Sattva Knowledge Institute SKI perspective

NOURISHING THE FUTURE: EFFECTIVE SOLUTIONS FOR UNDER-5 CHILDREN IN UNDERSERVED REGIONS

May 2023

Acknowledgements

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We would like to thank **Dr. Shweta Khandelwal** (Head of Nutrition Research at PHFI) for providing valuable inputs that helped shape this perspective.

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Glossary

ABDM	:	Ayushman Bharat Digital Mission
ANC	:	Antenatal Care
ANM	:	Auxiliary Nurse and Midwife
ASHA	:	Accredited Social Health Activist
AWC	:	Anganwadi Centre
AWH	:	Anganwadi Helper
AWW	:	Anganwadi Workers
CBO	:	Community Based Organisations
CCP	:	Care Companion Programme
CHC	:	Community Health Centres
CNNS	:	Comprehensive National Sample Survey
HRH	:	Human Resource for Health
HWC	:	Health and Wellness Centre
ICDS	:	Integrated Child Development Services
IEC	:	Information, Education, and Communication
IYCF	:	Infant and Young Child Feeding
LBW	:	Low Birth Weight
MDM	:	Mid-Day Meal
MoHFW	:	Ministry of Health and Family Welfare
NFHS	:	National Family Health Survey
NSS	:	National Sample Survey
ORS	:	Oral Rehydration Solutions
PDS	:	Public Distribution System
PHC	:	Primary Health Centres
POSHAN	:	Prime Minister's Overarching Scheme for Holistic Nutrition
SC	:	Sub-Centre
THR	:	Take-Home Ration
UNICEF	:	United Nations Children's Fund
VHND	:	Village Health and Nutrition Day
WASH	:	Water, Sanitation and Health
WHO	:	World Health Organisation

Executive Summary

In recent years, there has been a noticeable improvement in the overall nutritional outcomes for children under the age of five (U-5) in India, as evidenced by nationally representative data aggregates. Several state-led policies, programmes, regulations, and legislations have attempted to address the problems of child and maternal mortality across the stages of their biological development. Although India is currently way behind the SDG target of ending maternal mortality and child mortality, **accelerated antenatal care programmes and rigorous expansion of immunisation coverage have been paramount in decreasing the mortality rates**.

However, it is important to note that beyond the measurement of the absolute values of mortality, **indicators of malnutrition have a significant impact on determining the overall wellbeing of children**, and their physical, cognitive, and psychosocial abilities in adulthood. These indicators have been extremely essential in tracking the status of levels of malnutrition, and the National Family Health Surveys (NFHS) have been crucial in this endeavour. While India has seen improvements in most indicators, certain states have witnessed an increase in the prevalence of stunting, wasting, and low weight. Furthermore, the proportion of children suffering from anaemia country-wide has increased. This highlights the need for continued efforts from domestic and corporate funders to strengthen the nutrition delivery system across the care continuum up to the last mile.

This perspective identifies systemic challenges to nutritional outcomes as those associated with the state as the provider of welfare and social security, and the community as the site where accessibility, quality, and sustainability of nutritional healthcare are determined. **State-situated challenges** are sociocultural, economic and political; financial, human, physical, and social capital; quantity and quality of resources, such as land, education, employment, income and technology. **Community-oriented challenges** include accessibility to a healthy household environment, health services, and nutritious food; quality of nutrition determined by household food security, adequate dietary intake, awareness of and access to low-cost nutritious food; and sustainability of adequate care and feeding practices in the long run.

Targeted goals for improving nutritional outcomes among children under the age of five must centralise reduction in the incidence of low birth weight; improvement in child health through routine immunisation and clinical interventions for infectious diseases; improvement in infant and young child feeding practices (IYCF); and treatment of malnutrition.

To this effect, the perspective identifies five definitive and basic minimum pathways for domestic foundations and CSR funders aspiring to work on child nutrition in India to achieve these goals.

Evolving Focus on Nutrition for U-5 Children

India's intervention for battling early childhood malnutrition for children under the age of five can be traced back to the launch of the Special Nutrition Programme and the Balwadi Nutrition Programme (implemented through voluntary organisations with central grants) in the early 70s, providing 300 calories and 10 grams of protein for the annual duration of 300 days and 270 days respectively (Department of Women & Child Development 1993). The Integrated Child Development Services (ICDS) programme was a turning point in India's commitment to children in the 0-6 years age group. By subsuming thousands of projects under its aegis, the ICDS focused on providing supplementary nutrition, pre-school non-formal education, nutrition and health education, immunisation, health check-ups, and referral services. The Anganwadi centres thus became an important site from where ICDS reached children under 6 years of age (Ministry of Women and Child Development [MoWCD] 2015). The watershed moment for childhood nutrition arrived when the ICDS became an entitlement through the 2001 Supreme Court order which directed all states and union territories to implement the ICDS in full and ensure that every child up to 6 years of age receives 300 calories and 8-10 grams of protein per day (Supreme Court of India 2001). Additionally, the order directed states and UTs to ensure that each malnourished child receives 600 calories and 16-20 grams of protein per day. The *POSHAN Abhiyaan*, and its rechristened versions, *POSHAN 2.0* and *Saksham Anganwadi*, continue to address the challenges of malnutrition and deficiencies.

Figure 1: India still has a long way to go to achieve its SDG target 2.2 of ending all forms of malnutrition.

