DISTRICT-LEVEL PLANNING

DESIGNATE A DISTRICT NODAL OFFICER FOR HEALTH CONVERGENCE¹³

Designate one Assistant District Collector (ADC) as a district health nodal officer to serve as an intermediary between the DC's office, NRHM, the health department, ICDS, and other nutrition-related activities through education and PHE line departments. This officer should not add further line reporting, but instead serve as a coordinator for regular meetings and joint planning between relevant departments, and organize a key focus on nutrition. They will work closely with the DPM on health and nutrition programming convergence, and address bottlenecks as required.

FOCUS AREA:

IMPROVE AWW PERFORMANCE

INSTIGATE IMMEDIATE STRENGTHENING TO SUPERVISORY STRUCTURE

- Ensure that enough AWC supervisors are sanctioned, hired, and trained so that they are each responsible for 10 AWC, and can conduct bimonthly visits to supervise each AWW's

¹¹ Further detailed in our companion paper *Improving Performance of ASHAs in India*.

¹² This is merely one example of the activities that would now come under the supervision of the DPM and the specific additional roles and responsibilities shall be developed further. Supervision of nutrition activities is limited currently, and, instead of creating a specific role for nutrition management, the purpose of including these activities under the DPM is to converge nutrition and health under the individual who is most closely involved with program activities at the district level.

¹³ This has been issued in Assam—one ADC is named a health nodal officer and serves as a point person in the DC's office for health-related activities and convergence.

performance. Visits should be made both to the centre and local households that should be accessing services.

- Institute a formal review process every 6 months on each AWW so that AWW performance is managed and tracked, and she is given feedback on her work.
 - This review process should involve the AWC supervisor and block management.
 - Ensure this additional review process is done with minimal additional paperwork.
- Ensure that block management is meeting bimonthly with all block AWC supervisors to report on programme data, supply and distribution issues, and operations.
- Ensure that block management is reporting monthly to the DPM and the ICDS officer or WCD/Social Welfare department.
- Establish block-wide learning exchanges under the direction of the ICDS Officer, DPM, and block officials, so that AWCs can visit other centres to see operations.
- Provide career development opportunities for AWW/AWH to motivate performance.

DEVELOP AWW TRAINING AROUND CLEAR ROLES & RESPONSIBILITIES

- Concretize clear, finite AWW roles and responsibilities. These should include expected outcomes for each activity and how the activity will be monitored. It should also outline concrete expectations for effective collaboration between the ANA, ASHA, ANM, and Nutrition Committee.
- Ensure that all AWW receive one day of refresher training every 6 months.
- Revise introductory AWW training. Material needs to be refocused towards most important nutrition interventions and programme expectations.
- Ensure that all selected AWW receive the full introductory training, including on-the-job training before beginning.
- Ensure that significant components of the introductory and refresher trainings are conducted on-the-job and ongoing by the AWC supervisor.

REVISE ICDS MONITORING INDICATORS & DATA MANAGEMENT¹⁴

- Prioritize and streamline data collection in order to minimize burden on AWW, and create monitoring systems that can inform planning and measure ICDS efficiency and impact. Introduce technology solutions to data collection for real-time use.
- Supervisors must be trained to use key indicators in real-time to monitor AWW performance, AWC supply chains, and block/district requirements (e.g. SAM/MAM caseload). AWW, ASHA, and other community-level workers must be trained on key indicators, and why they are important for monitoring quality, improving workload, and other uses.

FOCUS AREA:

ADDRESS GAPS IN ICDS COVERAGE AND OPERATIONS

FOCUS ON THE 1000 DAY WINDOW OF OPPORTUNITY

- Change AWC timings from early-mid morning to times that are most suitable for mothers or other caretakers to bring small children.
- Ensure that food supplies meet feeding requirements for children under two years of age.
- Ensure that microplanning and mapping targets MAM, SAM, and high-risk families for ANA outreach and AWC services.

¹⁴ We recommend World Bank's 2009 report for detailed recommendations about improving monitoring and evaluation in ICDS.

