

Tracking India's Progress on Addressing Malnutrition: What will it Take?

INTRODUCTION

India has a robust policy framework for nutrition that covers most evidence-based interventions (Vir et al. 2013), and it has in place large-scale national program platforms – the Integrated Child Development Services and the National Rural Health Mission – with the mandate to deliver diverse nutrition interventions (Avula et al. 2013). The National Nutrition Strategy (NITI Aayog 2017) and POSHAN Abhiyaan¹, India's national nutrition mission launched in early 2018, provide an updated strategic framework for action to improve nutritional outcomes for children, pregnant women, and lactating mothers. The mission-mode approach provides an impetus to strengthen not only the implementation but also the monitoring and measurement of progress. The mission explicitly notes that NITI Aayog has a mandate to lead on the monitoring and evaluation of POSHAN Abhiyaan.

This *Policy Note*, developed jointly with NITI Aayog and IDinsight, aims to provide guidance to national, state, and district level government officials/stakeholders on issues to consider on the use of data to track progress on nutrition interventions, immediate and underlying determinants, and outcomes. It proposes an indicator framework for POSHAN Abhiyaan and examines availability of data on these indicators across both population-based surveys and administrative data systems. Finally, it lays out issues to be considered in strengthening efforts to improve the use of data in the context of POSHAN Abhiyaan and makes key

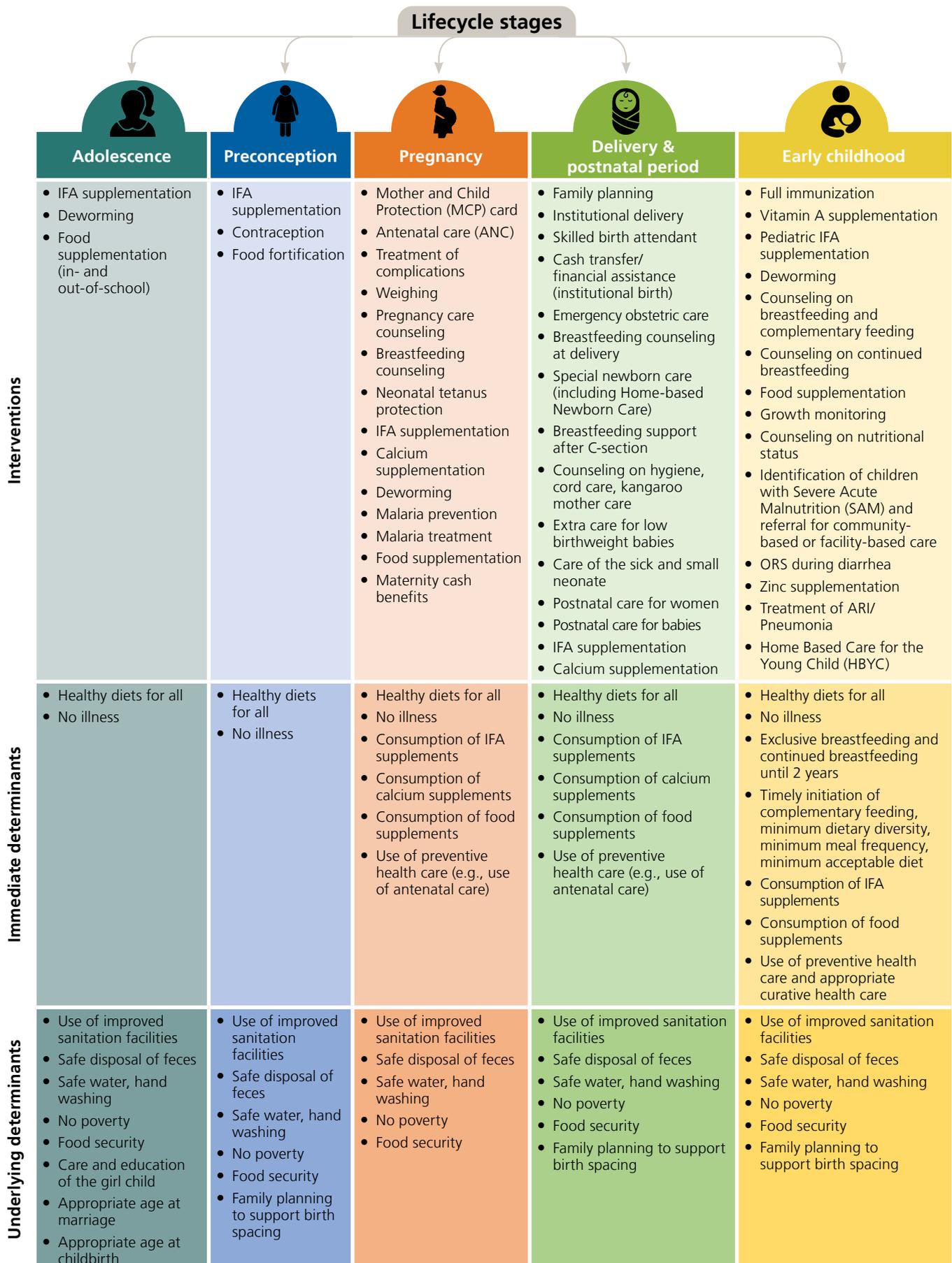
recommendations on improving data availability and improving the use of currently available data.

WHAT DID WE DO?

We first generated a comprehensive list of evidence-based interventions, determinants, and outcomes that align with POSHAN Abhiyaan's framework. We then identified potential indicators for each of these. POSHAN Abhiyaan's interventions cut across the lifecycle from adolescence, preconception, pregnancy, delivery, postnatal, newborn care, all the way through early childhood (Figure 1). For determinants, we focused both on immediate determinants, such as maternal nutrition, infant and young child feeding (IYCF) and child health, and underlying determinants, such as sanitation, early marriage and others. Finally, for outcomes, we focused on the stated target goals of POSHAN Abhiyaan as well as the nutrition-related Sustainable Development Goals (SDGs) to which India has committed.

