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POLICY NOTE

Financing Nutrition in India:

Cost Implications of the Nutrition Policy Landscape 2022-23

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KEY FINDINGS

- India should spend at least **₹48,440 crore** in FY 2022-23, across Union government ministries and State government departments to fully finance a set of core Direct Nutrition Interventions (DNIs), at scale. This is ₹9,869 crore more than the estimates made by Kapur et al., 2020. In FY 2022-23 and beyond, spending on nutrition will need to be benchmarked at least at this level, or more, unless target populations or unit costs for key interventions change substantially.

- The bulk of this investment should be for Saksham Anganwadi and Poshan 2.0's Supplementary Nutrition Program (SNP) interventions for adolescent girls aged 14 to 18 years, pregnant women, lactating mothers, children aged 6 months to 3 years[1], and malnourished children amounting to an annual allocation of **₹24,252 crore**, up by ₹3,456 crore in FY 2019-20. This estimate is based on the latest unit cost norms from Poshan 2.0 guidelines, which have remained unchanged since 2017.

- Maternity Benefits under Pradhan Mantri Matru Vandana Yojana (PMMVY), launched in 2017, and the Janani Suraksha Yojana (JSY) cost **₹12,929 crore** in 2022, assuming the revised norms of two live births, as opposed to one live birth until Aprill 2022, and only if second child is a girl, for PMMVY. This is an addition of **₹3,669 crore** since 2019-20.

KEY ASKS

- Cost of delivering key interventions vary across states due to differing state capacity, geography and terrain, and supply constraints. Therefore, **there should be a focus on determining local state-wise unit costs** to be more precise in estimating budgetary requirements.

- Data on allocations and expenditures for these core DNIs are currently not available in a comprehensive and disaggregated manner, especially at district and block levels. **It is useful to benchmark cost requirements with current data on allocations and expenditures at the district level and below.** Data, in particular, are missing for various interventions such as counselling. Filling these data gaps is crucial. This exercise would enable better planning, budgeting, and decision-making to ensure maximum possible coverage.

[1] While SNP is provided to 3–6-year-old children as well, this note focusses on early childhood interventions.

INTRODUCTION

Over the last few years, India has been implementing several nutrition interventions as part of its national strategy to address malnutrition and associated risks. These include nutrition-specific interventions that address immediate determinants of nutritional status, such as the provision of food supplements, Iron and Folic Acid (IFA) supplementation during pregnancy, breastfeeding (BF) promotion, vitamin A supplementation in early childhood, and food supplementation. They also include nutrition-sensitive interventions which cover underlying determinants of nutritional status, such as access to clean water, sanitation, etc.

However, while India's recent National Family Health Survey (NFHS-5) shows an increase in coverage of key nutrition interventions, improvements in outcomes such as stunting, anaemia, wasting, and low birth weight remain marginal. Table 1 presents some key indicators on malnutrition from the last two rounds of NFHS.

In Financial Year (FY) 2021-22, the Government of India (GoI) restructured and combined the Integrated Child Development Services (ICDS), Prime Minister's Overarching Scheme for Holistic Nourishment (POSHAN) Abhiyaan, and the Scheme for Adolescent Girls into Saksham Anganwadi and Poshan 2.0 (hereafter, Poshan 2.0) to converge nutrition-related initiatives across ministries and strengthen outcomes.

Specifically, the scheme seeks to focus on the following components[2]:

- Supplementary Nutrition Program (SNP) for children in the age group of 6-72 months, Pregnant Women and Lactating Women (PWLM)" and use the acronym consequently, and adolescent girls (14-18 years) in aspirational and North Eastern Region (NER) districts;
- Early Childhood Care and Education and early stimulation for children who are 3-6 years and 0-3 year old, respectively;
- Infrastructure for Anganwadi Centres (AWCs); and
- POSHAN Abhiyaan.

In FYs 2021-22 and 2022-23, respectively, the MWCD earmarked ₹20,105 crore and ₹20,263 crore for Poshan 2.0[3].

The restructuring of the scheme follows several policy changes implemented since 2017 to improve nutritional outcomes. These include cash transfers under the Pradhan Mantri Matru Vandana Yojana (PMMVY); increase in unit cost norms under the Supplementary Nutrition Program (SNP); the launch of the POSHAN Abhiyaan with an approved three-year budget of ₹9,046 crore; and Identification of aspirational districts for targeted nutritional interventions, among others.

Further, in April 2022, benefits under PMMVY were expanded to two live births, provided the second birth is a girl. The benefit amount is ₹5,000 and ₹6,000, respectively, for the first and second live birth[4].

Table 1: Nutrition Outcomes

Indicator	NFHS 4 (2015-16)	NFHS 5 (2019-21)
Children under five who are stunted (%)	38.4	35.5
Children under five who are wasted (%)	21	19.3
Children under five who are underweight (%)	35.8	32.1
Children under five who are anaemic (%)	58.6	67.1
Women (15-49 years) who are anaemic (%)	53.1	57
Women with below-normal Body Mass Index	22.9	18.5
Infant Mortality Rate	40.7	35.2
Under Five Mortality Rate	49.7	41.9

Source: India Fact Sheet, NFHS-5. Available online at: http://rchiips.org/nfhs/NFHS-5_FCTS/India.pdf.

[2] Saksham Anganwadi and Poshan 2.0 Guidelines. Available online at: https://wcd.nic.in/acts/guidelines-mission-saksham-anganwadi-and-poshan-20.

[3] Union budget documents. Available online at: https://www.indiabudget.gov.in/.

At the Union government level, these interventions are delivered primarily through the Ministry of Women and Child Department (MWCD) and the Ministry of Health and Family Welfare (MoHFW). However, despite existing investments, demands by ministries are not met. In FY 2021-22, the shortfall was ₹10,299 crore for Department of Health and Family Welfare (DoHFW)[5]. Unlike DoHFW, MWCD's projected demand for its key schemes equalled allocations in FY 2022-23. This is due to the ministry reducing its projected demand, which decreased by 24 per cent from ₹32,603 crore in FY 2021-22 to ₹24,939 crore this year[6].

This Policy Note aims to estimate the potential costs to deliver at scale (i.e. 100 per cent coverage) for a core set of Direct Nutrition Interventions (DNIs) for FY 2022-23.

INTERVENTIONS COVERED IN THIS NOTE

There are two types of interventions to address nutrition and development. Nutrition-specific interventions that address immediate determinants and nutrition-sensitive interventions that address underlying determinants (Maternal and Child Nutrition Study Group, 2013).

This note focuses on nutrition-specific interventions. Building on the Scaling Up Nutrition (SUN) costing method adapted by Menon et al., 2016, interventions have been categorised under five major themes. These include behaviour change communication (BCC) or counselling; food supplements under the SNP; micronutrients and deworming interventions; other health interventions such as immunisation and inpatient treatment for Severe Acute Malnutrition (SAM) children; and maternity benefit cash transfers.