- Consider adult literacy programmes for mothers, especially geared towards family health and nutrition.

SCALE-UP AWW RECRUITMENT & SELECTION

- Ensure that there is one AWW on staff in all AWCs considered *operational*. AWC cannot run with an AWH, as it appears many are, particularly in Bihar. AWC supervisors aware of AWW staffing gaps must be held responsible for immediately reporting to the block level.
- Ensure that AWW are serving in their home community's AWC; the Gram Sabha must address cases where AWW is commuting for work.

RECTIFY AWC INFRASTRUCTURAL DEFICIENCIES

- Ensure that all AWC have essential infrastructure to support a healthy, clean, and safe environment:
 - Proper space ventilation, especially for cooking smoke
 - Adequate space for preschool activities, meals, and meetings
 - Water source and filter
 - Toilets accessible to children and adults
 - Government-owned space that can be under lock and key, kept by the AWW, ANA, and AWC supervisor
 - Required maintenance and upkeep
- Ensure that all AWC have essential equipment:
 - Weight scales, growth monitoring charts
 - Utensils for preparing and serving food
- Establish a reporting mechanism between AWW, AWC supervisors, and block and district officials if supplies and infrastructure are unavailable or mismanaged.

IMMEDIATELY RECTIFY FOOD SUPPLY & DISTRIBUTION ISSUES

- Ensure that AWC provide cooked or semi-cooked supplementary nutrition to direct beneficiaries, versus uncooked food that risks not reaching targeted beneficiaries (e.g. carry-home packets of uncooked in Bihar).
- Ensure that provided supplementary nutrition diversifies the diet and provides high nutritional value, instead of providing more of the same foods already provided in the home.
- Utilize and encourage the use of locally produced, high-nutrient supplementation that is ready-to-eat, particularly through partnership with self-help groups, NGOs, or VHSC.

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APPENDIX

APPENDIX 1: SAMPLING

Five states within the NRHM high-focus states were selected for regional sampling: Assam (Northeast), Bihar (East), Uttar Pradesh (North), Chhattisgarh (Central), Rajasthan (West). These are among the poorest and most populous states in the country; populations in Bihar and UP are highly dense. One district in each state was selected in consultation with programme officials. From the selected districts, two blocks (taluks) were selected for geographical spread within the district. In Bihar and Chhattisgarh three blocks were selected.

The questionnaire was conducted with the help of local educated women (e.g. from NGOs or have field research experience). These women were largely used for the household survey in selected villages, where they visited households to question mothers and complete the questionnaires.

ASHA and AWW lists were provided by PHCs (in Rajasthan the ICDS coordinator provided both lists), and a meeting was called, usually at the PHC, with randomly selected ASHAs and AWWs from the list. The ASHA and AWW questionnaires were translated into Hindi; in Rajasthan, Bihar, UP and in most part of Chhattisgarh, Hindi or a minor variant of Hindi is the local language. Questionnaires were circulated to all ASHAs or AWWs separately, and as each question was explained the ASHA or AWW was asked to fill in their answers. Supervisors were available to ensure participants did not copy or consult each other while writing responses. For any clarifications on any word or phrase, women who could speak local languages were available to translate.

Households were selected from two to three villages from selected blocks. Young mothers with children were identified, and over 50 were selected at random. In Chhattisgarh, five responses were incomplete and were disregarded. The total sample of ASHAs, AWWs, and young mothers (or households) is in Table A1. Details selected households are presented in Table A2.