40%
Reduction in prevalence of stunting till 2025

<5%
Reduction target for total prevalence of childhood wasting (acute malnutrition) by 2025

2030
Target to eliminate wasting in children under five years of age

The Comprehensive National Nutrition Survey (CNNS) 2016-18 shows that among the surveyed children <5,

35% were stunted

33% were under-weight

41% were anaemic

32% had iron deficiency

18% had vitamin A defi-ciency

14% had vitamin D deficiency

19% had zinc deficiency

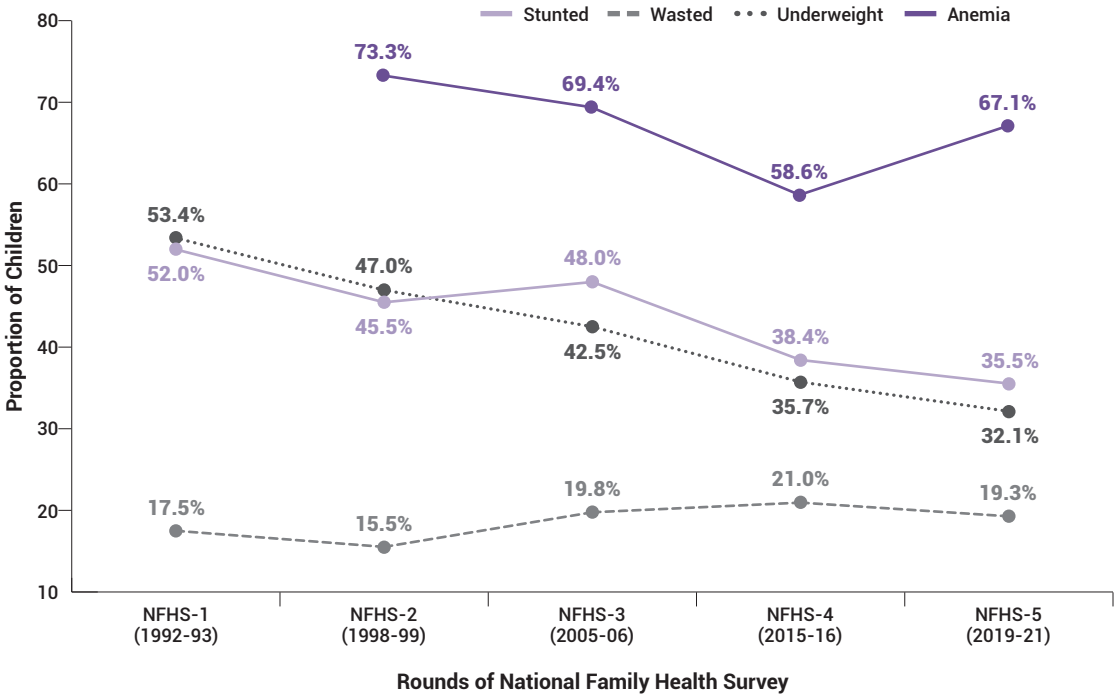
14% had vitamin B12 defi-ciency

23% had folate deficiency

Source: CNNS 2018; MoHFW 2019

While the CNNS 2016-18 adds depth to our public data and understanding of undernutrition, a comparison of malnutrition indicators across the five rounds of the National Family Health Survey (NFHS) shows an overall decreasing trendline on prevalence of stunting and low weight/underweight. The latest result of the NFHS-5 finds wasting among children under five to be close to the one in NFHS-3, but the percentage of children experiencing wasting is still higher than the results found in the first two rounds of the same survey. The proportion of children suffering from anaemia has increased since the last round of NFHS as seen in the infographic below.

Figure 2: Trendline of nutrition indicators (stunting, wasting, underweight, anaemia) from NFHS-1 to NFHS-5.



Note: The data for anaemia was not collected by GoI during NFHS-1

Source: NFHS 1 to 5

A comparison of the data from NFHS-4 and NFHS-5 reveals that India is currently off-target for achieving SDG indicators such as stunting, wasting, and anaemia among women by 2030 (Subramanian et al. 2023). The proportion of women suffering from anaemia has risen from 53.1% in 2015-16 to 57% in 2019-21. 441 out of 707 districts are off-target for stunting, about 571 out of 707 districts are off-target for wasting, and a whopping 644 are off-target for achieving 50% reduction in the number of women of reproductive age suffering from anaemia, which is crucial for preventing incidence of low birth weight (Geographic Insights 2023). Over 14 lakh children in India are severely malnourished (MWCD 2023). In order to accelerate nutrition outcomes for children under 5, the state interventions covering preventive measures, treatment, education, and behavioural change need to address nutritional intake, hygiene practices, health-seeking behaviour, nutrition awareness, clinical interventions, and ensure vigilant monitoring for signs of physical and neurodevelopmental growth issues.

Where Does India Lag Behind?

Despite the national and state-level interventions to address malnutrition indicators among children under the age of 5, there are several challenges contributing to the inefficiencies in last-mile care delivery. The framework below maps the challenges that undermine efforts for ensuring positive nutrition outcomes.

Table 1: Impediments to better nutritional outcomes.

