

ICDS and Persistent Undernutrition

Strategies to Enhance the Impact

This article examines the effectiveness of the Integrated Child Development Services programme in addressing the challenge of child undernutrition in India. It finds that although the ICDS programme appears to be well-designed and well-placed to address the multidimensional causes of malnutrition in India, there are several mismatches between the programme's design and its actual implementation that prevent it from reaching its potential. These include an increasing emphasis on the provision of supplementary feeding and preschool education to children aged four to six years, at the expense of other programme components that are crucial for combating persistent undernutrition; a failure to effectively reach children under three and, ineffective targeting of the poorest states and those with the highest levels of undernutrition which tend to have the lowest levels of programme funding and coverage. In addition, ICDS faces substantial operational challenges.

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I Introduction

In India, approximately 60 million children are underweight.¹ In 1998-99, 47 per cent of children under three were underweight or severely underweight, and a further 26 per cent were mildly underweight such that, in total, underweight afflicted almost three-quarters of Indian children. These prevalence figures are amongst the highest in the world, and nearly double that of sub-Saharan Africa. Levels of malnutrition declined modestly during the 1990s, with the prevalence of underweight among children under three falling by 11 per cent between 1992-93 and 1998-99, but lagged far behind that achieved by countries with similar economic growth rates. Micronutrient deficiencies are also widespread: more than 75 per cent of preschool children suffer from iron deficiency anaemia (IDA), 57 per cent of preschool children have sub-clinical vitamin A deficiency (VAD) and iodine deficiency is endemic in 85 per cent of districts [UNICEF 2003, WHO 2000, UNICEF and MI 2004]. Progress in reducing the prevalence of micronutrient deficiencies in India has been slow.

The global community has designated halving the prevalence of underweight children by 2015 as a key indicator of progress towards the millennium development goal (MDG) of eradicating extreme poverty and hunger. However, it appears that economic growth alone, though impressive, will not reduce malnutrition sufficiently to meet the MDG nutrition target. If this is to be achieved, difficult choices about how to scale up and reform existing nutrition programmes or introduce new ones have to be made by the government of India and other agencies involved in nutrition in India.

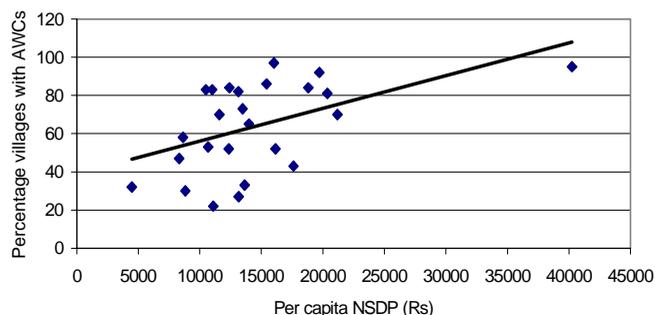
India's main early child development and nutrition intervention, the Integrated Child Development Services (ICDS) programme, has expanded steadily across the country during the 30 years of its existence. It is well-designed and well-placed to address many of the underlying causes of undernutrition in India. However, it faces a range of implementation difficulties that prevent it from fully realising its potential.

This article presents some key findings of a World Bank discussion paper² which evaluates the performance and potential of the ICDS programme. To do so, it uses data from the two National Family Health Surveys (NFHS I and NFHS II), a 2000-02 World Bank-funded ICDS survey of women and children,³ a number of qualitative studies, and the experiences of technical experts, NGO partners and policy-makers in India. In particular, it identifies the most important weaknesses in the current implementation of ICDS and suggests some steps that can be taken to improve the impact of the programme.

II Overview

The Integrated Child Development Services programme, which now covers almost all development blocks in India, is potentially well-poised to address some of the underlying causes of persistent undernutrition. The programme adopts a multi-sectoral approach to child well-being, incorporating health, education and nutrition interventions, and is implemented through a network of 'anganwadi' centres (AWCs) at the community level. At these centres, anganwadi workers (AWWs) and their helpers provide eight key services to 0- to 6-year old children and mothers, including supplementary feeding, immunisation, health

Figure 1: Relationship between Per Capita Net State Domestic Product (NSDP) and ICDS Coverage



Note: Per capita net state domestic product (NSDP) is in current prices for 1998-99.

Source: Coverage calculated from NFHS II data; NSDP from Indiatat.com.

check-ups and referrals, health and nutrition education to adult women, micronutrient supplementation, health referrals and preschool education for 3- to 6-year olds. As the programme has developed, it has expanded its range of interventions to include components focused on adolescent girls' nutrition, health, awareness, and skills development, as well as income-generation schemes for women.