TABLE A1: Number of ASHA, AWW and Households (HH) Selected for Survey

State	District	Selected No. Of		
		ASHA	AWW	HH
Rajasthan	Dungarpur	124	59	52
Bihar	Jahanabad	135	54	53
Chhattisgarh	Mahasamund	120	52	46
UP	Unnao	123	51	55
Total		502	216	206

TABLE A2: Details of Household (HH) Sample by age group of children

State	No. selected Villages	No. HH with Children age 0–1 yrs		No. HH with Children age 1–2 yrs		No. HH with Children age 2–3 yrs		Total of Selected HH
		TOTAL	SAMPLE	TOTAL	SAMPLE	TOTAL	SAMPLE	
Rajasthan	3	86	25	45	16	60	11	52
Bihar	2	106	26	100	12	105	15	53
Chhattisgarh	3	43	21	53	13	54	12	46
UP	2	116	27	68	18	76	10	55
Total	10	351	99	266	59	295	48	206

APPENDIX2: ANGANWADI WORKER SURVEY¹⁵

- 1) Ref #: _____ 2) Date of interview: _____ 3) Village: _____
- 4) Tehsil: _____ 5) District: _____ 6) State: _____
- 7) Name of the respondent: _____ 8) Age: _____
- 9) Marital status: Unmarried/ Married/ Widowed/ Divorced/ Separated
- 10) Education:¹⁶ _____ 11) Literate: R / W/ N¹⁷
- 12) Religion: Hindu/ Muslim/ Buddhist/ Other _____
- 13) Caste: Brahmin / OBC/ SC/ ST/ Other¹⁸ _____
- 14) Do you have another job ? Y/N _____
- 15) Do you belong to the local community where the AWC is situated? Y/N
- 16) How many days in a week is the AWC open on an average? _____
- 17) How many hours per week do you work at the AWC? _____
- 18) How many Anganwadi helpers work with you? _____
- 19) Do you conduct any house visit to meet pregnant/lactating women? Y/N
- 20) How many individuals utilize the AWC per month, on an average?

Group	Nutrition supplementation	Nutrition counseling ¹⁹		Total
		Group	Individual	
Pregnant women				
Lactating women				
Children < 6m				
Children 6m- 3 yr				
Children 3y-6y				

- 21) How many times in a month do you interact with the ANM in your area professionally? _____
- 22) Number and names of ASHAs working in the area your AWC serves²⁰? _____
- 23) How many times in a month do you interact professionally with the ASHA? _____
- 24) Do you supply drugs /medicines to the ASHA? Y/N
- 25) If you have an ASHA allocated for your community, please answer the following:

a) Do the women who attend the AWC have at least one ANC visit by the ASHA during pregnancy?	
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¹⁵ The ASHA survey used in this field survey is included in our companion paper.

¹⁶ Write down the highest grade passed. If no formal education- write 0.

¹⁷ R: Can read only, W: can read and write both, N: can neither read nor write.

¹⁸ SC= Scheduled caste.; ST=Scheduled Tribe; OBC=Other Backward caste.

¹⁹ In case of children, nutrition counseling is offered for their mothers.

²⁰ If no ASHA active write 0.

(0=No ; 1= rarely; 2= sometimes; 3=mostly)	
b) Is the ASHA instrumental in mobilizing the pregnant women to attend the AWC?	
c) Does the ASHA teach them about the importance of optimal breastfeeding?	
d) Does the ASHA help you with organizing lectures/ classes on importance of nutritious food and immunization, personal hygiene, care during pregnancy etc?	
e) If yes, frequency of such joint activities: (T=more than twice weekly ; W= weekly; F=fortnightly; M= monthly, A= every 2-3 months; L= less frequent than that)	
f) Does the ASHA provide you with information on pregnant /lactating women in the community? (0=- No; N= provides statistics but no further details; D= provides details about the women including their names but there is no follow-up to see if they attend the clinic; F=She follows up with AWC to see that they attend here.)	

26) Nutritional supplementation provided by Anganwadi clinic in your area.

(H=Eat at home/ A= Eat in AWC)

Uncooked cereals/pulses.			Cooked food			Other (fruits, milk etc)		
E.g.	Frequency	Quantity	E.g.	Frequency	Quantity (H/A)	E.g.	Frequency	Quantity (H/A)
Rice			Boiled Egg			Banana		
Wheat			Chicdi			Other fruit		
Dal						Milk		
Other pulses						Milk powder		
Others			Others			Other		

27) Should the mother give her newborn her colostrum (breast milk -yellowish in color) _____
 (A= Yes, without discarding anything; B= Yes, but discarded first few drops; C= No; D= Don't know)

28) How long after the delivery, should the mother start to breastfeed her newborn? _____
 (A= <1/2 hr; B=1/2 hr - 1hr; C= 1hr -1day; D= 2-7 days; E=>7 day; F=Never)

29) In your opinion, what should the baby be fed?