Using a list of indicators for the interventions, determinants and outcomes articulated in the POSHAN Abhiyaan framework, we examined the availability of data on these across multiple data sources, including population-based household surveys and administrative data. We reviewed the questionnaires used in the National Family Health Survey (NFHS-4 2015-16), the Comprehensive National Nutrition Survey (CNNS 2016-18), the Aspirational Districts Programme (ADP) Survey (first and second rounds 2018-19) by IDinsight

¹The Prime Minister's Overarching Scheme for Holistic Nutrition (POSHAN) Abhiyaan or National Nutrition Mission, is Government of India's flagship programme to improve nutritional outcomes for children, pregnant women and lactating mothers. Launched by the Prime Minister on the occasion of International Women's Day on 8 March, 2018 from Jhunjhunu in Rajasthan, POSHAN Abhiyaan directs the attention of the country towards the problem of malnutrition and addresses it in a mission-mode.

FIGURE 1: Interventions, immediate and underlying determinants targeted by POSHAN Abhiyaan


and the Tata Trusts. We also reviewed currently available indicators in administrative data sources of the Health Management Information Systems (HMIS reporting format version 2015), Integrated Child Development Services Anganwadi Centre Monthly Progress Report (ICDS-AMPR version December 2012), and ICDS-Common Application Software (CAS).

While reviewing these surveys and administrative data sources, we indicated the availability of data against the potential indicator, if information was available. This information may not be a perfect match for the time frame or age group specified in the indicator. However, the proposed list of potential indicators for interventions in Tables 1-8 could be considered in developing surveys/nutrition monitoring systems.

Across all sources, we assessed whether the data sources included the information to create/compute a relevant indicator. We summarized our findings across domains (interventions, determinants and outcomes) and by data source, and reflected on the use of these indicators to track progress, to provide strategic direction, and to improve program implementation and uptake.

WHAT DID WE FIND?

1. A number of data systems can be leveraged to monitor progress and to inform evidence-based decisions and actions

In India, data on intervention coverage, determinants, and outcomes are available from both population-based household surveys and administrative data systems.

Population-based household surveys include the NFHS, the CNNS, and surveys conducted under the Aspirational Districts Programme by third-party organizations, such as IDinsight and the Tata Trusts. *Population-based surveys need to ensure the availability of data on relevant indicators to assess the coverage of interventions, key determinants, and level of outcomes. This data obtained in given timeframes, with geographic representativeness, can be used to support appropriate decisions.*

Administrative data systems include data from the core ministries and departments that deliver public services for health and nutrition. In India, these include the data systems from ICDS and National Health Mission (NHM) for nutrition-specific interventions and from other systems (e.g., Swachh Bharat Mission for sanitation), which can support improvements

in underlying determinants of nutrition. *These administrative systems generate data around common administrative boundaries (e.g., blocks, districts, supervisory service areas, etc.) and should support effective reviews and action.*

Since data is available from multiple sources, comparing indicators from different surveys or indicators from survey and administrative data is challenging. While interpreting findings, it is therefore important to consider differences in data collection mechanisms across sources. These include differences in sampling, questionnaire design, frequency of data collection, recall periods, and reference age groups. While interpreting and using data from administrative systems, it is also important to consider denominators, the accuracy of reporting and difference in reference periods for different administrative data systems.

2. Data can, and should, be used for a range of decisions in the context of India's nutrition efforts

Data can and should be used for tracking progress, reporting and assessing impact, strategy refinement and program refinement. These uses vary by level – national, state, district or even sub-district. For each of these uses, timely availability of data and effective uses of available data are critical to ascertain.

Progress tracking helps to monitor efforts aimed at achieving targets and to establish new priorities, if needed. To track progress, data on program inputs and coverage of interventions are useful in short time frames. Data on immediate and underlying determinants are useful in medium-term timeframes and data on outcomes are useful in longer timeframes. Currently, the primary reporting mechanism is the report on the progress of POSHAN Abhiyaan submitted to the Prime Minister's Office every six months by NITI Aayog.

Strategy refinement is needed periodically and should be undertaken by a range of stakeholders. In POSHAN Abhiyaan, national strategy development was conducted in the 2017-18 timeframe, prior to the development of the mission's approaches. Individual states have also conducted either implicit or explicit strategic reviews and planning. It would be useful to consider a rapid mid-term strategy review for POSHAN Abhiyaan in 2020, including in high burden states.

Program refinement and course correction is an ongoing process to strengthen program activities. For this, data on intervention inputs (human resources, supplies, etc.) and intervention coverage should be used.

However, a key need for program refinement is a culture of program reviews grounded in data.

Impact evaluation can help to assess the impact of various components of POSHAN Abhiyaan, and its various accompanying inputs. It should be planned early, but the impact assessment itself should not be done so early in the lifetime of the mission as to underestimate impact.

3. Data on program inputs are primarily available from a range of dashboards and monitoring systems but need consolidation and validation

Input indicators refer to the resources needed to support the implementation of an intervention or program. These include financial, human resources, training and infrastructure. They are primarily tracked in administrative monitoring systems of ICDS and health department. Additional program input information on the roll-out of POSHAN Abhiyaan is available on the following administrative dashboards:

- ▶ Anemia Mukht Bharat Dashboard
- ▶ ICDS-CAS Dashboard
- ▶ ICDS-CAS Governance Dashboard
- ▶ Jan Andolan Dashboard (POSHAN Abhiyaan)
- ▶ Pradhan Mantri Matru Vandana Yojana (PMMVY) Dashboard
- ▶ Swachh Bharat Abhiyaan Dashboard
- ▶ HMIS.

