

# Fiscal Challenges in Scaling Up Nutrition Interventions

## Insights and Policy Implications

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Four states—Bihar, Chhattisgarh, Odisha, and Uttar Pradesh—together account for around 45% of stunted children in India. The existing literature makes a case for delivery of a host of specific interventions referred to as the direct nutrition interventions, along with sector-wise or systemic interventions, to bring about significant reductions in prevalence of stunting among children. An analysis of the delivery of DNIs in the said states shows that apart from the decline in fiscal priority for the DNIs during 2014–15 to 2017–18, there are also significant resource gaps for some of these interventions, which underscores the need for enhancing fiscal priority for these interventions.

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Globally, 25% of children below five years of age (approximately 1,560 lakh) have stunted growth due to chronic nutrition deprivation in utero, early childhood or both (UNICEF, WHO and World Bank 2016) and almost a third of them live in India. Around 38.4% children below five years of age in India are stunted, as per the National Family Health Survey-4 (NFHS-4), 2015–16 (IPS 2016). Hence, India's nutrition action/inaction affects numbers globally. Nutrition-specific interventions or direct nutrition interventions (DNIs), that can reduce child stunting significantly by addressing the immediate causes of undernutrition, arising out of inadequate diet and disease, are well known (Bhutta et al 2013). Also, most of these are included in India's national policy framework (Menon et al 2015).

Evidence base on nutrition interventions that address stunting is strong globally. However, research on the public investment in these interventions in India and their delivery is still evolving. India has a federal fiscal architecture, where the responsibility for financing of critical social sectors (which are relevant from the nutrition perspective), is shared between the union and the state governments. The recent changes in the fiscal architecture of the country, such as the recommendations of the Fourteenth Finance Commission (Ministry of Finance 2015) and the restructuring of the centrally sponsored schemes (CSS) (NITI Aayog 2015), have on the one hand enhanced the fiscal autonomy of the states, by increasing the share of untied funds in transfers from the union government to the states.

On the other hand, the states' contribution in the funding of CSS has also increased in the last three years, owing to changed fund sharing pattern in most CSS (Choudhury et al 2018). This has been accompanied by a reduction in the union budget outlays for critical social sector schemes, under the premise that the resource gap would be met by the states out of their enhanced untied resources (Centre for Budget and Governance Accountability 2016). The states' role in the financing of most social sectors has thus increased significantly. Hence, examining union government figures alone does not give a complete picture of funds allocated and spent for nutrition-related interventions, as the implementation of social sector programmes, including nutrition, has been and continues to be, the primary responsibility of the states.

This, coupled with the marked disparities in the nutritional outcomes across states (as revealed by NFHS-4), points towards the need for strengthening action at the states' level for addressing undernutrition. Four states—Bihar, Chhattisgarh, Odisha, and Uttar Pradesh (UP)—together account for around 45% of stunted children in India (IIPS 2016; Registrar General of India 2011). However, an analysis of fiscal outlays for the direct nutrition interventions (which are a part of India's prevailing policy framework), which can prevent stunting among children, has not been comprehensively undertaken so far. In this context, we have studied the following: first, we have mapped the delivery platforms for DNIs in the study states. Second, we have analysed the four-year trend in fiscal outlays, earmarked for DNIs by these state governments (covering 2014–15 to 2017–18). Third, we have assessed the “adequacy” of budgets for the delivery of select DNIs at scale. Lastly, we have also commented on the kind of data gaps confronted while carrying out this analysis, to highlight the challenges involved in analyses of nutrition budgets at the state level.

Globally, the package of DNIs that can reduce stunting is well known (Horton et al 2010; Bhutta et al 2013). These interventions have demonstrated effectiveness by reducing child mortality, improving nutrition outcomes and protecting human capital. In the Indian context, Menon et al (2015) categorised a set of 14 DNIs included in India's policy framework, as India Plus interventions. This article uses India Plus interventions, along with three other DNIs—maternal calcium, maternal deworming, and supplementary nutrition to adolescent girls. These DNIs span across the first 1,000 days of life (from conception to the first 24 months of a child's life) and adolescence; which presents an important window of opportunity to improve child nutrition. The article thus studies the state budget outlays for 17 DNIs.

The data on government budgets (or fiscal outlays) and actual expenditure, provided by the state finance departments, are presented in the template of budget documents. Some of the DNIs do not appear separately or distinctly in such templates, especially those that are components or subcomponents within larger schemes. Hence, this analysis uses budgetary information in a template that corresponds closely to the nutrition sector. Analysis was done for four states in India—Bihar, Chhattisgarh, Odisha, and UP. These states, together, account for approximately 45% of the child stunting burden in the country (IIPS 2016; Registrar General of India 2011), and present differing socio-economic contexts.

### Trends on Budget Outlays

The budgets tabulated for DNIs included in this study were categorised into five themes: (i) behaviour change communication (counselling during pregnancy regarding good nutrition practices for pregnant women, counselling for optimal breastfeeding and counselling for complementary feeding and hand-washing), (ii) micronutrient supplementation and deworming (vitamin A and iron folic acid [IFA] supplementation and deworming for children, IFA and deworming for adolescents, and IFA, calcium and deworming for pregnant and lactating [P&L] women, in addition to oral rehydration salts [ORS] and therapeutic zinc supplements for treatment of diarrhoea); (iii) supplementary/complementary feeding (supplementary food for pregnant and lactating women and young children, additional food rations for severely underweight children and supplementary food for adolescents girls); (iv) care of sick and management of severe acute malnourishment (facility-based treatment of children with severe acute malnutrition [SAM]); and (v) others (insecticide-treated bed nets for pregnant women in malaria-endemic areas, maternity entitlements for Pregnant

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and Lactating (P&L) women). The analysis has also included state-specific schemes delivering DNIs, wherever applicable.

The nodal ministries delivering the DNIs being studied were mapped first. Thereafter, we mapped the CSS and state-specific schemes, and within these schemes, specific components which act as delivery platforms for the DNIs in the study states. For each DNI, its associated institutional cost, such as incentives, procurement of drugs, human resources, infrastructure, etc, have also been included in the respective budgets, that is, the fiscal outlays or expenditure data that were collated for the different DNIs for the study states. The budget outlays were collated from the detailed demand for grants (DDGs), brought out by the state finance departments, and the record of proceedings (ROPs) under the National Health Mission (NHM) (under health departments) for the four states. Supplementary ROPs, wherever available, were also included in the analysis.

The analysis was done for four fiscal years: 2014–15, 2015–16, 2016–17 and 2017–18. The budget data collated from the DDGs includes the budget estimates for 2017–18, revised estimates for 2016–17 and actual expenditure for 2015–16 and 2014–15. The budget data from ROPs gives us the approved outlays for all four years. Two points need to be noted here with regard to

the methodology of this analysis: (i) state budget documents, that is, the DDGs, for fiscal years up to 2013–14, did not report the central share of funds for several CSS. The DDGs of the states from 2014–15 onwards, however, capture almost the entire quantum of resources transferred from the centre to states. Hence, for ensuring comparability, the analysis covers only the financial years starting from 2014–15.