Alternatives	First 3 months	First 6 months	After 6 months
Only breast milk			
Supplementary water can be given			
Special tea. Honey or other fluid added			
Supplementary Formula feed /homemade feed in addition to breast milk.			
Only supplementary food. Stop breast milk.			

Other			
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30) When did the mother start giving supplementary water regularly to the newborn? ____
 (A= immediately after birth or within 24 hrs; B= 24 hours-1 week; C=1 week-1 month; D=1-3 month;
 E=3-6 months, F=6-9 months, G=later)

31) Should a woman's food intake change during pregnancy: N / M/ L
 (N= No change; M= she should eat better than she normally does as she is eating for two; L=she should reduce intake as otherwise the baby will be bigger causing problems during delivery.)

32) Is taking vitamin/iron supplements during pregnancy important? Yes/ No/ don't know.

33) Do you think a mother is to be blamed if she has a daughter? Y/N

34) Should breastfeeding be continued if the baby has diarrhea? Y/N

35) Why do you think mothers don't bring their children aged 6m- 3 years to the Anganwadi clinic? Mark important reasons. _____

A=Difficulty in access (too far/ no safe road/ need to be accompanied/other)

S=No suitable service provided for that age group;

T= Timing inconvenient;

R=Social restriction due to community/ caste etc;

N= No financial need, can buy good food;

Q=Problem with quality of food;

K=Don't know about AWW services;

W=Wish to go but couldn't due to job/housework;

O=Others _____

36) Do you wash hands before cooking/eating or after toilet? No/ With water/ with soap/ Wash with something else

37) Should vegetables be washed before /after cutting?

ANNEX 3: HOUSEHOLD SURVEY

Young women, who have at least one child less than 3 years old, are asked the following questions in a language they understand by the interviewer after the women give a valid, informed, oral consent^{21, 22}.

- 1) Ref No: _____ 2) Date of interview: _____ 3) Village: _____
- 4) Tehsil: _____ 5) District: _____ 6) State: _____
- 7) Name of the respondent: _____ 8) Age: _____
- 9) Marital status: Unmarried/ Married/ Widowed/ Divorced/ Separated
- 10) Education:²³ _____ 11) Literate: R / W/ N ²⁴
- 12) Religion: Hindu/ Muslim/ Other _____ 13) Caste: Brahmin / OBC/ SC/ ST/
Other²⁵ _____
- 14) Household income: Rs _____/m 15) No. of members in your household: _____
- 16) Husband's occupation: _____²⁶
Joint²⁷ _____ 17) Household type: Nuclear/Extended nuc./
- 18) Do you work? Household work only / farm labor/ other manual labor /other
- 19) Age (and gender) of her current living children²⁸
_____ () _____ () _____ () _____ () _____ ()
- 20) If you have lost any children, at what age did they die (gender)?
_____ () _____ () _____ () _____ ()²⁹

²¹As part of our study with our partners on health and nutrition in rural India, we are conducting a household survey. We will be asking young women with at least one child younger than 3 years of age, some questions on personal information, opinions about breastfeeding, health / nutrition practices, ASHAs, Anganwadi centers etc. Answers to all questions will be kept confidential. It is your choice to be in this survey and if you choose to do so, you can decide not to answer any question you do not wish to.

²² Abbreviations used: **ANC**= Antenatal check-up (during pregnancy); **AWW**=Anganwadi worker; **AWC** = Anganwadi clinic; **ANM** =Auxiliary nurse and midwife; **PHC**=Primary Health care center; **JSY**: JananiSurakshaYojna.

²³ Write down the highest grade passed. If no formal education- write 0.