III Strategies to Enhance the Impact

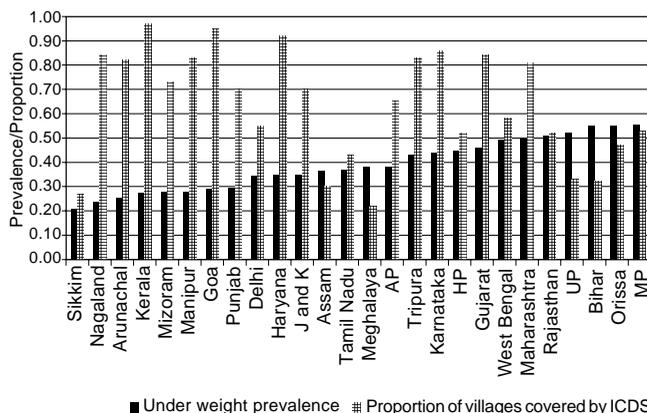
The persistent high levels of child undernutrition in India are the consequence of a complex interaction of basic, underlying and immediate factors [see, for example, the theoretical frameworks of Mosley and Chen 1984 and UNICEF 1990]. While any single intervention cannot address such a complexity of determinants, the package of services provided by ICDS is well-suited to addressing the immediate causes of undernutrition, namely, inadequate dietary intake and childhood infection. It is a well-designed intervention and is an appropriate response to the problem of undernutrition in India.

For its services to be effective in combating undernutrition, however, the programme also needs to be implemented in an efficient and equitable manner. In order for the intervention to be implemented efficiently, those integrated child development services that can have the greatest impact on malnutrition at the lowest cost should be prioritised. In order for services to be implemented equitably, those beneficiaries at greatest risk of malnutrition should be targeted. It is in the efficient and equitable implementation of the intervention that ICDS sometimes falls short.

Consequently, we frame our analysis of ICDS in terms of the mismatches between how an efficient and effective nutrition intervention should function and the way that ICDS, as it is currently implemented, is functioning. These three mismatches relate to the type of services that ICDS prioritises; the characteristics of the beneficiaries that ICDS reaches; and the geographic areas that ICDS targets.

Mismatch I: Although the design of ICDS recognises the multi-dimensional determinants of undernutrition, too much emphasis is currently given to enhancing food security through the supplementary nutrition programme. Not enough attention is given to other interventions that can be most effective in improving children's nutritional outcomes, often at lower cost.

Figure 2: Proportion of Villages Covered by ICDS and Underweight Prevalence, 1998-99, by State



Source: Underweight prevalence calculated from NFHS II; villages covered calculated from NFHS II data in Das Gupta et al 2005.

Mismatch II: Service delivery is not sufficiently focused on the youngest children (under three), who can potentially benefit the most from ICDS interventions. In addition, children from wealthier households are more likely to participate in the programme than children from poorer households.

Mismatch III: The poorest states and those with the highest levels of undernutrition still have much lower levels of programme funding and coverage than other states, despite expansion of the programme into many under-served areas during the 1990s.

We now turn to examine some key dimensions of programme implementation that are central to achieving results,⁴ review how ICDS scores along these dimensions and present options that the Department of Women and Child Development (DWCD) could consider to realign the design and implementation of ICDS and improve the chance of maximising its impact. Particular attention is given to what can be done to fix the three mismatches identified above.

Provide Predictable and Adequate Funding

Availability of funds has not been a major problem for ICDS, which has received extensive financing from both national and international sources. Over the years, absolute spending, as well as the spending per child on various ICDS components, has increased substantially [World Bank 2004a]. For example, the government of India's (GoI's) contribution increased from Rs 329.8 crore in 1992-93 to Rs 1,311.2 crore in 2001-02. The expenditure on supplementary nutrition, which is financed by the state governments, increased almost four-fold during the same period. Future funding, at least of some magnitude, also seems assured. The government of India has promised to construct almost 2,00,000 additional anganwadi centres in the next few years and committed itself to shouldering some of the financial burden of the supplementary nutrition component through a co-financing arrangement with the states.

Build Political Leadership and Commitment

High-level political commitment is essential for all successful public health programmes. Although India has one of the highest proportions of underweight children in the world and the

government has often expressed its commitment to reducing malnutrition, this is not adequately reflected in current policy discussions. Several factors may explain this, including: a lack of awareness of the most cost-effective interventions; a tendency to view malnutrition interventions as transfers to the poor and to underestimate their economic impact for the country as a whole; the multiplicity of organisational stakeholders involved; and the relatively muted voice of the poor.

Building commitment and effectively mobilising political leadership towards supporting changes in the existing array of nutrition programmes in India is the starting point for any reform. It will require engaging several public and private stakeholders in understanding the size and characteristics of the undernutrition problem in India, the devastating human, social and economic consequences of failing to address it and the large human, social and economic benefits associated with the correct implementation of available, affordable and cost-effective nutrition interventions.

Seek Technical Consensus on the Most Effective Nutrition Strategy

Agreement among technical experts on the right strategy to combat malnutrition is a central factor in maximising the impact of a programme. While ICDS is thoughtfully conceived and well-designed, it has not always been successful in implementing the most cost-effective nutrition interventions.

The dominant focus within the ICDS programme is on food supplementation, at the expense of other aspects of the programme that are crucial for improving child nutritional outcomes. Specifically, not enough attention is given to improving child-care behaviours and to educating parents on how to improve nutrition using the family food budget – both interventions that are highly cost-effective and part of the original design of ICDS. There is also very little attention given to micronutrient supplementation or disease prevention and control.