Basic Principles: Accessibility, Quality, Sustainability			
State: Context and Enablers	**Sociocultural, Economic and Political context**	**Financial, human, physical and social capital**	**Quantity and quality of resources, such as land, education, employment, income and technology**
	Dietary Diversity: Incumbent upon the minimum support price which has historically favoured rice and wheat, and in turn, discouraged diversified farming (Dev & Pandey 2022).	**Availability of Human Resources for Health (HRH):** • 5% shortfall of paramedics in ANMs at sub-centres; 25% shortfall of ANMs at PHCs; 74% shortage of health assistants at rural PHCs. • Recorded shortfall in doctors in rural areas: 74% shortage of gynaecologists at CHCs; 79% shortage of general physicians at CHCs; 81.64% shortage of paediatricians at CHCs (Rural Health Statistics 2021-22).	**Education as a Social Determinant:** • Only 9% of children whose mothers have no schooling receive a minimum acceptable diet, compared with 12% of children whose mothers have 12 or more years of schooling (NFHS-5). • Secondary school education among mothers is an important protective factor for under-5 mortality in India (Moradhvaj & Samir 2023).
	Governance Issues in Management of Mid-day Meals: • Irregular supplies, low and delayed remuneration to cooks and staff, inadequate monitoring, and mismanagement have been widely affecting the implementation of mid-day meals in India (Khera 2006).	**Budgetary Allocation and Utilisation:** • Within 14% of rural population and 19% of urban population with health coverage, only 13% and 9% respectively had coverage through government sponsored health insurance (NSS 75th round, 2016-18). • The first year of the pandemic saw the lowest budgetary allocation of ₹600 crores to the POSHAN Abhiyaan. The allocation increased to ₹2,700 crores for 2021-22, but the release of allocated budget has had a poor track record. (Paul & Kapur 2021).	**Income, Agricultural Production, and Ownership of Livestock:** • While several extant studies have shown a positive correlation between economic status and level of nutrition, agricultural assets indicate greater purchasing power to purchase diverse foods in agricultural households. • Higher income households show higher dietary diversity score relative to the poorest income quintile. • Children belonging to lower income quintiles have lower dietary diversity scores in agricultural and non-agricultural households. • Agricultural production conditions such as availability of irrigation and crop diversity have important impact on dietary diversity for small and marginal farm-holding households. • After controlling for income, ownership of milk-producing and poultry livestock predicts higher consumption of milk and meat respectively (Bhagowalia, Kadiyala & Headey 2012).

Community

Accessibility

Healthy Household Environment	Health Services	Nutritious Food
Hygiene Care Practice: • Stools of only 38% children were disposed safely. • 32% of the children were in households without access to a toilet (NFHS-5).	**Availability of Primary Care Facilities:** • Shortfall in the availability of primary care facilities in rural India stands at 25% for sub-centres, 31% for Primary Health Centres (PHCs), and 36% for Community Health Centres (CHCs) (Rural Health Statistics 2021-22). **Accessibility of maternity benefit entitlements:** • Only 13% of the eligible respondents were able to avail regular benefits from the Pradhan Mantri Matritva Vandana Yojana (Hunger Watch Survey 2021).	**Affordability:** • 63-76% of the rural population could not afford recommended diets, as nutritious diets have been found to be unaffordable. Despite the improvement of wages since 2007, affordability of recommended diets exceeded the expected wage earnings of women in some states in 2011 (Raghunathan, Headey & Herforth 2021). **Dietary Intake:** • While consumption of whole grains come close to the percentage recommended target dietary intake at the national level, the level of intake falls far below the recommended target for other key foods like fruits, vegetables, legumes, nuts, fish, dairy, and red meat (Global Nutrition Report 2019).

Quality

Household Food Security	Adequate Dietary Intake	Awareness and access to low-cost nutritious food
• 49% of Indian households across 14 states experienced some form of food insecurity in 2021. • 41% of households had experienced deterioration of nutritional quality of their diets compared to pre-pandemic times. • 25% of the households were not able to avail their rightful entitlements from MDM Scheme and ICDS (Hunger Watch Survey 2021).	• Only 11.3% of children between 6 to 23 months of age received adequate diet; about 89% of children did not receive adequate diet (NFHS-5). • 42% children between 6 to 23 months of age were fed minimum number of times per day for their age, 21% received an adequately diverse diet, and only 6% received a minimum acceptable diet (CNNS 2016-18).	• Village Health and Nutrition Day (VHND) is one of the important vehicles at the last mile to improve awareness and mobilisation around nutrition intake. However, important aspects of VHND such as integration of ICDS and high-risk identification have not been prioritised as part of improving awareness around nutrition. The level of awareness about the objectives of VHND among beneficiaries and service providers has not been up to the mark (Panigrahi, Mohapatra & Mishra 2015).

Community

Sustainability

Adequate care and feeding practices in the long run

Breastfeeding:
- Only 41% of last-born children were breastfed within one hour of birth (colostrum) and 87% of children began breastfeeding within one day of birth (NFHS-5).
- It is estimated that only 56.6% infants start breastfeeding within one hour of life (CNNS 2016-18).

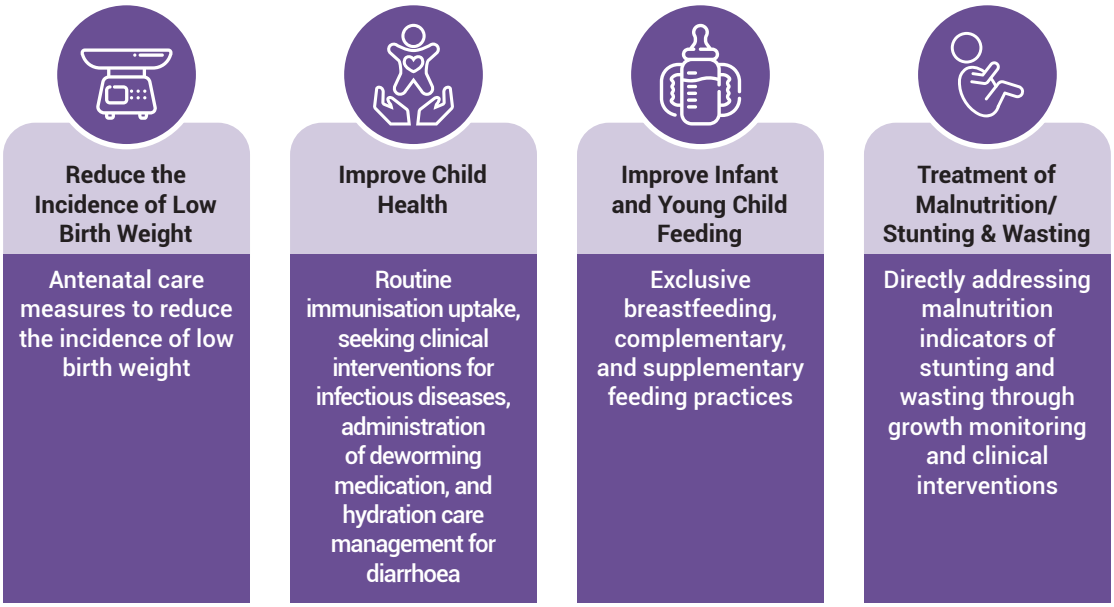
Micronutrients:
- 37% of children aged 6-59 months were given vitamin A supplements.
- 21% children consumed iron-rich foods.
- Among children age 6-59 months, 27% were given iron supplements.
- 30% children were given deworming medication (NFHS-5).