²⁴**R**: Can read only, **W**: can read and write both, **N**: can neither read nor write.

²⁵ **SC**= Scheduled caste; **ST**=Scheduled Tribe; **OBC**=Other Backward caste.

²⁶ Some occupations: **F** (Farms his own fields), **FL** (Farm laborer), **M** (Manual laborer other than in the fields), **C** (Clerk), **S** (Shopkeeper,) **U** (Unemployed).

²⁷Nuclear/ Extended nuclear (with grandparents and unmarried siblings)/ Joint (two or more married siblings in the same household).

²⁸ Give ages in descending order with age approximated in years (1, 1.5, 2, 2.5...). Enter **A** if child is less than 1 month old and **B** if child is between 1 month and 1 year of age. E.g. **5.5(M)**, **3 (F)**, **A(F)**

²⁹ a) Include known miscarriages / spontaneous abortions in this question since poor maternal nutrition is known to lead to miscarriages. Do not include induced abortions (MTPs or menstrual regulation) used as a family planning measure. Write **M** : if

21) Are you pregnant now? Y/N

22) Last delivery: _____ months/years ago.

1) Do you know if breastfeeding should be started within 30 minute of a normal delivery? Yes/No.

2) Ideally, should the first breast milk (colostrums) be given to the newborn? Y/ N/ D
(Y=Yes, it important to do so, N=No, it is harmful for the baby, D= Don't know)

3) Did you give the baby the first milk (yellowish in color) A/ B/ C
(A= Yes, without discarding anything; B= Yes, but discarded first few drops; C= No)

4) How long after the delivery, did you first breastfeed your newborn? _____
(A= <1/2 hr; B=1/2 hr - 1hr; C= 1hr -1day; D= 2-7 days; E=>7 day; F=Never)

5) If later than 1/2 hr, what was the cause of delay? _____
(C=Cesarean operation, E= traditionally delayed because mother is too exhausted, T=traditionally delayed because of other reasons, B=could not breastfeed despite trying, P= other medical/surgical complications, O=other (explain))

6) When did you start giving supplementary water regularly to the newborn? _____
(A= immediately after birth or within 24 hrs; B= 24 hours-1 week; C=1 week-1 month; D=1-3 month; E=3-6 months, F=6-9 months, G=later)

7) In your opinion, what should the baby be fed for the first six months?

Alternatives	First 3 months	First 6 months	After 6 months
Only breast milk			
Supplementary water can be given			
Special tea. Honey or other fluid added			
Supplementary Formula feed /homemade feed in addition to breast milk.			
Only supplementary food. Stop breast milk.			
Other			

8) Do you have an ASHA working in your area? Y/N

9) Did she pay you a visit during your last pregnancy for an ANC check-up? Y/N

10) If yes, how many visits did she pay (excluding at time of your delivery)? _____

11) Did you receive information from the following (Mark all that apply)

- breastfeeding: Relatives / Dai/ ASHA/ AWW/ ANM/ Private doctor/None
- nutrition counseling: Relatives / Dai/ ASHA/ AWW/ ANM/ Private doctor/None
- family planning: Relatives / Dai/ ASHA/ AWW/ ANM/ Private doctor/None

12) Should a woman's food intake change during pregnancy: N / M/ L

*miscarriage; D: if baby dies during labor ; NN: if baby is born alive but dies within first 28 days of life; PN: post neonatal death (after 28 days but within first year). For others write their age at death in years (1, 1.5, 2, 2.5 ...)
b) Write M/F (if known) in the brackets after writing age at death e.g. 3 (F) , NN (M)*

(N= No change/ M= she should eat better than she normally does as she is eating for two / L=she should reduce intake as otherwise the baby will be bigger causing problems during delivery.)

13) Is taking vitamin/Iron supplements during pregnancy important? Yes/ No/ don't know.