Feeding and caring practices: Failure to exclusively breastfeed children during the first six months of life, along with delayed introduction of semi-solid foods, is an important trigger of malnutrition. In 2003, it was found that less than 40 per cent of infants in India were exclusively breastfed during the first six months [BPNI 2003], the quality of complementary foods is often poor, due to local customs and beliefs [Roy 1997] and, according to the NFHS II, only one-third of children in India were fed semi-solid foods between the ages of six and nine months.

ICDS appears to have had little success in encouraging mothers to adopt appropriate child care and feeding behaviours (including practices related to breastfeeding, weaning and diet) that have the potential to improve child growth and health outcomes. Data from Kerala, Maharashtra, Rajasthan and Uttar Pradesh yield very little evidence that these healthy behaviours are more common in villages with AWCs than without AWCs [Bredenkamp and Akin 2004].

The AWW should devote much more of her time and energy to communicating the importance of exclusive breastfeeding and, later, adding semi-solid complementary food three to four times a day in appropriate quantities thereafter [Ghosh 2004]. Also important is to show women how to use their own resources to feed their children more effectively. This approach has been used in many settings including the Republic of Korea, China and Vietnam [Whang 1981; Allen and Gillespie 2001].

Growth-monitoring: Growth monitoring activities are hampered by poor access to appropriate equipment, such as weighing scales,

growth cards and wall or book charts. Often the equipment is nominally present, but not of sufficient quantity or quality. Even in AWCs with scales that are in working condition, many AWWs fail to weigh young children (under three) every month (as ICDS guidelines stipulate).

Even with regular weighing, growth monitoring is effective only if accompanied by communication for behaviour change that results in the improved growth of the malnourished child. Previous studies of ICDS have noted that this does not often occur, perhaps because many AWWs are not fully competent with respect to the interpretation of growth cards/curves [Gopalan 1992] or because AWWs fail to effectively communicate the meaning of children's growth patterns to mothers [Vasundhara and Harish 1993]. Indeed, the ICDS III baseline/ICDS II endline survey reveals a very large discrepancy between the child's measured weight and the mother's subjective assessment of her child's growth status: in Kerala, for example, all mothers surveyed reported that their children are experiencing normal growth, and in Uttar Pradesh where underweight prevalence in the sample is 46 per cent, 94 per cent of women describe their children's nutritional status as "normal" [Bredenkamp and Akin 2004].

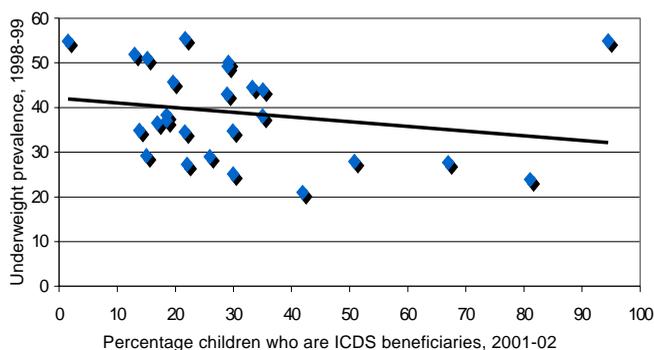
Supplementary nutrition: Many ICDS functionaries, at all administrative levels, as well as programme beneficiaries, appear to consider the supplementary nutrition programme (i.e., food distribution) to be synonymous with the full set of ICDS nutrition interventions. This is indicative of the pervasiveness of the food bias in the ICDS programme. The food bias is also reflected in the allocation of expenditure across ICDS components: the supplementary feeding programme currently accounts for about two-thirds of the total cost of the ICDS programme [Radhakrishna et al 1998]. It is also evident in the time usage of the AWW: AWWs can spend up to 40 per cent of their time on supplemental nutrition-related activities and a further 39 per cent on preschool education [NCAER 2001], which does not leave much time for other important ICDS activities such as growth-promotion, health and nutrition education, home visits, referral services and meeting with the community.

Despite the large share of resources devoted to it, the supplementary nutrition programme (SNP) performs rather poorly:

One problem is the irregularity of the food supply. In the ICDS III baseline/ICDS II endline survey, the majority of AWCs reported that they had experienced disruptions in the food supply during a preceding three-month period [Bredenkamp and Akin 2004]. Another evaluation reported that food distribution had ceased for periods longer than 90 days in 27 per cent of AWCs [NIPCCD 1992]. In the absence of localised food insecurity (such as drought or crop failure), local procurement may be a more effective means of supplying food: the supply would be more regular since it is easier to hold local providers accountable for delivery and local inhabitants have a vested interest in the well-being of the children in their community.

Another problem is leakage of the supplementary food benefit to non-targeted and non-needy beneficiaries since, in practice, there is little targeting of malnourished children for double rations of supplementary food. Food is typically distributed to all those who come to the centre [Educational Resource Unit 2004], and in cases where the AWC is located on school premises, to grade 1 children as well as preschool children so that children often receive less than the recommended 300 kcal of food. In some instances, food is also distributed to indigent

Figure 3: Inverse Relationship between the Percentage of Underweight Children and the Percentage of Children Who Are ICDS Beneficiaries, by State



Source: Calculated from NFHS II, DWCD statistics and Census 2001 data.

adults and it is common practice for anganwadi helpers (AWHs), and occasionally AWWs, to take home-cooked food rations [Educational Resource Unit 2004].