The information on program inputs is available in a scattershot manner from multiple data sources. The ICDS-CAS dashboard captures detailed information on the procurement, distribution, training and support. Information on Social and Behavior Change Communication (SBCC) activities is obtained from the Jan Andolan dashboard. Information on the flow of finances for POSHAN Abhiyaan inputs is unavailable in a consolidated manner but could be consolidated from reported expenditures across ministries/line departments.

4. Data availability on intervention coverage varies by life-stage and type of intervention

An overview of data availability for nutrition intervention coverage indicators across the lifecycle, by data source, is provided below. **Nutrition intervention**

coverage indicators reflect the extent to which people in need actually receive important health and nutrition interventions. Coverage indicators are typically calculated by dividing the number of people receiving a defined intervention by the population eligible for, or in need of the intervention. Examples of coverage indicators include the proportion of women who receive iron-folic acid supplements during their antenatal care (ANC) visits, the proportion of women who receive breastfeeding counseling, and the proportion of children who are measured or weighed.

Data on intervention coverage in India are available from a range of sources. Below we have summarized data availability on nutrition intervention coverage from adolescence to early childhood. In all the instances (Tables 1-8), for aspirational districts, data availability is based on the review of second-round ADP Survey questionnaires. For ICDS (AMPR/CAS), data availability in either ICDS-AMPR or ICDS-CAS is considered.

a. Data availability on interventions during adolescence

Interventions for adolescent girls target both in-school and out-of-school adolescents and focus on iron and folic acid (IFA) supplements, deworming and food supplements. Data on the coverage of interventions during adolescence is scarce, both in surveys and administrative data.

b. Data availability on interventions during preconception

Interventions during preconception target all women of reproductive age (15-49 years) who are not currently pregnant or lactating and focus on IFA supplementation, contraception and food fortification. Limited data is available on the coverage of IFA supplementation interventions for women of reproductive age (not currently pregnant or lactating) beyond girls in 12th class. However, monthly monitoring format on Weekly Iron and Folic Acid Supplementation (WIFS) includes data on IFA supplementation among boys and girls from classes 6th-12th. Girls from classes 10th-12th are also covered under women of reproductive age (WRA) group (15-49 years). Limited data is available on the contraception and food fortification related interventions during this period.

TABLE 1: Potential indicators and data availability on interventions during adolescence

Interventions	Potential indicators	Population based surveys			Administrative data	
		NFHS	CNNS	ADP Survey	HMIS	ICDS (AMPR/CAS)
Iron-folic acid (IFA) supplementation	Percentage of girls (10-19 years) who received any IFA in the last 1 month	✗	✗	✗	✓	✗
Deworming	Percentage of girls (10-19 years) who received albendazole or any other deworming drug in the last 6 months	✗	✓	✗	✓	✗
Food supplementation (out-of-school) ²	Percentage of out-of-school girls (10-19 years) who received food supplements in the last month	✗	✓	✗	✗	✗
Food supplementation (in-school) ³	Percentage of in-school girls (10-19 years) who received school meals in the last school year	✗	✓	✗	✗	✗

✓ = Available; ✗ = Not available

TABLE 2: Potential indicators and data availability on interventions during preconception

Interventions	Potential indicators	Population based surveys			Administrative data	
		NFHS	CNNS	ADP Survey	HMIS	ICDS (AMPR/CAS)
IFA supplementation ⁴	Percentage of women (15-49 years) who are not currently pregnant or lactating, who received any IFA in the last 1 month	✗	✗	✗	✗	✗
Contraception	Percentage of women (15-49 years) with an unmet need for family planning	✓	✓	✗	✓	✗
Food fortification	Percentage of households using iodized salt	✓	✗	✗	✗	✓

✓ = Available; ✗ = Not available

c. Data availability on interventions during pregnancy

Interventions for pregnant women focus on ANC, IFA and calcium supplementation, food supplements, deworming and malaria prevention and treatment, and maternity benefit cash transfers. Nutrition interventions for pregnant women are delivered by the Ministry of Health and Family Welfare (MoHFW) and the Ministry of Women and Child Development (MWCD) through the Village Health, Sanitation and Nutrition Days (VHSNDs),

community-based events such as *godbharai*, ANC at health facilities, and benefits such as PMMVY.

Multiple data sources are available on the coverage of interventions during pregnancy. The type of coverage indicators included varies greatly across all data sources. While indicators for measuring the coverage of ANC interventions exist in multiple data sources, there is limited information for measuring the coverage of calcium supplementation, malaria prevention and treatment, counseling during pregnancy and maternity benefits.

²**Food supplementation (out-of-school adolescents):** Under SABLA monitoring formats (quarterly and annual reports), coverage of supplementary nutrition (take home ration) and hot cooked meal among 11-14 years and 14-18 years is included.

³**Food supplementation (in-school adolescents):** Under Mid-Day Meal (MDM), School Monthly Data Capture Format, indicator on actual number of days Mid-Day Meal served and total meals served during the month is reported for primary and upper primary levels.

⁴**Iron & Folic Acid Supplementation:** Weekly Iron & Folic Acid Supplementation (WIFS) monthly monitoring format includes data on IFA supplementation among boys and girls from classes 6th-12th. Girls from classes 10th-12th are also covered under WRA group (15-49 years).