Supplementary and Complementary Feeding:
- Apart from mother's milk, complementary foods are received by a little less than half of Indian infants aged 6-9 months (UNICEF n.d.).

Goalposts for U-5 Children's Improved Nutritional Status

Given the range of systemic challenges outlined above, non-governmental stakeholders could aim to implement programmes that improve accessibility, quality, and sustainability of targeted interventions with actionable goals. Nonprofits and philanthropic funders working towards positive nutrition outcomes should aim at achieving the following goals through their interventions.

Figure 3: Targeted goals for improving U5 nutritional status.



Reduce the incidence of low birth weight

The World Health Organization defines low birth weight as a birth weight less than 2.5 kg (WHO). Prenatal care for adolescent girls and women is the prerequisite for achieving a healthy weight for newborns. Monitoring foetal growth, ensuring intake of essential supplements, and administering necessary drugs to reduce foetal complications are some important antenatal care measures to reduce the incidence of low birth weight.

Improve child health

Paediatric care services such as immunisation, growth monitoring, hydration care, and clinical interventions for infectious diseases are crucial to sustain improvement in overall child health.

Improve infant and young child feeding (exclusive breastfeeding, complementary and supplementary feeding)

According to WHO and UNICEF, breastfeeding should begin within one hour of delivery, be exclusive for the first six months of life, and be supplemented with nutritionally appropriate and safe supplementary (solid) meals and complementary feeding after six months, with continuing nursing up to two years of age or beyond.

Treatment of malnutrition/stunting and wasting

Maternal undernutrition leading to intrauterine growth restriction accounts for 20% of childhood stunting cases (WHO 2014). Suboptimal breastfeeding; complementary feeding limited in quality, quantity and variety; incidence of severe infectious diseases could lead to, wasting, stunting and low weight; sub-clinical factors of poor WaSH conditions could also lead to stunting and wasting. Strategies for addressing stunting and wasting must include regular linear growth assessments, promotion of nutritious habits, ensuring provision of diverse forms of food containing essential micronutrients (MoHFW 2013).

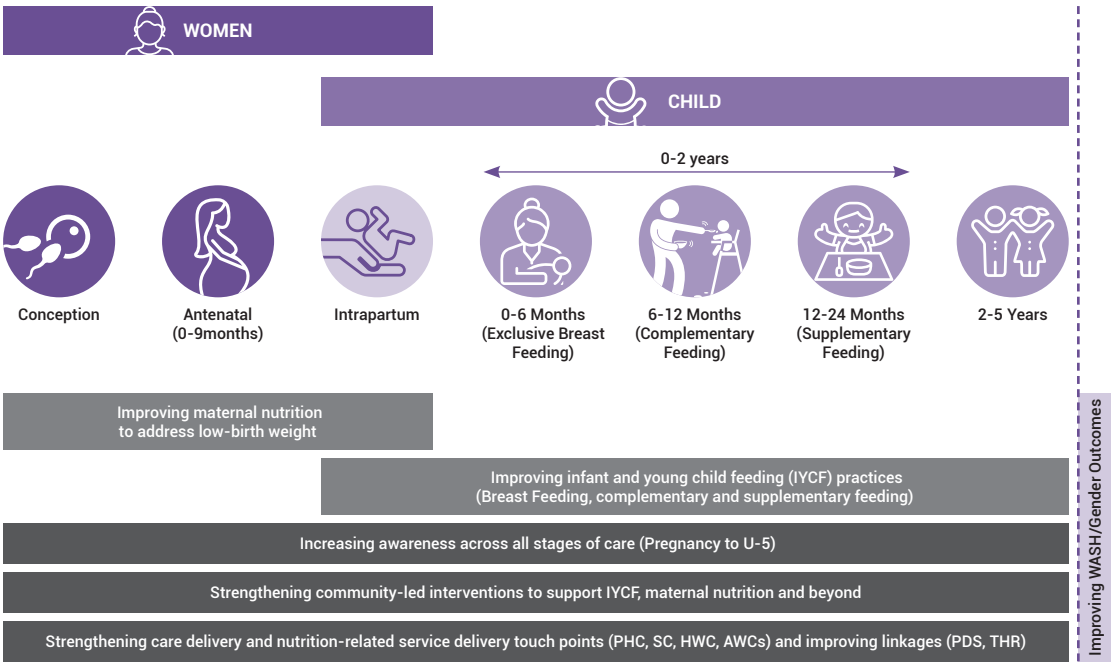
Bridging the Gap with Stakeholder Action

For achieving the targeted goals, corporate funders and domestic foundations can pursue the following connected pathways to direct their interventions.

This section provides a list of interventions and their impact through illustrative examples of programmes launched by non-profits in underserved areas. While these programmes have succeeded in their own right, it is also important for the funders to be mindful of the contextual specificities that may have enabled - and encumbered some aspects of - the success of these interventions.

The mere decontextualised replication of best practices from one location to another by conflating form and function is a “technique of successful failure” (Andrews, Pritchett and Woolcock 2017). Hence, it is extremely important to conduct a rigorous needs assessment,

Figure 4: Pathways for improving nutrition outcomes for children under the age of five.



and engage in co-creative processes for programme design with the community where the intended programme is to be implemented. Social determinants such as gender and working-life conditions also largely influence the uptake of the several nutrition enhancement services (Sridhar 2008).