(ii) The data taken from the ROPs of NHM as mentioned above, are approved outlays, which are not strictly the same as budget estimates, revised estimates or actual expenditure. However, given the objective of developing an analytical framework that corresponds closely with the nutrition sector discourse, we have had to combine figures from two different sources that are not strictly comparable about the reliability of numbers—only the actual expenditures are fully reliable; budget estimates, revised estimates and approved outlays indicate what is likely to be the quantum of actual expenditures, but it serves the purpose of analysis quite well.

### Adequacy of Budget Outlays

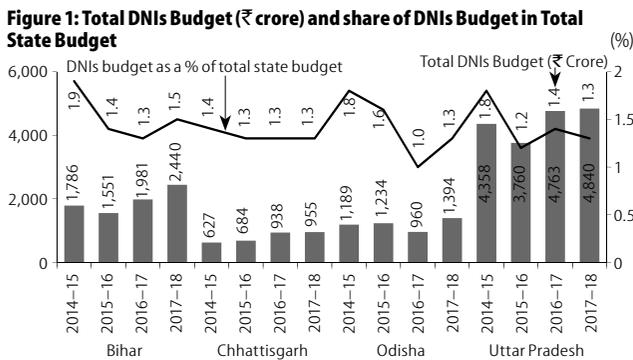
Two approaches were adopted to assess the adequacy of budget outlays for select DNIs—(i) assessing adequacy of budget outlays against the resource requirement estimates given by

**Table 1: Delivery Platforms for Direct Nutrition Interventions in India**

Direct Nutrition Intervention	Scheme / Programme	Scheme Component	References
Counselling during pregnancy; counselling for breastfeeding to caregivers of children; counselling for complementary feeding and handwashing to caregivers of children 0–6 months	National Health Mission	• Infant and Young Child Feeding • Mother's Absolute Affection Programme	MoHFW (2013a, 2016b)
	Integrated Child Development Services (ICDS)	IEC Component under ICDS	MWCD (2012)
Complementary food supplements for children 6–36 months of age Supplementary food rations for pregnant and lactating women for six months after delivery Additional food rations for severely underweight children 6–59 months	ICDS	Supplementary Nutrition Programme (SNP)	MWCD (2017a)
Supplementary food for adolescent girls	RGSEAG-SABLA	Supplementary Nutrition Programme (SNP)	MWCD (2018)
Vitamin A supplementation for children 6–59 months	National Health Mission	Vitamin A Supplementation Programme	MoHFW (2006a)
ORS for treatment of diarrhoea for children under five years Therapeutic zinc supplements for treatment of diarrhoea for children under five years	National Health Mission	• Management of childhood diarrhoea through scaling-up zinc and ORS – procurement of ORS • Intensified Diarrhoea Control Fortnight	MoHFW (2016a)
Deworming for children 12–59 months Deworming for adolescents 10–19 years Deworming for pregnant women	National Health Mission	• Albendazole under National Iron Plus Initiative • Albendazole under Weekly Iron and Folic Acid Supplementation	MoHFW (2012, 2014b, 2016c)
Iron folic acid (IFA) supplements for children 6–59 months IFA supplements for pregnant women and breastfeeding mothers	National Health Mission	• National Iron Plus Initiative (Budget for pregnant women reported under Janani Shishu Suraksha Karyakram [JSSK])	MoHFW (2013)
IFA supplements for adolescents 10–19 years	National Health Mission	• Weekly Iron and Folic Acid Supplementation	MoHFW (2012)
Calcium supplementation for pregnant women and breastfeeding mothers	National Health Mission	• Tab Calcium Carbonate (Budget reported under JSSK)	MoHFW (2014a).
Salt iodisation for general population	National Health Mission	• National Iodine Deficiency Disorder Control Programme	MoHFW (2006)
Facility-based treatment for children 6–59 months for children with WHZ < -3SD	National Health Mission	• Facility-based management of children with SAM	MoHFW (2011)
Insecticide treated nets for pregnant women in malaria areas	National Health Mission	• Impregnation of bed nets under NVBDCP	MoHFW and State Vector Borne Disease Control Programme (2010)
Conditional cash transfer to pregnant and lactating women	• National Health Mission • ICDS	• Janani Suraksha Yojana • IGMSY/PMMVY	MoHFW (2015, 2015a); MWCD (2017b)

Abbreviations are as follows: IEC—information, education and communication; ORS—oral rehydration salts; RGSEAG—Rajiv Gandhi Scheme for Empowerment of Adolescent Girls; NVBDCP—National Vector Borne Disease Control Programme; SAM—severe acute malnutrition; IGMSY—Indira Gandhi Matritva Sahyog Yojana; and PMMVY—Pradhan Mantri Matru Vandana Yojana. WHZ < -3SD stands for Weight-for-height Z-score below three standard deviations.

Sources: Compiled from guidelines of various schemes and programmes, as mentioned in the references column.



Source: Compiled by authors from record of proceedings and the detailed demand for grants for Department of Women and Child Development/Social Welfare, for respective state budgets for financial years 2014–15, 2015–16, 2016–17 and 2017–18.

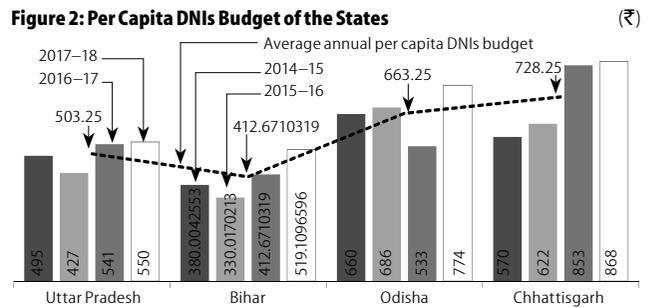
S Chakrabarti and P Menon (2017), for a set of India Plus interventions, and (ii) assessing the adequacy of budget outlays against the government’s own norms (as per scheme guidelines) and stated number of beneficiaries. The two different approaches were adopted for different sets of DNIs, largely based on the availability of cost estimates, and their comparability with available disaggregated data on budget outlays. Specifically, the government’s norms have been used to assess resource requirement for Integrated Child Development Services—Supplementary Nutrition Programme (ICDS-SNP), instead of using Chakrabarti and Menon (2017) estimates. This is because first, Chakrabarti and Menon (2017) provide cost estimates for the provision of supplementary nutrition to children in age group of six months to three years, and the budgets for ICDS-SNP do not provide this level of disaggregation, leading to issues of comparability; and second, to assess if the government is provisioning enough in its annual budget to provide supplementary nutrition to at least its targeted/stated number of beneficiaries, as per its own unit costs.