Table 2 lists out the interventions covered as well as the ministries responsible. Food supplementation interventions and PMMVY are currently in the domain of MWCD; micronutrients currently fall within the purview of MoHFW, whereas counselling is jointly delivered by MWCD and MoHFW.

Table 2: Mapping nutrition-related interventions

Stage	Intervention	Ministry	Source
Counselling Interventions			
Pregnancy	Counselling during pregnancy	MWCD+MoHFW	Khan et al., 2014
0 - 6 months	Counselling for breastfeeding (0-6 months)	MWCD+MoHFW	Khan et al., 2014
6 - 72 months	Counselling for CF and WASH	MWCD+MoHFW	Khan et al, 2014
Food Supplement Interventions			
Pre-Pregnancy	Food supplements for adolescent girls	MWCD	Ministry of Women and Child Development, 2017
Pregnancy	Food supplements for pregnant women	MWCD	Ministry of Women and Child Development, 2017
0 - 6 months	Food supplements for lactating women	MWCD	Ministry of Women and Child Development, 2017
6 - 36 months	Food supplements for children	MWCD	Ministry of Women and Child Development, 2017
6 - 36 months	Food supplements for malnourished children	MWCD	Ministry of Women and Child Development, 2017

[4] Enrolments under PMMVY, Press Information Bureau. Available online at: https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1846142.
[5] Demand for Grants 2022-23, Department of Health and Family Welfare, Rajya Sabha Secretariat. Available online at: https://rajyasabha.nic.in/rsnew/Committee_site/Committee_File/ReportFile/14/160/134_2022_3_15.pdf.
[6] Demand for Grants 2022-23, Ministry of Women and Child Development, Rajya Sabha Secretariat. Available online at: https://rajyasabha.nic.in/rsnew/Committee_site/Committee_File/ReportFile/16/162/338_2022_3_15.pdf.

Stage	Intervention	Ministry	Source
Micronutrient and Deworming Interventions			
Pre-Pregnancy	IFA for adolescent girls	MoHFW	National Health Mission (RoP and PIP 2022-24)
Pre-Pregnancy	Deworming for adolescent girls	MoHFW	National Health Mission (RoP and PIP 2022-24)
Pregnancy	IFA for pregnant women	MoHFW	National Health Mission (RoP and PIP 2022-24)
Pregnancy	Calcium for pregnant women	MoHFW	National Health Mission (RoP and PIP 2022-24)
Pregnancy	Deworming for pregnant women	MoHFW	National Health Mission (RoP and PIP 2022-24)
0 - 6 months	IFA for lactating women	MoHFW	National Health Mission (RoP and PIP 2022-24)
0 - 6 months	Calcium for lactating women	MoHFW	National Health Mission (RoP and PIP 2022-24)
6 - 36 months	Iron supplements for children (6-60 months)	MoHFW	National Health Mission (RoP and PIP 2022-24)
6 - 36 months	Deworming for children (12-60 months)	MoHFW	National Health Mission (RoP and PIP 2022-24)
6 - 36 months	Vitamin A supplements for children (6-60 months)	MoHFW	National Health Mission (RoP and PIP 2022-24)
Health Interventions			
Pregnancy	Insecticide treated bed nets	MoHFW	UNICEF 2013
0 - 6 months	Immunisation (0-60 months)	MoHFW	Chatterjee S, Das P, Nigam A, et al 2018
0 - 6 months	ORS and therapeutic zinc supplements for treatment of diarrhoea (2-60 months)	MoHFW	National Health Mission (RoP and PIP 2022-24)
6-36 months	Treatment of SAM children at Nutrition Rehabilitation Centres (NRC)	MoHFW	Operational guidelines on facility-based management of children with severe acute malnutrition, 2011
Maternity Benefit Cash Transfers			
Pregnancy	Conditional cash transfer- JSY	MoHFW	National Health Mission Website
0 - 6 months	Conditional cash transfer- PMMVY	MWCD	Ministry of Women and Child Development, 2017

Note: CF= Complementary Feeding; IFA= Iron and folic acid; JSY= Janani Suraksha Yojana; ORS= Oral rehydration salts; PMMVY= Pradhan Mantri Matru Vandana Yojana; SAM= Severe acute malnutrition; WASH= Water, sanitation and hygiene.

METHODS

The detailed method for costing these interventions is given in **Figure 1.**

Figure 1: Detailed methods

Costing method	• Activity-Based Costing (ABC-I) was adapted, as used in Menon et al. (2016) and Chakrabarti et al. (2017), for a core set of DNIs. This was costed at scale, inclusive of inflation. • Unit costs were updated for FY 2022-23. • Each intervention, and its target population, to be costed was described.
Target Population Estimation 2022-23	• The target population for each intervention was estimated using year-on-year Natural Growth Rate (NGR). • Birth rates from Sample Registration System (SRS) 2020 were used to estimate the number of births and, consequently, the number of pregnant women. • From the Poshan 2.0 guidelines, the target population of adolescents in the 14-18 years age group in aspirational districts and North Eastern Region (NER) states was identified.
Unit costs	• Local unit cost data were obtained from relevant sources within India or from comparable programmatic settings in South Asia. • A standard pan-India unit cost for interventions was applied for which state-wise data was unavailable (supplementary nutrition, counselling, etc.). • The unit costs of health interventions were inflated using the Consumer Price Index (CPI). For cash transfers and supplementary nutrition, unit costs used were available for 2022 from GoI and remain unchanged since 2017.
Intervention-related estimations	• The platform or channel through which each intervention or activity would be delivered was specified. • For each intervention, the target population size was multiplied by the relevant unit cost to arrive at a total cost of implementing each intervention at full coverage. • Here, "full coverage" is defined as 100 per cent of the target population, except in the case of treatment of SAM, which was set to 80 per cent (Horton et al., 2010).

LIMITATIONS

There are, however, some limitations to the study:

1. This note has been restricted to universal interventions and while states provide several entitlements and additional funds, those have been excluded. Therefore, the current estimates underestimate overall costs.
2. In the absence of disaggregated unit cost data for several interventions pan-India unit costs have been used for food supplements and insecticide treated bed nets. These may result in an under or overestimation given substantial variations across states in their capacity and costs for delivering interventions. Moreover, while several states have significantly enhanced unit costs for SNP through their own funds which are excluded from this note, SNP costs are likely to be an underestimation of actual expenditure by states.

3. While counselling has indeed picked pace across the country with the launch of the POSHAN Abhiyaan, there are no updated unit costs for the same. We have, thus, relied on estimates from Bangladesh from 2014. Unit costs, however, are not uniform across states. These estimates need to be calculated in India's context and, currently, these figures might be an overestimate or underestimate.

4. Costs estimated at 100 per cent coverage may overestimate the amount the government needs to invest either due to self-financing or other reasons. However, given the universal nature of these programs, it is useful to estimate costs at full coverage and provide scenarios at different levels of coverage.