Therefore, the needs assessment and co-creative programme intervention must address the social determinants of health as laid down by the WHO, which are "income and social protection; education; unemployment and job insecurity; working life conditions; food insecurity; housing, basic amenities and the environment; early childhood development; social inclusion and non-discrimination; structural conflict; access to affordable health services of decent quality" (WHO 2023).

1. Improving maternal nutrition to address low birth weight

The following antenatal care interventions are imperative to reduce the incidence of low birth weight (WHO 2014b):

- Monitoring of foetal growth and evaluation of neonatal size
- Daily intake iron and folic acid supplements by the pregnant individual
- Daily intake of balanced protein-energy supplementation
- Daily intake of calcium supplements
- Administration of antiplatelet agents before 16 weeks for those at the risk of pre-eclampsia (high BP condition that could lead to foetal complications).
- Interventionist care in the case of severe pre-eclampsia before term
- Acceleration of foetal lung maturity in case of early initiation of labour through administration of antenatal single-dose corticosteroids

The **Arogya Sakhi Home**-Based and Antenatal Care Programme by ARMMAN identifies and trains women health entrepreneurs from rural, resource-deficient communities to become Arogya Sakhis. Through the training and mentoring provided by Armman, Arogya Sakhis are equipped to perform basic diagnostic tests to check haemoglobin, blood sugar, and blood pressure levels. Additionally, the Arogya Sakhis also conduct the foetal doppler test and collect anthropometric measurements. Using a mobile application, the Arogya Sakhis identify high-risk signs and symptoms, and receive alerts when a referral is needed.

A randomised cluster trial of the Arogya Sakhi programme in 250 villages with 166 Arogya Sakhis across the rural parts of Mahastrashtra's Solapur, Osmanabad, and Washim districts yielded the following impact metrics:

1. There was a 20.3% increase in the number of women's uptake of four or more ANC visits.
2. There was a 22% increase in the number of infants who tripled their low birth weight at the end of infancy.
3. There was a 27% increase in the number of women who became aware of the need for growth monitoring every month.

2. Targeted interventions to strengthen IYCF practices (breastfeeding, complementary feeding, and supplementary feeding)

At the health systems level, the WHO recommends institutionalisation of the Baby-Friendly Hospital Initiative to support exclusive breastfeeding practice, and integrate breastfeeding promotion and support across the maternal and child health care continuum. Group counselling by trained professionals has shown to improve the rates of exclusive breastfeeding (WHO 2014). Locally available complementary foods must be introduced at six months, since exclusive breastfeeding is insufficient for fulfilling the micronutrient-requirement at that age. Best sources of iron and zinc can be found in foods such as eggs, fish, soya beans, pulses, dry dates, raisins, whole wheat flour, etc. Vitamin A-rich foods include fish, liver, egg, milk and dairy products, sweet potatoes, carrots, orange, sweet lime, mango, etc. (MoHFW 2016).

PATH's Mother Baby Friendly Initiative Plus (MBFI+) has been championing Human Milk Banks (HMBs) as an important means for enabling life-saving health and nutrition for vulnerable newborns without access to mother's own milk, owing to maternal illness, deaths or abandonment. An HMB collects, pasteurises, tests, and stores safe donor milk from lactating mothers for infants in need. Communitisation is integral to the HMB

model, and it focuses on promoting the importance of breastfeeding and milk donation; building awareness on the value of human milk; and working with employers and other stakeholders to create an enabling environment for breastfeeding and milk donation.

In India, PATH's activities for increasing the access to human milk include the following:

1. Provision of technical guidance and support to the Government of India in formulating evidence-based guidelines and standards for ensuring safety and quality for HMB systems.
2. Capacity building by supporting the establishment of the Network Chapter of the Human Milk Banking Association of India, and supporting local stakeholders to take ownership of robust HMB processes.
3. Facilitation of knowledge exchange between India and Brazil, which has witnessed great success in the operationalisation of HMBs.
4. Research and innovation through impact evaluation of the MBFI+ model on newborn health outcomes and breastfeeding practices at network hospitals in Mumbai; working with the government and other stakeholders to deepen the research and innovations in the HMB systems; and production of affordable, easy-to-use equipment for the safe operation of HMBs in India and other LMICs (PATH n.d.).

An important cultural shift also needs to be accelerated to create an enabling environment for nursing mothers to breastfeed at the workplace. Mobile Creches' Child Care Services programme exemplifies the movement from a culture of taboo to a culture that affirms breastfeeding for the most vulnerable women.

Delhi-based **Mobile Creches** is recognised globally for its pioneering role in developing Early Childhood Development practices, programmes, and policies for the youngest citizens of India. Since 1969, MC has led a holistic approach that intersects with the overlapping issues of working mothers, girls' education, and sustainable communities. Mobile Creches follows an ecosystem approach to accelerate quality creches and day care services for marginalised children under 6 years of age. The Childcare Model is based on sound scientific principles in four intersecting domains: Good Health, Adequate Nutrition, Opportunities for Early Learning, and Responsive Parenting, delivered in a safe and caring environment, by a trained care worker. To enable breastfeeding at construction sites, Mobile Creches negotiates with contractors for women workers to take nursing breaks. All children receive supplementary nutrition comprising 500 calories and 12 grams of protein, through three hot cooked meals during the day. Malnourished

children receive additional diet. In 2022-23, Mobile Creches reached out to 30,000+ children, and 8600+ community members through 511 childcare centres in 14 states. This included government partnerships to scale public-funded creches in three states, and working with tea garden employers and real estate developers for worksite-based creches for children of women informal workers (Mobile Creches n.d.).

3. Integrating treatment of malnutrition into routine health services

Determined integration of immunisation into routine health services has been instrumental in the progressively high uptake of vaccines among children under five. Similarly, there is an acute need to make treatment of malnutrition an integral part of routine paediatric services at all medical establishments and the Public Distribution System (PDS).