**Adequacy against resource requirement estimates:**

Chakrabarti and Menon (2017) have put forth resource requirements for providing a set of India Plus interventions, at scale, 2017. They have used a mix of government unit costs (for example, for deworming, treatment of SAM, etc), as well as unit costs estimated by independent agencies (for example, the United Nations International Children’s Emergency Fund’s [UNICEF] estimates for provision of IFA and deworming for adolescents; and Micronutrient Initiative’s estimates for IFA for pregnant women and children, vitamin A and ORS and zinc treatment of diarrhoea). Of these, adequacy analysis was done for DNIs delivered by the health department. Their resource requirement estimates were compared with budget outlays (approved budgets from ROPs) for 2017–18, for the respective states.

**Adequacy against government’s norms and reported number of beneficiaries:**

This approach has been followed for the supplementary nutrition programme under ICDS (ICDS-SNP), which covers three DNIs—supplementary nutrition to severely underweight children (6–72 months), to normal (other) children (6–72 months) and to P&L women. The per day per person



Source: Compiled by authors from record of proceedings and the detailed demand for grants for the Department of Women and Child Development/Social Welfare for respective state budgets for financial years 2014–15, 2015–16, 2016–17 and 2017–18. Per capita figures have been computed by taking the population of children in age group 0–6 years and the number of females in age group 11–49 years, from the Census 2011 (Registrar General of India 2011).

unit costs for the provision of supplementary nutrition to severely underweight children, for other children and for P&L women were ₹9, ₹6, and ₹7<sup>1</sup> respectively (MWCD 2017a). The number of beneficiaries has been taken from the answers to the Lok Sabha question (Lok Sabha 2016), which was the latest available information in the public domain, on the number of beneficiaries under ICDS-SNP at the time of study. The number of beneficiaries under each category was multiplied by the respective unit costs for the beneficiaries to arrive at per day requirement. Subsequently, the daily resource requirement was multiplied by 300 (supplementary nutrition is provided for 300 days in a year), to arrive at the total fund requirement for the SNP. The results were then compared with the actual expenditure on ICDS-SNP in 2015–16.

**Results and Findings**

All DNIs are delivered through components within four CSS with relation to the ICDS, Indra Gandhi Matritva Sahyog Yojana (IGMSY)/Pradhan Mantri Matru Vandana Yojana (PMMVY), Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (Sabla) and NHM. While NHM is implemented by the Ministry of Health and Family Welfare, the other three schemes are implemented by the Ministry of Women and Child Development. Moreover, it is not entire schemes, rather specific components within these larger programmes and schemes which are delivering the DNIs (see Table 1 for details).

In addition, states are implementing state-specific schemes for the delivery of DNIs. For example, for the provision of supplementary nutrition, Chhattisgarh is implementing the Mahtari Jatan Yojana, the Mukhyamantri Amrit Yojana, and Phulwari Yojana and UP is implementing the Hausla Poshan Yojana. Similarly, Odisha initiated the Mamata scheme for

**Table 2: Composition of DNIs’ Budget in 2017–18 (%)**

	Bihar	Chhattisgarh	Odisha	Uttar Pradesh
Behaviour change interventions	3.5	3.3	0.9	0.6
Micronutrient supplementation and deworming	3.0	2.8	1.6	4.0
Supplementary feeding	75.4	78.5	63.5	83.8
SAM treatment	0.4	0.7	0.3	0.5
Others	17.6	14.7	33.8	11.1

SAM refers to severe acute malnutrition. Source: Compiled by authors from record of proceedings and the detailed demand for grants for Department of Women and Child Development/Social Welfare for respective state budgets for financial years 2014–15, 2015–16, 2016–17 and 2017–18.

conditional cash transfer to P&L women and Mo Masari for providing insecticide-treated bed nets to pregnant women. Bihar, however, does not have any state-specific schemes for DNIs.

**Declining share of DNIs' budgets:** Given the differences in the size of the respective state budgets, the total DNIs' budgets vary across states. In 2017–18, budget outlays varied from ₹2,440 crore in Bihar, ₹955 crore in Chhattisgarh, ₹1,394 crore in Odisha and ₹4,840 crore in UP (Figure 1). While these outlays by themselves are low, their share within the respective state budgets

has also declined over the last four years, clearly indicating a lack of prioritisation by the four states. The DNIs' budgets as a proportion of the total state budget declined from 1.9% to 1.5% in Bihar, 1.4% to 1.3% in Chhattisgarh, 1.8% to 1.3% in Odisha and 1.8% to 1.3% in UP, from financial year 2014–15 to financial year 2017–18 (Figure 1).

**Low per capita average annual DNIs budgets:** Given the differences in the population size of these states, per capita outlays are a better parameter for comparing the budget outlays across

**Table 3: Uttar Pradesh—Budget Outlays for DNIs in Last Four Fiscal Years**

Direct Nutrition Interventions (DNIs)		Budget Outlay (₹ crore)			
		2014–15	2015–16	2016–17	2017–18
I Behaviour change interventions		6.8 [0.2%]	0.0 [0.0%]	22.4 [0.5%]	31.0 [0.6%]
Combined budget outlays for three interventions:	IYCF/MAA	1.69	0	1.42	12.0
1 Counselling for mothers during pregnancy					
2 Counselling for optimal breastfeeding to caregivers of children 0–6 months	IEC-ICDS	5.1	0	21	19.0
3 Counselling for complementary feeding and handwashing to caregivers of children 6–23 months, under schemes IYCF and IEC-ICDS.					
II Micronutrient supplementation and deworming interventions		67.80 [1.6%]	94.91 [2.5%]	181.58 [3.8%]	193.28 [4.0%]
4 Vitamin A supplementation for children 6–59 months		7.4	7.5	7.6	7.9
5 ORS for treatment of diarrhoea for children under five years		11.5	1.5	7.6	–
6 Therapeutic zinc supplements for treatment of diarrhoea for children under five years					
Intensified diarrhoea control fortnight		0.0	0	8.6	8.8
7 Deworming for children 12–59 months		3.3	4.3	3.2	4.9
8 Deworming for adolescents 10–19 years		2.3	2.3	1.9	10.8
National Deworming Day		0.0	0	0	7.6
9 Deworming for pregnant women		0.0	0	0	
10 Iron folic acid supplements for children 6–59 months		21.8	24.6	5.5	19.8
11 Iron folic acid supplements for adolescents 10–19 years		18.7	17.5	21.9	8.3
12 Iron folic acid supplements for pregnant women and breastfeeding mothers of children 0–6 months		0.0	36	125	125.0
13 Calcium supplementation for pregnant women and breastfeeding mothers		0.0			
14 Salt iodisation for general population		2.8	1.2	0.3	0.2
III Supplementary feeding		3,769 [86.5%]	3,148 [83.7%]	4,035.17 [84.7%]	4,057.00 [83.8%]
15 Complementary food supplements for children 6–36 months of age		3,549	3,034	2,946	3,220
16 Supplementary food for pregnant and lactating women for six months after delivery					
17 Additional food ration for severely underweight (WAZ < -3) children 6–59 months					
18 Supplementary food rations for adolescent girls 11–18 years		220	114	312	312.0
State-funded schemes					
Feeding programme for severely underweight children: Hausla Poshan Yojana		–	–	298.9	125.0
Feeding programme for pregnant women: Hausla Poshan Yojana		NA	NA	478.2	400
IV Severe acute malnutrition treatment		4.5 [0.1%]	4.9 [0.1%]	6.3 [0.5%]	22.3
19 Facility-based treatment for children 6–59 months with severe acute malnutrition		4.5	4.9	6.3	22.3
V Others		510 [11.7%]	512 [13.6%]	517 [10.9%]	536.2 [11.1%]
20 Insecticide-treated nets for pregnant women in malaria-endemic areas		0	0	0	0.0
21 Cash transfers to pregnant women and breastfeeding mothers for the first six months after delivery					
Indira Gandhi Matritva Sahyog Yojana/PMMVY		1	0	6	7.0
Janani Suraksha Yojana		509	512	511	529.2
Total DNI budget (I + II + III + IV + V)		4,358.1	3,759.8	4,762.5	4,839.7
Total state budget		2,35,608	3,03,949.3	3,40,255.2	3,84,659.7
Total DNI budget as a % of total state budget		1.8	1.2	1.4	1.3
Per capita DNI budget* (₹)		495.2	427.3	541.2	550.0