5. This study also excludes several costs:

    a. Poshan Tracker acts as a job aid and, ideally, its costs should be absorbed into the unit costs of each intervention.

    b. This study also excludes personnel costs, honoraria, and salaries for certain components such as food supplements, micronutrients, and maternity benefits. Similarly, time costs have been excluded for many interventions including micronutrients and deworming interventions, food supplements, etc. A detailed list of what is included and excluded in the costs of each intervention in this note has been given in Table 3.

Table 3: What is included and excluded while calculating unit costs

Intervention	Source	Includes	Excludes
Counselling Interventions			
Counselling during pregnancy	Khan et al, 2014	Costs related to: Personnel, Training, Home visits, Beneficiary time, Mass media campaigns, and Monitoring.	India specific costs, costs for community-based events, and Poshan Tracker costs.
Counselling for breastfeeding (0-6 months)	Khan et al, 2014		
Counselling for CF and WASH	Khan et al, 2014		
Food Supplement Interventions			
Food supplements for adolescent girls	MWCD, 2022 (unchanged since 2017)	Unit costs for food provision only	Costs related to: Personnel, Logistics and supply, Administration, Fuel and utensils, Monitoring costs, and Quality testing.
Food supplements for pregnant women			
Food supplements for lactating women			
Food supplements for children			
Food supplements for malnourished children			
Micronutrient and Deworming Interventions			
IFA for adolescent girls	National Health Mission (RoP and PIP 2022-24)	Unit costs of drugs	Costs related to: Administration, Personnel, Transport and warehousing costs, and Monitoring.
Deworming for adolescent girls			
IFA for pregnant women			
Calcium for pregnant women			
Deworming for pregnant women			
IFA for lactating women			
Calcium for lactating women			
Iron supplements for children (6-60 months)			
Deworming for children (12-60 months)			
Vitamin A supplements for children (6-60 months)			

Intervention	Source	Includes	Excludes
Health Interventions			
Insecticide treated bed nets	UNICEF 2013	Unit cost of bed net	Costs related to: Administration, Personnel, User costs, and Monitoring.
Immunisation (0-60 months)	Chatterjee S, Das P, Nigam A, et al 2018	Costs related to: Procurement, Transport and storage, Distribution, Training, Monitoring, and Platforms [CBE , Village Health, Sanitation, and Nutrition Day (VHSND), TV and radio advertisements].	Personnel costs
ORS and therapeutic zinc supplements for treatment of diarrhoea (2-60 months)	National Health Mission (RoP and PIP 2022-24)	Unit costs of drugs	Costs related to: Administration, Personnel, Transport and warehousing costs, and Monitoring.
Treatment of SAM children at NRC	Operational guidelines on facility-based management of children with severe acute malnutrition, 2011	Fixed costs (building, ward, medical, and kitchen equipment), and Variable costs (medical supplies, personnel costs, kitchen supplies, maintenance costs).	Costs related to: Administration, Personnel, Transport, Beneficiary time, Monitoring, and State specific additions.
Maternity Benefits			
Conditional cash transfer- JSY	National Health Mission Website	Cash transfer amount	Costs related to: Administration, Personnel, and Monitoring.
Conditional cash transfer- PMMVY	MWCD, 2022		

FINDINGS

The study found that at FY 2022-23 population estimates, India should have spent at least **₹48,440 crore** in 2022, across Union and state governments, and across ministries and departments to fully finance a set of core DNIs, at scale (see Table 2 for details on the DNIs). This is **₹9,869 crore** more than in FY 2019-20 when the total estimate was **₹38,571 crore**.

The remainder of the note is structured as follows. The next section looks at the disaggregated costs across interventions between FY 2019-20 and FY 2022-23. This is followed by a breakdown of costs by the ministry responsible and a state-wise costing and variations in cost estimates due to changes in assumptions have been presented. Finally, the last section provides a short summary of the implications of the cost analysis along with recommendations for policymakers.

Intervention-wise Costs

The estimated costs for FY 2022-23 are as follows:

- 50 per cent of total costs are for food supplements at scale, which are estimated at **₹24,252 crore** ($3.03 billion)[7], up by ₹3,456 crore in FY 2019-20. This includes supplementary food for adolescent girls, PWLM, children aged 6 months to 3 years, and additional rations for severely underweight children.

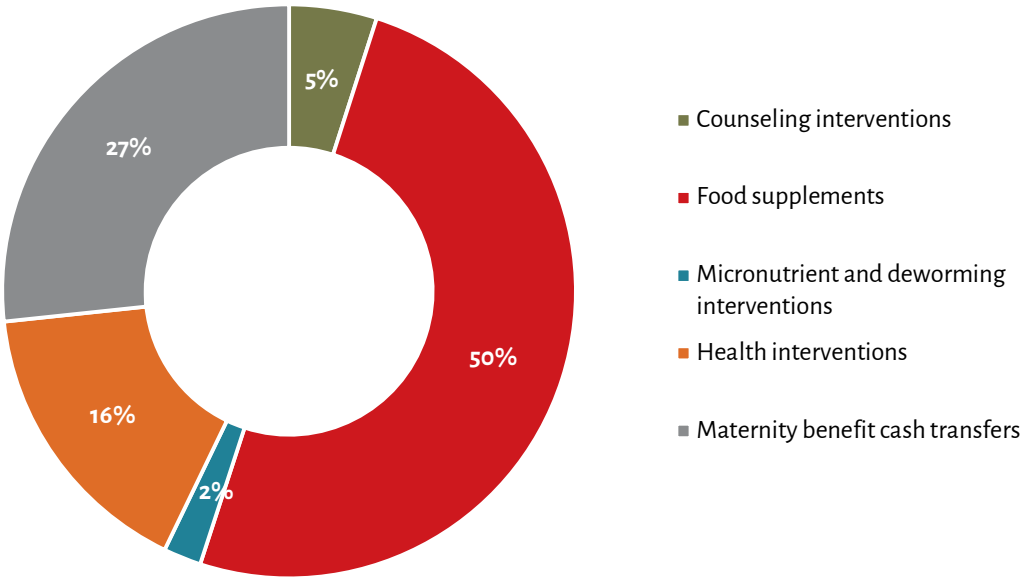
- The second largest intervention accounting for 27 per cent of total costs is maternity benefit cash transfers at scale. In FY 2022-23, **₹12,929 crore** ($1.62 billion) is required across two schemes: **₹10,252 crore** for PMMVY and the remaining **₹2,677 crore f**or JSY, which is the conditional cash transfer to incentivise institutional delivery. The overall increase from FY 2019-20 is ₹3,669 crore.

- For health interventions at scale, **₹7,834 crore** ($979 million) is required, up by ₹1,711 crore in FY 2019-20. This includes immunisation of children (**₹4,557 crore**); providing insecticide treated bed nets to pregnant women (**₹147 crore**); treatment of severely malnourished children at NRC (**₹3,099 crore**); and drugs for treatment of diarrhoea for children (**₹31 crore**).

