

## CHAPTER 2 THE INTEGRATED CHILD DEVELOPMENT SERVICES PROGRAM (ICDS) – ARE RESULTS MEETING EXPECTATIONS?

**India’s primary policy response to child malnutrition, the Integrated Child Development Services (ICDS) program, is well-conceived and well-placed to address the major causes of child undernutrition in India. However, more attention has been given to increasing coverage than to improving the quality of service delivery and to distributing food rather than changing family-based feeding and caring behavior. This has resulted in limited impact.**

The ICDS has expanded tremendously over its 30 years of operation to cover almost all development blocks in India and offers a wide range of health, nutrition and education services to children, women and adolescent girls. However, while the program is intended to target the needs of the poorest and the most undernourished, as well as the age groups that represent a significant “window of opportunity” for nutrition investments (i.e. children under three, pregnant and lactating women), there is a mismatch between the program’s intentions and its actual implementation.

Key mismatches are that:

- (iv) The dominant focus on food supplementation is to the detriment of other tasks envisaged in the program which are crucial for improving child nutritional outcomes. For example, not enough attention is given to improving child-care behaviors, and on educating parents how to improve nutrition using the family food budget.
- (v) Older children (between 3-6 years) participate much more than younger ones and children from wealthier households participate much more than poorer ones. The program fails to preferentially target girls, lower castes or poorest villages (all of whom are at higher risk of undernutrition);
- (vi) Although program growth was greater in underserved than well-served areas during the 1990s, the poorest states and those with the highest levels of undernutrition still have the lowest levels of program funding and coverage by ICDS activities.

In addition to these mismatches, the program faces substantial operational challenges. Inadequate worker skills, shortage of equipment, poor supervision and weak M&E detract from the program’s potential impact. Community workers are overburdened, because they are expected to provide pre-school education to four to six year olds as well as nutrition services to all children under six, with the consequence that most children under three—the group that suffers most from malnutrition—do not get micronutrient supplements, and most of their parents are not reached with counseling on better feeding and child care practices.

However, examples of successful interventions (Bellary district in Karnataka) and innovations/variations in ICDS from several states (the INHP in nine states, the Dular scheme in Bihar and the TINP in Tamil Nadu) suggest that the potential for better implementation and for impact does exist.

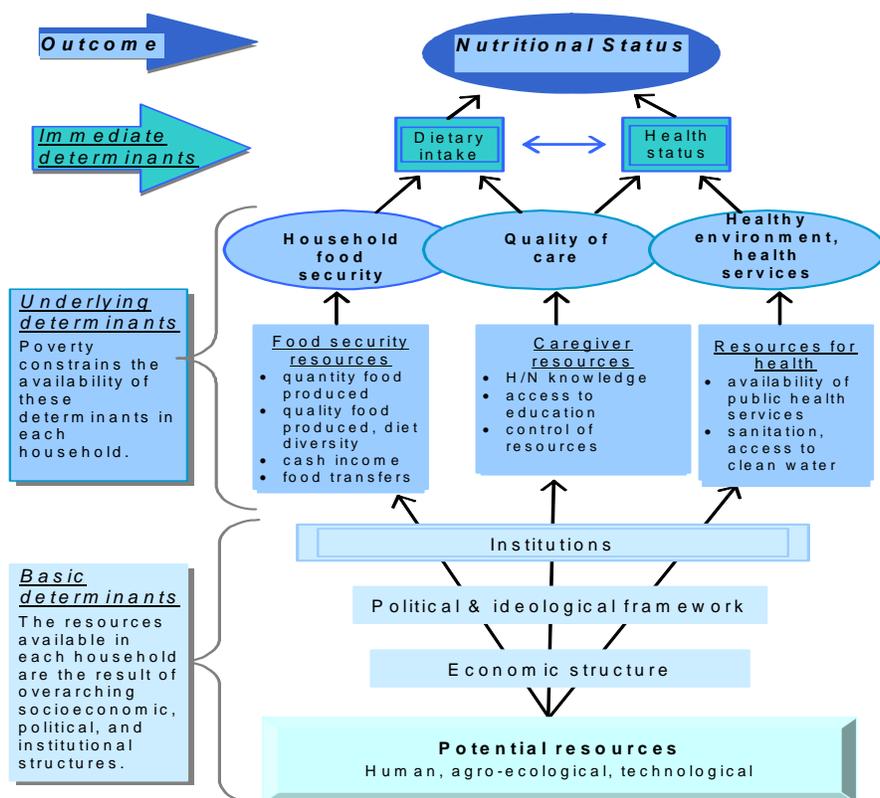
## 2.1 HOW ICDS AIMS TO ADDRESS THE CAUSES OF PERSISTENT UNDERNUTRITION

With strong government commitment and political will, the ICDS program has emerged from small beginnings in 1975 to become India's flagship nutrition program. Using a conceptual framework of the causes of undernutrition, this section shows that many of the ICDS program components are well-designed to address the immediate causes of child undernutrition in India, even though – as will be seen later – substantial shifts in focus and improvements in implementation will be necessary if the program is to realize that potential.

### 2.1.1 A conceptual framework of the causes of undernutrition

Child undernutrition is a consequence of the complex interactions of multiple determinants. One way to conceptualize these interactions is with the use of a framework that traces the causal pathways of undernutrition through different levels – the most immediate, the underlying, and the basic causes.

Figure 18 Conceptual framework: the causes of undernutrition



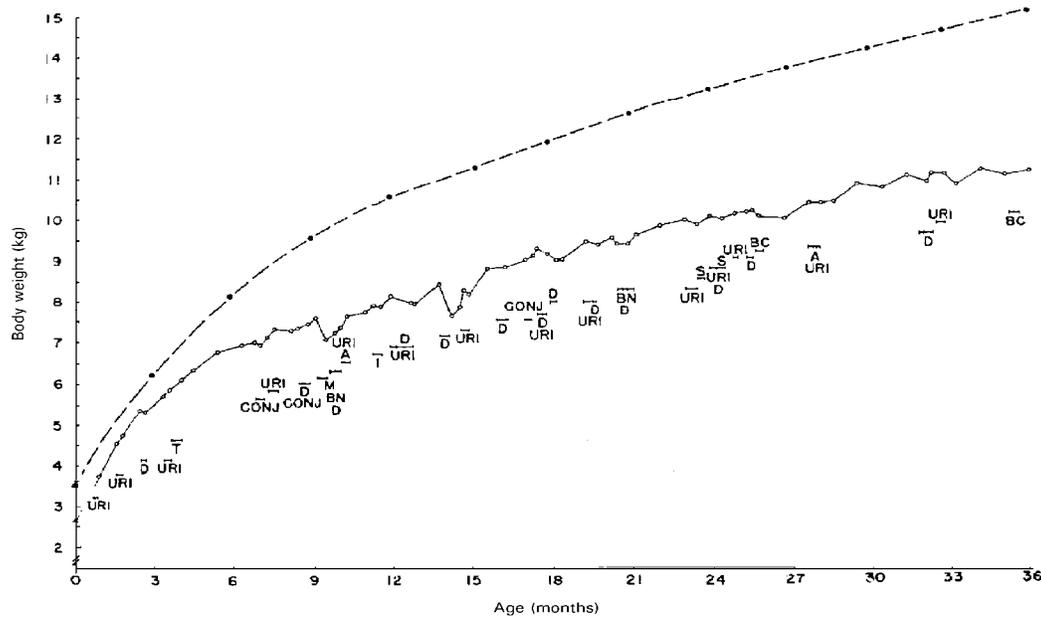
Source: Adapted from UNICEF 1990; Jonsson 1993; Smith and Haddad 2000

### 2.1.1.1 *The immediate causes of undernutrition*

The first level is composed of the most immediate causes of malnutrition and highlights the importance of both food intake *and* the absence of infection for improving child nutritional status. Inadequate dietary intake and infections create a vicious cycle that is responsible for much of the high morbidity and mortality among children in developing countries. On the one hand, when children do not consume enough, immune response is lowered, rendering them more susceptible to infectious diseases. On the other hand, ill children deplete their nutritional stores and are in poor health because of reduced intake, poor absorption of nutrients and the increased demands of combating disease<sup>1</sup>.

Over the past decades, a large body of work has documented the interaction between nutrition and infection. Evidence of the malnutrition-infection syndrome was first reported in studies conducted in India and Guatemala which found that children developed diarrheal infections around the time of weaning from breastmilk to other foods, and that they were subsequently more prone to infections and growth faltering<sup>2</sup>. While the weight loss associated with a single episode of infection can be made up if the diet is adequate, recurrent episodes of infection without sufficient food or inadequate recovery time is a primary cause of poor growth among children in developing countries<sup>3</sup>. Figure 19 clearly shows how periods of infection are associated with subsequent weight loss in children. Following infection, a number of weeks pass before the child's weight returns to that before onset, leaving the child further retarded in weight-for-age. In the case of diarrhea, the degree of growth deficit has been shown to be proportional to the number of days ill<sup>4</sup>. If infections are frequent, high rates of underweight will prevail, even when food intake is adequate. The converse is also true: if infections are less common or less severe, lower rates of child undernutrition will prevail even if average food intake is low. Thus, sufficient food intake is only one determinant of nutritional status.

**Figure 19 How infection compromises growth: the association between repeated episodes of infection and weight gain of a child during the first three years of life**



Source: Reproduced from Calder and Jackson 2000, based on work by Mata et al. 1977.

Notes: (o-o) designates the weight of the child; (•- - •) is the median of the weight-for-age standard curve; A, abscess; BC, bronchitis; BN, bronchopneumonia; CONJ, conjunctivitis; D, diarrhea; I, impetigo; M, measles; S, stomatitis; T, oral thrush; URI, upper respiratory tract infection. The length of the horizontal lines indicates the duration of individual episodes of infectious disease.

### 2.1.1.2 The underlying determinants of undernutrition

The two immediate causes of malnutrition, poor dietary intake and infection, are closely linked to the three underlying determinants of nutritional status: household-level access to food, health resources (such as preventive and curative healthcare, and clean water and sanitation) and the appropriateness of the child care and feeding behaviors that caregivers adopt with respect to their children<sup>a</sup>.