\*Per capita figures have been computed by taking the population of children in age group 0–6 years and number of females in age group 11–49 years, from Census 2011 (Registrar General of India 2011). Figures in parenthesis indicate sectoral share in total DNIs budget. Abbreviations are as follows: IYCF—Infant and Young Child Feeding Scheme; MAA—Mother's Absolute Affection Programme; IEC-ICDS—Information, Education and Communication under the Integrated Child Development Services; ORS—oral rehydration salts; and PMMVY—Pradhan Mantri Matru Vandana Yojana.

Source: Compiled by authors from the detailed demand for grants for Department of Women and Child Development 2016–17 and 2017–18, Government of Uttar Pradesh and record of proceedings 2014–15, 2015–16, 2016–17, 2017–18, National Health Mission, Government of India.

states. The average annual per capita DNIs' budgets across states were ₹728, ₹663, ₹503 and ₹413 for Chhattisgarh, Odisha, UP and Bihar respectively (Figure 2). While in absolute terms UP and Bihar have higher budget outlays for DNIs, these are also the states with a larger population, as compared to Odisha or Chhattisgarh. Thus, per capita DNIs budgets are much higher for Chhattisgarh and Odisha in all four fiscal years, clearly indicating that UP and Bihar—with a relatively higher burden of undernutrition in the country—are also the states with lower levels of per capita spending on DNIs (Figure 2). In 2017–18, the per capita DNIs' budget was ₹550 for UP and ₹519 for Bihar, compared to ₹774 for Odisha and ₹868 for Chhattisgarh (also see Tables 3 to 6).

**Skewed composition of DNIs' budgets in states:** Supplementary feeding accounts for the highest share of the total DNIs budget in all four states for 2017–18, followed by “Others” interventions, with much less proportion of budgets for SAM treatment, behaviour change interventions and micronutrient supplementation (Table 2). The DNIs delivered by the health department, such as the treatment of SAM, micronutrient supplementation and deworming, receive very small proportions of the total DNIs budgets in all four states. The trend is similar for the previous three years as well. However, we may note here that the high proportion of supplementary feeding programme budgets among all DNIs, is largely due to the

**Table 4: Bihar—Budget Outlays for DNIs in Last Four Fiscal Years**

Direct Nutrition Interventions (DNIs)	Budget Outlay (₹ crore)			
	2014–15	2015–16	2016–17	2017–18
I Behaviour change interventions	5.4 [0.3%]	17 [1.1%]	63 [3.2%]	86.4 [3.5%]
Combined budget outlays for three interventions:				
1 Counselling for mothers during pregnancy	1	0	1	4.4
2 Counselling for optimal breastfeeding to caregivers of children 0–6 months	4.4	17	62	82
3 Counselling for complementary feeding and handwashing to caregivers of children 6–23 months, under schemes IYCF and IEC-ICDS.				
II Micronutrient supplementation and deworming interventions	45.4 [2.5%]	78 [4.0%]	79.9 [3.0%]	74.4
4 Vitamin A supplementation for children 6–59 months	8.2	10	6.5	14.3
5 ORS for treatment of diarrhoea for children under five years	0	11.7	9.3	9.3
6 Therapeutic zinc supplements for treatment of diarrhoea for children under five years	0	1.6	1.8	1.8
Intensified diarrhoea control fortnight	0	1.1	0	2.6
7 Deworming for children 12–59 months	0.9	5.7	2.9	3.3
8 Deworming for adolescents 10–19 years	2.7	2.8	4.4	4.4
National deworming day	0	0.5	2.7	6.7
9 Deworming for pregnant women	0	0	0	
10 Iron folic acid supplements for children 6–59 months	9.9	10.7	14.5	29.6
11 Iron folic acid supplements for adolescents 10–19 years	15.4	22.2	26.5	0.1
12 Iron folic acid supplements for pregnant women and breastfeeding mothers of children 0–6 months	8	11.2	11.2	Not Available
13 Calcium supplementation for pregnant women and breastfeeding mothers				
14 Salt iodisation for general population	0.3	0.5	0.1	2.4
III Supplementary feeding	1,314 [73.6%]	1,090 [70.3%]	1,397 [70.5%]	1,840 [75.4%]
15 Complementary food supplements for children 6–36 months of age	1,198	1,075	1,226	1,787
16 Supplementary food for pregnant and lactating women for six months after delivery				
17 Additional food ration for severely underweight (WAZ < -3) children 6–59 months				
18 Supplementary food rations for adolescent girls 11–18 years	116	15	171	53
State-funded scheme: Spot feeding for pregnant and lactating mothers	NA	NA	NA	NA
IV Severe acute malnutrition treatment	6.8 [0.4%]	6.3 [0.4%]	7.4 [0.4%]	8.9 [0.4%]
19 Facility-based treatment for children 6–59 months for children with severe acute malnutrition	6.8	6.3	7.4	8.9
V Others	414 [23.2%]	359.8 [23.2%]	434 [21.9%]	430.0 [17.6%]
20 Insecticide-treated bed nets for pregnant women in malaria-endemic areas	0	0	0	0
21 Cash transfers to pregnant women and breastfeeding mothers for the first six months after delivery				
Indira Gandhi Matritva Sahyog Yojana/PMMVY	27	47	91	85.9
Janani Suraksha Yojana	387	312.8	343	344.1
Total DNI budget (I + II + III + IV + V)	1,786	1,551	1,981	2,439
Total State budget	94,698	1,12,328	1,54,327	1,60,086
Total DNI budget as a % of total state budget	1.9	1.4	1.3	1.5
Per capita DNI budget* (₹)	380.0	330.0	421.6	519.0

\*Per capita figures have been computed by taking the population of children in age group 0–6 years and number of females in age group 11–49 years, from Census 2011 (Registrar General of India 2011). Abbreviations are as follows: IYCF—Infant and Young Child Feeding scheme; MAA—Mother's Absolute Affection Programme; IEC-ICDS—Information, Education and Communication under the Integrated Child Development Services; ORS—oral rehydration salts and PMMY—Pradhan Mantri Matru Vandana Yojana.