- To deliver counselling at scale, **₹2,395 crore** ($299 million) is required, an increase of ₹1,022 crore from FY 2019-20. This includes counselling for the promotion of breastfeeding, complementary feeding, and water, hygiene, and sanitation practices. Of all categories, BCC interventions cost the least.

- For the distribution of micronutrient supplements and deworming tablets at scale, **₹1,029 crore** ($129 million) is required, up by ₹10 crore in FY 2019-20. This includes IFA and deworming for adolescent girls, PWLM; deworming for pregnant women; and vitamin A, IFA, zinc, and deworming for children.

Figure 1: Total annual costs of delivering nutrition interventions at scale, by programme and ministry



Source: Authors' estimates after updating the methodology used by Chakrabarti et al., 2017.

[7] This calculation assumes 1 USD = 80 INR.

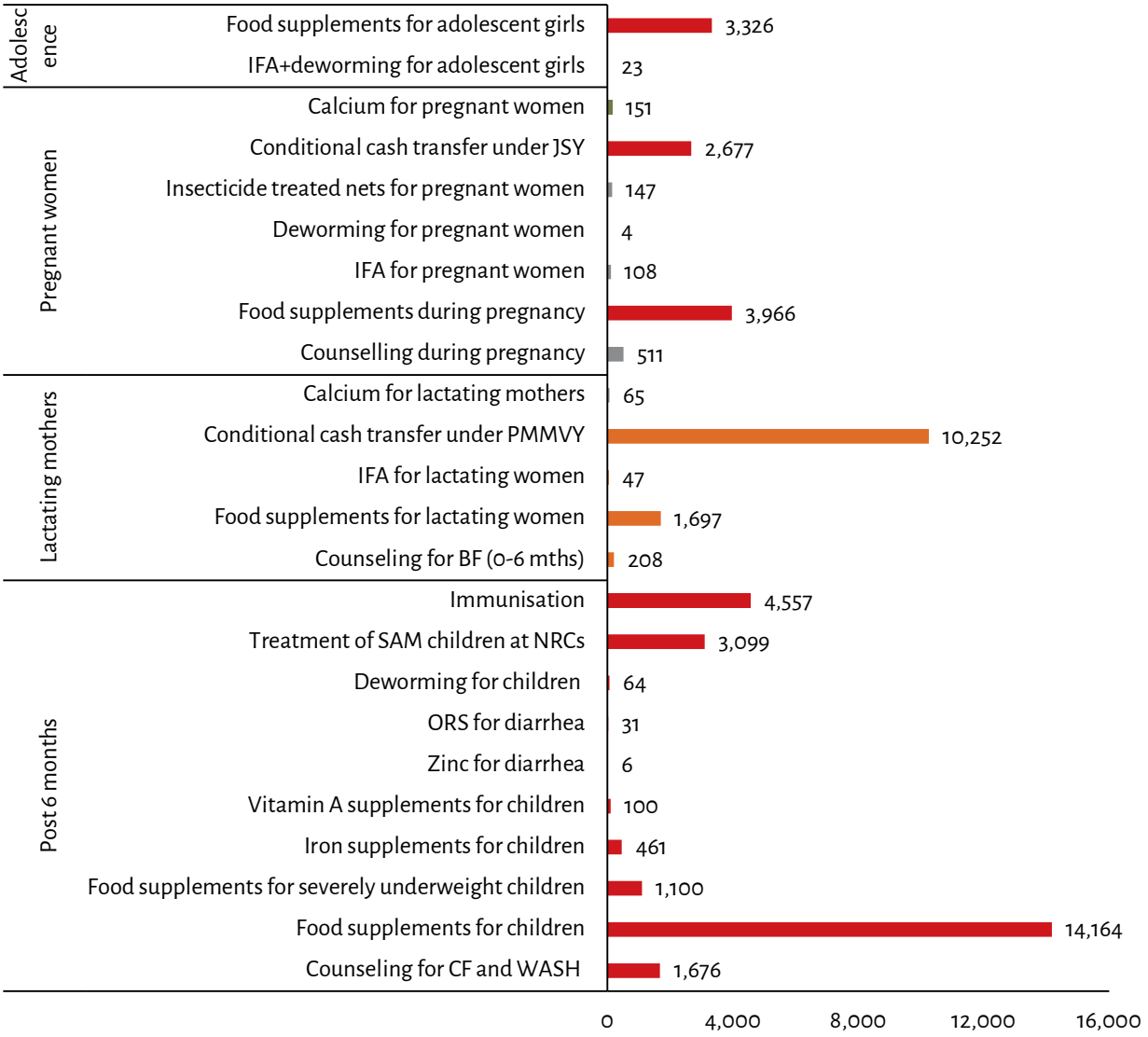
Disaggregated costs of delivering the core set of nutrition interventions are shown in Figure 2. Interventions for children (6 to 36 months) costed the most (**₹25,258 crore**), followed by interventions for lactating mothers and children below 6 months (**₹12,269 crore**), up by ₹3,127 crore and ₹3,770 crore in 2019-20, respectively. Further, interventions for pregnant women (**₹7,564 crore**) and adolescent girls (**₹3,349 crore**) increased by ₹273 crore and ₹2,700 crore, respectively.

Studies have found that there are several low-cost interventions with high returns, which can be prioritised particularly in low resource settings (Bhutta et al, 2013). These include counselling for care and nutrition during pregnancy, breastfeeding, complementary feeding and hygiene practices, micronutrient supplementation and deworming for adolescents, women and children, and insecticide-treated nets for pregnant women in malaria-endemic areas.

In India too, similar to findings in Kapur et al., 2020, the costs were lowest for deworming for pregnant women, zinc for children (6-36 months), and IFA and deworming for adolescent girls. The costliest interventions were food supplements for children (6-36 months), cash transfers under PMMVY, and immunisation.

Among these interventions, several have low costs with high returns and should be prioritised.

Figure 2: **Annual costs of delivering nutrition interventions at scale, in crore**