#### A. Household-level food security

This refers to physical and economic access to foods that are socially and culturally acceptable, and of sufficient quality and quantity. This is not necessarily assured by macro-level food security, i.e. sufficient food production at national/regional levels. Food security at the household level is determined by a more complex array of factors than agricultural production, including local prices (of food and other goods), income and an effective trade and transport infrastructure<sup>5</sup>. Moreover, household food security is not in itself sufficient to assure that the nutritional needs of every child, and adult, living in a particular household will be met. Within each household, decisions are made as to the quantity and quality of food that is allocated to each household member and a further

<sup>a</sup> Together these factors constitute the concept of *nutrition security*, which is viewed as the outcome of good health, a healthy environment and good caring practices combined with household level *food security*.

complex range of factors influences this decision. These factors may include the relative bargaining power of household members (which in turn may be related to their individual income, autonomy, gender and education) as well as other characteristics, such as health status of individual members. Consequently, the diets of individual children (or others) within the household may be deficient even though *per capita* caloric intakes are high and even when the household is food secure.

### *B. Access to health resources*

*(i) Access to sufficient clean water, good sanitation and a clean living environment.* Over-crowding, congestion, a shortage of clean water and inadequate facilities for the disposal of human excreta, waste water and solid wastes contribute to the development of gastrointestinal infections, such as diarrhea, and facilitate the spread of infectious disease. Historical studies of the sanitary revolution, for example, show that while mortality rates in urban areas exceeded those of rural areas prior to the revolution, the situation was reversed following the sanitation improvements<sup>6</sup>. Crowding has been shown to be associated with an increased risk of infectious intestinal disease (due to rotavirus group A) in children<sup>7</sup> and tuberculosis infection<sup>8</sup>. Poor water quality, a limited quantity of water, poor excreta disposal practices and poor food hygiene are all associated with increased diarrhea prevalence in infants<sup>9</sup>. Moreover, good water, sanitation and hygiene conditions at the community level generate important externalities for individual households in the community: in Peru<sup>10</sup> and Andhra Pradesh<sup>11</sup>, it has been shown that good water and sanitation at the neighborhood level has a positive effect on the height of children in a particular household independent of whether that household itself has a healthy environment<sup>12</sup>.

*(ii) Access to health services, including vector and disease control.* In section 2.1.1, it was established that the presence of infection, and particularly communicable disease, is a direct cause of malnutrition. Consequently, efforts to prevent exposure to infection and cure disease should stand central to any strategy aimed at combating malnutrition, including regular deworming, the use of bed nets in malaria areas and access to regular and affordable health check-ups.

### *C. Adopting appropriate childcare behaviors*

Providing appropriate care, which can mitigate the impact of the malnutrition-infection cycle for vulnerable groups such as children and pregnant and lactating women, means adopting child-care and feeding behaviors that direct available resources towards promoting child nutritional well-being. For example, adequate care during pregnancy and delivery can reduce the incidence of maternal death, miscarriage, stillbirth and low birth weight among infants. Likewise, adequate feeding of young children (initiation of breastfeeding within an hour of birth, exclusive breast-feeding for the first six months of life and adequate and timely complementary feeding starting at 6 months while continuing to breastfeed) is critical for child growth.

Caregiver's time, their knowledge and educational status, autonomy, control over monetary and other resources, and their capacity to make appropriate caring decisions are often the key factors that determine how children (and pregnant women) are cared for.

#### *2.1.1.3 The basic determinants of undernutrition*

Finally, the framework links these underlying determinants to a set of basic determinants which include the availability of human, economic and organizational resources with which to improve nutrition, the use of which is shaped by how society is organized in terms of economic structure, political and ideological expectations, and the institutions through which activities and resources within society are regulated, social values are met, and potential resources are converted into actual resources.

#### **2.1.2 The design of the ICDS program and the underlying causes of child undernutrition**

The Integrated Child Development Services (ICDS) program is potentially well-poised to address some of the *underlying* causes of persistent undernutrition, identified in the framework above.

The program adopts a multi-sectoral approach to child well-being, incorporating health, education and nutrition interventions (Table 9), and is implemented through a network of *anganwadi* centers at the community level. The Department of Women and Child Development's (DWCD) emphasis on a "life-cycle approach" means that malnutrition is fought through interventions targeted at unmarried adolescent girls, pregnant women, mothers and children aged 0 to 6 years. Eight key services are provided, including supplementary feeding, immunization, health checkups and referrals, health and nutrition education to adult women, micronutrient supplementation and preschool education for 3 to 6 year olds. As the program 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.

**Table 9 Range of services that the ICDS seeks to provide to children and women**

	<b>Children under 6</b>	<b>Pregnant women</b>	<b>Lactating women</b>
<b>Health check-ups, and treatment</b>	Health check-ups by AWW, ANM, LHW Treatment of diarrhea Deworming Basic treatment of minor ailments Referral of more severe illnesses	Antenatal check-ups	Postnatal check-ups
<b>Growth-monitoring</b>	Monthly weighing of under-threes Quarterly weighing of 3-6 year olds Weight recorded on growth cards		
<b>Immunization</b>	Immunization against poliomyelitis, diphtheria, pertussis, tetanus, tuberculosis and measles	Tetanus toxoid immunization	
<b>Micronutrient supplementation</b>	IFA and Vitamin A supplementation for malnourished children	IFA supplementation	
<b>Health and nutrition education</b>		Advice includes infant feeding practices, child care and development, utilization of health services, family planning and sanitation	Advice includes infant feeding practices, child care and development, utilization of health services, family planning and sanitation
<b>Supplementary nutrition</b>	Hot meal or ready-to-eat snack providing 300 calories and 8-10g protein Double rations for malnourished children	Hot meal or ready-to-eat snack providing 500 calories and 20-25g protein	Hot meal or ready-to-eat snack providing 500 calories and 20-25g protein
<b>Preschool education</b>	Early Childhood Care and Preschool Education (ECCE) consisting of "early stimulation" of under-threes and education "through the medium of play" for children aged 3-6 years		

Source: DWCD 2004

Note: In practice, not all of these services are necessarily provided at every AWC

However, as will be discussed later in this chapter, while ICDS has the potential to address many of the underlying causes of malnutrition, there are a number of mismatches between design and implementation within the program (especially with respect to targeting), as well as some serious problems with the quality of implementation. ICDS will, therefore, need some strategic changes for it to effectively combat malnutrition in India.

### 2.1.3 ICDS and the World Bank

Total government expenditure on the program has grown sharply over time. An average of 700 million rupees was spent per year on the program between 1975 and 1992, but this amount rose more than six-fold to average 4,542 million rupees per year between 1992 and 1997. For 1999-2000, the budgetary allocation for the program was over 8,557 million rupees and more than US\$400 million have been allocated under India's Tenth Five-Year Plan (2002-2007). The program has been supported by several donors, including UNICEF, SIDA, WFP, CARE and NORAD.

The World Bank has supported efforts to improve nutrition in India, in general, since 1980 through six projects. With an overall investment of US\$ 712.3 million in the sector, India accounts for the largest volume of Bank Group lending devoted specifically to nutrition programs. Support to ICDS, in particular, has been provided in three overlapping phases:

- Phase I in which the Bank supported the Tamil Nadu Integrated Nutrition Project (TINP) as an alternative to the standard ICDS in the state of Tamil Nadu (TINP I, 1980-89; TINP II, 1990-1997);
- Phase II in which support was extended to the standard government ICDS programs, as well as some additional activities (ICDS I in Orissa and Andhra Pradesh, 1991-1997, and ICDS II in Bihar and Madhya Pradesh, 1993-2000); and
- Phase III in which the primary emphasis has moved from expanding coverage to improving quality of services (through an ICDS component in the Andhra Pradesh Economic Restructuring Program, 1999-2004, and the Woman and Child Development Project<sup>b</sup>, 1999-2004).

## 2.2 EMPIRICAL FINDINGS ON THE IMPACT OF ICDS

The ICDS program has been the subject of a large volume of research. Most evaluations have focused on the quality of infrastructure and inputs, and the execution of activities. There have been few rigorous evaluations of the program's impact on nutritional status or health behaviors, partly because there are few sources of data that permit the comparison of outcomes among recipients and non-recipients of the program. Consequently, authors have been unable to use the statistically rigorous methodologies that would enable them to draw more reliable conclusions about the impact of ICDS. As a result, some studies have found that the program is associated with improvements in nutritional status, while other studies have failed to find a positive effect. In future, to be sure of measuring the impact accurately, it will be necessary to have data on treatment and control populations, preferably over at least two time periods.

The major national-level study of program impact<sup>13</sup> found that the prevalence of underweight was lower among children in areas with the ICDS program in place than elsewhere, for both children under three<sup>c</sup> and children aged 3 to 6<sup>d</sup>, but given the sample sizes of the control and treatment groups both these differences are statistically insignificant<sup>14</sup>.

Three recent studies estimate the association between having an *anganwadi* center in a village and the likelihood that a child is underweight, and find little or no association between the presence of an ICDS center and child nutritional status. Using multivariate analysis of the 1992/93 NFHS data, the World Bank (2004a) estimates that, for boys, having a local ICDS center is associated with a 5% reduction in the likelihood of being underweight, but that there is no significant association for girls. Using both the 1992/93 and the 1998/99 NFHS data, Das Gupta *et al* (2005) find that the program appears to

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<sup>b</sup> The Woman and Child Development Project supports ICDS service delivery in 11 states (Maharashtra, Kerala, Rajasthan, Uttar Pradesh, Tamil Nadu, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Orissa and Uttaranchal), as well as a component that supports training for ICDS officials across all of India.

<sup>c</sup> The prevalence of underweight was 29.2% where the program was in place, compared with 32.3% elsewhere.

<sup>d</sup> The prevalence of underweight was 25.3% where the program was in place, compared with 30.2% elsewhere.

have a significant and positive effect on nutritional outcomes. However, on more rigorous exploration, using propensity score matching techniques, they find little significant effect when children in ICDS villages are compared with children with similar demographic, household and village characteristics in non-ICDS villages. In a multivariate model of cross-sectional data collected in Kerala, Rajasthan and Uttar Pradesh between 2000 and 2002, Bredenkamp and Akin (2004) find that children who live in villages with *anganwadi* centers are not significantly less likely to be underweight or ill than other children. When using data on actual attendance at *anganwadi* centers in six states<sup>e</sup>, it is found that only in Kerala is this significantly associated with better nutritional status<sup>15</sup>.

There is also not much evidence that ICDS has been successful in attaining its goal of improving the coverage of specific child health interventions such as de-worming and Vitamin A supplementation, and encouraging mothers to adopt appropriate child care and feeding behaviors (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 show no clear evidence that these behaviors were more common in ICDS areas, with the exception of Maharashtra<sup>16</sup> (Table 10). Although communication for behavior change through the AWW is a crucial weapon against poor health and malnutrition, it appears that any information that the AWW is conveying to mothers is not being communicated effectively enough to impact positively on mothers' behavior.