WAZ < -3SD refers to Weight-for-age Z-score less than three standard deviations.

Figures in parenthesis indicate sectoral share in total DNI budget.

Compiled by authors from the detailed demand for grants for Social Welfare Department 2016–17, 2017–18, Government of Bihar and record of proceedings 2014–15, 2015–16, 2016–17 and 2017–18, National Health Mission, Government of India.

relatively higher cost of delivering this intervention, as compared to other interventions.

**Uneven trends in budgets for different DNIs:** The trends in budgets for interventions within the DNIs vary across states, showing inconsistency in budgeting for the interventions (see Tables 3 to 6). For example, in UP, the budgets for micronutrient supplementation and deworming increased consistently from between 2014–15 and 2017–18, while in Odisha, budgets for

micronutrient supplementation and deworming, first declined from 2014–15 to 2015–16, before increasing in 2016–17 and 2017–18. Similarly, in Chhattisgarh also, the budgets for “others” first decreased from 2014–15 to 2015–16, and then increased in 2016–17 and in 2017–18.

**State-specific schemes supplementing the CSS:** Three of the four study states have introduced state-specific schemes to supplement the CSS or act as top-ups to the existing provisions

**Table 5: Odisha—Budget Outlays for DNIs in Last Four Fiscal Years**

Direct Nutrition Interventions (DNIs)		Budget Outlays (₹ crore)				
		2014–15	2015–16	2016–17	2017–18	
I	Behaviour change interventions	4.73 [0.4%]	10.71 [0.8%]	13.54 [1.5%]	12.39 [0.9%]	
Combined budget outlays for three interventions:						
	1 Counselling for mothers during pregnancy	IYCF	0.24	0.38	0.14	0.79
	2 Counselling for optimal breastfeeding to caregivers of children 0–6 months	IEC-ICDS	4.49	10.33	13.4	11.6
	3 Counselling for complementary feeding and handwashing to caregivers of children 6–23 months, under schemes IYCF and IEC-ICDS.					
II	Micronutrient supplementation and deworming interventions		16.30 [1.4%]	4.17 [1.5%]	13.62 [1.6%]	22.22
	4 Vitamin A supplementation for children 6–59 months		1.04	0.00	0.02	1.00
	5 ORS for treatment of diarrhoea for children under five years		0.10	0.00	0.12	0.00
	6 Therapeutic zinc supplements for treatment of diarrhoea for children under five years		0.00	0.00	0.00	0.00
	Intensified diarrhoea control fortnight		0.39	0.93	1.57	1.05
	7 Deworming for children 12–59 months		0.55	0.00	0.00	0.54
	8 Deworming for adolescents 10–19 years		0.46	0.00	0.00	1.65
	National Deworming Day		0.00	0.00	1.89	2.48
	9 Deworming for pregnant women		0	0	0	0.09
	10 Iron folic acid supplements for children 6–59 months		7.02	2.11	1.27	6.04
	11 Iron folic acid supplements for adolescents 10–19 years		4.88	0.62	0.62	3.63
	12 Iron folic acid supplements for pregnant women and breastfeeding mothers of children 0–6 months		0	0	0	5.74
	13 Calcium supplementation for pregnant women and breastfeeding mothers		0	0	7.77	0.00
	14 Salt iodisation for general population		1.86	0.51	0.37	0.00
III	Supplementary feeding		752.4 [63.3%]	829.5 [58.6%]	533.6 [63.5%]	884.5
	15 Complementary food supplements for children 6–36 months of age		682.4	758.6	443.7	800.4
	16 Supplementary food for pregnant and lactating women for 6 months after delivery					
	17 Additional food ration for severely underweight (WAZ < -3SD) children 6–59 months					
	18 Supplementary food rations for adolescent girls 11–18 years		70	70.9	89.9	84.1
	State-funded scheme: Spot feeding for pregnant and lactating mothers		NA	NA	NA	NA
IV	Severe acute malnutrition treatment		6.8 [0.6%]	4.4 [0.3%]	4.8 [0.5%]	3.7 [0.3%]
	19 Facility-based treatment for children 6–59 months for children with severe acute malnutrition		6.8	4.4	4.8	3.7
V	Others		408.9 [34.4%]	385.2 [31.28%]	394.5 [41.1%]	471.1 [33.8%]
	20 Insecticide-treated bed nets for pregnant women in malaria-endemic areas		0	0	0	0.08
	State-funded scheme: Mo Masari		70	0.0003	0.0003	0
	21 Cash transfers to pregnant women and breastfeeding mothers for the first six months after delivery Indira Gandhi Matritva Sahyog Yojana/PMMVY		18	24	19	Allocations reported combined with Mamata
	Janani Suraksha Yojana		98.28	102.19	95.46	92.98
	State-funded scheme: Mamata		222.63	259	280	378
	Total DNI budget (I + II + III + IV + V)		1,189.2	1,233.9	960.0	1,393.8
	Total state budget		66,680	79,114.1	93,515.4	1,06,911
	Total DNI budget as a % of total state budget		1.8	1.6	1.0	1.3
	Per capita DNI budget* (₹)		660.2	685.5	533.3	774.3

\*Per capita figures have been computed by taking the population of children in age group 0–6 years and number of females in age group 11–49 years, from Census 2011 (Registrar General of India 2011). Figures in parenthesis indicate sectoral share in total DNIs budget. Abbreviations are as follows: IYCF—Infant and Young Child Feeding Scheme; IEC-ICDS—Information, Education and Communication under the Integrated Child Development Services; ORS—oral rehydration salts and PMMVY—Pradhan Mantri Matru Vandana Yojana.

WAZ < -3SD refers to Weight-for-age Z-score less than three standard deviations.