Mumbai-based **Foundation for Mother and Child Health's (FMCH)** Wadia Intervention is a preventive and treatment care project with the objective of early identification of chronic and acute malnutrition. This project is being implemented through malnutrition screening in the Wadia's Children Hospital OPD, wherein an assessment booth for children under five years of age has been set up for measuring height, weight, and mid upper-arm circumference (MUAC). The children with Severe Acute Malnutrition (SAM) are referred to the Nutrition Rehabilitation Centre (NRC), and those with Moderate Acute Malnutrition are referred to FMCH's nutrition OPD for weekly dietary counselling and follow-up. Education sessions are conducted for pregnant women, lactating mothers, and family caregivers by providing appropriate knowledge on pregnancy, birth, nutrition, and breastfeeding.

FOUNDATION FOR MOTHER & CHILD HEALTH INDIA

Through this intervention, FMCH has screened over 10,000 children every year, and counselled over 6000 children till date. In 2019-20, close to 16,000 families at Wadia Hospital got the benefit of screening, counselling, and education sessions. 58% children identified in the SAM category were referred to NRC by FMCH for treatment, 12.7% children were admitted at the NRC, and 16% MAM children identified through the screening process underwent counselling (FMCH India n.d.).

Gujarat Cooperative Milk Marketing Federation (GCMMF), the cooperative body overseeing the management of Amul, partnered with the Government of Gujarat and the Kaira, Banas and Surat district unions for production and supply of Take-Home Ration (THR) products.

The organisation has produced two types of fortified blended THR products for children and women. Balbhog is designed for children of normal weight from 6 months to 3 years of age, and severely underweight children of 6 months to 6 years with a recommended serving of 125 grams per child per day. Sakhibhog or Devibhog are instant-mix food products for making *sukhdi, sheera, upma,* meant for pregnant and lactating women, with a recommended serving of 145 grams per person per day. Previous formulations of these products had separately allocated ingredients which were being used by the beneficiaries to prepare food for their entire families. Therefore, Balbhog and Sakhibhog were designed appropriately, with recipes corresponding to beneficiary categories.

The distribution of these products happens at Anganwadi Centres (AWCs). Once the AWCs input their monthly THR requirements into the ICDS-CAS, the ICDS reviews and places the official procurement order, which is then received by the Anganwadi Worker. The latest publicly available information about the number of beneficiaries of Amul's THR products is about 42 lakh beneficiaries per day (Sight and Life 2020).

4. Increasing awareness across all stages of care (pregnancy to U5)

Pregnant individuals and their caregivers must be educated on the practices related to nutrition, hygiene, and the importance of seeking care at the nearest medical establishment in case of emergencies. Therefore, awareness among primary caregivers at every stage of development, to identify signs of malnutrition empowers them to take action with the right knowledge, and seek clinical help when required.

Noora Health's flagship Care Companion Program (CCP) is a capacity-building solution model that trains nurses and other health workers in hospital and clinic settings. In turn, master trainers equip caregivers with culturally and regionally contextualised, and medically accurate caregiving education. Within the maternal and newborn care curriculum, the CCP equips new parents and families with knowledge and skills related to breastfeeding, kangaroo care, nutrition, hygiene practices, and identifying complications or warning signs. Additionally, the CCP offers mobile-based follow-up support, including WhatsApp services in regional languages for patients and caregivers to ask questions and seek help from nurses and medical staff after they return home.

The CCP is active in the states of Andhra Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Telangana, and Himachal Pradesh. Noora Health has signed MoUs with the health directorates of these states to roll out the CCP in hospitals and clinics across all levels of the health system, from district hospitals to Health and Wellness Centres. Noora Health's programmes are also active in Bangladesh, with plans to expand to Indonesia in 2023. To date, Noora Health has trained more than three million caregivers, representing nearly 2.1 million patients.

The following results have been recorded since the implementation of CCP sessions:

- 18% reduction in risk of newborn death within first month across 28 hospitals in Punjab, MP, Maharashtra, and Karnataka
- 54% reduction in newborn readmission (along with other post-discharge neonatal and maternal health outcomes) in Karnataka, Punjab, MP, and Maharashtra
- 23% increase in immunisation uptake increased from through teletraining remote engagement service
- 71% reduction in 30-day post-surgical complications among cardiac patients (Noora Health n.d.).

5. Strengthening community-led interventions to support IYCF, maternal nutrition, and beyond

The involvement of the community is likely to persuade every member to take part, and also increase the chances of sustaining the intervention. Community mobilisation through POSHAN panchayats and Village Health and Nutrition Days to support the efficient functioning of Anganwadi Centres, and creation of nutri-gardens or poshan vatikas through land identified by the POSHAN panchayats are some measures that can be reinforced by NGOs and community-based organisations.

In order to address the systems level knowledge, skills, and attitudinal concerns, the Assam-based **Farm 2 Food Foundation's Farmpreneur – School Nutrition Gardens** trained teachers and Anganwadi workers to establish school nutrition gardens at Anganwadi Centres and schools. This initiative has been instrumental in improving the mid-day meals served to over 80,000 children, and influenced behaviour change in diet patterns. School children were encouraged to participate in the gardening and cultivation of local vegetables, which were then cooked

and served in the mid-day meals. More than 500 school nutrition gardens were established, and training was delivered to teachers, Anganwadi Workers, and Community Development Project Officers across Assam and Delhi. This programme was awarded a Special Jury Prize at the Outlook POSHAN Awards ceremony in 2019 (Purbey et al. 2021).