In addition to the leakage in the distribution of supplementary feeding at the AWC, there is also substantial leakage in the “take-home food” component of ICDS since many children share the ICDS food with siblings or elders. In Madhya Pradesh, for example, only 32 per cent of children consume all take-home food themselves [Bredenkamp and Akin 2004].⁵

It is absolutely crucial that the multidimensional nature of malnutrition be recognised and reflected in ICDS implementation: food intake is only one, and most often not the main, determinant of child nutritional status. Rather than being used for supplementary feeding, some state resources could be redirected towards effecting improvements in the delivery of other ICDS services. Supplementary feeding should be used strategically, i.e., as an incentive for poor and malnourished children to attend the AWC where they, and their mothers, can receive health and nutrition education interventions.

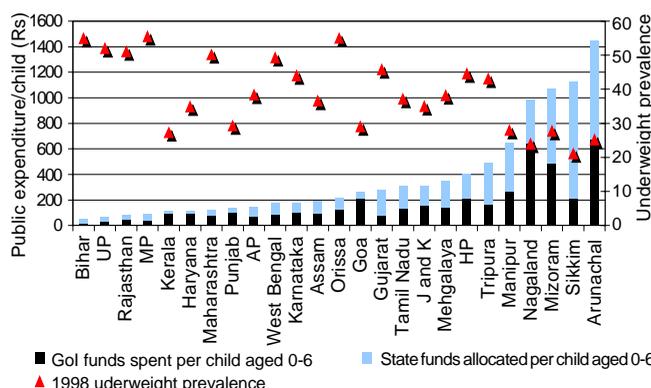
Disease control and micronutrient supplementation: Recognising that child growth and health can be enhanced by improving environmental hygiene and domestic health management practices, the ICDS programme has components for de-worming and iron supplementation. These interventions need reinforcing, and can be supported by additional training for anganwadi workers in how to implement them.

ICDS can also be used to facilitate children’s access to the national micronutrient supplementation programmes for iron, vitamin A and iodine. The benefits of micronutrient supplementation for child growth, health, and cognitive development are well-documented, and have been shown to be exceptionally cost-effective in a number of settings [Behrman et al 2004]. However, in India, they have not yet had much impact [Vijayaraghavan 2002] and need strengthening.

Target Areas with the Highest Poverty Rate and Malnutrition Prevalence

ICDS policy stipulates that there should be one anganwadi centre in place per 1,000 population, with more intensive placement of one per 700 population in tribal areas, where poverty tends to be more prevalent. While this policy aims to promote an equitable distribution of centres, in reality, the ICDS programme

Figure 4: Relationship between State Underweight Prevalence and GoI and State Public Expenditure Allocations, 1998-99



Source: Underweight prevalence calculated from NFHS II data; funding figures from DWCD.

is rather poorly targeted. The poorest states and those states with the highest levels of undernutrition tend to have the lowest coverage by ICDS activities and the smallest government budgetary allocations per malnourished child.

Poorer states have lower levels of ICDS programme coverage than the richer states: The coverage of villages by ICDS is much more pronounced in wealthier states, as can be seen by the steep slope of the curve in Figure 1. States with lower per capita net state domestic product (NSDP) have a smaller percentage of villages covered by the ICDS programme than those with higher per capita NSDP.

The states with the worst malnutrition have the lowest levels of ICDS programme coverage: Regardless of the indicator of ICDS coverage used, whether it be (a) the percentage of villages with an anganwadi centre, (b) the number of ICDS beneficiaries or (c) public expenditure on ICDS, access to the ICDS programme is poorest in the states with the worst nutrition indicators:

(a) Examining the percentage of villages with an anganwadi centre, it can be seen that the five states with the highest underweight prevalence, namely, Rajasthan, Uttar Pradesh, Bihar, Orissa and Madhya Pradesh, all rank in the bottom 10 in terms of ICDS coverage.

Wealthier communities are also more likely to have the ICDS programme than poorer communities. In 1998, for example, while only half of the villages from the lowest two deciles of the all-India wealth distribution had the ICDS programme in place, the programme covered about 80 per cent of the richest villages [Das Gupta et al 2005].

(b) Also, in terms of beneficiary numbers, states with a greater percentage of underweight children tend to have a smaller percentage of children enrolled in the ICDS programme (see Figure 3). Worst is Bihar where, despite an underweight prevalence of 55 per cent, only 1.5 per cent of children benefit from the ICDS programme. At the other end of the spectrum, Manipur, Mizoram, Nagaland and Sikkim exhibit an underweight prevalence that is among the lowest in India (between 20 per cent and 30 per cent), yet are among the five states with the highest percentage of ICDS beneficiaries. The clear exception to this pattern is Orissa, which has a very high underweight prevalence of 47 per cent and has managed to enrol as many as 95 per cent of children in the programme.