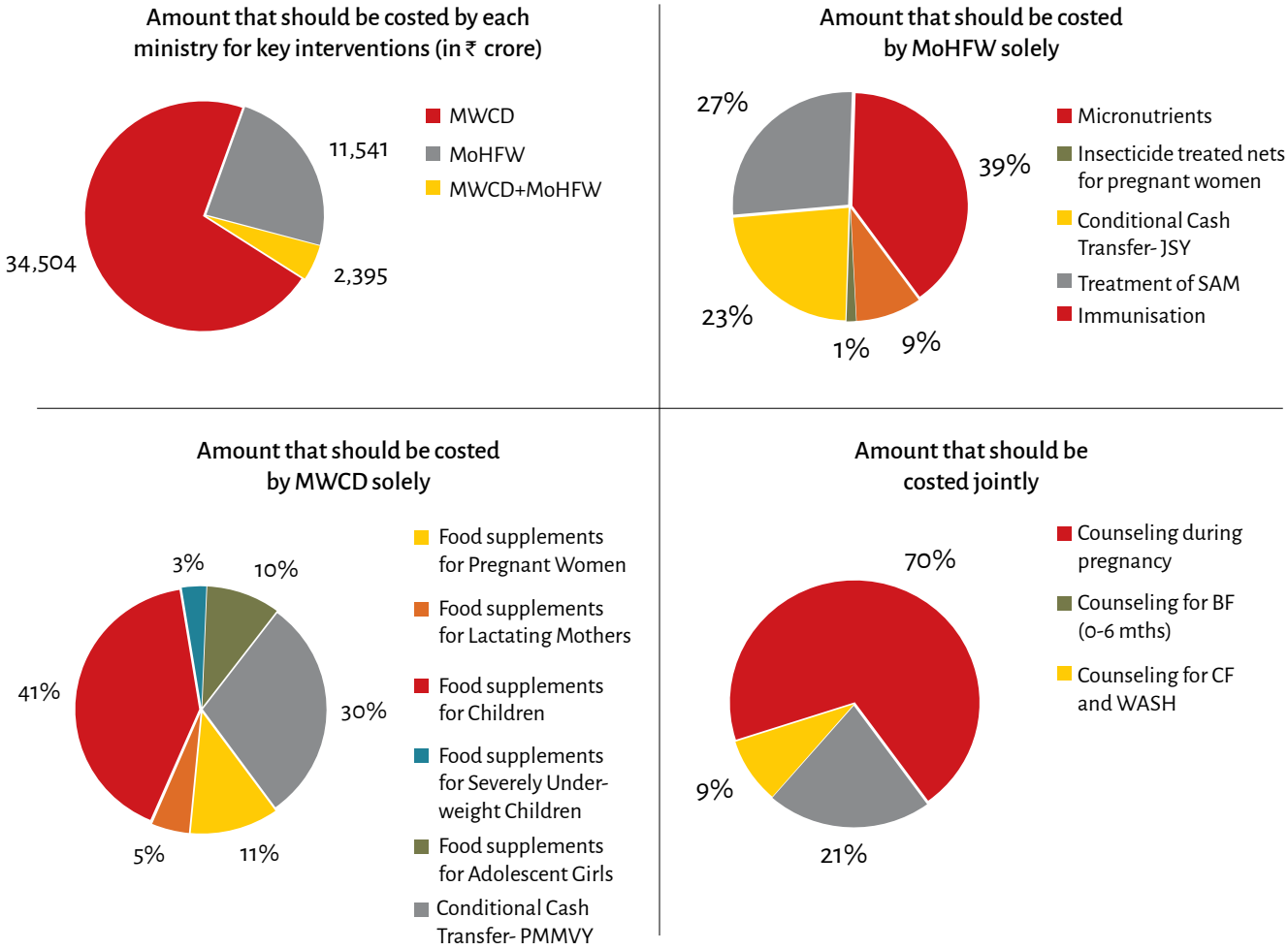
Source: Authors' estimates after updating the methodology used by Chakrabarti et al, 2017.

At the Union government level, the responsibility of designing and implementing these interventions rests with the MoHFW and (or) MWCD. Disaggregated costs for each intervention by the line ministry are shown in Figure 3. Of the total costs, a majority (71 per cent) were under the ambit of the MWCD amounting to ₹34,504 crore. MoHFW accounted for 24 per cent or ₹11,541 crore. The remaining costs were the joint responsibility of both MoHFW and MWCD amounting to ₹2,395 crore or 5 per cent of the total costs.

Even though Poshan 2.0 guidelines focus on convergence, interventions remain within departmental silos. For example, the provision of micronutrients remains within the ambit of NHM under MoHFW, and the provision of food supplements with MWCD. As before, counselling continues to be the joint responsibilities of these ministries.

A breakdown of the types of interventions under each Ministry shows that a majority of the MWCDs costs were towards supplementary nutrition for children (6-36 months), while the majority of MoHFW costs were for immunisation.

Figure 3: **Annual costs of delivering nutrition interventions by ministry**



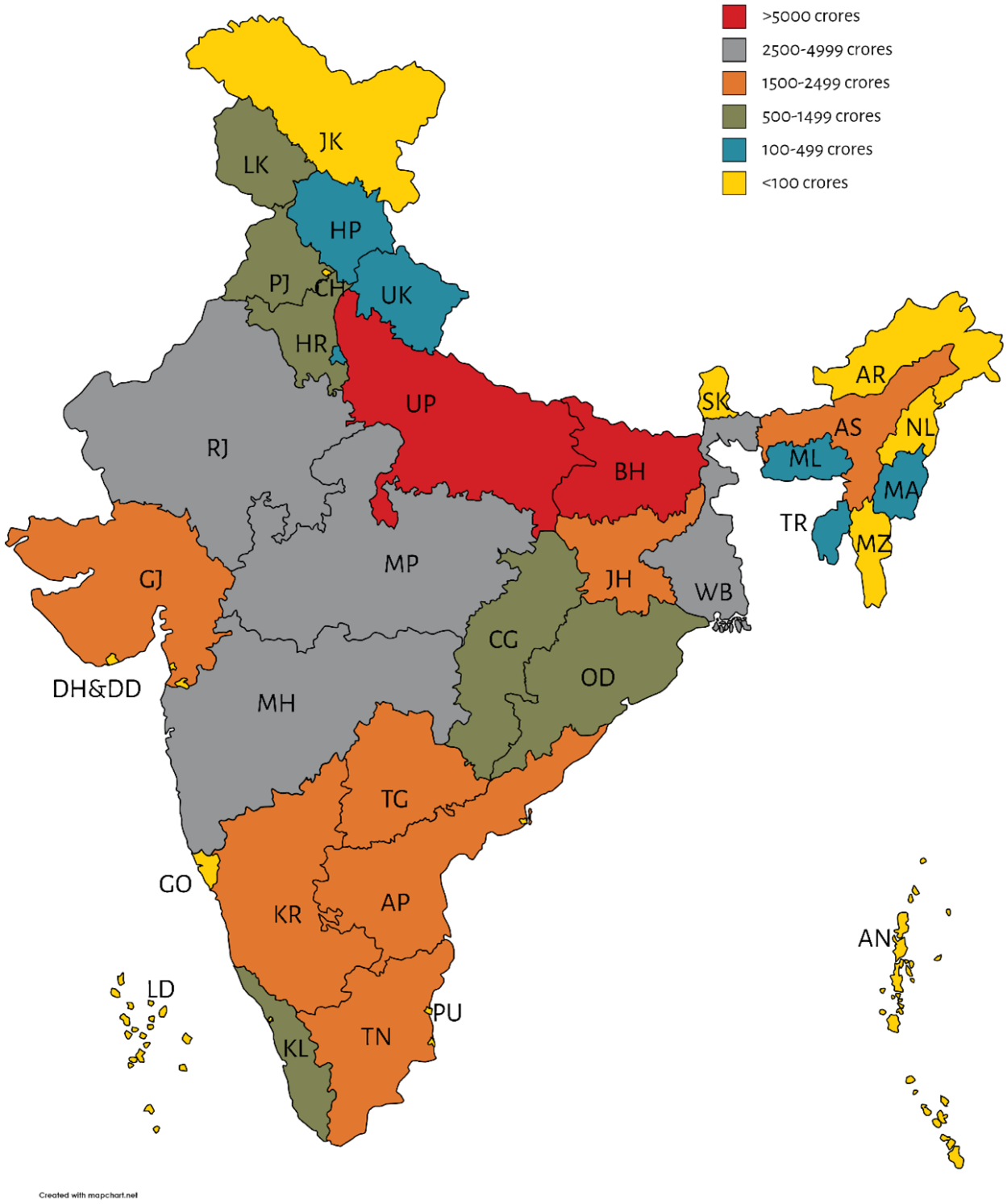
Costs by Program and State

Variations in costs across states depend primarily on population (Figure 4). Uttar Pradesh and Bihar, owing to their high population required the highest allocations. Similarly, states like Maharashtra, Madhya Pradesh, and Rajasthan required large allocations.