**Table 10 Comparison of intermediate health outcomes and behaviors across children living in villages with and without an AWC**

	<i>In villages:</i>	Kerala	Maharashtra	Rajasthan	Uttar Pradesh
<b>Percentage over 6 mths receiving Vitamin A supplementation</b>	Without AWCs	81.2	80.5	29.8	18.0
	With AWCs	78.3***	<b>88.5***</b>	22.5***	<b>21.0***</b>
<b>Percentage older than 12 months ever dewormed</b>	Without AWCs	61.1	34.3	3.7	17.7
	With AWCs	<b>66.3***</b>	<b>59.7***</b>	4.1	13.3***
<b>Percentage over 6 mths consuming Vitamin A-rich food within previous 3 days</b>	Without AWCs	78.1	78.1	27.6	36.0
	With AWCs	72.0***	<b>90.5***</b>	26.9	32.5***
<b>Percentage breastfed within 1 hour of delivery</b>	Without AWCs	85.6	54.4	9.4	6.1
	With AWCs	80.0***	41.2***	10.3	6.7
<b>Percentage consuming colostrum</b>	Without AWCs	98	18.9	74.1	53.4
	With AWCs	96.9***	<b>28.7***</b>	<b>80.4***</b>	37.3***
<b>Percentage under 6 mths who are exclusively breastfed</b>	Without AWCs	67.1	21.5	38.4	99.7
	With AWCs	58.2***	11.3***	<b>43.3*</b>	84.6***
<b>Percentage aged 6-9 mths consuming complementary food</b>	Without AWCs	84.1	67.3	93.8	0.3
	With AWCs	87.7	<b>73.6</b>	93.7	<b>19.1***</b>
<b>Mean duration of breastfeeding, among children who have been weaned</b>	Without AWCs	13.4mths	16.3mths	8mths	23.7mths
	With AWCs	12.5mths***	17.4mths***	7.1mths***	22.8mths***

Source: Calculated from ICDS III baseline/ICDS II endline survey 2000-2002 in Bredenkamp and Akin 2004

Notes: \* statistically significant at the 10% level; \*\* 5% level; \*\*\* 1% level

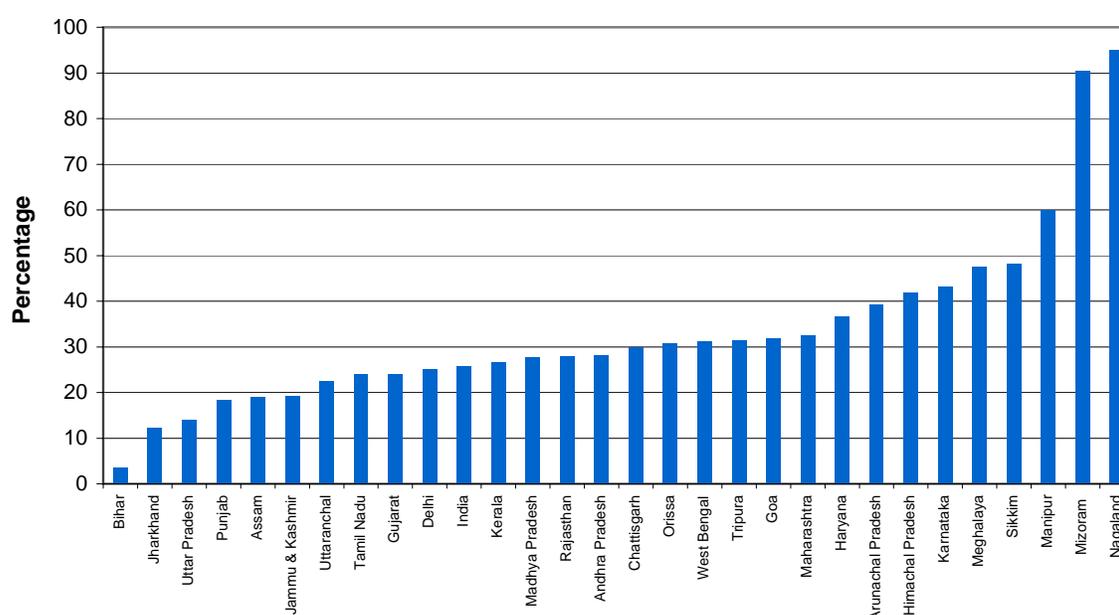
For clarity, **boldface** indicates where outcomes are significantly *better* in villages with AWCs

<sup>e</sup> These six states are Kerala, Maharashtra, Rajasthan, Uttar Pradesh, Madhya Pradesh and Chhattisgarh.

## 2.3 GEOGRAPHICAL TARGETING: THE PLACEMENT OF ICDS PROGRAMS ACROSS STATES AND VILLAGES

The percentage of administrative *blocks* covered by ICDS has reached almost 90% (see Table C in the Appendix). However, the percentage of children who actually take up the services provided by the program is lower and varies considerably across states. By December 2002 only one quarter of children aged between 6 months and 6 years benefited from the supplementary nutrition (SNP) component<sup>f</sup> of ICDS, on average, with this figure ranging from little more than 10% to over 90% across the states. Coverage is particularly high in the north-eastern states.

**Figure 20 Inter-state variation in the percentage of children enrolled in the SNP component, 2002**



Source: DWCD enrolment data (updated 2004); Census of India 2001

Note: Figures are calculated from data on the number of children aged 6 months to 6 years who are were SNP beneficiaries in December 2002 (DWCD data) and from population data for children under 6 in 2001 (Census of India 2001). The use of different age categories may result in a slight underestimation of the number of beneficiaries while the use of population data from 2001 may result in a slight overestimation of the percentage of beneficiaries, so that the net magnitude and direction of the bias is hard to predict.

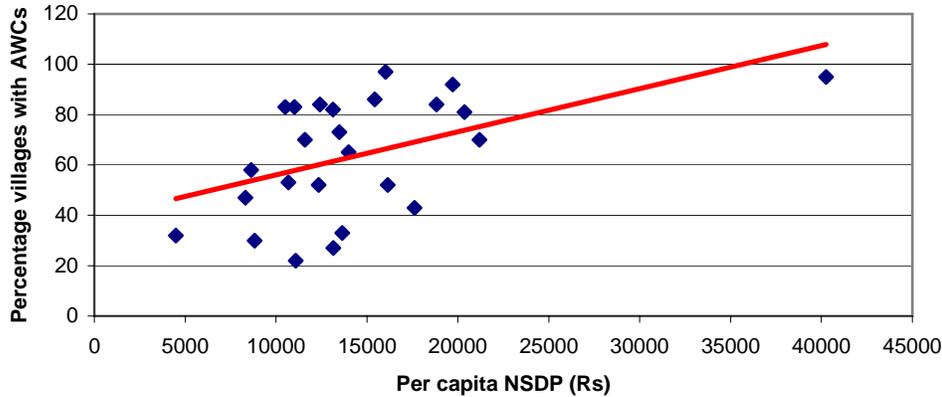
### 2.3.1 The relationship between state income and ICDS coverage

ICDS policy stipulates that there should be one *anganwadi* center in place per 1000 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 centers, in reality, the coverage of villages by ICDS is much more

<sup>f</sup> The percentage of children who receive *any* of the six main ICDS services is difficult to estimate and, so, the percentage of SNP beneficiaries is used as an indicator for the number of ICDS beneficiaries.

pronounced in wealthier states, as can be seen by the steep slope of the curve in Figure 21 below. States with lower per capita Net State Domestic Product (NSDP) have a smaller percentage of villages covered by the ICDS program than those with higher NSDP. However, the *growth* of program coverage from 1992 to 1998 was more rapid in the poorest villages of the country<sup>17</sup>.

**Figure 21 Relationship between *per capita* net state domestic product (NSDP) and ICDS coverage**



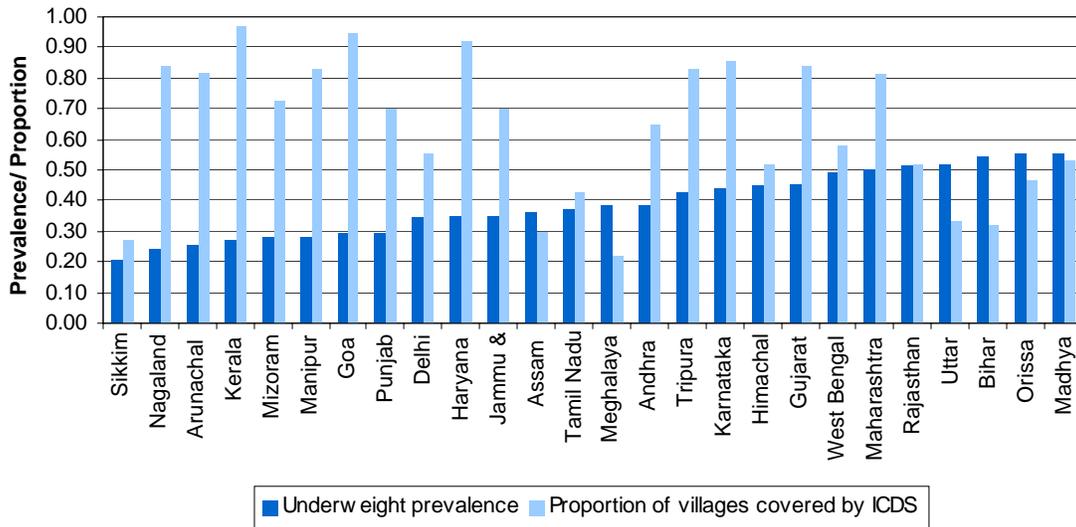
Source: Coverage calculated from NFHS II data; NSDP from Indiatat.com  
 Note: Per capita NSDP (net state domestic product) is in current prices for 1998/99

### 2.3.2 The relationship between state malnutrition prevalence and ICDS coverage

Regardless of the indicator of ICDS coverage used, whether it be (a) the percentage of villages with an *anganwadi* center, (b) the number of ICDS beneficiaries or (c) public expenditure on ICDS, access to the ICDS program appears to be poorest in the states with the worst nutrition indicators:

- a) Examining the percentage of villages with an *anganwadi* center 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 ten in terms of ICDS coverage.