14) Did you take such supplements for at least a month during your last pregnancy? Y/N

15) If yes, who provided them? ASHA/ AWW/ PHC/ ANM/ Private doctor

16) If not, why didn't you? A= No one told me to or gave me tablets. B= Someone gave me tablets but didn't stress their importance; C= Someone gave me the tablets but they didn't suit me ; D= I would have taken them but no one gave them; E= Cost (Tablets were not free of cost)

17) How many TT (tetanus toxoid) doses did you get during last pregnancy? 0 / 1 / 2 / doses don't know.

18) Do you think a mother is to be blamed if she has a daughter? Y/N

19) Should breastfeeding be continued if the baby has diarrhea? Y/N

20) Did you attend an AWC for the following: (N= never;/ R= rarely; S= sometimes; O= often)

a) pregnancy:_____ b) lactation:_____ c) children up to 3 yrs:_____ d)children 3-6 yrs:_____

21) If applicable, why do you not take your child between 6m- 3 years of age to Anganwadi clinic? Otherwise, why do you think other mothers in your neighborhood fail to do so? Mark all that apply.

A=Difficulty in access (too far/ no safe road/ need to be accompanied/other)

S=No suitable service provided for that age group;

T= Timing inconvenient;

R=Social restriction due to community/ caste etc;

N= No financial need, can buy good food;

Q=Problem with quality of food;

K=Didn't know about AWW services;

W=Wished to go but couldn't due to job/housework;

O=Others_____

22) Are you satisfied with the facilities provided by the following? For each category write Y/N. Write brief comments in their respective categories.

	ASHA	AWW	PHC
Staff			
Timings			
Range of service			
Quality			
Cost			
Other			

23) Nutritional supplementation provided by Anganwadi clinic in your area. (H=Eat at home/ A= Eat in AWC)

Uncooked cereals/pulses.			Cooked food			Other (fruits, milk etc)		
E.g.	Frequency	Quantity	E.g.	Frequency	Quantity (H/A)	E.g.	Frequency	Quantity (H/A)
Rice			Boiled Egg			Banana		
Wheat						Other fruit		
Dal						Milk		
Other Pulses						Milk powder		
Others			Others			Other		

24) How often will your child eat 1 serving³⁰ of the following: (averagely for a child above 3 years of age)

	Per	Son	Daughter
Egg	Month		
Fish/Meat	Month		
Vegetable	Week		
Chappati/Roti	Day		
Rice	Week		
Any dal/pulse	Week		
Ghee/oil	Week		
Other			

25) Do you wash hands before cooking/eating or after toilet? No/ With water/ with soap/ With something else _____

26) Should vegetables be washed before / after cutting?

27) Do you believe that evil spirits will influence health of the child? Y/N

28) If the child has diarrhea, what should you do? N /F/ B

(N= Give neither food nor water; F= Give water but no food; B= Continue both food and water, in fact take care to prevent dehydration.)

³⁰ Vegetable (1katori), ghee (1 teaspoon), chappati/bhakri (1 medium sized)

29) Where did your last delivery take place: Home/ Government clinic/ Government Hospital/
Private clinic/ On route to some clinic/ Other

30) For your last delivery, who attended your delivery (Mark all that apply) Relatives only / Dai / ASHA /
ANM / PHC doctor/ Other government doctor / Private doctor

31) Decision for place for delivery was mainly taken by: Husband / mother-in-law/ self / jointly as a
couple.

32) Reasons for choosing with most importance first: _____
(T= Tradition; E=Cost; J=JSY incentive; Q=Quality of care; P=previous complications;
N= No alternatives available; O=Other_____)

33) Distance to place of delivery: _____ (b) How did you travel?: _____hrs on foot / car / cart

34) Were you accompanied on your trip to institution by ASHA / Dai / ANM/ Doctor?