TABLE 3: Potential indicators and data availability on interventions during pregnancy

Interventions	Potential indicators	Population based surveys			Administrative data	
		NFHS	CNNS	ADP Survey	HMIS	ICDS (AMPR/CAS)
Mother and childcare	Percentage of women (15-49 years) who received the Mother and Child Protection (MCP) card after pregnancy registration	✓	✓	✓	✗	✓
Birth spacing	Percentage of women (15-49 years) currently using any method to delay or avoid getting pregnant	✓	✓	✗	✗	✓
Any ANC	Percentage of women (15-49 years) attended by any trained provider ever or at least once during pregnancy	✓	✓	✓	✗	✓
ANC during first trimester	Percentage of women (15-49 years) attended by any trained provider during the first trimester of pregnancy	✓	✓	✗	✓	✗
At least 4 ANC visits	Percentage of women (15-49 years) attended by any trained provider 4 or more times during pregnancy	✓	✓	✓	✓	✓
Treatment of complications	Indicator not specified	✗	✗	✗	✗	✗
Weighing	Percentage of women (15-49 years) who were weighed during ANC when pregnant	✓	✓	✓	✗	✓
Counseling ⁵	Percentage of women (15-49 years) who received health and nutrition education (individual/group counseling) during pregnancy	✓	✓	✗	✗	✓
	Percentage of women (15-49 years) who received advice about their weight after weighing during pregnancy	✗	✗	✗	✗	✗
	Percentage of women (15-49 years) who received information on consuming additional food during pregnancy from any provider ⁶	✗	✓	✗	✗	✗
	Percentage of women (15-49 years) who received information on consuming IFA from any provider	✗	✓	✗	✗	✓
	Percentage of women (15-49 years) who received information on consuming calcium from any provider	✗	✗	✗	✗	✗
	Percentage of women (15-49 years) who received advice on breastfeeding from any provider	✓	✓	✗	✗	✓
	Percentage of women (15-49 years) who received information on birth preparedness from any provider	✓	✗	✗	✗	✓
Tetanus injection	Percentage of women (15-49 years) who received at least 2 TT injections during pregnancy	✓	✓	✗	✓	✓
IFA supplementation	Percentage of women (15-49 years) who received any IFA during pregnancy	✓	✓	✓	✓	✓
Calcium supplementation	Percentage of women (15-49 years) who received any calcium during pregnancy	✗	✗	✗	✓	✗

⁵Data on VHSNDs, community-based events such as *godbharai* and home visits during pregnancy coming from activities in ICDS-CAS contribute to counseling and it is a way for districts/blocks to track whether the activities related to pregnancy counseling are happening.

⁶Provider could be a health professional/ ANM/ASHA/AWW.

TABLE 3: Potential indicators and data availability on interventions during pregnancy

Interventions	Potential indicators	Population based surveys			Administrative data	
		NFHS	CNNS	ADP Survey	HMIS	ICDS (AMPR/CAS)
Deworming	Percentage of women (15-49 years) who received any albendazole during pregnancy	✓	✓	✗	✓	✗
Malaria prevention	Percentage of women (15-49 years) who slept under a treated bed net during pregnancy	✓	✓	✗	✗	✗
Malaria treatment	Percentage of women (15-49 years) who received treatment for malaria during pregnancy	✗	✗	✗	✗	✗
Food supplementation	Percentage of women (15-49 years) who received any food supplements during pregnancy	✓	✓	✓	✗	✓
	Percentage of women (15-49 years) who received food supplements for at least 6 months during pregnancy	✗	✓	✓	✗	✗
Maternity cash benefits ⁷	Percentage of eligible women (15-49 years, plus other eligibility criteria) who received financial assistance during pregnancy	✗	✗	✗	✗	✓

✓ = Available; ✗ = Not available

d. Data availability on interventions during delivery and postnatal care

Interventions during delivery and postnatal care focus on conditional cash transfers to support institutional delivery, delivery by skilled health personnel, counseling and support on early initiation of breastfeeding, counseling on kangaroo mother care, postnatal care of women and babies. Most of these interventions are to be delivered through the MoHFW platform of public health institutions and home visits by frontline functionaries.

Most surveys and administrative data provide information only on institutional deliveries, deliveries attended by skilled birth attendants, and postnatal care for women and babies. Information on breastfeeding support after a C-section and breastfeeding counseling is not captured across data systems, except in ICDS-CAS. Whereas, Kangaroo mother care counseling is covered in NFHS, CNNS, and ICDS.

e. Data availability on interventions during infancy and early childhood

Interventions for infants and early childcare under POSHAN Abhiyaan are focused on complete

immunization, vitamin A supplementation, IFA supplementation, deworming, growth monitoring, counseling on breastfeeding and complementary feeding, food supplementation, screening and care of undernourished children and early detection and care during illness. Interventions are primarily delivered through the health and the ICDS systems at Anganwadi Centres (AWCs) and at beneficiary homes.

Most indicators for measuring the coverage of interventions for infants and young children are covered to an extent either in population-based surveys or administrative data systems. Coverage data on immunization and micronutrients are embedded in most of the data systems. There are, however, limited options to track progress on the coverage of interventions related to infant and young child feeding counseling and the care of severely undernourished children. Some are included in the ICDS-CAS, such as *Annaprasan Diwas*, a community-based event, and home visits on exclusive breastfeeding and complementary feeding.

⁷**Maternity cash benefits:** Under the Pradhan Mantri Matru Vandana Yojana (PMMVY), a conditional cash transfer scheme for pregnant and lactating women, maternity cash benefit amounting to 5000 INR is provided in 3 installments: Early pregnancy registration (first instalment 1000 INR); received at least one antenatal check-up after 6 months of pregnancy (second installment 2000 INR); childbirth registration, received first cycle of BCG, OPV, DPT, and Hepatitis-B (third installment 2000 INR). The scheme is implemented by the Ministry of Women and Child Development.