Action Against Hunger's multi-pronged Jeevan Dhara-Jeevan Amrut project was launched in the Melghat region of Amravati District, Maharashtra, in 2018. Accounting for three contributing factors of malnutrition, i.e. food security and livelihood, WaSH, and nutrition, the project activities comprise kitchen gardens and poultry rearing for providing micronutrient-rich food to vulnerable families. The kitchen garden techniques include organic and inexpensive pest management and creation of organic fertilisers through composting. The organisation provides farmers with 12 seed kits, vermicompost beds, and sticky traps for pest protection. Technical training sessions on sustainable nutrition-sensitive horticultural methods, post-harvest handling for preservation of nutrients, and marketing advice for sale of surplus produce are conducted.

As a result of this initiative, 216 families established nutrition gardens, 100 families received livestock, 269 members were trained on nutrition-sensitive agriculture and livelihood, and the project received the 2019 Indo-French CSR Award for improving nutritional status of pregnant women and children under the age of 5 years (Purbey et al. 2021).

6. Strengthening care delivery and nutrition-related service touch-points (AWC, SC, PHC, CHC), and improving linkages (PDS, THR)

To strengthen care delivery and services, it is important to resolve the shortages of medical establishments and human resources at primary care level like sub-centres, PHCs, CHCs, and Anganwadi centres. The presence of CBOs would be extremely valuable to enable the mobilisation required to aid the efforts of the district or state administrations. Additionally, mobilisation is also required to reinforce PDS procurement and delivery, along with just distribution of take-home rations.

Antara Foundation's AAA Platform, Integrated AAA app, and Rationalised Registers are flagship programme models and solutions for strengthening the care delivery and nutrition-related services by strengthening the links between the ASHAs, ANMs, and Anganwadi Workers. Capacity building, building linkages between health workers for last-mile delivery, digital and administrative (non-digital) solutions for data collection and record keeping are integral to Antara Foundation's model for improving the delivery of primary care. Currently, their programmes are operational in Chhindwara, Betul, Seoni, Morena and Gwalior districts of Madhya Pradesh.

The Committed Communities Development Trust has been working in Bhiwandi (Thane district) and Malegaon (Nashik district) in Maharashtra towards improving antenatal and postnatal care services. Along with the focus on providing nutrition, immunisation, micronutrient supplements, psychosocial health support, facilitating institutional deliveries, and special care for high-risk cases, the programme also facilitates take-home ration from PDS facilities (The Antara Foundation n.d.).

The **NAND GHAR project** by Vedanta is a network of modern Anganwadis which functions as an education and health centre for children. The project intends to bridge the gap between urban and rural India with a strong focus on health, education, nutrition, women empowerment, and hygiene.

This model of state-of-the-art Anganwadis is responsible for:

- Breakfast, hot-cooked meals, and Take-Home Ration offered to children through ICDS' supplementary nutrition programme
- Development of 'Poshan Vatikas' at Nand Ghars to ensure nutritious food to children and 'Grih Vatikas' to promote community-level nutrition.
- Field teams work on the ground to strengthen the government delivery system for ensuring proper quality, quantity and frequency of nutrition at Nand Ghars.
- Healthcare through telemedicine, capacity building of ASHA and ANM, and dedicated Mobile Health Vans.
- Mobilising community engagement activities such as VHSNC meetings, immunisation, vaccination, parent-teacher meetings, and so on.
- Systemic strengthening of government-run initiatives by supporting ICDS and other departments.

Furthermore, a major focus of the project is placed on inculcating strong social and

moral values in children from a young age, instilling proper hygiene and sanitation habits in children, and increasing the respect for women in their households and their communities.

Today, there are 4,000 Nand Ghars across 11 states (as of September 2022) which have reached around 1,60,000 children. Vedanta has also collaborated with the Government of Rajasthan to upgrade 25,000 Anganwadis to Nand Ghars over the next three years (Vedanta n.d.).

Improving WaSH infrastructure and practices

In addition to delivering nutrition and food security, the need for improved WaSH infrastructure and practices is paramount to the success of the above-mentioned pathways. Availability of functional toilets, end of open defecation through community-led total sanitation approach, regular handwashing, and appropriate disposal of stagnant water are all important measures for maintenance of good health of children under 5.

Table 3: Illustrative List of Interventions

Programme	Description	Scale of Impact	Pathway
The Arogya Sakhi home-based and antenatal care programme by ARMMAN	The Arogya Sakhi programme identifies and trains women health entrepreneurs from rural, resource-deficient communities to become Arogya Sakhis. Through the training and mentoring provided by ARMMAN, Arogya Sakhis are equipped to perform basic diagnostic tests to check haemoglobin, blood sugar, and blood pressure levels.	20.3% increase in the number of women's uptake of four or more ANC visits, a 22% increase in the number of infants who tripled their low birth weight at the end of infancy and a 27% increase in the number of women who became aware of the need for growth monitoring every month.	Improving maternal nutrition to address low birth weight
Milk Bank by PATH **Mother-Baby Friendly Initiative Plus Integrated System (MBFI+)**	PATH is working with technical and policy leaders around the world including in India to ensure that all babies have access to human milk by establishing a Mother-Baby Friendly Initiative Plus (MBFI+) model that promotes, strengthens, and protects breastfeeding. This is accomplished through integrating breastfeeding promotion, skin-to-skin care (KMC), and providing safe donor human milk for vulnerable babies.	• Facilitated learning exchanges within and outside India, including a learning exchange between India and Brazil. • Supported the establishment of the Network Chapter of the Human Milk Banking Association of India.	Targeted interventions to strengthen IYCF practices