**Figure 22 Relationship between the proportion of villages covered by ICDS and underweight prevalence, by state, 1998/99**

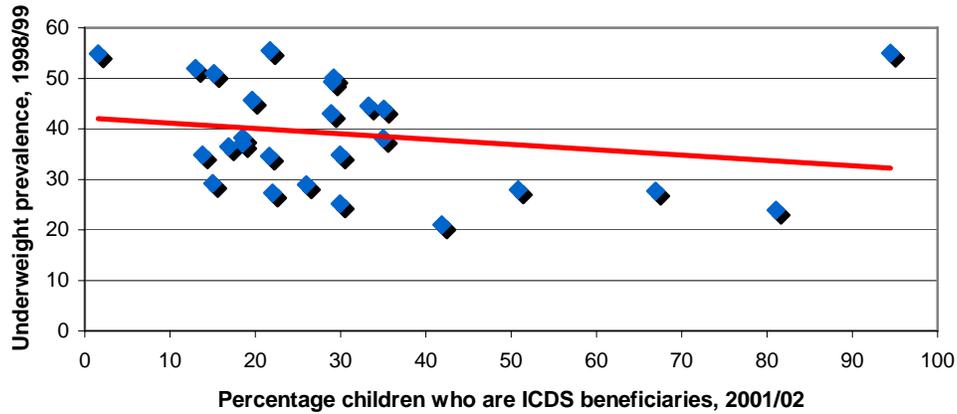


Source: Underweight prevalence calculated from NFHS II; villages covered calculated from NFHS II data in Das Gupta et al. 2005 (see Table C in the Appendix)

Village-level data reveal that ICDS placement is less regressive within a given state than across states. In 1998, for example, while only half of the villages from the lowest two deciles of the all-India wealth distribution had the ICDS program in place, the program covered about 80% of the richest villages in India. However, the difference in program coverage between the poorest and the wealthiest villages within the states is much smaller – about 60% of the poorest villages in every state were covered by the ICDS program compared with 70% of the wealthiest villages<sup>18</sup>.

- b) Also, states with a greater percentage of underweight children tend to have a smaller percentage of children enrolled in the ICDS program (Figure 23). Worst is Bihar where, despite an underweight prevalence of 55%, only 1.5% of children benefit from the ICDS program. 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% and 30%), 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% and has managed to enroll as many as 95% of children in the program.

**Figure 23 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

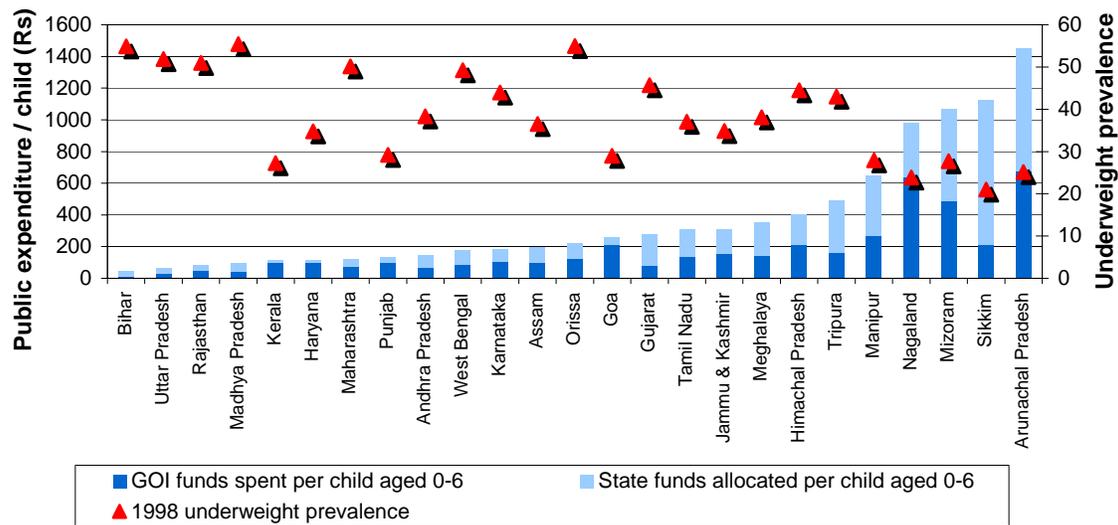
- c) The states where the prevalence of malnutrition is highest are also the states that are most poorly funded by the Government of India (GOI) and state financial allocations to ICDS. GOI per child expenditure in support of states' ICDS programs appears to be strongly and inversely proportional to the states' underweight prevalence (see dark blue bars in Figure 24 below).

In addition, the (per child) amount allocated by state governments to ICDS – most of which is spent on the supplementary feeding component – is lowest in the states with the highest underweight prevalence and highest in the states with the lowest underweight prevalence (see light blue bars in Figure 24). Total public expenditure<sup>g</sup> figures (see stacked bars in Figure 24) 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.

Since, as these expenditure figures indicate, poorer states find it difficult to mobilize 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.

<sup>g</sup> This public expenditure estimate combines GOI expenditure on ICDS with state allocations to ICDS. It excludes any expenditure on ICDS by local government institutions.

**Figure 24 Relationship between state underweight prevalence and GOI and state public expenditure allocations, 1998/99**



Source: Underweight prevalence calculated from NFHS II data; expenditure data from DWCD

## 2.4 INDIVIDUAL TARGETING: CHARACTERISTICS OF BENEFICIARIES

Effective targeting restricts nutrition interventions to those individuals or groups that are most vulnerable to malnutrition. In so doing, it maximizes the social returns and minimizes costs. However, the high generalized malnutrition prevalence in India and the administrative costs associated with excluding those who are relatively well-off means that rigorous targeting of ICDS benefits to particular socioeconomic groups is unlikely to prove a feasible strategy. Instead, ICDS policy follows the general guideline that a “special effort” should be made to reach children from lower income families or scheduled tribe and schedule caste groups, viz. “children ...belonging to poorest of the poor families and living in disadvantaged areas including backward rural areas, tribal areas and urban slums”<sup>19</sup>. There is also some explicit targeting of the severely malnourished who are supposed to receive double food rations.

This section examines whether those children who are most in need of the ICDS program do have access to its services and utilize them on a regular basis. We present the findings from survey data on children’s attendance<sup>h</sup> at *anganwadi* centers<sup>i</sup> (AWCs), collected in Kerala, Maharashtra, Rajasthan, Uttar Pradesh, Madhya Pradesh and Chhattisgarh during 2000-2002 (and henceforth referred to as the ICDS III baseline/ICDS II endline survey). The information is disaggregated by age, gender, caste, household wealth and location.

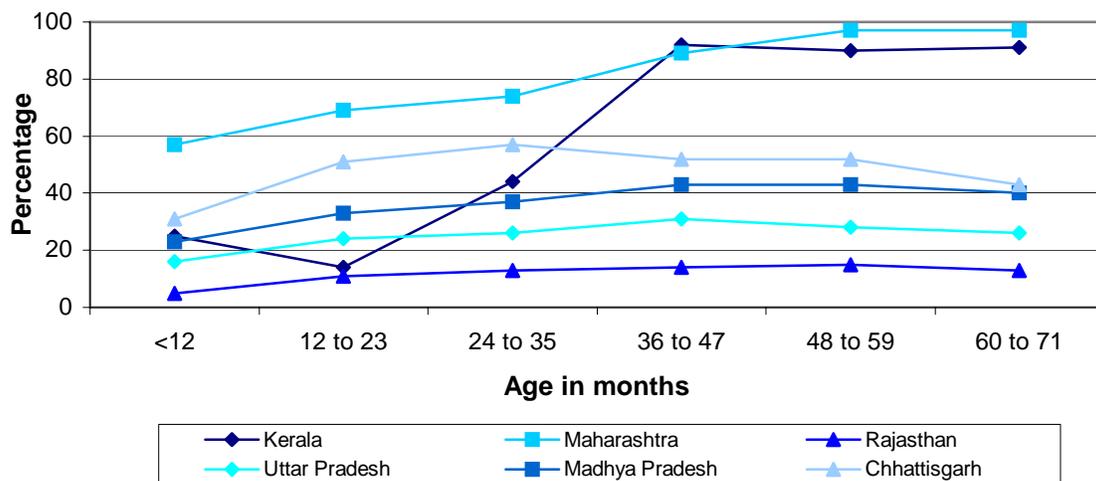
<sup>h</sup> Unless otherwise stated, attendance is operationalized as visiting the AWC at least once a month, conditional on there being an AWC in the village. In addition to the graphs in this section, actual figures on children’s attendance can be found in Table D in the Appendix.

<sup>i</sup> Since the villages and blocks in which households are located were not sampled randomly, the absolute levels of participation cannot be generalized to the entire state, but only to the sampled blocks. The differentials in relative access by subgroup are likely to more representative, however.

### 2.4.1 By age

Early childhood is a crucial developmental period during which there is considerable scope to influence the growth of malnourished children – through growth-monitoring, which is supposed to be performed monthly, and through encouraging sound child-care and feeding practices. However, it is precisely this group of children – infants and children under three – that are least likely to attend the *anganwadi* center. Attendance is lowest among the youngest children, then increases steadily – sometimes fairly dramatically as in the case of Kerala and Maharashtra – until the age of three after which it remains more or less constant (Figure 25). In Kerala and Maharashtra, almost every child aged 4 to 6 (in this sample) attended the AWC at least once a month. Attendance rates are less than half of that in the other four states.

**Figure 25 Percentage of children (of those living in villages with AWCs) who attend the AWC at least once a month, by age**



Source: ICDS aseline/endline survey 2000-2002

When daily, rather than monthly, attendance figures are examined, the gap between the attendance rates of children under three and children aged 4 to 6 is much larger (see Figure B in the Appendix).

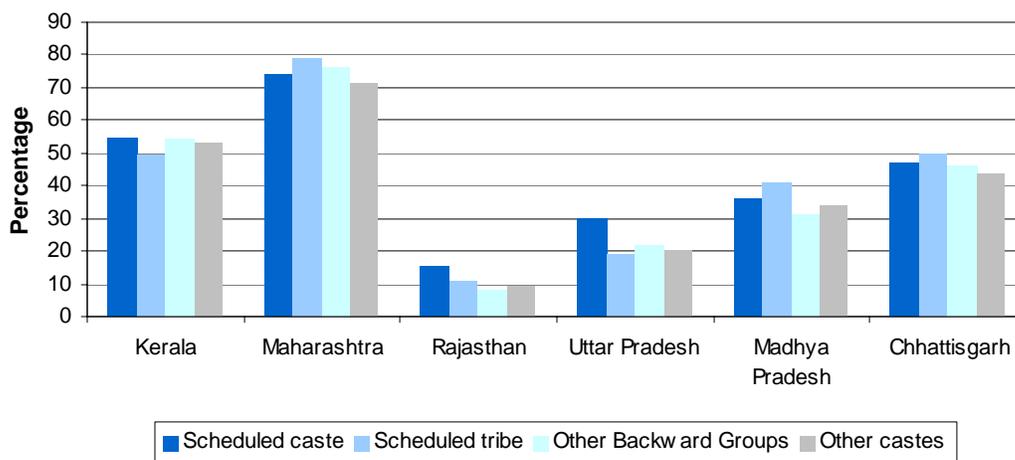
### 2.4.2 By gender

There is no statistically significant difference in the participation rates of boys and girls, either among the group that attends the *anganwadi* center on a daily basis or among those who attend at least once a month. There, thus, appears to be no gender discrimination in the reach of ICDS services.