To a lesser extent, the prevalence of malnutrition status also affects costs across states. This is because the estimates also include costs for treatment for SAM children i.e. treatment at NRC and additional food supplements (reflected in a higher unit cost).

In Figure 4, these overall state-wise costs are further disaggregated into the program type for each intervention.

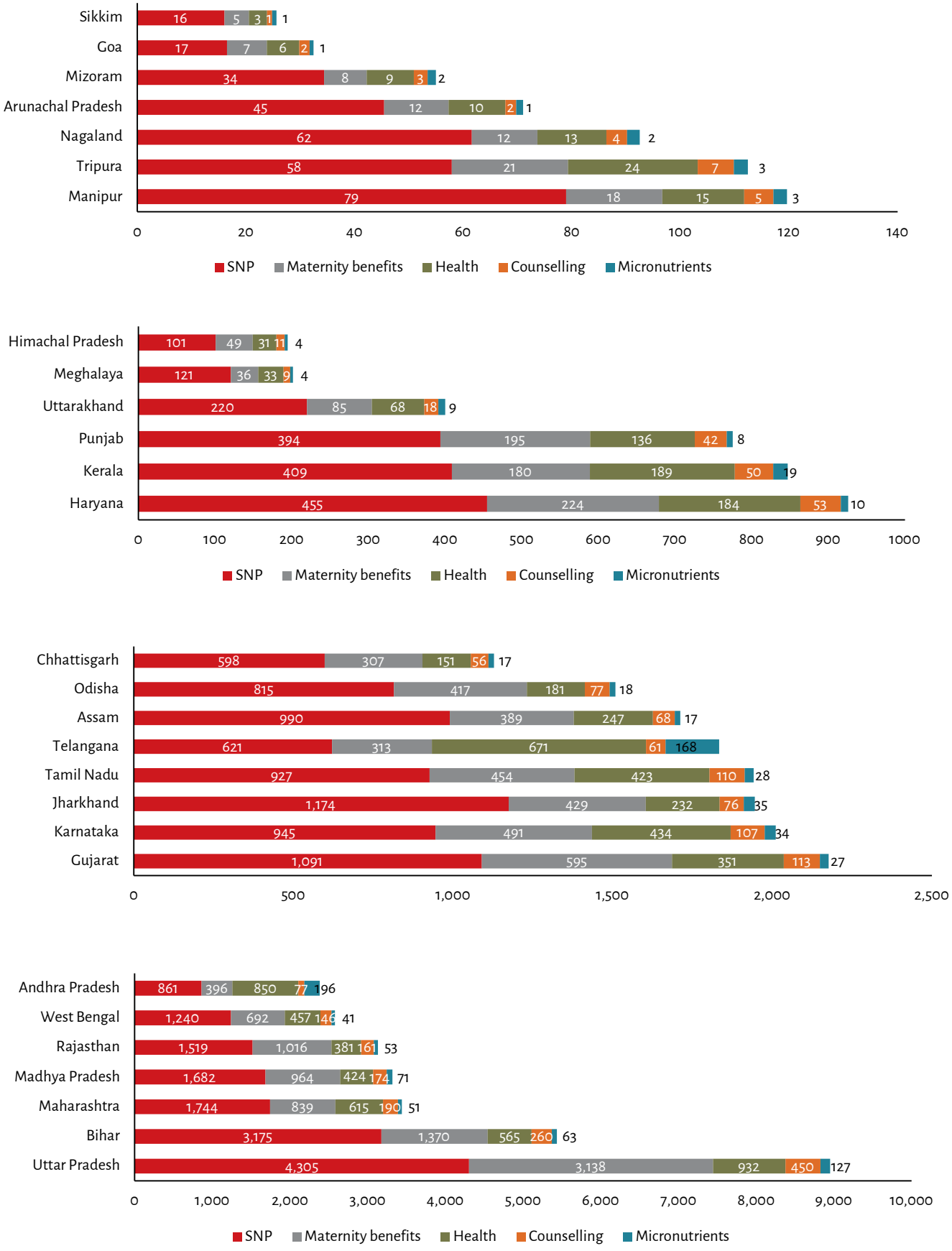
Figure 4: **Annual costs required to deliver nutrition interventions at scale, by state, in crore**



Source: Authors' estimates after updating the methodology used by Chakrabarti et al. (2017).
Note: AN = Andaman and Nicobar Islands; AP = Andhra Pradesh; AR = Arunachal Pradesh; AS = Assam; BH = Bihar; CG = Chhattisgarh; CH = Chandigarh; DH&DD = Dadra and Nagar Haveli and Daman and Diu; DL = Delhi; GJ = Gujarat; GO = Goa; HP = Himachal Pradesh; HR = Haryana; JH = Jharkhand; JK = Jammu and Kashmir; KL = Kerala; KR = Karnataka; LD = Lakshadweep; LK = Ladakh; MH = Maharashtra; ML = Meghalaya; MN = Manipur; MP = Madhya Pradesh; MZ = Mizoram; NL = Nagaland; OD = Odisha; PJ = Punjab; PU = Puducherry; RJ = Rajasthan; SK = Sikkim; TL = Telangana; TN = Tamil Nadu; TR = Tripura; UK = Uttarakhand; UP = Uttar Pradesh; WB = West Bengal

Disclaimer: *This map is for illustrative purposes only and does not represent a political stand by AI-CPR or IFPRI Poshan on the territory of India.*

Figure 5: Annual costs required to deliver nutrition interventions at scale, by state, in crore



Source: Authors' estimates after updating the methodology used by Chakrabarti et al. (2017).

VARIATION IN COSTS

The costs presented in this note will vary based on changing assumptions or additions of other components. Some examples have been presented below.

1. SNP for children (6 to 36 months) alone accounts for 30 per cent of the total cost of all interventions covered in this study. If this is expanded to include SNP for 3-6 year old children as currently provided under the scheme, it would account for an additional **₹20,946 crore**.