Programme	Description	Scale of Impact	Pathway
Mobile Creches Child Care Services	Child care services of Mobile Creches (MC) includes high quality early childhood development services to migrant children of construction workers through an integrated programme. It ensures child care – health, nutrition, early learning and care – for birth-12 year old children living at the construction sites of Delhi (NCR).	In 2022-23, Mobile Creches reached out to 30,000+ children, and 8,600+ community members through 511 childcare centres in 14 states.	Targeted interventions to strengthen IYCF practices
Balbhog and Sakhibhog by Amul	Balbhog is designed for children of normal weight from 6 months to 3 years of age, and severely underweight children of 6 months to 6 years with a recommended serving of 125 grams per child per day. Sakhibhog or Devibhog are instant-mix food products for making sukhdi, sheera, upma, meant for pregnant and lactating women, with a recommended serving of 145 grams per person per day. The distribution of these THR products is done through AWCs.	Amul THR products have been distributed to about 42 lakh beneficiaries on a per day basis.	Targeted interventions to strengthen IYCF practices
Antara Foundation's AAA Platform	Antara Foundation's AAA Platform, Integrated AAA app, and Rationalized Registers are flagship programme models and solutions for strengthening the care delivery and nutrition-related services by strengthening the links between the ASHAs, ANMs, and Anganwadi Workers. Capacity building, building linkages between health workers for last-mile delivery, digital solutions for data collection and record keeping, and improved administrative (non-digital) solutions for data collection and record keeping are integral to Antara Foundation's model for improving the delivery of primary care. Currently, their programmes are operational in Chhindwara, Betul, Seoni, Morena and Gwalior districts of Madhya Pradesh.	• 6,700+ frontline workers trained and 5,200+ village maps created by frontline workers. • 77,000 ASHAs using redesigned record-books across 52 districts in Madhya Pradesh.	Strengthening care-delivery and nutrition service touchpoints

Programme	Description	Scale of Impact	Pathway
Nand Ghar	The Nand Ghar project by Vedanta is a network of modern Anganwadis which functions as an education and health centre for children.The project intends to bridge the gap between urban and rural India with a strong focus on health, education, nutrition, women empowerment, and hygiene. Furthermore, a major focus of the project is placed on inculcating strong social and moral values in children from a young age, instilling proper hygiene and sanitation habits in children, and increasing the respect for women in their household and their community.	There are 4,000 Nand Ghars across 11 states (September, 2022) which have reached around 1,60,000 children. Vedanta has also collaborated with the Government of Rajasthan to upgrade 25,000 Anganwadis to Nand Ghars over the next three years.	Strengthening care-delivery and nutrition service touchpoints
Noora Health's Flagship Care Companion Programme (CCP)	Noora Health's flagship Care Companion Programme (CCP) is a capacity building solution model that trains nurses and other paramedics at district hospitals. In turn, the nurses and paramedics equip care-givers with care-giving education for mothers and children. Apart from breastfeeding, kangaroo care, and hygiene practices, the CCP also puts a great emphasis on maternal and child nutrition requirements and practices.	• 18% reduction in risk of newborn death within first month across 28 hospitals in Punjab, MP, Maharashtra, and Karnataka. • 54% reduction in newborn readmission (along with other post-discharge neonatal and maternal health outcomes) in Karnataka, Punjab, MP, and Maharashtra. • Immunisation uptake increased from 65.2% to 88.2% through teletraining remote engagement service. • 71% reduction in 30-day post-surgical complications among cardiac patients.	Increasing awareness across all stages of care
Farmpreneur - School Nutrition Gardens	Farm 2 Food Foundation's Farmpreneur - School Nutrition Gardens initiative trained teachers and Anganwadi workers to establish school nutrition gardens at Anganwadi Centres and schools. School children were encouraged to participate in the gardening and cultivation of local vegetables, which were then cooked and served in the mid-day meals.	This initiative has been instrumental in improving the mid-day meals served to over 80,000 children, and influenced behaviour change in diet patterns. More than 500 school nutrition gardens were established, and training was delivered to teachers, Anganwadi Workers, and Community Development Project Officers across Assam and Delhi.	Strengthening community-led interventions to support IYCF, maternal nutrition, and beyond

Programme	Description	Scale of Impact	Pathway
Jeevan Dhara-Jeevan Amrut by Action Against Hunger	The project addresses food security, livelihood, WaSH, and nutrition. Poultry rearing and kitchen gardens for providing micronutrient-rich food to vulnerable families are two main project activities.	216 families established nutrition gardens, 100 families received livestock, and 269 members were trained on nutrition-sensitive agriculture and livelihood.	Strengthening community-led interventions to support IYCF, maternal nutrition, and beyond
Wadia Project by FMCH	The Project aims at early identification of malnutrition (both acute and chronic) among children visiting the OPD at the Bai Jerbai Wadia Hospital for Children (BJWHC) and providing appropriate intervention for them. This initiative also incorporates an education component for pregnant women who visit the Nowrosjee Wadia Maternity Hospital (NWMH).	In 2019-20, they had impacted close to 16,000 families in Wadia Hospital through screening, counselling and education sessions. 58% children who were identified in SAM were referred to NRC by FMCH for treatment and 16% MAM children were identified through screening.	Integrating treatment of malnutrition into routine health services

Conclusion

These programmes are representations of how non-governmental support to supplement state-led interventions have played a significant role at varying scales. They also represent ideas of substance that may have had varying outcomes based on challenges and/or strengths rooted in their contexts. Right from the needs assessment phase to the last-mile implementation, the lessons drawn would be insightful for building and scaling programmes of this kind, where systemic issues play a major role in determining success. Therefore, any effective idea or programme must have a robust monitoring and evaluation process running parallel to its implementation. Funders would find immense long-term value in doing so for not only improving the programmes, but also the nutritional outcomes among children under the age of five.

While India has been making incremental progress on reducing stunting, wasting and low weight among children under five, the increase in the prevalence of anaemia needs to be addressed with urgency. Moreover, the SDG target of ending all forms of malnutrition, juxtaposed with the current status of malnutrition in the country, has to be seen as a persistent reminder of the work ahead of the development ecosystem in the country, which includes domestic foundations and CSR funders. While this perspective aims to present a small sample of the nutrition-related programmes across each proposed pathway, it also aims to encourage the funding community to take inspiration from these programmes and work towards implementing and scaling such programmes across the country.

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