Source: Compiled by authors from detailed demand for grants for Department of Women and Child Development 2016–17, 2017–18 Government of Odisha and record of proceedings 2014–15, 2015–16, 2016–17, 2017–18, National Health Mission, Government of India.

under CSS. For example, Hausla Poshan Yojana was introduced by the UP government in July 2016 to provide cooked meals, along with other nutritious food, such as one seasonal fruit or curd or ghee, to 10 lakh pregnant women and 14 lakh severely underweight children between six months and six years of age. They also included the distribution of iron tablets and pregnant women in the scheme (Government of Uttar Pradesh 2016). Similarly, Chhattisgarh is implementing schemes—Mukhyamantri Amrit Yojana, Mahtari Jatan Yojana, Phulwari Yojana—which provide supplementary nutrition to children and P&L women. The Mahtari Jatan Yojana provides a nutritious

diet to pregnant women at anganwadi centres. Under the scheme, 250 grams of hot cooked food is to be provided to pregnant women at all anganwadi centres across the state. Odisha, on the other hand, is implementing the Mamata scheme, similar to IGMSY/PMMVY, for the provision of conditional cash transfers to P&L women, up to first two live births. In fact, Odisha has also consistently allocated lesser budget for IGMSY/PMMVY, compared to Mamata schemes, between financial years 2014–15 and 2016–17. Odisha also has a scheme for the prevention of malaria among pregnant women and under-five and tribal schoolchildren in malaria endemic districts—the Mo Masari (Meherda et al nd).

**Table 6: Chhattisgarh—Budget Outlays for DNIs in Last Four Fiscal Years**

Direct Nutrition Interventions (DNIs)		Budget Outlay (₹ crore)			
		2014–15	2015–16	2016–17	2017–18
I Behaviour change interventions		1.4 [0.2%]	3.26 [0.5%]	46.6 [5.0%]	31.63 [3.3%]
Combined budget outlays for three interventions:	IYCF	1.4	0.76	1.3	2.39
1 Counselling for mothers during pregnancy					
2 Counselling for optimal breastfeeding to caregivers of children 0–6 months	IEC-ICDS	0	2.5	45.3	29.24
3 Counselling for complementary feeding and handwashing to caregivers of children 6–23 months, under schemes IYCF and IEC-ICDS.					
II Micronutrient supplementation and deworming interventions	[1.6%]	10.17 [2.1%]	14.54 [2.2%]	20.6133 [2.8%]	26.7
4 Vitamin A supplementation for children 6–59 months		0.64	0.5	0.62	0.78
5 ORS for treatment of diarrhoea for children under five years		0	0.75	0.75	0.57
6 Therapeutic zinc supplements for treatment of diarrhoea for children under five years		0	0	0	0.08
Intensified diarrhoea control fortnight		0	0.77	0.7	0.73
7 Deworming for children 12–59 months		0.37	0.07	0.07	0.4
8 Deworming for adolescents 10–19 years		0.4	0.2	0.2	0.66
National Deworming Day		0	0.69	2.32	3.19
9 Deworming for pregnant women		0	0	0	0.08
10 Iron folic acid supplements for children 6–59 months		4.89	0.86	1.08	7.39
11 Iron folic acid supplements for adolescents 10–19 years		1.19	5.95	6.03	4.9
12 Iron folic acid supplements for pregnant women and breastfeeding mothers of children 0–6 months		2	4.18	8.3	7.75
13 Calcium supplementation for pregnant women and breastfeeding mothers		0		0	0
14 Salt iodisation for general population		0.68	0.57	0.54	0.17
III Supplementary feeding	[86.4%]	541 [86.8%]	593.5 [81.1%]	760.9 [78.5%]	749.8
15 Complementary food supplements for children 6–36 months of age		455	448	512	515
16 Supplementary food for pregnant and lactating women for six months after delivery					
17 Additional food ration for severely underweight (WAZ < -3SD) children 6–59 months					
18 Supplementary food rations for adolescent girls 11–18 years		77	126.5	165	165
State plan schemes					
Phulwari Yojana		9	19	10	10
Mahtari Jatan Yojana		NA	NA	39.1	25
Mukhyamantri Amrit Yojana		NA	NA	34.8	34.8
IV Severe acute malnutrition treatment	[0.8%]	4.8 [0.7%]	4.5 [0.6%]	5.6 [0.7%]	6.4
19 Facility-based treatment for children 6–59 months for children with severe acute malnutrition		4.8	4.5	5.6	6.4
V Others	[11.1%]	69.1 [9.9%]	67.9 [11.1%]	104.1 [14.7%]	140.3
20 Insecticide-treated bed nets for pregnant women in malaria-endemic areas		0	0	0	0
21 Cash transfers to pregnant women and breastfeeding mothers for the first six months after delivery					
Indira Gandhi Matritva Sahyog Yojana/PMMVY		9	7	35	70
Janani Suraksha Yojana		60.1	60.9	69.1	70.3
Total DNI budget (I + II + III + IV + V)		626.5	683.7	937.8	954.8
Total state budget		46,207.0	51,811.3	70,674.2	76,031.6
Total DNI budget as a % of total state budget		1.4	1.3	1.3	1.3
Per capita DNI budget* (₹)		569.5	621.5	852.6	868.0

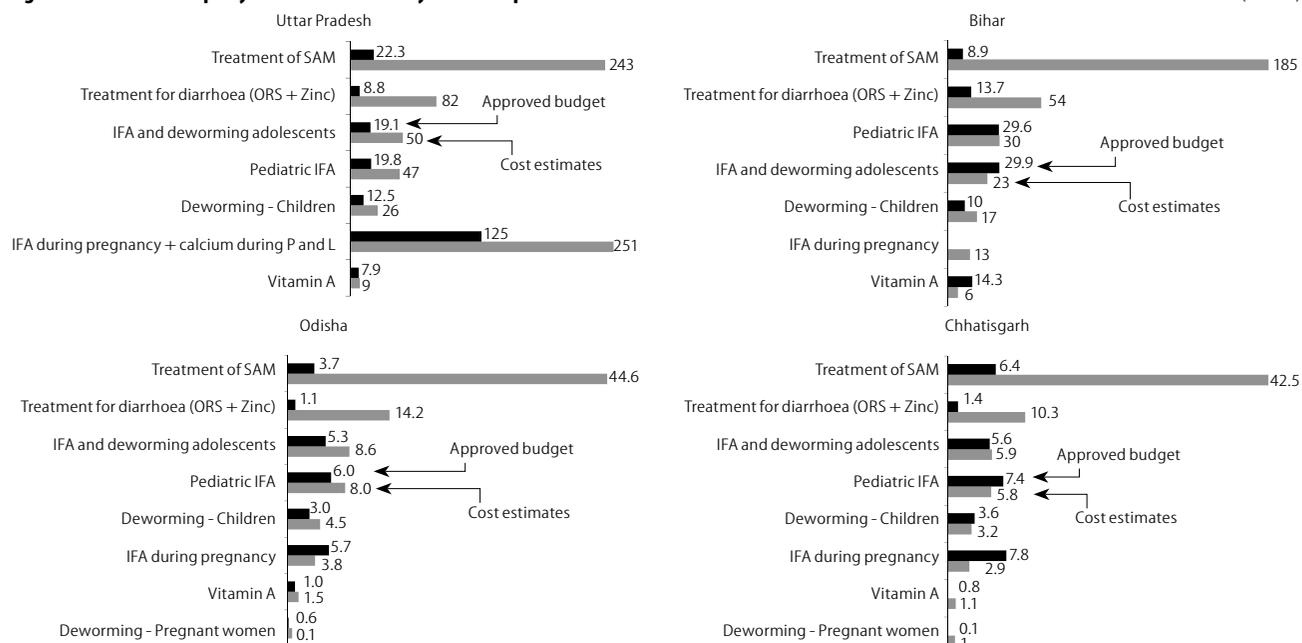
\*Per capita figures have been computed by taking the population of children in age group 0–6 years and number of females in age group 11–49 years, from Census 2011 (Registrar General of India 2011). Figures in parenthesis indicate sectoral share in total DNIs budget. Abbreviations are as follows: IYCF—Infant and Young Child Feeding Scheme; IEC-ICDS—Information, Education and Communication under the Integrated Child Development Services; ORS—oral rehydration salts and PMMY—Pradhan Mantri Matru Vandana Yojana.