(c) The states where the prevalence of malnutrition is highest are also the states that are most poorly funded by GoI and state

Table: Summary of Strengths and Weaknesses of ICDS

Positive Features	Areas Needing Improvement	How To Do It
<p>Overall programme Designed to address the multiple determinants undernutrition, i.e., food security, health services and caring and feeding behaviour</p> <p>Designed to address the intergenerational cycle of undernutrition, i.e., pregnant women and young children – although the initial focus was on children 3-6 years, over the last decade the focus has shifted towards children 0-3 years.</p> <p>Designed to target poor states and poor people within these states</p> <p>Strong grassroot presence</p> <p>Wide coverage</p>	<p>Mismatch I</p> <ul style="list-style-type: none"> • Wide gap between original intention/design and actual implementation – food supplementation dominates and linkages with health sector and counselling of parents are neglected <p>Mismatch II</p> <ul style="list-style-type: none"> • Service delivery remains focused on older children (3-6 years) • Some of the poorest and most vulnerable groups are not reached <p>Mismatch III</p> <ul style="list-style-type: none"> • Per child spending is higher in richer states <p>Other issues</p> <ul style="list-style-type: none"> • Quality of services is poor <ul style="list-style-type: none"> • Design is standardised and does not reflect local needs 	<ul style="list-style-type: none"> • Rationalise design and improve implementation <ul style="list-style-type: none"> – Define priority objectives – Identify cost-effective interventions to achieve those objectives – Implement activities to deliver those interventions – Monitor execution and evaluate impact • Improve targeting of children under three and pregnant women <ul style="list-style-type: none"> – Strengthen nutrition and health education activities – Increase home visits • Improve targeting of poorest and most vulnerable households <ul style="list-style-type: none"> – Introduce mini anganwadi centres (poriawadis) – Increase outreach activities • Address regressive distribution of financing across states by targeting future expansions to districts and blocks with highest prevalence of malnutrition • Develop capacity to deliver all nutrition interventions <ul style="list-style-type: none"> – Increase external participation in service delivery (e.g., mothers' groups) – Increase synergy with other programmes (e.g., reproductive and child health, primary education, etc). – Add a second anganwadi worker (AWW) – Contract private sector for specific activities • Optimise use of available resources <ul style="list-style-type: none"> – Improve skills of anganwadi workers and their helpers – Introduce supportive supervision – Improve supply of inputs • Strengthen focus on results and accountability <ul style="list-style-type: none"> – Decentralise responsibility and management of the programme to state governments and panchayati raj institutions (PRIs) through performance-based financing – Reform the management information system (MIS) – Reward performance at all levels of the administration – Strengthen community ownership and enhance accountability to local communities – Involve PRIs in monitoring service delivery • Introduce flexibility through bottom-up planning
<p>By determinant of malnutrition A food security Designed to fill the "food gap" in the intake of young undernourished children</p>	<ul style="list-style-type: none"> • Food supplementation is universal and absorbs much of the financial and time resources in the anganwadi centre (AWC) • Food availability is irregular; quality is often poor • Leakage to non-priority groups 	<ul style="list-style-type: none"> • Ensure that malnourished children are reached by the supplemental nutrition programme (SNP) • Improve the efficiency of procurement and distribution of SNP so that resources can be freed up to strengthen other nutrition interventions • Improve procurement and distribution of food <ul style="list-style-type: none"> – Decentralise procurement of food to community level – Contract the private sector (e.g., for food distribution) • Strengthen monitoring and information system (MIS) • Encourage community ownership and monitoring
<p>B health Designed to link with health services for immunisation, vitamin A supplementation and referral of high-risk children and pregnant women</p>	<ul style="list-style-type: none"> • Weak articulation with health system • Poor focus on counselling and behaviour change 	<ul style="list-style-type: none"> • Strengthen convergence with RCH programme <ul style="list-style-type: none"> – Introduce joint ICDS-RCH bottom-up planning process – Provide better training of auxiliary mid-wives (ANMs) in nutrition issues and best practices • Reset priorities and redirect resources towards disease prevention/control
<p>C care Designed to support effective nutrition counselling and growth promotion linked to regular growth monitoring</p>	<ul style="list-style-type: none"> • AWW is overburdened with many other tasks that take priority over nutrition promotion • AWW has received little training to develop skills needed for counselling parents • Poor quality of equipment for weighing/growth promotion • Poor focus on counselling and behaviour change 	<ul style="list-style-type: none"> • Foster community support (e.g., mothers' groups) • Increase manpower in AWCs • Improve training • Strengthen MIS and improve the supply system • Reset priorities and redirect resources towards promoting appropriate breastfeeding, home-based complementary feeding and caring behaviours • Training
<p>D micronutrients Centre-based interventions are potentially useful for supplementation of vitamin A and IFA tablets.</p>	<ul style="list-style-type: none"> • Inadequate articulation with reproductive and child health (RCH) programme 	<ul style="list-style-type: none"> • Strengthen convergence with RCH programme

financial allocations to ICDS. GoI per child expenditure in support of states' ICDS programmes appears to be strongly and inversely proportional to the states' underweight prevalence (see dark bars in Figure 4).

In addition, the (per child) amount allocated by state governments to ICDS – most of which is spent on the supplemental feeding component – is lowest in the states with the highest underweight prevalence and highest in the states with the lowest underweight prevalence (see dotted bars in Figure 4). Total public expenditure⁶ figures (see stacked bars in Figure 4) show that four of the states that rank in the top five for underweight prevalence (namely Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh) are also the four states that receive the least for ICDS, on a per child basis. This regressive relationship holds true at the other end of the spectrum, too, where the five largest per child allocations are made to and by the five states that have the lowest underweight prevalence.