TABLE 4: Potential indicators and data availability on interventions during delivery and postnatal care

Interventions	Potential indicators	Population based surveys			Administrative data	
		NFHS	CNNS	ADP Survey	HMIS	ICDS (AMPR/CAS)
Skilled birth attendance and emergency obstetric care						
Institutional delivery	Percentage of women (15-49 years) who delivered in a health facility	✓	✓	✓	✓	✓
Cash transfer/ financial assistance (institutional birth)	Percentage of women (15-49 years) who received financial assistance for delivering at a public /private accredited health facility	✓	✗	✗	✗	✓
Skilled birth attendant to support the birth	Percentage of women (15-49 years) who were attended by skilled health personnel during delivery	✓	✓	✓	✓	✓
Emergency obstetric care	Percentage of pregnant women (15-49 years) with obstetric complications	✗	✗	✗	✓	✓
	Percentage of complicated pregnancies treated with blood transfusion	✗	✗	✗	✓	✗
Newborn care						
Breastfeeding support after a C-section	Percentage of pregnant women (15-49 years) who had a C-section birth in the last two years and who received breastfeeding support at delivery	✗	✗	✗	✗	✓
Hygiene	Percentage of pregnant women (15-49 years) counseled on the importance of personal hygiene after delivery	✗	✗	✓	✗	✓
Cord care	Percentage of pregnant women (15-49 years) who received advice/counseling on cord care	✓	✓	✗	✗	✓
	Percentage of newborns whose cord was cut with clean blade	✓	✗	✗	✗	✓
Kangaroo mother care (KMC) counseling ⁸	Percentage of pregnant women (15-49 years) who received counseling on KMC	✓	✓	✗	✗	✓
Extra care for low birthweight babies ⁹	Percentage of low birthweight babies who were visited on the first two days of birth at home	✗	✗	✗	✗	✗
	Percentage of low birthweight babies who received full schedule of Home-based Newborn Care (HBNC) visits	✗	✗	✗	✓	✗
Care of the sick and small neonate ¹⁰	Percentage of sick newborns referred by any health worker to a tertiary care facility	✗	✗	✗	✓	✗
Breastfeeding counseling at delivery	Percentage of pregnant women (15-49 years) counseled on exclusive breastfeeding within 30 days after delivery	✗	✗	✗	✗	✓
Postnatal care for women	Percentage of pregnant women (15-49 years) who received postnatal care while in a facility or at home following delivery within two days after birth	✓	✓	✗	✓	✓
Postnatal care for babies ¹¹	Percentage of children (0-59 months) who received first check by a health professional within 2 days after they were born	✓	✓	✓	✓	✓

✓ = Available; ✗ = Not available

⁸Currently, there are no KMC indicators in the HMIS. The Special Newborn Care Units (SNCU) online software is the portal for data entry on SNCU activities and contains a yes/no indicator on KMC. However, it is not yet very reliable.

⁹Home based Newborn Care (HBNC) guidelines 2014.

¹⁰Care of the sick and small neonate: Indicators on sick and small neonate are tracked through Janani Shishu Suraksha Karyakaram (JSSK) in HMIS.

¹¹Postnatal care for babies: Data are available on the Home-Based Newborn Care program (in the HMIS) and postnatal home visits (in ICDS-CAS).

TABLE 5: Potential indicators and data availability for interventions during early childhood

Interventions	Potential indicators	Population based surveys			Administrative data	
		NFHS	CNNS	ADP Survey	HMIS	ICDS (AMPR/CAS)
Full immunization	Percentage of children (12-23 months) who received full immunization ¹²	✓	✓	✓	✓	✓
Vitamin A supplementation	Percentage of children (6-59 months) who received vitamin A supplements in the last 6 months	✓	✓	✗	✓	✓
IFA supplementation	Percentage of children (6-59 months) who received iron supplements in the last 7 days	✓	✓	✗	✓	✗
Deworming	Percentage of children (12-59 months) who received albendazole or any other deworming drug in the last 6 months	✓	✓	✗	✓	✓
Counseling on complementary feeding ¹³	Percentage of women (15-49 years) who received counseling on child dietary diversity in the last 2 years	✗	✗	✗	✗	✓
Food supplementation	Percentage of children (6-35 months) who received food supplements in the last 12 months	✓	✓	✓	✗	✓
Growth monitoring	Percentage of children (0-59 months) who were ever weighed in the last 12 months	✓	✓	✗	✗	✓
Counseling on nutritional status	Percentage of children (0-59 months) whose mothers received counseling	✓	✓	✗	✗	✗
Identification of severely underweight and provision of additional rations	Percentage of children (0-59 months) who were identified as malnourished and were given double ration in the last 3 months	✗	✓	✗	✗	✓
Facility-based management of children with severe acute malnutrition	Percentage of children (0-59 months) who were referred to a health center or a nutrition rehabilitation center after weighing and identifying the children to be malnourished	✗	✗	✗	✓	✓
ORS during diarrhea	Percentage of children (0-59 months) with diarrhea in the last two weeks who received ORS	✓	✓	✓	✗	✓
Zinc (20 mg) for 14 days with ORS in children > 2 months	Percentage of children (2-59 months) who received zinc and ORS during diarrhea in the last 2 weeks	✓	✓	✓	✗	✗
Treatment for ARI/ Pneumonia	Percentage of children (0-59 months) who received advice/treatment for ARI/ Pneumonia in the last 2 weeks	✓	✓	✗	✓	✓

✓ = Available; ✗ = Not available

5. Data availability on immediate and underlying determinants of malnutrition

To achieve the nutrition outcomes under POSHAN Abhiyaan, several immediate and underlying determinants, including nutrition-related behaviors, need to be improved.

- ▶ Research shows that child undernutrition is caused by inadequacies in food, health and care for infants and young children, especially in the first two years of life (**immediate determinants**). Mothers' and infants' access to nutrition-specific interventions can influence these immediate determinants.