2. As per Poshan 2.0 guidelines per day costs of SNP. As per these norms, per day costs of SNP are ₹8 for children; ₹9.5 for pregnant women, lactating mothers, and adolescent girls; and ₹12 for severely malnourished children. These costs remain unchanged since 2017[8], and do not account for inflation. India witnessed a significant food and beverage inflation of 28 per cent from October 2017 to October 2022. Accounting for this to index costs for SNP, the per day costs as of October 2022 are ₹10 instead of ₹8 for children; ₹12 instead of ₹9.5 for PWLM, and adolescent girls; and ₹15 instead of ₹12 for severly malnourished children[9]. Accounting for this inflation, an additional cost of **₹6,559 crore** is needed for children from 6-36 months.

3. We assume that only 80 per cent of SAM children can be provided treatment at an NRC facility. If coverage were 100 per cent, an **additional ₹774 crore**, is required.

4. For community-based events, it will take an additional of **₹417 crore** for existing operational AWCs in 2022[10] (at ₹250 per AWC per month).

REQUIRED AMOUNTS VERSUS ALLOCATED AMOUNTS

One direct use of estimated costs is to compare them with allocations by Union and State governments. Given the availability of data as well as the fact that SNP is the largest cost, a comparison has been undertaken between approved allocations for SNP and estimated costs.

Financing for SNP is shared between the Union and State governments in a 50:50 ratio for large states and UTs with legislatures, 90:10 ratio for hilly states, and 100:0 for UTs without legislatures. For each state, the total allocations for SNP have been estimated assuming that the state contributed its share as well. These estimated figures have been calculated as proportion of required allocations. As previously mentioned, this method excludes states adding additional funds or expanding the coverage of SNP, such Karnataka providing hot cooked meals to pregnant women and lactating mothers.

Latest data on allocations is available for FY 2021-22. Estimated allocations (based on GoI allocations and share) in FY 2021-22 stood at ₹17,216 crore. Current required allocations are ₹45,197 crore, or 38 per cent of the required allocations.

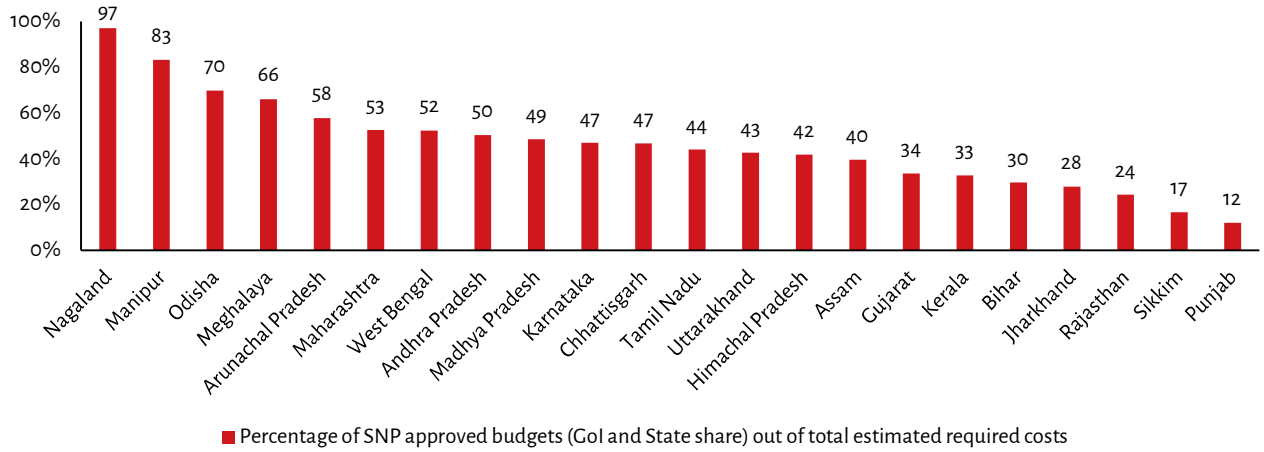
There is variation across states. Nagaland is almost costing for the requisite target population. Manipur falls short by 17 per cent. Meanwhile, states such as Rajasthan (24 per cent), Sikkim (17 per cent), and Punjab (12 per cent) are not costing for their target population adequately.

[8] Cost norms were previously revised in 2017.

[9] Saksham Anganwadi and Poshan 2.0 (2022), Budget Brief, Accountabiity Initiative. Available online at: accountabilityindia.in/publication/saksham-anganwadi-budget-briefs-2022-accountability-initiative-centre-for-policy-research.

[10] A total of 13,91,004 AWCs are operational in India. State-wise operational AWCs can be found here: http://164.100.24.220/loksabhaquestions/annex/179/AU3345.pdf.

Figure 6: SNP estimated allocations out of required allocations stood at 38% in 2022-23



IMPLICATIONS

Our analysis indicates that there are large inter-state and inter-district variabilities, across programmes and ministries, in the estimated costs of delivering a core set of nutrition interventions at scale.

The costs provided here can be used by policy-makers for planning and budgeting. The objective of budgeting is estimating revenues required and likely expenditures, as well as determining future funding needs. Cost estimates can contribute to a more informed debate on resource allocation priorities (WHO, 2003), and help make choices clearer for policymakers.

Indian states projected to have the largest shortfall in spending for nutrition and health interventions are at risk of populations falling further behind in the global push toward universal health coverage and in achieving Sustainable Development Goals (SDGs). It is crucial to both identify these gaps, and work towards addressing them in both the short and medium term.

Costing studies can assist policymakers plan the composition and evolving needs of interventions. It is possible that some interventions are phased out in the future, or the component-mix and resource-mix requires change. To this end, cost estimates can prove to be a useful tool for policy-makers (Borkum et al, 2015). However, this study cannot make any claims regarding the efficiency and effectiveness of these spending amounts.

RECOMMENDATIONS

Based on our findings, we offer the following policy-focused recommendations:

1. India should have spent at least **₹48,440 crore** in FY 2022-23, across Union and State government budgets, and across ministries and departments to fully finance a set of nutrition interventions, at scale. In FY 2022-23 and beyond, spending on nutrition will need to be benchmarked at least at this level, or beyond, unless target populations or unit costs for key interventions change substantially.

2. States should prioritise the rapid scale-up of low-cost interventions, such as counselling for care and nutrition during pregnancy, breastfeeding, complementary feeding and hygiene practices, micronutrient supplementation and deworming for adolescents, women and children, and insecticide-treated nets for pregnant women in malaria-endemic areas. These interventions are likely to have high benefit-cost ratios.

3. PMMVY requires an allocation of **₹10,252 crore** annually to cover two live births in India if second one is a girl, as per new guidelines. This program has the potential to boost the demand for essential nutrition interventions.

4. SNP interventions for adolescent girls, pregnant women, lactating mothers, and children aged 6 months to 3 years, require an annual allocation of **₹24,252 crore**. This estimate is based on the recent cost norms in the guidelines for Poshan 2.0, which are unchanged since 2017.