35) When and how much money did you get from the JSY scheme? Rs_____ after_____ ³¹months

36) Did anyone demand a cut (part of the incentive) from you as a condition of you getting the money?
Who? (Mark all that apply) Doctor/ ANM/ Dai/ ASHA / Other _____

37) How was the umbilical cord cut after delivery? _____
N=Razor blade or scissor t- either new or sterilized (e.g. with boiling water); O= Razor blade or scissors but
not sterilized/new; T= other like the edge of a broken cup/ plant stalk_____

38) Was anything (e.g. mud) applied on umbilical stump after delivery? Y/N b)What _____

39) Is wrapping newborn to keep it warm, especially in winter, important? Y/N

³¹ Write **NA** if delivery at home or private clinic. Write **Rs0 after 30 months** (time since delivery) if eligible but not yet received money.

ANNEX 3: ROLES AND RESPONSIBILITIES OF AWW

SOURCE: Department of Women and Child Development,
wcd.nic.in/Roleandresponsibilities.doc

To elicit community support and participation in running the programme.

- ii. To weigh each child every month, record the weight graphically on the growth card, use referral card for referring cases of mothers/children to the sub-centres/PHC etc., and maintain child cards for children below 6 years and produce these cards before visiting medical and para-medical personnel.
- iii. To carry out a quick survey of all the families, especially mothers and children in those families in their respective area of work once in a year.
- iv. To organise non-formal pre-school activities in the anganwadi of children in the age group 3-6 years of age and to help in designing and making of toys and play equipment of indigenous origin for use in anganwadi.
- v. To organise supplementary nutrition feeding for children (0-6 years) and expectant and nursing mothers by planning the menu based on locally available food and local recipes.
- vi. To provide health and nutrition education and counseling on breastfeeding/ Infant & young feeding practices to mothers. Anganwadi Workers, being close to the local community, can motivate married women to adopt family planning/birth control measures
- vii. AWWs shall share the information relating to births that took place during the month with the Panchayat Secretary/Gram Sabha Sewak/ ANM whoever has been notified as Registrar/Sub Registrar of Births & Deaths in her village.
- viii. To make home visits for educating parents to enable mothers to plan an effective role in the child's growth and development with special emphasis on new born child.
- ix. To maintain files and records as prescribed.
- x. To assist the PHC staff in the implementation of health component of the programme viz. immunisation, health check-up, ante natal and post natal check etc.
- xi. To assist ANM in the administration of IFA and Vitamin A by keeping stock of the two medicines in the Centre without maintaining stock register as it would add to her administrative work which would effect her main functions under the Scheme.
- xii. To share information collected under ICDS Scheme with the ANM. However, ANM will not solely rely upon the information obtained from the records of AWW.
- xiii. To bring to the notice of the Supervisors/ CDPO any development in the village which requires their attention and intervention, particularly in regard to the work of the coordinating arrangements with different departments.

xiv. To maintain liaison with other institutions (Mahila Mandals) and involve lady school teachers and girls of the primary/middle schools in the village which have relevance to her functions.

xv. To guide Accredited Social Health Activists (ASHA) engaged under National Rural Health Mission in the delivery of health care services and maintenance of records under the ICDS Scheme.

xvi. To assist in implementation of Kishori Shakti Yojana (KSY) and motivate and educate the adolescent girls and their parents and community in general by organizing social awareness programmes/ campaigns etc.

xvii.

AWW would also assist in implementation of Nutrition Programme for Adolescent Girls (NPAG) as per the guidelines of the Scheme and maintain such record as prescribed under the NPAG.

xviii. Anganwadi Worker can function as depot holder for RCH Kit/ contraceptives and disposable delivery kits. However, actual distribution of delivery kits or administration of drugs, other than OTC (Over the Counter) drugs would actually be carried out by the ANM or ASHA as decided by the Ministry of Health & Family Welfare.

xix. To identify the disability among children during her home visits and refer the case immediately to the nearest PHC or District Disability Rehabilitation Centre.

xx. To support in organizing Pulse Polio Immunization (PPI) drives.

xxi. To inform the ANM in case of emergency cases like diahorrea, cholera etc.

Role and responsibilities of Anganwadi Helpers

(i) To cook and serve the food to children and marchers

(ii) To clean the Anganwadi premises daily and fetching water.

(iii) Cleanliness of small children.

(iv) To bring small children collecting from the village to the Anganwadi.