WAZ < -3SD refers to Weight-for-age Z-score less than three standard deviations.

Source: Compiled by authors from detailed demand for grants for Department of Women and Child Development 2016–17, Government of Chhattisgarh and record of proceedings 2014–15, 2015–16, 2016–17, 2017–18, National Health Mission, Government of India.

**Figure 3: Resource Adequacy for DNIs Delivered by Health Department in 2017–18**

₹ (crore)



Cost estimates have not been given for those DNIs for which we did not have budget outlays for financial year 2017–18. In Bihar, the cost estimate for adolescent IFA and deworming has been compared with the total budget available for the interventions. Abbreviations used are as follows: SAM—severe acute malnourishment; IFA—iron and folic acid and ORS—oral rehydration salts. Source: Cost estimates from Chakrabarti and Menon (2017) and budget outlays from record of proceedings 2014–15, 2015–16, 2016–17, 2017–18, for study states.

**DNIs delivered by health department:** A comparison of the cost estimates given by Chakrabarti and Menon (2017) with approved budgets for DNIs delivered by the health department, show significant resource gaps across states for most DNIs (Figure 3). The treatment of SAM and treatment of diarrhoea have the highest resource gaps across states, ranging from 95% for SAM treatment in Bihar to 85% in Chhattisgarh. Similarly, for treatment of diarrhoea, the resource gap is approximately 93% in Odisha and 75% in Bihar. Adolescent IFA and deworming seem to be better funded in Bihar and Chhattisgarh, while IFA during pregnancy is better funded in Odisha. Bihar did not report budget outlays for IFA during pregnancy separately in 2017–18. Hence analysis could not be done for this DNI in Bihar.

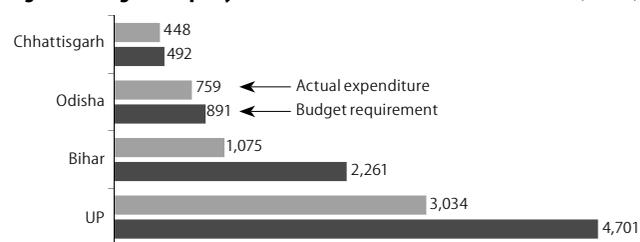
**Adequacy of budgets for ICDS-SNP:** A comparison of the resource requirement for delivering ICDS-SNP with the actual budget expenditure in 2015–16 reveals huge resource gaps in Bihar and UP (Figure 4). The resource gap is approximately 53% in Bihar and 35% in UP. In comparison, Odisha, with a resource gap of 15% and Chhattisgarh with a resource gap of 9%, fare much better.

### Constraints on the Analysis

Most schemes and programmes related to DNIs are multi-faceted, which makes it difficult to track budgets for specific interventions. This constrains the analysis for DNIs budgets. As noted earlier, DNIs are mostly sub-components within the larger programmes of the departments, budgets for which are not necessarily reported in the detailed budget books, and hence, one has to use multiple sources of budget data. For example, to collate data on DNIs delivered by the health department, the ROPs produced under the NHM were used, as the budgets for

**Figure 4: Budget Adequacy for SNP in FY 2015–16**

₹ (crore)



Source: Cost estimates from scheme guidelines (MWCD 2017c) and Lok Sabha (2016) and budget data from detailed demand for grants for financial years 2014–15 to 2017–18 for respective states.

components within the NHM programme are not reported in the budget books of the health department.

There is divergence between the scheme components for which the budget is available and the DNIs defined in the nutrition framework. In such a scenario, either combined budgets for more than one DNI are used, or a proxy is used to collate budgets. For example, disaggregated budget outlays for SNP for children 6–36 months of age, P&L women and severely underweight children are not available. Hence, we have to use the entire budget for ICDS-SNP as a combined budget for three DNIs—supplementary nutrition to severely underweight children (6–72 months), to normal (other) children (6–72 months) and to P&L women. Similarly, we have no specific scheme designed for counselling during pregnancy. Hence, we use budgets for Infant and Young Child Feeding (IYCF)/Mother's Absolute Affection (MAA) programmes and Information, Education and Communication-Integrated Child Development Services (IEC-ICDS), as proxy for counselling budgets.

However, budgets for IEC-ICDS include other components as well, which cannot be demarcated from counselling for nutrition. Due to absence of clear demarcation of nutrition activities in the government programmes, budgets for nutrition are, at

best, a close approximation and not the precise amount allocated. Another challenge confronted in tracking budgets for DNIs is the lack of uniformity in the reporting of budgets across states. The structure of DDGs is same across all states till the third tier of budget classification.<sup>2</sup> However, the budgets for schemes are generally reported at the fourth tier or below. When tracking budgets for DNIs, which are sub-components within schemes, the level at which the budgets for DNIs are reported, differs across states, even for the same schemes. Similarly, the budget outlays for DNIs in ROPs too, are not reported at the same level/tier across states, and even across years for the same states.

What makes the task even more difficult is the fact that budgets for each DNI are scattered across various components within schemes and across various budget heads. Moreover, budgets for DNIs are spread horizontally and vertically across departments and schemes, further complicating budget tracking. We also faced challenge in obtaining data on the physical progress under various schemes. For example, it was not possible to get the latest data on the number of beneficiaries for ICDS-SNP, state-wise and disaggregated by population groups. Hence, we had to rely on parliamentary questions, which too gave data only till 2015–16.

### Policy Implications

DNIs are evidence-based interventions, whose implementation at scale would help reduce the level of stunting among children under-five significantly, yet we observe that the implementation of these DNIs is weak across states due to various factors. In this section as well as in the concluding remarks, we make a few broad points about the landscape of nutrition interventions in India. The policy discourse on undernutrition in India needs to pay a lot more attention to why DNIs, despite their proven effectiveness in addressing the problem, are not getting implemented or delivered at scale in some of the states (especially in high burden states with regards to undernutrition). Our analysis indicates that limited fiscal priority in the states for DNIs overall, and the neglect of some of the DNIs—particularly those under the NHM—could be one of the main factors constraining the scaling-up of DNIs.