¹²Full immunization includes one dose of BCG vaccine, three doses of polio vaccine, three doses of DTP3 vaccine, and one dose of measles.

¹³Counseling on complementary feeding: Intervention on counseling on complementary feeding is also tracked as part of Annaprasan Diwas activities, home visits on complementary feeding (ICDS-CAS), and Home-Based Care of Young Child. Exclusive breastfeeding home visits are also tracked through ICDS-CAS.

- ▶ At the household and community level, women's status, household food security, hygiene and socioeconomic conditions further contribute to children's nutrition outcomes (**underlying and basic determinants**). Interventions such as social safety nets, sanitation programs, women's empowerment and agriculture programs have the potential to improve nutrition by addressing the underlying and basic determinants.

The POSHAN Abhiyaan framework recognizes most of these determinants explicitly and others implicitly. **Immediate determinants** of maternal behaviors include consumption of IFA, consumption of 360 calcium tablets, and consumption of any food supplements during pregnancy. Immediate determinants on newborn care include early initiation of breastfeeding, exclusive breastfeeding, continued breastfeeding up to two years, timely initiation of complementary foods, and ensuring minimum dietary diversity. For infant and young childcare, determinants include consumption of food supplementation and consumption of IFA supplementation.

The **underlying determinants** include girl child education, adolescent preparation for becoming an adult, adolescent lifestyle, and healthcare, marriage after 18 years, childbirth after 20 years, sanitation, safe water, toilet use, handwashing, and safe disposal of feces. Issues of poverty and food insecurity are not explicitly mentioned in the framework but are implicit

in the recognition of other determinants and of some of the interventions (such as food supplementation and cash transfers).

Data on immediate determinants are available from diverse sources, but data are especially limited on nutrition-related behaviors. Although administrative data sources like the ICDS-CAS include several behavioral indicators, a note of caution here is that the administrative data systems and the survey systems usually compute IYCF indicators in different ways, leading to substantial comparability challenges. Administrative data is also subject to high levels of reporting bias when providers are aware that these intermediate outcomes are being tracked. In addition, some indicators, such as IYCF indicators, need to be computed using multiple survey questions of high quality and administrative data does not usually allow for this. We recommend, therefore, that survey data be relied upon to assess trends and progress in critical immediate determinants such as nutrition behaviors, dietary patterns, consumption of supplements and more.

Data availability on underlying determinants is better in surveys than in administrative data. This is appropriate since survey questionnaires are better suited to capture this data. In addition to the surveys reviewed, additional data on underlying determinants, such as food security, poverty, and gender-related determinants are available from a range of surveys.

TABLE 6: Data availability on key behaviors and other immediate determinants

Interventions	Potential indicators	Population based surveys			Administrative data	
		NFHS	CNNS	ADP Survey	HMIS	ICDS (AMPR/CAS)
Women's dietary diversity during pregnancy	MDD-W (minimum dietary diversity-women); proportion of currently pregnant women who consume at least 5 out of 10 food groups	✗	✗	✗	✗	✗
Consumption of IFA supplements	Percentage of adolescent girls (15-19 years) who consumed IFA supplements in the last one week	✗	✓	✗	✗	✗
	Percentage of women (15-49 years) who consumed IFA supplements for 180 days or more during pregnancy	✓	✓	✗	✗	✓
	Percentage of women (15-49 years) who consumed IFA supplements for 100 days or more during lactation	✗	✗	✗	✗	✗

TABLE 6: Data availability on key behaviors and other immediate determinants

Interventions	Potential indicators	Population based surveys			Administrative data	
		NFHS	CNNS	ADP Survey	HMIS	ICDS (AMPR/CAS)
Consumption of calcium supplements	Percentage of women (15-49 years) who consumed any calcium tablets during pregnancy	✗	✗	✗	✗	✗
	Percentage of women (15-49 years) who consumed 360 calcium tablets during pregnancy	✗	✗	✗	✗	✗
	Percentage of women (15-49 years) who consumed any calcium tablets during lactation	✗	✗	✗	✗	✗
	Percentage of women (15-49 years) who consumed 360 calcium tablets during lactation	✗	✗	✗	✗	✗
Consumption of food supplements during pregnancy	Percentage of women (15-49 years) who consumed any food supplements during pregnancy	✗	✗	✓	✗	✗
	Percentage of women (15-49 years) who consumed food supplements for at least 6 months during pregnancy	✗	✗	✓	✗	✗
Consumption of food supplements during lactation	Percentage of women (15-49 years) who consumed any food supplements during lactation	✗	✗	✗	✗	✗
	Percentage of women (15-49 years) who consumed food supplements for at least 4 months during lactation	✗	✗	✗	✗	✗
Early initiation of breastfeeding	Percentage of children (0-23 months) who were breastfed within an hour of birth	✓	✓	✓	✓	✓
Exclusive breastfeeding under 6 months	Percentage of children (0-5 months) who received only breastmilk	✓	✓	✓	✗	✓
Continued breastfeeding at 2 years	Percentage of children (20-23 months) who are fed breastmilk	✓	✓	✓	✗	✗
Timely initiation of complementary feeding	Percentage of infants (6-8 months) who receive solid, semi-solid or soft foods	✓	✗	✗	✗	✓
Minimum dietary diversity	Percentage of children (6-23 months) who receive foods from 4 or more food groups	✓	✓	✗	✗	✓
Minimum meal frequency	Proportion of breastfed and non-breastfed children (6-23 months) who receive solid, semi-solid, or soft foods (also including milk feeds for non-breastfed children) the minimum number of times or more	✓	✓	✗	✗	✓
Minimum acceptable diet	Proportion of children (6-23 months) who receive a minimum acceptable diet (apart from breast milk)	✓	✗	✗	✗	✓
Consumption of IFA supplements by children	Percentage of children (6-59 months) who consumed at least 4 doses of iron supplements in the last 1 month	✗	✗	✗	✗	✗
Consumption of food supplements	Percentage of children (6-23 months) who consumed ICDS food supplements	✗	✗	✗	✗	✗