However, there are some encouraging signs. First, the poorest states have shown the highest rate of growth of programme coverage during the 1990s [Das Gupta et al 2005]. Second, the programme is more evenly distributed within states than across states – about 60 per cent of the poorest villages in every state were covered by ICDS programmes compared with 70 per cent of wealthiest villages. Third, since poorer states find it difficult to mobilise resources for ICDS, the government of India has recently proposed to provide additional central financing to all states to cover 50 per cent of the cost of the supplementary nutrition component.⁷

Reach the Most Vulnerable Groups of Children

Since most growth faltering occurs during the first two years of life, and continues to negatively affect children's development all through their lives [ACC/SCN 2004], it is essential that children under the age of three are effectively reached with ICDS interventions. In addition, according to ICDS policy, a "special effort" should be made to reach children from lower income families or scheduled tribe and scheduled caste groups [DWCD 2003]. There is also supposed to be explicit targeting of severely malnourished children who should receive double food rations.

Effectively reach children under three: Because of the type of services provided and the focus on centre-based activities, ICDS does not attract as large a share of the youngest children as it could. Consequently, monthly growth-monitoring of under-threes is not regularly performed and the supplemental feeding programme is not effectively targeted at children during the early childhood years, i.e., during the optimal window for influencing growth [Allen and Gillespie 2001]. Instead, the centre tends to attract more four to six year olds, partly because of the preschool activities that are offered concurrently. Thus, interventions miss the most critical age group, and the prevalence of stunting and underweight remains very high.

A more concerted effort needs to be made to recruit young children into the programme, perhaps through reaching out to women effectively while they are still pregnant or when their children are born. Succeeding in this effort would produce a shift towards preventing malnutrition instead of just treating it, when it is often already too late to recover the growth trajectory. One possibility is to explore the use of conditional cash-transfers

which have been very successful in other countries. In Mexico [Skoufias 2001], Honduras [Rawlings and Rubio 2003] and Colombia [Attanasio et al 2004], they have been used to increase the demand for healthcare among young children, educate parents about adequate caring and feeding practices and, ultimately, appear to have improved child nutritional and health status quite rapidly.

Better target children of low economic status: In states included in the ICDS III baseline/ICDS II endline survey, remarkably little variation was found in children's participation rates across wealth quintiles – not much more than a 10 per centage point difference. On the one hand, this implies that a poor economic background does not present too formidable an obstacle to ICDS attendance. On the other hand, since poorer children are more likely to be malnourished, it is desirable that ICDS attracts a larger share of lower quintile than upper quintile children. In Kerala and Madhya Pradesh, attendance is particularly regressive, with higher attendance rates in the upper quintiles [Bredenkamp and Akin 2004].

Ensure that girls and lower castes are reached: There are welcome indications of an absence of gender discrimination in the reach of ICDS. The ICDS III baseline/ICDS II endline data show that there is no statistically significant difference in the participation rates of boys and girls [Bredenkamp and Akin 2004]. Given the patterns of malnutrition in India, ICDS could even go further and preferentially target young girls for certain interventions.

Since the ICDS scheme emphasises the participation of children of lower castes, it is also encouraging to see that in the states surveyed, the attendance rates of scheduled caste and scheduled tribe children are in line with or slightly better than that of other castes [Bredenkamp and Akin 2004]. These data are supported by qualitative evidence of high take-up rates among scheduled tribes relative to forward castes, perhaps partly because of social stigma associated with the receipt of benefits among the upper castes [Educational Resource Unit 2004]. Attendance by children of a particular caste appears to be influenced by the caste of the anganwadi worker and the caste that is most dominant in the local community.

Improve Anganwadi Worker Training and Reduce Her Workload

Undoubtedly, the skills of the anganwadi worker (AWW), her capacity to mobilise the community to support ICDS and her ability to recruit eligible children stand central to quality service delivery and ICDS effectiveness. Too often, though, performance is constrained by poor quality training and the pressure of a large and disparate workload.

While AWWs tend to be well-educated, they are sometimes poorly trained for ICDS tasks. Survey data show that pre-service training is scarce with most women undergoing short-term in-service training [Bredenkamp and Akin 2004]. Recently, though, more resources have been directed towards strengthening capacity at the central, state and block levels to provide high quality support and training to functionaries of ICDS programmes. In 2002, a new training programme, 'Udisha', was initiated with funding from the World Bank and attempts to shift the focus of training from the mere transfer of knowledge towards the strengthening of AWW competencies.

One challenge is the large and ever-increasing range of duties that AWWs are expected to fulfil. AWWs must engage in

supplementary nutrition-related activities, preschool education, growth-promotion, health and nutrition education, home visits, referral services and meetings with the community. In addition, AWWs must maintain at least 12 different types of records. Since their workplace is located right at the grassroots, unlike most government workers, they are also frequently asked to help implement a multiplicity of government programmes in addition to ICDS.

It is imperative that the AWW is perceived and treated as the core input for ICDS service delivery and given the right tools and support to perform her tasks effectively. The frequent delays in payment of honoraria to AWWs are inexcusable: in Uttar Pradesh in 2000, for example, as many as 67 per cent of urban AWWs reported that they did not receive their honoraria regularly [Bredenkamp and Akin 2004].