### 2.4.3 By caste

The ICDS scheme places special emphasis on the participation of children of lower castes. Some *anganwadi* centers have been constructed in close proximity to scheduled caste and schedule tribe colonies, and *anganwadi* workers are expected to take steps to encourage the recruitment of these children into the program. Consequently, it is encouraging to see that in all states the attendance rates of scheduled caste and scheduled tribe children are in line with or slightly better than that of other castes (Figure 26). In Maharashtra, Madhya Pradesh and Chhattisgarh, the percentage of scheduled tribe children attending the AWC is higher than any other caste, while in Kerala, Rajasthan and Uttar Pradesh, a greater percentage of scheduled caste children than other children attend. These data are supported by qualitative evidence of high take-up among scheduled tribes relative to forward castes, perhaps partly because of social stigma associated with the receipt of benefits among the upper castes<sup>20</sup>. The relative caste composition of *anganwadi* centers differs from center to center, though, and attendance by children of a particular caste appears to also be influenced by the caste of the *anganwadi* worker and the caste that is most dominant in the local community.

**Figure 26 Percentage of children (of those living in villages with AWCs) who attend the AWC at least once a month, by caste**



Source: ICDS III baseline/ICDS II endline survey 2000-2002

### 2.4.4 By household wealth

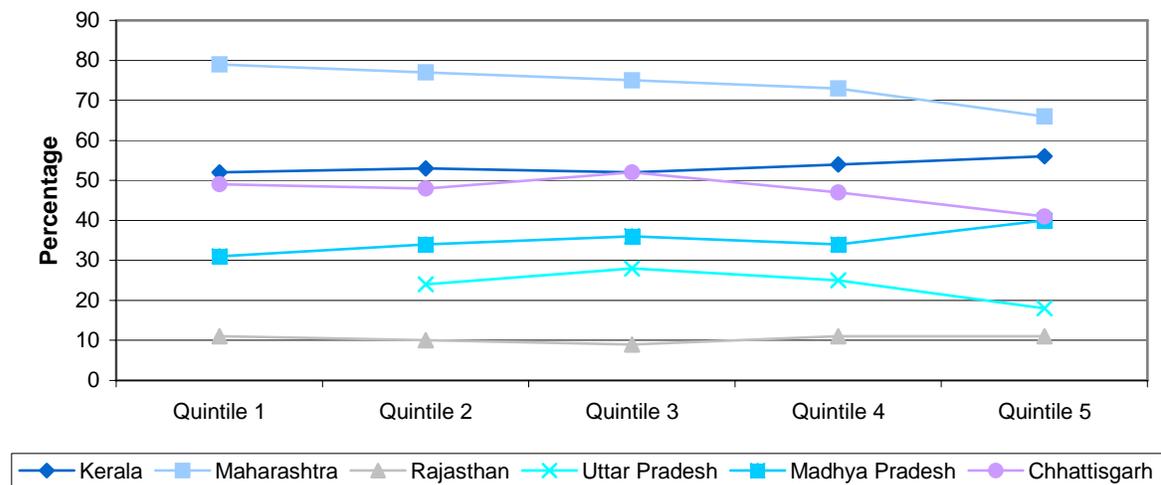
Among children living in villages with *anganwadi* centers, remarkably little variation is found in participation rates across wealth quintiles (Figure 27). Within each state, there is not much more than a 10 percentage point difference across the quintiles in the percentage of children attending. On 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. Maharashtra is the only state where attendance does decline steadily as wealth increases; in Chhattisgarh

and Uttar Pradesh, attendance is slightly lower in the top quintile; in Kerala and Madhya Pradesh, however, attendance is more regressive, with higher attendance rates in the upper quintiles.

A similar picture is obtained when one examines daily attendance figures: with the exception of Maharashtra, the percentage of upper quintile children attending centers is either as high or higher than the percentage of lower quintile children (see Table D in the Appendix for actual figures).

It is important to note that the state-level enrolment figures discussed above may obscure low enrolment among economically disadvantaged children in specific villages. Field visits to Uttar Pradesh, for example, found that the poorest of the poor were frequently excluded from ICDS interventions and underrepresented at *anganwadi* centers.<sup>21</sup>

**Figure 27 Percentage children (of those living in villages with AWCs) who attend the AWC at least once a month, by asset quintile**



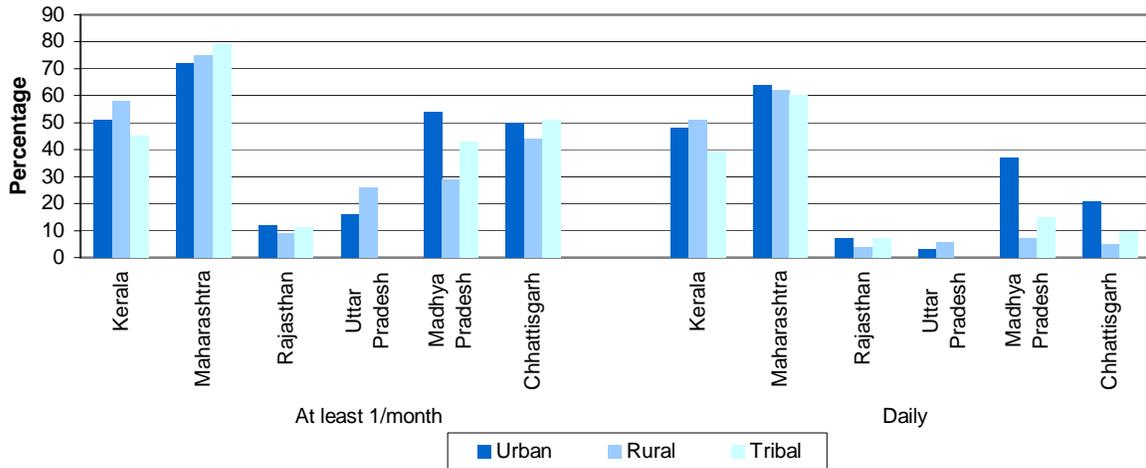
Source: ICDS III baseline/ICDS II endline survey 2000-2002

Note: Insufficient observations are available for Quintile 1 in the Uttar Pradesh data; unlike the quintiles used in Chapter 1 that were based on the national wealth distribution, these quintiles reflect the household's position in the state's wealth distribution

### 2.4.5 By urban-rural location

There is much heterogeneity across states in the attendance rates of children living in urban, rural and tribal areas. For example, in Madhya Pradesh and Chhattisgarh attendance rates are highest in urban areas, followed by tribal areas, while in Kerala and Uttar Pradesh attendance rates are highest in rural areas.

**Figure 28 Percentage of children (of those living in villages with AWCs) who attend the AWC at least once a month, by location**



Source: ICDS III baseline/ICDS II endline survey 2000-2002

Thus, although large proportions of vulnerable groups are indeed taking-up the ICDS benefits for which they are eligible, there is also substantial program capture by the less needy, which may be at the expense of more vulnerable children. Specifically, although attendance by lower castes is found to be relatively high, there is still scope to attract a greater percentage of this group, and additional effort needs to be made to reach younger children and children from asset-poor households, who are not only under-represented at *anganwadi* centers, but also most at risk for malnutrition<sup>j</sup>.

## 2.5 CHARACTERISTICS AND QUALITY OF ICDS SERVICE DELIVERY

Central to the ICDS objective of reducing the prevalence of malnutrition are two services: growth promotion and the provision of supplementary food. This section examines the delivery of these services, especially with respect to the availability of equipment and supplies, and the frequency with which these services are accessed. It also looks at the quality of AWC infrastructure, the training and competencies of AWWs and the coordination between the ICDS program and the Reproductive and Child Health program (RCH).

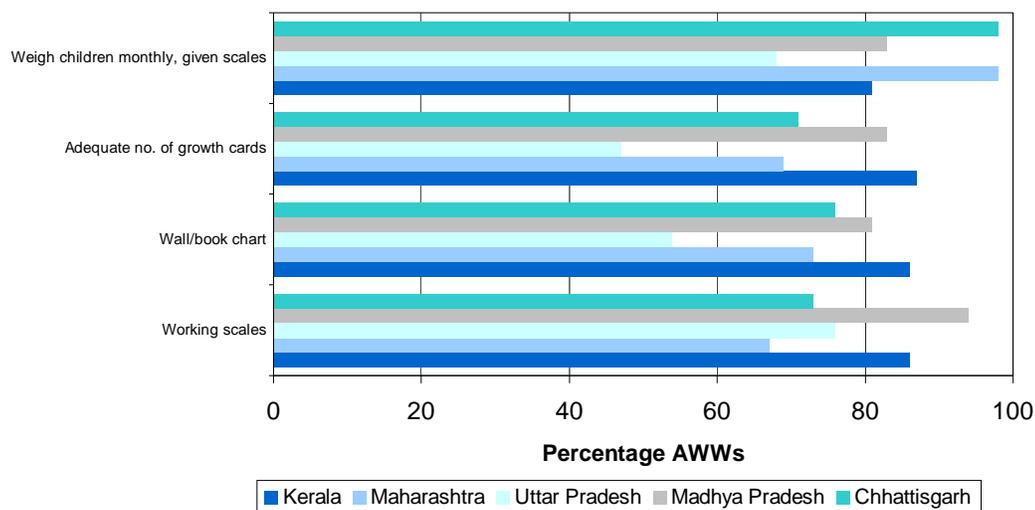
### 2.5.1 Growth promotion

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. AWCs in Kerala and Madhya Pradesh, while also experiencing equipment shortages, are generally better-equipped than those in the other three states (Figure 29). Even in AWCs with working scales, many AWWs report that they do not weigh young children (under three) every month. In all

<sup>j</sup> Disaggregated attendance rates, by state, subgroup and frequency of attendance are in Table D in the Appendix.

states, growth-monitoring performance appears to be superior in tribal areas, where children are weighed with greater frequency, and AWCs in urban and tribal areas are better-equipped with weighing equipment than rural AWCs.