Convergence across ministries and departments is a key part of nutrition and health interventions, as specified in Table 2. All interventions mentioned in this note are typically covered under Poshan 2.0 and NHM. Further, those covered under NHM require multiple departments and ministries to work together. The goal is to provide all interventions listed above to women and children. While progress has been slow (Menon et al. 2019), we recommend that both Union and state governments focus on improving convergence.

The Parliament, which is a signatory to the World Health Assembly resolution on global nutrition targets, is responsible for ensuring that India meets these targets. This is being attempted through NHM.

Data on allocations and expenditures for these core DNIs is currently not available in a comprehensive and disaggregated manner for all interventions. On what is available, gaps exist. Moving forward, it would be useful to benchmark these cost requirements with current data on allocations and expenditures for these core DNIs. This exercise would enable better planning, budgeting, and decision-making to ensure maximum possible coverage.

ASSUMPTIONS AND METHODOLOGY

S. No.	Activity	Assumptions and Methodology
1	Population	Population for 2022-23 has been estimated by using 2011 census population figures and updating those year-on-year using annual natural growth rates (SRS).
2		Natural Growth Rate for 2014 was unavailable, so it was estimated by averaging the natural growth rate of previous year (2013) and the subsequent year (2015). Natural Growth Rate 2021 or 2022 was unavailable, and the 2020 figures have been used.
3		For adolescent girls aged 14-18 years, we first identified the aspirational districts and NER states. Data for aspirational districts has been taken from Lok Sabha Unstarred question number 560, July 2022. Available online at: http://164.100.47.194/Loksabha/Questions/QResult15.aspx?qref=39281&lsno=17. From Census 2011 population data on adolescent girls aged 10-19 years, we halved the number of adolescent girls for estimating the girls for our required age group of 14-18 years. Following this, we multiplied these figures with the state/UT population multiplication factor and estimated the number of girls aged 14-18 years in 2022.
4		Birth order data from SRS 2020 (latest available), using national averages for union territories.
5		The number of pregnant women is the same as the number of live births.
6		The number of 0-6 month old children and 6-12 month old children was obtained by dividing the number of 0-1 year olds by two.
7	Unit Costs	Counselling costs same as those used in Menon et al., (2016), derived from original research in Khan et al. (2014) (converted from dollars at the rate of 62 rupees per dollar).
8		Supplementary Nutrition costs have been calculated as per 2022 guidelines. We have included supplements for pregnant women, lactating mothers, children aged 6 months to 6 years, malnourished children aged 6 months to 6 years, and adolescent girls 14-18 years. Food supplements (6-12 months) - 8 ₹/day x 25 days a month x 6 months = ₹1200 Food supplements (12-36 months) - 8 ₹/day x 25 days a month x 12 months = ₹2400 Food supplements (pregnancy) - 9.5 ₹/day x 25 days a month x 6 months = ₹1425 Food supplements (lactation) - 9.5 ₹/day x 25 days a month x 6 months = ₹1425 Food supplements for malnourished children - 12 ₹/day x 25 days a month x 3 months = ₹900 Food supplements for 3-6 year olds - 8 ₹/day X 25 days a month X 12 months = ₹2400 Adolescent Girls (14-18) - 9.5 ₹/day x 25 days a month x 6 months = ₹2850 However, this assumes norms are set including transport and other related costs.
9		For estimating the costs for micronutrients and deworming, drug unit costs have been included. These costs are sourced from RoP 2022-24 available on NHM website. If data was unavailable, the most recent PIP has been used instead

S. No.	Activity	Assumptions and Methodology
10	Unit Costs	Immunisation costs are from Chatterjee S, Das P, Nigam A, et al. Variation in cost and performance of routine immunisation service delivery in India. BMJ Glob Health 2018;3:e000794. Doi:10.1136/bmjgh-2018-000794. The study lists costs for 7 states, and then list out other states which will follow the same costing schedule. States in similar regions were clubbed together, following the method in the paper. Costs include transport costs, storage costs, and so on. Costs for fully immunising one beneficiary in 2022 were arrived at by inflating the immunisation costs in 2017 using MOSPI General Consumer Price Index figures for December 2017 and October 2022. For Telangana, Andhra Pradesh costs were used.
11		Annualized costs of running a 10-bedded NRC were used. This accounts for annualized fixed costs, and annual variable costs. We assume a stay of 10 days, as per guidelines. We also assume that the NRC functions 365 days a year, and is occupied throughout. Costs from operational guidelines on Facility Based Management of Children with Severe Acute Malnutrition, published by MoHFW under NRHM in 2011. MOSPI General Consumer Price Index was used to estimate costs of running an NRC in October 2022.
12		Insecticide treated nets for pregnant women in highly-endemic areas (Odisha, Assam, West Bengal, Chhattisgarh, Jharkhand, Andaman and Nicobar Islands, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Puducherry, Sikkim, Tripura). We used a standard costs of ₹300 (same as Chakrabarti et al., 2017).
13		We have used the following guidelines for each of the drug-based interventions: 1. IFA for pregnant and lactating women - 180 during pregnancy and 180 after birth (6 months after pregnancy) 2. IFA and Deworming for adolescent girls - 1 IFA tablet per week i.e. 52 IFA tablets per year and 2 deworming (Albendazole) tablets per year. 3. Iron Supplements for children - 1 ml biweekly i.e. 104 ml per year or approximately 2.08 bottles of 50 ml. 4. Vitamin A syrup - 1 ml every year for children aged 0-12 months and 2 ml every six months for children of age 12-60 months. 5. Deworming for children 12-59 months- 2 times a year. 6. Zinc for Diarrhoea for 2-59 months - used prevalence rates of Diarrhoea from NFHS-5, and used guidelines for dosage (We assume that 1 tablet = 20mg). 7. ORS - Assume that each sachet contains 4.4 grams which makes 200 ml of ORS solution. Furthermore, we assume that each child needs ORS for 4 days, 3 times a day. Amount for each age group has been taken from guidelines, and prevalence of Diarrhoea for various age groups from NFHS 5.
14		Maternity benefits in India are delivered through two conditional cash transfers: 1. PMMVY - For estimating the total beneficiaries under PMMVY, the total number of live births was multiplied with first order births from SRS 2020. Then, the number of beneficiaries was multiplied with the benefit amount of ₹5,000 and ₹6,000, respectively, for the first and second live birth. According to the new guidelines for MWCD's Mission Shakti, of which PMMVY is a sub-scheme, beneficiaries are eligible for a one-time lumpsum payment of ₹6,000 after birth of the second child, if the child is a girl. 2. JSY - States were divided into high performing and low performing states based on guidelines. Each category was split into rural and urban. For High Performing states, the proportion of SC/ST/or BPL households was calculated for rural and urban areas, using NFHS 5 Raw data. Along with these figures, the number of pregnant women was used to estimate the number of women eligible. This was multiplied by the amount transferred per birth (₹1,000).
15	General	Poshan Tracker costs are not included in this costing study.

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