Promote Collaboration between ICDS and the Reproductive and Child Health Programme

The objectives of the Reproductive and Child Health (RCH) programme and ICDS are intertwined and, so, the promotion of linkages between the activities of the two would be mutually beneficial. Already some of these linkages are recognised in the job descriptions of the anganwadi workers and auxiliary nurse-midwives (ANMs). AWWs are supposed to promote awareness of national immunisation days (NIDs) and maintain immunisation records, refer sick children to healthcare facilities and encourage mothers to seek antenatal care. In their turn, ANMs, employed by the department of health, are supposed to conduct general health check-ups of ICDS beneficiaries, give immunisations, dispense medicines and contraceptives, and provide assistance and guidance to AWWs in the discharge of their health-related duties.

Collaboration between ICDS and the health delivery system has improved in recent years, one consequence of which has been better immunisation coverage. However, the partnership between the AWW and the ANM has been less successful with respect to identifying high-risk pregnancies, providing prenatal and postnatal care, and conveying adequate health and nutritional messages to women. One reason is the absence of a designated person or body to oversee the promotion of this collaboration. Site visits reveal that AWWs seldom enquire whether mothers are registered with the ANM and receiving antenatal care, and the ICDS III baseline/ICDS II endline survey showed that, in some states, the ANM's visits to the AWC are not very regular. Strengthening the convergence of ICDS and RCH will help to ensure the provision of a broader set of child and maternal health services, and should be a priority for the departments concerned.

Encourage Community Participation and Decentralisation

With a few exceptions, ICDS remains a highly standardised intervention that follows rules and regulations set centrally. Given the heterogeneity of malnutrition patterns observed in India, state governments should be encouraged to tailor the basic model to local needs and assume responsibility for the management of the overall programme rather than focus almost exclusively on the procurement and distribution of supplementary food, i.e., the only activity in the programme that they finance directly.

A budget line that is specific to the financing of ICDS should be introduced in the state budgets so that planning and monitoring of investments in ICDS becomes an explicit activity of state governments.

The programme is also run in a very top-down fashion, with all the logistical and implementation inefficiencies and rigidities that such an approach entails. A programme to provide daily services to young children and pregnant women requires active participation and supervision by the community. There does appear to be some empirical association between those states (and areas) in which AWCs have been identified as being better performers and those in which community support for ICDS, in the form of financial contributions from the panchayat, have been forthcoming [Bredenkamp and Akin 2004]. However, country-wide, only about 25 per cent of states receive support from panchayat leaders, and this support has mainly been in the form of the provision of space for the AWC and the recruitment of beneficiaries [NCAER 2001].

Despite statements of intent to involve communities in the process, there is little sense of community ownership. This impression is reinforced by the fact that, in most places, the AWW is hired and paid by the government, and is not made accountable to the community in which she works. Also, equipment, food and other supplies are provided directly by the government. Given the extensive decentralisation that has been underway in India over the past decade, there is considerable scope for involving locally-elected village committees much more actively in implementing the ICDS programme.

Use Information to Inform Action

It is generally recognised that the monitoring and evaluation activities related to ICDS need strengthening. What is crucial is an emphasis on collecting high quality information that is relevant, in the sense that the data that are collected clearly reveal something about the functioning of important aspects of the programme, and are of a manageable quantity, since large volumes of information are unlikely to be utilised to inform decisions.

In this regard, it may be helpful to revisit the guidelines and instructions issued for the monitoring and evaluation of ICDS in the past, and streamline and fine-tune them. This would cut down on the volume of superfluous information, and person-hours needed to process it. The number of registers currently collected by AWWs, for example, far exceeds the existing capacity to use this information for programme management. Simultaneous with an effort that streamlines and standardises the indicators that are collected across states, the development of a standard template with which to display information would make ICDS data more immediately accessible – at more levels and to more people in the project management system.

Computerisation and electronic processing of information would aid in processing data into a form that is useable, so that a programme manager or other interested party can find out what the status of activities is at any point in time, present or past. Ideally, he or she should have easy access not only to aggregate indicators, but also to block and district level information. It is only then that data collected at the AWC level and aggregated further up the chain of implementation becomes potentially useable information that can be utilised to identify problem areas and take ameliorating action.

In general, more human resources need to be devoted to monitoring and evaluation activities. An awareness of its importance needs to be created at all levels of implementation so that, in the portions of their tasks that are allocated to monitoring and evaluation-related activities, functionaries give it the attention it deserves. This is challenging and requires a substantial mind-shift for functionaries – towards outcomes, results and performance, rather than inputs. In addition, some strengthening of community monitoring is desirable, either through existing community institutions or more informally, e.g. through encouraging community members to be alert to AWC opening hours and attendance, and to demand improvements where needed.

IV The Road Ahead

That ICDS has great potential to improve the nutritional status of India's children is undeniable, but it needs to overcome some challenges if this potential is to be realised. Three major mismatches between what an effective nutrition intervention should do and what ICDS is currently doing are preventing the programme from achieving better results. Consequently, despite its national infrastructure, ICDS is not making the expected contribution to reducing the prevalence of malnutrition in India. It might be more beneficial to focus energies on improving service delivery within existing AWCs projects, rather than just on expanding coverage.