**Figure 29 Percentage of AWWs with growth-monitoring equipment in place**



Source: ICDS III baseline/ICDS II endline survey 2000-2002

Even with regular weighing, growth monitoring is effective only if accompanied by communication for behavior change that results in 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<sup>22</sup> or because AWWs fail to effectively communicate the meaning of children’s growth patterns to mothers<sup>23</sup>. 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, all mothers think that their children are experiencing normal growth, and in Uttar Pradesh where underweight prevalence in the ICDS III baseline/ICDS II endline sample is 46%, 94% of women describe their children’s nutritional status as “normal”<sup>24</sup>.

### 2.5.2 Targeting and take-up of the supplementary nutrition component

The supplementary nutrition component (SNP) is one of the most well-known of ICDS interventions. Food is financed and procured by the states and provided to children at the AWC either in the form of a ready-to-eat snack or a meal cooked by the AWW. Through it, many children receive food at the AWC, with state averages ranging from about 20 to 80 children per AWC depending on the location of the AWC. In addition, in most states, there is a take-home food component from which about 20 to 25 children per AWC benefit.

Despite the resources and energy devoted to it, the SNP appears to perform rather poorly, especially in terms of providing a regular supplementary source of nutrition to the needy, while simultaneously excluding the non-needy. Irregularities in the food supply (see Table 11) and leakage to non-targeted individuals are major problems.

The most commonly reported reasons why children do not receive supplementary food from the AWC relate to inadequacies on the supply-side, especially issues of access, information and the irregularity of the food supply. These include, in decreasing order of importance, that food is not available for distribution, the mother is not aware of the food program or the eligibility of her child, the AWW fails to contact the mother or children when food is available and the AWC is too far away<sup>k</sup>. This is a very strong indication that ICDS needs to improve the regularity of the food supply – indeed, in three out of the five states surveyed in 2000-2002, the majority of AWCs reported irregularities in their food supply during the preceding three month period<sup>25</sup>. Another evaluation reported that disruptions in food distribution occurred for periods of over 90 days in 27 percent of AWCs<sup>26</sup>. There is also some evidence that household attitudes and behaviors are important determinants of children’s access to ICDS food: some mothers think that their children do not need the food (even though the same children were assessed by researchers as malnourished), some mothers fail to collect the food from the AWC and sometimes families prohibit the collection of food. Surveys revealed negligible complaints about food quality or quantity<sup>27</sup>, but field visits have shown that food is sometimes badly cooked, dry and salty<sup>28</sup> and should be supplemented by sugar, rice or vegetables, perhaps procured locally, to be more wholesome and palatable to children.

**Table 11 Regularity of food supply to AWCs and the availability of the take-home food program**

	Kerala	Maharashtra	Uttar Pradesh	Madhya Pradesh	Chhattisgarh
<b>% AWCs with no recent irregularities in food supply</b>	60%	41%	68%	27%	17%
<b>% AWCs with a take-home food program</b>	15%	28%	42%	95%	75%

Source: ICDS III baseline/ICDS II endline survey 2000-2002

Leakage of the supplementary food benefit to non-targeted beneficiaries seems fairly widespread. The first obvious source of leakage is in the attendance at the AWC: in many states, attendance rates are higher among children from relatively wealthy than from relatively poor households (see section 2.4.4). Also, it appears that in practice, there is little targeting of children from disadvantaged groups for supplementary feeding or of malnourished children for double rations of supplementary food. Food is often distributed to all those who come to the center<sup>29</sup>, and in cases where the AWC is located on school premises, to grade 1 children as well as preschool children, so that the number of SNP beneficiaries often exceeds the number of children actually enrolled at the AWC and children often receive less than the recommended 300 kcal of food. In some instances, food is also distributed to indigent adults and it is common practice for AWHs, and occasionally AWWs, to take home cooked food<sup>30</sup>. In addition to the leakage in the

<sup>k</sup> In all India, AWCs are located an average of 100 to 200 meters away from beneficiary households with an average travel time of 5 to 10 minutes (NCAER 2001).

distribution of supplementary feeding at the AWW, there is additional, and 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 about a third of children consume all take-home food themselves. One third of children consume less than a quarter of the food and 6% of children consume none of the food taken home from the AWC<sup>31</sup>. It is telling that most *anganwadi* workers surveyed describe the take-home food component as “not useful”.

Despite the irregularity of the food supply and the leakage of food to the non-needy, one way in which the SNP is effective is as an incentive to attract children to the centers – where they can then receive other health- and nutrition-related services. Without the SNP, attendance at the *anganwadi* centers may be much lower. Community-based monitoring mechanisms have recently been introduced in some areas in an attempt to improve the delivery of supplementary nutrition.

### 2.5.3 Providing a safe and hygienic environment for ICDS service delivery

Growth promotion, the provision of supplementary food and other ICDS services are sometimes performed in adverse environments.

*Location of anganwadi centers:* Most AWCs in urban areas (but not those in rural areas) are located in rented buildings (Table 12), especially community buildings such as primary schools, religious centers and *panchayat* buildings, which, while potentially improving community scrutiny of ICDS, may render the regular functioning of the AWC vulnerable to the competing uses that the community has for these buildings. Moreover, the budgetary allocation to rent is low with the consequence that AWCs are frequently found in small or unclean locations. Some ICDS programs are run from the houses of ICDS functionaries.

*Construction of anganwadi centers:* About one-third of AWCs in India have *pucca*<sup>1</sup> buildings, about another third have semi-pucca construction, less than one-third are in *kutch*a buildings, and a handful of AWCs function from open spaces, such as under trees<sup>32</sup>. Cooking space is typically inadequate, as reported by 55% of AWWs across the country<sup>33</sup>.

*Toilet:* Most AWCs have no toilet facilities<sup>m</sup>, especially in rural and tribal areas (Table 12). Of those AWCs with toilets, flush toilets are more common in urban areas and pit-latrines are more common in rural and tribal areas.

*Drinking water:* The majority of AWCs obtain their drinking water from a tap or hand-pump, but the water source varies substantially across state and rural-urban-tribal location.

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<sup>1</sup> Brick and mortar type of construction

<sup>m</sup> Similar findings were obtained in a country-wide study (NCAER 2001) which showed that as few as 17% of AWCs had toilet facilities.

**Table 12 Anganwadi center infrastructure, by location**

	Kerala			Maharashtra			Uttar Pradesh		Madhya Pradesh			Chhattisgarh		
	urban	rural	tribal	urban	rural	tribal	urban	rural	urban	rural	tribal	urban	Rural	tribal
<b>Percentage of AWCs with drinking water that is from:</b>														
Piped or pumped	69	44	50	21	44	41	54	70	100	58	83	73	83	72
Open well	27	41	17		20	34		8					4	
Other	4	15	33	79	36	25	46	22	0	42	17	27	13	28
<b>Percentage of AWCs with toilets that are:</b>														
Flush	27	15			2		8	7	50	19	14	36	13	16
Pit/latrine	20	26			13	10	29	10	8	15	7	9	9	4
None	53	59	100	100	85	90	63	84	42	65	79	55	78	80
<b>% AWCs with rented building</b>														
	64	41	50	96	19	41	92	15	92	46	21	82	17	44
<b>No. of AWCs in sample</b>														
	45	27	6	24	54	29	24	61	12	15	29	11	23	25

Source: ICDS III baseline/ICDS II endline survey 2000-2002

## 2.5.4 Anganwadi worker training, workload and status

Undoubtedly, the skills of the AWW and her capacity to mobilize the community to support ICDS and 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 diverse workload.

### 2.5.4.1 Skills training

While AWWs tend to be well-educated, they are often poorly trained for ICDS tasks. Survey data show that while almost all AWWs have at least matriculated from high school and half of those in urban areas have even received some college education; pre-service training is scarce with most women undergoing short-term in-service training<sup>34</sup>. Recently, more resources have been directed towards strengthening the capacity at the central, state and block levels to provide high quality support and training to functionaries of ICDS programs. In 2002, a new training program, *Udisha* (“first rays of the new dawn”), was initiated with funding from the World Bank and attempts to shift the focus of training away from the mere transfer of knowledge and towards the strengthening of AWW competencies.

### 2.5.4.2 AWW workload, status and remuneration

AWWs can spend up to 40% of their time on supplementary nutrition-related activities and a further 39% on preschool education<sup>35</sup>, 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. In addition, AWWs must

maintain at least 12 different types of records<sup>n</sup>. AWWs are also often given other responsibilities outside of ICDS: when AWCs are located on school premises, for example, some AWWs have the additional responsibility of teaching Class 1<sup>36</sup>; in other communities, AWWs are required to meet family-planning and sterilization targets; or, AWWs are called upon to assist in other government programs for women and children, such as the Pulse Polio campaign. Home visits, to advise on matters related to antenatal care and to promote breast-feeding, timely immunization and regular weighing, appear to be one of the more neglected of ICDS tasks with only 78% AWWs in Maharashtra, 68% in Chhattisgarh, 43% in Madhya Pradesh, 38% in Uttar Pradesh and 35% in Kerala undertaking the equivalent of at least once visit per day<sup>37</sup>.

The low status that the community attaches to the position of *anganwadi* worker and the irregularity with which AWWs are paid are demotivating factors. Despite the importance of her work, the AWW is often held in rather low regard by the community<sup>38</sup>, viewed as a “mere” provider of child-care, rather than a valuable healthcare worker. There are also frequent lags in payment of honoraria which need to be resolved. In Uttar Pradesh, for example, as many as 67% of urban AWWs report that they do not receive their honoraria regularly<sup>39</sup>.

### **2.5.5 Collaboration between ICDS and the Reproductive and Child Health Program**

The objectives of the Reproductive and Child Health program (RCH) 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 recognized in the job descriptions of the *anganwadi* workers and auxiliary nurse-midwives (ANMs). AWWs are supposed to promote awareness of national immunization days (NIDs) and maintain immunization 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 immunizations, dispense medicines and contraceptives, and provide assistance and guidance to AWWs in the discharge of their health-related duties.

In practice, cooperation between the ICDS and RCH appears to be somewhat limited, partly because of the absence of a designated person or body to oversee the promotion of this collaboration. Site visits reveal that AWWs take little interest in finding out whether mothers are registered with the ANM and receiving antenatal care, and the ICDS III baseline/ICDS II endline survey (2000-2002) shows that ANM visits to the AWC are not very regular. In Kerala, for example, only 50% of urban AWCs and no rural AWCs had received an ANM visit in the previous month<sup>40,o</sup>. As a result, it is perhaps not too surprising that some *anganwadi* workers, and as many as one-third of those surveyed in rural Uttar Pradesh, are inclined to believe that the ANM does not perform anything

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<sup>n</sup> These include records for daily attendance, preschool education, supplies, supplementary nutrition program, births, deaths, immunization, weight, pregnancy, health referral, a daily diary, a monthly progress report and a survey of households in the area covered by the AWC.