✓ = Available; ✗ = Not available

TABLE 7: Data availability on underlying determinants

Interventions	Potential indicators	Population based surveys			Administrative data	
		NFHS	CNNS	ADP Survey	HMIS	ICDS (AMPR/CAS)
Care and education of the girl child ¹⁴	Percentage of women (15-49 years) who completed high school (at least 10 years of schooling)	✓	✓	✓	✗	✗
Adolescent girl care	Indicator not specified ¹⁵	✗	✓	✗	✓	✗
Right age at marriage	Percentage of women (20-24 years) who were married when they were under 18 years of age	✓	✓	✗	✗	✓
Right age of childbirth	Percentage of women (15-49 years) who had their first baby when they were under 20 years of age	✓	✓	✗	✗	✗
Sanitation	Percentage of households with children (0-23 months) with toilets (type to be defined)	✓	✓	✗	✗	✓
Safe water	Percentage of households with children (0-23 months) living in households with safe water	✓	✓	✗	✗	✓
Toilet use (mother)	Percentage of households with children (0-23 months) where the mother also used the toilet	✓	✓	✗	✗	✓
Handwashing	Indicator not specified	✓	✓	✗	✗	✓
Safe disposal of feces	Percentage of children (0-23 months) whose stools were safely disposed ¹⁵	✓	✓	✗	✗	✗
Poverty ¹⁷	Percentage of households with children (0-23 months) who have a BPL card	✓	✓	✗	✗	✓
Food insecurity	Percentage of 1000-day households experiencing food insecurity ¹⁸	✗	✓	✗	✗	✗

✓ = Available; ✗ = Not available

6. Data availability on nutrition outcomes

POSHAN Abhiyaan aims to have an impact on the following eight nutrition-related outcomes – low birth weight, stunting, underweight, wasting, childhood overweight, and anemia among children, adolescents and women of reproductive age. In addition, India is a signatory to the nutrition-related Sustainable Development Goals (SDGs), which include targets for reducing overweight and non-communicable diseases, the current emerging challenge. Indicators on these need to be tracked as well.

Outcome indicators are covered in most surveys. The NFHS survey is a strong data system to track progress on all outcome indicators except anemia among adolescents at different levels. Interim data collection efforts (third-party surveys, etc.) would be useful to track impact on outcomes in high burden districts or in sentinel sites, chosen to represent specific areas of concern or of action.

The HMIS captures some data on low birth weight, wasting among children (0-59 months), and anemia in women of reproductive age (15-49 years). The ICDS

¹⁴Indicators on **girl child education** are also monitored in Education department administrative data.

¹⁵**Adolescent girl care** could include TV viewing habits; alcohol consumption; smoking; physical activity; IFA, multivitamin supplement consumption, and deworming.

¹⁶**Safe disposal of feces:** Research studies do not recommend a survey indicator on practice, only observations or knowledge.

¹⁷**Poverty:** There are also several schemes listed in the National Nutrition Mission guidelines that could be considered to track poverty/food insecurity, including: Targeted Public Distribution System - number of beneficiaries covered; National Rural Livelihood Mission - number of poor families provided with livelihood resources; Mahatma Gandhi National Rural Employment Guarantee Scheme - number of unemployed persons provided job.

¹⁸**Food insecurity:** We highly recommend the inclusion of food insecurity indicators in surveys. Several scales exist that measure household food insecurity. The CNNS uses the Food Insecurity Experience Scale (FIES) questions that measure different levels of food insecurity.

AMPR reports on low birth weight and underweight among children (0-59 months). The ICDS-CAS dashboard covers many indicators, except childhood overweight, anemia in children and adolescents. However, the quality of administrative data on outcomes and of the field-level measurement processes that generate the data on outcomes are known to be a substantial challenge. In addition, data from administrative systems, even when quality is reasonable, are only available for the client populations of public services. In situations where the client populations use

privately provided care, they are not included in the denominators of those served by public health systems.

For these reasons, we recommend that survey data be prioritized for tracking of progress on the outcomes of POSHAN Abhiyaan. Survey data could indeed be compared with administrative data and where administrative data are collected on outcomes, a strong emphasis should be placed on improving measurement and data quality and assessing the denominators available.

TABLE 8: Data availability on nutrition outcomes

Interventions	Potential indicators	Population based surveys			Administrative data	
		NFHS	CNNS	ADP Survey	HMIS	ICDS (AMPR/CAS)
Anemia in adolescents	Percentage of adolescents (15-19 years) whose hemoglobin levels are less than 12.0 g/dl	✗	✓	✗	✗	✗
Anemia in women	Percentage of women (15-49 years) with hemoglobin levels below 12.0 g/dl	✓	✓	✓	✓	✓
Anemia in children	Percentage of children (6-59 months) whose hemoglobin levels are less than 11.0 g/dl	✓	✓	✗	✗	✗
Low-birth weight	Percentage of infants born with birthweight <2500 g	✓	✓	✓	✓	✓
Stunting among children	Percentage of children (0-59 months) whose height-for-age z-score is more than 2SD below the median compared to the WHO Child Growth Standards	✓	✓	✗	✗	✓
Underweight among children	Percentage of children (0-59 months) whose weight-for-age z-score is more than 2SD below the median compared to the WHO Child Growth Standards	✓	✓	✗	✗	✓
Wasting among children	Percentage of children (0-59 months) whose weight-for-height z-score is more than 2SD below the median compared to the WHO Child Growth Standards	✓	✓	✗	✓	✓
Childhood overweight	Percentage of children (0-59 months) whose weight-for-height z-score is more than 2SD above the median of the WHO Child Growth Standards	✓	✓	✗	✗	✗
Overweight/obesity among adult [World Health Assembly (WHA)/SDG target]	Age-standardized prevalence of overweight and obesity in persons aged 18+ years (defined as body mass index ≥ 25 kg/m ² for overweight and body mass index ≥ 30 kg/m ² for obesity)	✓	✗	✗	✗	✗
High blood pressure among adult [WHA/SDG target]	Age-standardized prevalence of raised blood pressure among persons aged 18+ years (defined as systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg) and mean systolic blood pressure	✓	✓	✗	✗	✗
High blood sugar among adult [WHA/SDG target]	Age-standardized prevalence of raised blood glucose/ diabetes among persons aged 18+ years (defined as fasting plasma glucose concentration ≥ 7.0 mmol/l (126 mg/dl) or on medication for raised blood glucose)	✓	✓	✗	✗	✗