The process of budgeting in the government—both at the union level and in the states—tends to get dominated by the finance department; but a lot also depends on factors like: (i) political prioritisation for different sectors or issues and (ii) the bargaining power of different line departments for their respective sectors, in the process of budgeting. Nutrition interventions seem to have got neglected to some extent in this process. Hence, the significance of budgeting adequately and appropriately for nutrition interventions needs more emphasis. In this broader landscape of nutrition financing in India, we discuss some of the issues arising from our analysis of the DNI budgets.

First, the decline in the proportion of DNI budgets within the overall state budgets, in all the four states between financial years 2014–15 and 2017–18, implies that the increase in the DNI budget has not kept pace with the increase in overall state budgets during these four years, indicating that the states have not increased the priority for the DNIs, despite their higher fiscal autonomy since 2015–16. There is thus a need to enhance

the budget outlays for delivering DNIs in these states. As most interventions are being delivered through CSS, both the union government and the state governments need to increase budget outlays for them. Without adequate support from the union government, the states might not be able to enhance the budget outlays for these DNIs.

Second, the variations witnessed in the budget outlays for the DNIs across states are, in most cases, driven by budgets for one or two sub-interventions. For example, in case of the budget for behaviour change interventions in Bihar, the sudden increases are primarily due to an enhanced budget for the IEC component under ICDS, and not due to increased budgets for IYCF/MAA Programme (see Table 4). Similarly, the reduction in budget for micronutrient supplementation and deworming in Odisha is due to a reduction in outlays for IFA supplementation for children (6–59 months) and adolescents. The reasons for inconsistent outlays are not clear and need to be probed further.

Third, while comparing budget outlays for DNIs delivered by the health department with the cost estimates given by Chakrabarti and Menon (2017), it should be noted that the resource gap has been assessed against approved budgets and not against actual expenditure. In states where fund utilisation is a problem (such as Bihar), the resource gap might be much higher for certain interventions, when assessed against actual expenditure. Also, some of the cost estimates are based on the assessment of independent agencies and may not reflect government guidelines. Moreover, since the availability of budget data with regard to health interventions is limited, it may be possible that the allocations for some of these interventions may not have been captured entirely, in case their budgets are being routed through some other source. Nevertheless, the huge resource gaps are a concern, especially when the resource requirements themselves are not high for most DNIs. For example, we need only ₹9 crore, ₹6 crore, ₹1.5 crore and ₹1.1 crore for the delivery of vitamin A supplementation to children for UP, Bihar, Odisha and Chhattisgarh respectively; and ₹14.2 crore and ₹10.3 crore for treatment of diarrhoea (zinc and ORS) for Odisha and Chhattisgarh. However, even these small amounts are not adequately provided by the states.

Fourth, the unit costs for the provision of supplementary feeding under ICDS-SNP were increased from October 2017 (PIB 2017) onwards. At the same time, the resource adequacy analysis was restricted to the registered number of beneficiaries availing these services. However, if the services are provided at scale, then we will observe a quantum jump in the resource requirement for ICDS-SNP. What also needs to be assessed is the adequacy and efficacy of the institutional set-up (anganwadi centres, anganwadi workers, etc) in place for the delivery of ICDS-SNP, across states, as well as the adequacy of these unit costs themselves, which have earlier been considered low for provision of quality food (Khan and Das 2014). There is thus a need to look afresh at the resource requirement for SNP from both quality and quantity perspective.

Fifth, there is little coordination between the two nodal departments responsible for the delivery of these interventions. The delivery of DNIs remains fragmented, and they are not seen

as a complete package for preventing stunting. Instituting a nodal body/institution to coordinate between the departments would be helpful in streamlining their efforts towards addressing undernutrition. For instance, UP had set up a State Nutrition Mission in 2014–15 for bringing better coordination between departments for implementing nutrition interventions (Government of UP 2016a). In order to draw the attention of the states' finance, health and women and child departments, as well as that of other stakeholders in the ecosystem around nutrition security in India, state budget documents should introduce a special statement on budget for nutrition interventions. Lastly, our analysis does not address questions related to the quality of service delivery, adequacy of interventions as per the needs of the states, outreach of the services, etc. It also does not enter into debates regarding the allocative efficiency of budget outlays for the DNIS studied. However, these dimensions may be equally important for ensuring effective delivery of any intervention for addressing undernutrition.

### Concluding Observations

Focus on a specific set of DNIS helps in bringing attention to interventions which are essential for preventing stunting, but which may otherwise be lost in the entire gamut of bigger programmes and schemes. The overall budget for DNIS remains low across the study states, suggesting that nutrition is still not a priority intervention, despite its relevance to human capital enhancement. In fact, the priority for DNIS within the overall state budgets has declined between financial years 2014–15

and 2017–18 in all the four states. The trend is even more worrisome when seen in the context of significant resource gaps in the delivery of DNIS, as revealed by the analysis. This calls for enhanced budget outlays for critical nutrition interventions across the study states, by both the health as well as women and child departments.

A part of the issue also lies in the lack of transparency in the availability of relevant financial and physical data, with respect to these nutrition interventions. While budgets are not structured to provide data separately for DNIS, more active public disclosure of budget information by the nodal departments would definitely help. For example, at present, the Financial Monitoring Reports which report statewide actual expenditure figures under NHM (as per programmatic disaggregation), are publicly available only for 2016–17. These too are not audited figures, raising issues of reliability.

Similarly, the data on physical progress under the schemes delivering the DNIS is not made available in a timely manner. For example, ICDS-SNP beneficiary data (statewise) was last updated on the ICDS website for March 2015, we thus had to use alternative data sources for our analysis. Lastly, these DNIS need to be recognised as a complete package of interventions by the state governments, whose effective delivery can help address undernutrition among children and women. With the DNIS divided across departments, greater coordination between the two departments of health and women and child development would help in improving the delivery of these interventions.

### NOTES

- 1 The unit costs for provision of ICDS-SNP were subsequently revised in 2017–18 to ₹12 per child per day for severely underweight children (6–72 months), ₹8 per child per day to other children (6–72 months) and ₹9.5 per woman per day for P&L women. However, since the number of beneficiaries was available for a year preceding 2017–18, older unit costs were used for assessing resource gap.
- 2 The budgets for schemes follow an administrative or organisational structure of the government, where each activity of the government is classified as per its nature and purpose. The budget classification is divided across six tiers, with each subsequent tier providing additional details regarding the purpose of the expenditure. These are: major head, sub-major head, minor head (third tier), sub-minor head, detailed head and object head.

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