<sup>o</sup> In some states, performance is better. In Chhattisgarh, for example, almost all AWCs (95%) report being visited by an ANM every month.

significant during her visits. That the provision of health services is not consistently better in villages with AWCs than without AWCs seems to suggest that there is currently little coordination or convergence between the two. As was seen in section 2.2, deworming is more frequent in villages with AWCs in Kerala and Maharashtra, but not in Rajasthan and Uttar Pradesh. More children receive Vitamin A supplementation in villages with AWCs than without AWCs in Maharashtra and Uttar Pradesh, but not in Kerala or Rajasthan. Although the immunization function is being performed with some regularity (e.g. at least 80% of AWCs in Kerala, Maharashtra, Madhya Pradesh and Chhattisgarh have immunization registers that have been regularly used), previous studies suggest that ICDS has had little to do with any improvements in immunization coverage<sup>41</sup>.

### **Box 1 Getting things right in Bellary district, Karnataka: A report from the field**

‘Venkatamma\* is quick to list the characteristics of a good AWC. “It should be a spacious place with clean surroundings, the building should have good ventilation, enough play materials and teaching aids, a mirror for the children to come and have a look, a small garden in front of the centre, and they should be received with love...” she pauses a while and continues with a grin. “Of course, most of these things are not there in my center but children attend regularly in good numbers.” She says it is the relationship with children, a good preschool component and food that attract children to the center.

The AWW, Venkatamma, and helper Rankamma\* both belong to the scheduled caste community and live close to the AWC. The AWC has its own building with a 12x20 classroom, storeroom and kitchen; there are enough vessels for cooking and serving; the water tank is very close to the centre, although supply is erratic and water sometimes has to be fetched from a bore-well nearby. A toilet has been built recently, although no one has yet begun to use it.

By and large, Venkatamma’s pride in her center is validated by our visit. Forty-seven children were present at the AWC when we went there unannounced. This was true for each of the three days we visited the centre. By about 10.30am all the children would troop in, some marching in confidently, others brought in crying by grandmothers or older siblings. We were intrigued by the fact that attendance continued to be high even after Venkatamma left to take over her new role as supervisor and the centre was being run only by the helper, Rankamma, with the help of two adolescent girls from the village. Even though she cannot handle the preschool component, Rankamma keeps the children engaged with songs and games. They weigh the children regularly, mark their weight in registers, explain to mothers how the children’s growth is progressing and makes suggestions on how to improve growth. Venkatamma and Rankamma work well together and the entire community appreciates and respects them. Women often visit the centre to informally interact with the AWW. Mothers could tell us how children should be breastfed and about pregnancy risks. It seemed as if the centre has acquired a status on a par with the school, where parents sent their children regularly.

The AWC follows a varied menu decided for the week by the state level authorities. All children are made to wash their hands before they start eating and in other AWCs in the same village, they even use soap to do so. Thereafter, the children are constantly reminded not to touch the floor or dirty their hands before eating. The AWW said that in her 14 years of service she had never experienced any major gaps in the supply of food, and there was always something or the other for the children to eat. For instance, if the supply of rice were delayed, there would be sprouted green-gram or energy food ready for the children. This was actively confirmed by mothers.

The AWW and the health unit coordinate well with each other. The village has placed its AWC and health unit close together. Problem health cases are referred by the AWW to the health center and many mothers now voluntarily bring their children to the health centre. Although the women we spoke to did not remember the names of medicines or immunizations given to children, nor the immunization cycle, they nevertheless took the children to the AWC on the immunization days with the result that immunization coverage is good.’

Summary of a field visit to Karnataka  
(Educational Resource Unit 2004)

\*Names have been changed

## 2.6 MONITORING AND EVALUATION

A strong monitoring and evaluation (M&E) system helps program managers track whether project implementation is proceeding as desired and, subsequently, make informed decisions to correct any problems. Periodically, it allows an assessment to be made of the extent to which the program is having the desired impact and, in so doing, promotes the most effective and efficient use of resources. The current M&E system faces many challenges, but there have been some notable accomplishments in recent years.

Given the size of the ICDS program, M&E is a daunting task. A standardized data collection procedure is employed in all states, but it is complex and for the most part relies on manual entries and compilations. Each AWW maintains as many as 10-25 different registers<sup>p</sup> into which information is entered, some of it on a daily basis. Once a month, the AWW compiles this information into a standardized Monthly Progress Report (MPR) that contains a number of input, process and impact indicators. These MPRs are then sent to the supervisors (each of whom supervise about 20 AWCs) who consolidate the reports and forward them to the Child Development Project Officers (CDPOs), who assemble reports by project/block and remit them all to the state headquarters and Central ICDS Monitoring Cell. At the Central level, some of the key indicators<sup>q</sup> are analyzed and Quarterly Progress Reports (QPRs) are prepared (for the World Bank-funded states) which are used by the DWCD, Planning Commission, Health and Family Welfare department and others. States are also ranked with respect to progress made and detailed feedback is sent to state headquarters. However, there is hardly any feedback down the line from the state headquarters to lower levels of program implementation so that local action is seldom taken in response to information, thus rendering the feedback system rather ineffective.

In light of the important role that an effective M&E system can play in bringing about improvements in child health, strengthening the M&E system is essential. There have been some significant improvements in M&E in some states, in part due to the commitment and effort of the GOI<sup>r</sup> and in part due to the presence of bilateral and international agencies, such as CARE, the World Food Program and the World Bank<sup>s</sup>, but some major impediments remain.

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<sup>p</sup> Most of these registers contain information on the take-up of different ICDS services, but AWWs are also frequently charged with collecting information for other government programs, such as old age schemes, too.

<sup>q</sup> These key indicators include figures on personnel, operationalization of blocks and AWCs, supply of supplementary nutrition, preschool education, the number of births and deaths, and malnutrition status - using the IAP (Gomez) classification.

<sup>r</sup> Specific activities in this regard include issuing clearer M&E guidelines to states, annual and periodic review meetings at the central level, small supplementary financial allocations to M&E activities at the local level and a pending revision of monitoring formats and the number of AWC registers.

<sup>s</sup> In World Bank project states, ICDS input, process *and* impact indicators that are compatible with the project's development objectives were defined at the outset of the project; adequate financial allocations were made to the M&E component of ICDS; and, M&E activities are broad, including field visits, periodic reviews, operations research, continuous social assessments, baseline and endline surveys - in addition to the standard ICDS monitoring activities.

### **2.6.1 Low prioritization of monitoring and evaluation activities**

There is too little emphasis on M&E, in part due to a poor understanding of what it entails and its potential contribution to program effectiveness. The primary focus of the program management (both in central and state governments) seems to be on the timely release of allocations to the implementing agencies and the recording of expenditures, with very little emphasis on assessing the quality of service delivery and impact of the program. At the local level, few AWWs are aware of the purpose and utility of data collection and, instead, view their data collection tasks as routine, boring and burdensome. The result is that although the ICDS program is being monitored – in the sense that information is regularly collected on inputs and outputs - the system is not oriented towards using that information to inform action, i.e. it is not used to improve service delivery, beneficiary recruitment or, eventually, modify program design. Consequently, there have been delays and bottlenecks in the replenishment of supplies, the neediest beneficiaries are often not reached and it is difficult to know which elements of the program are most effective.

### **2.6.2 Personnel capacity in monitoring and evaluation**

The number of appropriately qualified people assigned to the M&E activities of ICDS is relatively small at almost all levels of program implementation and those involved are usually not exclusively dedicated to monitoring, but are required to take it on as an additional responsibility. Overall monitoring of ICDS rests with the highest positions in the government (at the Director/Secretary level), but these officials face severe time constraints, with many other programs to oversee. Vacancies in M&E positions are also problematic, with many positions remaining unfilled for extended periods, and frequent personnel turnover at senior levels, common throughout the Indian bureaucratic system. The next incumbent takes a while to become familiar with the issues, thus wasting valuable time that could be used for program implementation.

At the field level, positions are more stable, but vacancies and irregular supervision are pervasive. While, in the sample of blocks included in the ICDS III baseline/ICDS II endline survey (2000-2002), supervisors had been appointed to all urban AWCs in the sample and were fairly active in ICDS activities (with at least 96% of the AWCs in five of the six states<sup>t</sup> reporting that they had been visited by supervisors in the preceding month), 10% of rural AWWs were not linked to a supervisor<sup>u</sup>. Moreover, many of those who had been appointed did not visit regularly: at least 30% of the rural AWCs that had supervisors in Uttar Pradesh and Chhattisgarh had not been visited by them in the preceding month<sup>42</sup>.

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<sup>t</sup> In Madhya Pradesh, only 58% of urban AWCs had been visited by supervisors in the preceding month.

<sup>u</sup> As many as 43% of AWWs were not linked to supervisors in Chhattisgarh

An M&E curriculum is included in the training syllabi for field level ICDS functionaries, but it has deficiencies: the value of M&E and the importance of collecting data on key project indicators are typically not adequately communicated.

### **2.6.3 Inadequate use of information systems and qualitative data**

The information system is central to keeping track and making sense of so much data, but is held back by insufficient utilization of computer networks. Almost all information that is collected by AWWs, supervisors and CDPOs and forwarded to the state level is transmitted by hand with very limited use of computers. Software programs are seldom used to analyze the data collected at the state and central level, except in some of the states covered under World Bank ICDS Projects. Availability of the necessary computer hardware up to the district/block levels still remains a problem, partly due to inadequate financial allocations to M&E.

There is also an inherent quantitative bias in the whole monitoring system that comes at the expense of the collection of some qualitative information that could assist in the construction of the causal narratives that explain patterns in the quantitative data. For example, continuous social assessments, which collect qualitative information through community meetings, focus groups and open-ended questionnaires, are currently being implemented in ICDS in the states that are supported by the World Bank, but are not used in other states.

If ICDS is to substantially reduce child malnutrition, then program managers need a reliable broad-based and efficient M&E system that enables them to adjust elements of program implementation and design so as to maximize the returns to nutrition investments. Some ways in which the current system could be improved are discussed in Chapter 3.