In the preceding sections, we explored some of the main strengths and weaknesses of service delivery in the ICDS programme. These are summarised in the table, along with a menu of options that the government of India could pursue to increase the programme's impact on the nutritional status of priority groups. First, in the top half of the table, the findings and recommendations that relate to the characteristics of the overall programme are summarised. This is done in terms of the three mismatches identified at the outset of this article. Second, in the lower half of the table, we look at how to improve the implementation of specific elements of the ICDS programme, arranged by their contribution to addressing the underlying determinants of protein-energy malnutrition [UNICEF 1990] and micronutrient deficiencies.

In addition, there are some possible alternatives to the current overall implementation strategy adopted by ICDS that, while still firmly rooted within the broad programmatic approach and overarching aims of the intervention, may help to resolve some of these issues. Two of these alternatives are:

To retain the present structure whereby a preschool function for older children (4 to 6 years), on the one hand, and maternal and child health and nutrition interventions with special emphasis on younger children (0 to 3 years), on the other, are offered within the same programme. If this option is pursued, then the difficulties in simultaneously carrying out these disparate tasks need to be resolved. At the moment, this dual objective tends to result in AWWs devoting most of their day to preschool education and older children, to whom educational activities are directed, squeezing out the attendance of younger children. Since anganwadi helpers devote most of their day to food preparation, human resources are skewed even further away from health interventions and counselling parents about feeding and caring practices. If the present structure is maintained, introducing a

system of two workers – one charged with health and nutrition functions and one charged with the preschool function – may be a good option. The National Rural Health Mission has planned to introduce an additional village health worker (ASHA) to focus on maternal and neonatal health issues. If this option is pursued, such a worker could be assigned the needs of 0- to 3-year old children, including nutrition. The AWW could then focus on preschool education of older children and the AWH could then continue supporting the preparation of food. Coordination with the work of the auxiliary nurse midwife of the RCH programme also needs to be carefully studied, articulated and monitored.

To separate the services provided to 4 to 6 year old children from those provided to 0 to 3 year olds and pregnant and lactating women. The demand for preschool education, and for feeding the older children, could be met by devolving these responsibilities to the department of education or to local authorities. The District Primary Education Programme (DPEP) already delivers preschool education services in some districts, and the feeding of 4 to 6 year olds could become part of the national mid-day meals programme [Measham and Chatterjee 1999]. In this manner, more of the AWW's time could be freed up for nutrition and health education and growth promotion. In this case, too, the coordination between the AWW, the ANM and the ASHA (as the proposal by the National Rural Health Mission is implemented) will be crucial for the success of the programmes.

To conclude, greater clarity and focus are needed if the ICDS programme is to make a substantial dent in the problem of persistent undernutrition in India. In particular, the three mismatches identified earlier need to be resolved so that a nutrition intervention is implemented that (a) provides the most effective services to address the most important determinants of malnutrition; (b) reaches younger children and the most vulnerable segments of the population; and (c) is well targeted to areas where the prevalence of undernutrition is highest.

Bridging the gap between the policy intentions of ICDS and its actual implementation 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 in India. mgragnolati@worldbank.org

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Notes

[The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors and should not be attributed in any manner to the World Bank, to its affiliated organisations or to members of its board of executive directors or the countries they represent.]

- 1 The term underweight is an anthropometric measure of protein-energy undernutrition. It is used to describe children who have a weight-for-age that is less than two standard deviations below the median value of the NCHS/WHO reference group. The term severe underweight is used when the measurements are less than three standard deviations below the reference median, and mild underweight when measurements are less than one standard deviation below the reference population.
- 2 This paper has been published as part of the HNP discussion paper series under the title "India's Undernourished Children: A Call for Reform and Action" [Graganolati et al 2005].
- 3 This survey, henceforth referred to as the ICDS III baseline/ICDS II endline survey 2000-02, involved the collection of data in the states of Kerala, Maharashtra, Rajasthan and Uttar Pradesh in 2000 as part of a baseline

- for activities, and in Bihar, Chhattisgarh, Jharkhand and Madhya Pradesh as part of an endline evaluation in 2002.
- 4 This list is loosely based on the elements of successful programmes identified in "Millions Saved. Proven Successes in Global Health" [Levine 2004], a recent report that documents 17 cases in which large-scale national, regional and global efforts have succeeded in improving health status in developing countries'.
 - 5 Many of these problems were addressed in Tamil Nadu's modification of the ICDS programme (TINP) which targeted food to the needy and required them to eat it on the premises instead of taking it home to share with others. The TINP is believed to have halved the prevalence of severe malnutrition in the villages in which it was implemented [Heaver 2002; Greiner and Pyle 2004].
 - 6 This public expenditure estimate combines GOI expenditure on ICDS with state allocations to ICDS. It excludes any expenditure on ICDS by local government institutions.
 - 7 According to this arrangement, the Government of India will finance 50 per cent of the costs of providing supplementary nutrition (SNP) in all states. While this will certainly ease the financial burden on many poorer states, it may not be sufficient to ensure that they are able to provide a reliable supply of food. An alternative would be a more progressive arrangement, whereby the share of the SNP component financed by the central government would vary according to how poor the state is.

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