✓ = Available; ✗ = Not available

RECOMMENDATIONS

1. Data prioritization

A set of core indicators across the lifecycle should be prioritized and reviewed at all levels (national, state, district, and block).

To track progress towards POSHAN Abhiyaan goals and targets, a set of core indicators across the lifecycle should be prioritized for monitoring the progress, diagnosis, and action in both population-based surveys and administrative data systems. These core indicators should be reviewed at national, state and district levels across existing review mechanisms. The data review highlights that several possible indicators are available for each intervention and from multiple data sources. Therefore, it is important to identify core data sources based on the potential data use scenarios (e.g., use of population-based survey data sources for evaluation of coverage or reach; or use of administrative data sources for program reviews and refinement).

2. Promote data use

Develop guidance on different types of data sources and their use to promote awareness. Strengthen capacities of officials to effectively use data to improve planning and decision making.

There is a need to create a strong culture of data use among officials at all levels in the nutrition space. To promote awareness around available data sources and their use, we need to ensure that all data users are aware of the design elements, challenges, and opportunities of each type of data source. We recognize the need to develop and provide guidance on the different types of data sources, what data are needed and how to effectively use data for progress tracking, strategy development, and program refinement. At the same time, it will be useful to support and incentivize district and sub-district level officials to integrate, analyze and use nutrition data from multiple sectors and systems to improve planning and decision making. As part of this process, it will be important to strengthen the capacities of staff to perform these activities across the data value chain.

3. Tracking progress on inputs and intervention coverage

Multiple data sources for coverage indicators require careful reconciliation of findings from survey data and administrative data systems. Ensure

interoperability of nutrition data across data systems to support better-informed decision making. Develop data use cases for survey and administrative data on intervention coverage.

- ▶ Identify a narrow set of input and coverage indicators that should be tracked at all levels to strengthen program actions.
- ▶ Prioritize and decide on specific indicators/information and data sources for each of the major POSHAN Abhiyaan inputs.
- ▶ Specific indicators/information for each of the major POSHAN Abhiyaan input indicators should come from administrative data systems.
- ▶ Build out and test data use cases to help prioritize and sequence the use of data from multiple sources for strengthening programs.

4. Monitoring progress on determinants

Use population-based survey data when available and continue to strengthen data on nutrition behaviors from administrative systems.

On the use of data from diverse sources:

- ▶ Include survey data primarily for diagnostic exercises to decide which immediate and underlying determinants, including behaviors, are the major challenge areas for the region.
- ▶ Ensure that issues related to underlying determinants are included at review meetings and amplified during public campaigns.
- ▶ Include implementers/sectors addressing underlying determinants in POSHAN Abhiyaan monitoring and strategic meetings at all levels (national, state, district).

5. Monitoring progress on outcomes

Use population-based survey data for progress tracking. Strengthen data on nutrition outcomes from administrative systems for program use.

- ▶ Ensure that population-based household surveys cover all nutrition target indicators, including indicators on emerging nutrition challenges that should be tracked even if they are not currently a key focus of POSHAN Abhiyaan, such as Non-Communicable Diseases (NCDs).
- ▶ Review the quality of measurement processes that generate administrative data on impact indicators.

- ▶ Support efforts to improve the quality of data available on outcomes in administrative data systems.
- ▶ Identify data use scenarios by building on a good understanding of the current data use culture at different levels.

6. Data stewardship

A single data stewardship entity is essential to ensure coordinated monitoring of progress, strategy refinement and to support data use for program refinement.

A single data stewardship entity must provide guidance to all major committees and review platforms. We recommend a strong role for a data stewardship body, such as NITI Aayog, and related state-level entities. Review mechanisms at each level should include clear guidance on the use of data at all reviews.

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NITI Aayog is the premier policy 'think tank' of the Government of India, providing both directional and policy inputs. While designing strategic and long-term policies and programmes for the Government of India, NITI Aayog also provides relevant technical advice to the centre and states.

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IDinsight is a global advisory, data analytics, and research organization that helps development leaders maximize their social impact.

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Data for Decisions to Expand Nutrition Transformation (DataDENT) is a 4-year initiative that aims to strengthen the data value chain for nutrition globally and in several focus countries including India. It is supported by the Bill & Melinda Gates Foundation and implemented by IFPRI, Johns Hopkins University, and Results for Development.

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Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India (POSHAN) is a multi-year initiative that aims to build evidence on effective actions for nutrition and support the use of evidence in decision-making. It is supported by the Bill & Melinda Gates Foundation and led by IFPRI in India.

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POSHAN Policy Notes aim to provide evidence-based guidance to support policy and program actions for nutrition in India.

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