## **2.7 SUCCESSFUL INNOVATIONS IN ICDS**

There is encouraging evidence that, with relatively small changes in project priorities and design, the impact of the ICDS program on child nutritional status can be substantially enhanced. This can be seen in studies of the successful implementation and performance of regular ICDS projects as well as in studies of projects that experiment with modifications to the ICDS program<sup>43</sup>. Adapting the lessons learnt from these projects and applying them to other ICDS projects can help ensure that the ICDS has the maximum impact – saving money *and* lives.

### 2.7.1 Gains from ICDS-RCH convergence and community change agents: lessons from INHP II

CARE India's<sup>v</sup> Integrated Nutrition and Health Project II (INHP II), now active in nine states<sup>w</sup>, highlights the gains from targeting behavior change interventions at the very youngest children (under two) and at pregnant women, i.e. concentrating energies on those critical periods in the lifecycle when the greatest impact on health status can be made<sup>44</sup>.

One innovation is the promotion of closer convergence between the ICDS program of the DWCD and the Reproductive and Child Health program (RCH) of the Department of Health and Family Welfare (DHFV) to encourage mothers to utilize RCH services<sup>x</sup>. The underlying premise of convergence is that by working together these programs are more likely to achieve their shared objectives of reducing infant mortality, combating child malnutrition and improving the health status of women. An example of this is the facilitation of well-publicized "Nutrition and Health Days" (NHDs) on which the AWW (from ICDS) and ANM (from RCH) provide immunizations to children under two and/or antenatal care (including check-ups, provision of IFA supplementation and TT immunization) to pregnant women at the AWC. Health talks are another important element of these days, and take-home rations of supplementary food (sufficient for a few weeks) are provided as an incentive for attendance. The process of setting up the NHDs is facilitated by the community, e.g. through engaging mothers' groups, self-help groups and *panchayati raj* institutions.

Another key activity is the appointment and training of "change agents" within the community. Volunteers<sup>y</sup> are assigned to families, and provide health and nutrition information, promote positive health behaviors and encourage ICDS participation. The activities of these agents start at the birth of the child, if not before, when they advise on appropriate newborn care and then follow up with regular home visits until the child is two years of age. Many of these visits are timed to coincide with critical periods in the lifecycle (e.g. at weaning) and serve as cues to action at times when mothers should initiate new health behaviors, failing which children might be especially vulnerable to undernutrition or disease.

The INHP approach appears to be having a significant effect. For example, 53% of pregnant women in the intervention areas received three or more antenatal checkups, compared to 38% in the non-intervention areas. Other aspects of antenatal care were also better in the intervention areas, such as the consumption of IFA tablets and the receipt of

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<sup>v</sup> This project is implemented in partnership with the DWCD and the DHFW of the GOI, NGOs and CBOs, with support from USAID and technical assistance from BASICS II.

<sup>w</sup> These states are Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal.

<sup>x</sup> These interventions include antenatal care, plus nutrition counseling and birth preparedness; home-based newborn care; maternal and child immunization; child feeding advice; Vitamin A for children; and supplementary nutrition.

<sup>y</sup> These can be women, men, adolescent girls or boys, or traditional birth attendants, each serving 10-15 families.

tetanus toxoid doses (see Table E in the Appendix). Childcare was also improved substantially. 65 percent of women in the intervention areas initiated breastfeeding within one hour of delivery, compared with 38 percent in the non-intervention areas. Similarly, higher proportions of children in the intervention areas were breastfed exclusively for six months, introduced to complementary feeding appropriately, given more nutritious complementary foods, vaccinated against measles by the age of 12 months and received Vitamin A supplementation (see Table F in the Appendix). There appears to be no difference in behavior by children's gender. Some of the greatest differences between intervention and non-intervention areas are found among people of low socioeconomic status, indicating that this intervention is progressive in its reach.

### **2.7.2 Gains from community-based interventions: the Dular strategy<sup>z</sup>**

As outlined above, the INHP II program made successful use of community participation to promote better health practices and implement the ICDS-RCH programs. The Dular program, undertaken by State governments in Bihar and Jharkhand, with the assistance of UNICEF, has also developed several innovative approaches to improving early childhood nutrition, care and development. Active in 8 of 60 districts, it focuses on intensive upgrading of ICDS operations, including the collection of birth weight data and the monitoring of care practices, Dular has creatively addressed many of the past failings of the ICDS program in Bihar.

As part of the strategy, the *anganwadi* worker in every targeted village teams up with a small group of local resource people who are then given basic training in nutrition, childcare and hygiene. Once trained, the team visits pregnant women and mothers of newborns in their homes to educate them about safe delivery, breastfeeding, immunization, and other essential care practices during pregnancy and early childhood. Since the team is made up of local people from the community, parents respond positively.

Though still young, Dular appears to be having an impact. For example, an evaluation using a sample of 450 households indicates that after one year of intervention there was an 8% decline in the prevalence of underweight among children under three, a 20% increase in the use of colostrum feeding within one hour of birth, a 20% decline in the episodes of diarrhea in under-threes during the three months prior to the interview, and a 30% increase in the consumption of adequately iodized salt by participating families<sup>aa</sup>.

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<sup>z</sup> This section draws on research by the International Food Policy Research Institute (IFPRI 2003).

<sup>aa</sup> These data have been provided by UNICEF, drawing on an evaluation by Tufts University.

### 2.7.3 Gains from community participation: Mothers' Committees in Andhra Pradesh

Lessons from another innovative program can be drawn upon to help build greater community participation into ICDS implementation. For example, in 1998, the state of Andhra Pradesh began establishing mothers' committees in villages with the ICDS program as a means of integrating the program into the community and stimulating demand for improved service quality. Mothers' committees are informal committees of eight nominated village members, established in line with the guidelines of the general ICDS program that required the formation of a *Mahila Mandal* (women's group), but registered as committees to allow formal participation in ICDS as well as to enhance legitimacy and accountability. Members serve three-year terms.

Currently, more than 50,000<sup>bb</sup> committees have been established in 351 development blocks in the state. Committee members are given three rounds of a week-long capacity-building training course that focuses on nutrition, health, education, group formation and economic empowerment, as well as relevant and state-specific social and legal issues. In collaboration with the State AIDS Control Society, 20,000 members of mothers' committees and 10,000 adolescent girls have been trained to serve as "change agents" in the promotion of HIV awareness and healthy sexual attitudes and behaviors.

The roles and responsibilities of these committees with respect to the ICDS program have evolved considerably over time. Originally they were involved in the civil works components of the World Bank-assisted ICDS I project - selecting construction sites for *anganwadi* centers, monitoring construction and releasing funds to cover construction costs. More than 15,000 *anganwadi* buildings were completed under the supervision of mothers' committees. Today the range of responsibilities includes recruiting AWWs and helpers, paying honoraria, monitoring community-based performance indicators for AWCs, establishing local food units to prepare and distribute supplementary food to the AWCs, and ensuring that eligible beneficiaries receive services. The mothers' committee members may also play an active role in motivating adolescent girls to join bridging courses and skills development programs, encouraging school enrolment, especially among girls who have dropped out, and motivating parents to send children to *anganwadi* preschool.

The evaluation of the mothers' committees indicates that the program has potential, but needs reinforcing. Only 40% of mothers' committees are formally involved in the ICDS program and only 31% of all mothers report actually having heard of the committees<sup>45</sup>. Awareness of the committees is higher in tribal areas (49% of women and 34% of adolescent girls) than in rural areas (25% of women and 15% of girls) and urban areas (20% of girls). Nevertheless, a survey of AWWs<sup>46</sup> showed that they appreciate the mothers' committees with three-quarters of workers describing the functioning of the mother's committees as "good" and another 11% as "satisfactory".

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<sup>bb</sup> The target number of committees is 53,144 which will cover all AWCs in Andhra Pradesh.

To increase the positive impact of the mothers' committees on maternal and child health and nutrition, it has been proposed that their role as 'change agents' be strengthened through further training. Such training would assist them in promoting appropriate infant feeding practices and attendance at the AWC. Another possibility is to increase the extent to which mothers' committees are genuinely empowered to manage aspects of the ICDS system, rather than simply helping program staff to promote healthy behaviors. This would involve delegating more powers to them to manage aspects of the program (such as organizing food distribution, appointing AWWs and improving AWC infrastructure) – subject to the external monitoring of the outcomes they achieve.

This effort has sought a much more ambitious role for community participation than the INHP II and Dular programs. The latter efforts hinged on involving community members as behavioral change agents. In addition to this, the Andhra Pradesh program tried to involve mothers' committees in the actual management of ICDS resources, such as overseeing civil works and releasing funds for construction costs, managing food preparation and distribution, and recruiting and monitoring AWWs. To carry out these tasks effectively, community members need a substantial degree of leadership training, support, and oversight, as well as clear designation of the needed powers. These requirements need to be built explicitly into the program design.

Other lessons from this effort include the need to assure stability in what is expected of community participants, as well as from AWWs. Shifting expectations, combined with lack of authority and project support, can make it difficult for community members to play an active role in program implementation. Similarly, AWWs may under-perform need to know to whom they are accountable, and for what tasks.

#### **2.7.4 The Tamil Nadu Integrated Nutrition Program (TINP)<sup>47</sup>**

This variation of the regular ICDS program focused on targeting high-risk groups and limited itself to a relatively small number of interventions. Project activities included regular growth monitoring, nutrition education and health checks-ups for all children. Therapeutic supplementary feeding was provided to moderately and severely malnourished children, children whose growth was faltering (especially those below 36 months of age) and high-risk pregnant and lactating women.

The TINP also placed more emphasis than the regular ICDS on the training of workers, supervision and managerial capacity, and an efficient management and information system. Information was analyzed and fed back into the project implementation. For example, when it was found that families were not changing the way they fed the children under two years of age, the project targeted more of its information and education to the parents of this youngest group. Mothers who took part in the project knew much more about good nutrition and health practices than other mothers, they breastfed for longer, and fewer of their children needed supplementary feeding.

Community participation was also substantially enhanced. The staff were encouraged to develop active and close collaboration with local women's and girls' groups from the

community to achieve behavioral change in the community as a whole. Efforts were made to engage the community members actively in project implementation. They were taught to promote birth weight recording, regular monthly weighing, and spot-feeding. They were also encouraged to participate in community assessment, analysis and problem-solving.

This program halved the prevalence of severe malnutrition in the villages in which it was implemented. Universal feeding was shown not to be necessary to achieve substantial nutritional and health gains. However, it did not fully meet its objective of reducing moderate malnutrition. The project evaluation concluded that to reduce moderate malnutrition TINP interventions must include a greater focus on home-based actions and proactive integration of nutrition activities with the health system.