



CHILD NUTRITION: APPROACHES AND PRACTICES FOR COMMUNITY-BASED COMPREHENSIVE CARE AND MANAGEMENT OF ACUTE MALNUTRITION IN INDIA

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Abstract: Child malnutrition remains a critical public health challenge in India, undermining human capital formation and long-term economic growth. Despite improvements in nutrition indicators over recent decades, acute malnutrition manifested as wasting continues to affect nearly one-fifth of children under five. This paper examines community-based management of acute malnutrition (CMAM) as a scalable, equity-oriented approach for addressing this burden. Drawing on state-level evidence compiled by NITI Aayog in collaboration with UNICEF, the study analyses institutional designs, service delivery mechanisms, and outcomes across Indian states. Using secondary empirical data from NFHS-5 and programme implementation records, the paper synthesizes best practices across thematic domains community mobilization, screening, medical and nutritional management, monitoring systems, and multisectoral convergence. The findings indicate that CMAM can successfully manage 80–90% of uncomplicated severe acute malnutrition cases at the community level, improve service coverage, and reduce health-system burden when embedded within existing ICDS and health infrastructure. The study concludes with policy recommendations for scaling, sustainability, and integration with preventive nutrition strategies under India's nutrition governance framework.

Index Terms - Acute malnutrition, CMAM, child nutrition, community health, India, Poshan 2.0.

I. INTRODUCTION

Pre-school children constitute the most vulnerable segment of any community. A child's entire life is determined in large measures by the food given to him during his first five years. Their nutritional status is an important indicator for assessing nutrition and health status of the community, and it is more crucial to children. Adequate Nutrition in early years critically affects physical growth, cognitive development, and lifetime productivity and is essential for enhancing social capital and economic productivity of a

country. On the other hand, due to lack of food availability and insufficient feeding throughout the day is lead to malnutrition particularly undernutrition. In India, malnutrition among children under five remains a persistent structural challenge despite sustained policy attention. Research findings indicate that children who suffer from malnutrition face obstacles in their physical and cognitive development, hindering their ability to learn and thrive. According to NFHS-5 (2019–21), 35.5% of children are stunted, 32.1% underweight, and 19.3% wasted, with severe wasting affecting 7.7%.

An action-oriented approach is requisite to establish a comprehensive care continuum that address malnutrition, especially at the community level. To tackle the problem centrally, the Government of India introduced a comprehensive scheme Poshan 2.0 in the year 2021, to address malnutrition among vulnerable groups, including children under the age of six years. This programme is implemented across all the states, which have also developed their own community-based approaches to tackle acute malnutrition.

Acute malnutrition is particularly concerning due to its strong association with child mortality, infection susceptibility, and long-term developmental deficits. Conventional facility-based responses Nutrition Rehabilitation Centres (NRCs) while clinically effective, face constraints of coverage, caregiver compliance, and cost. These limitations have catalysed a shift toward Community-Based Management of Acute Malnutrition (CMAM), emphasizing decentralized care, early detection, and community participation.

II. CONCEPTUAL FRAMEWORK: ACUTE MALNUTRITION AND CMAM

Acute malnutrition is classified into Moderate Acute Malnutrition (MAM) and Severe Acute Malnutrition (SAM) by assessment of Anthropometric measurement (weight-for-height Z-scores, MUAC) and clinical symptoms (bilateral oedema).

Community-Based Management of Acute Malnutrition (CMAM) is founded on six core principles:

1. Early detection and timeliness
2. Maximum population coverage
3. Appropriate outpatient care
4. Referral linkages with facilities
5. Integration with nutrition-sensitive sectors
6. Capacity building within existing systems

The application of these six principles, along with structured follow up can help 85-90% of children overcome acute malnutrition and regaining normal nutritional assessment grade without medical complications.

III. METHODOLOGY

This study is based on secondary analysis of:

- State-reported CMAM implementation data collected by NITI Aayog
- NFHS-5 national nutrition indicators
- Programme documentation from Departments of Women and Child Development and Health across states

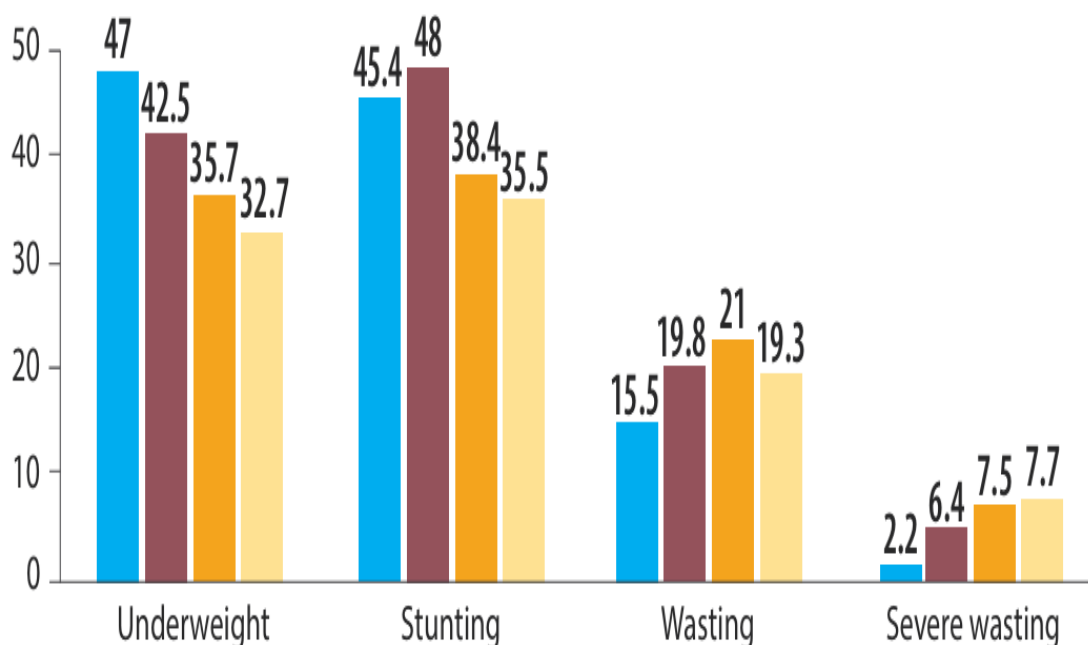
A thematic analytical approach is adopted to examine state-level practices and identification of key strengths, innovations, and gaps in programme implementation. The data was categorized under twelve CMAM domains: community mobilization, screening, appetite testing, medical care, nutritional management, follow-up, nutrition education, digital reporting, monitoring, convergence, capacity building, and scalability.

Further, it is also reviewed state-specific approaches intended for early diagnosis and management of acute malnutrition including care of newborn, infants and preschool children. This study also examined participation of community in nutrition related programmes, counselling sessions and usage of digital tools to improve programme implementation and outcomes.

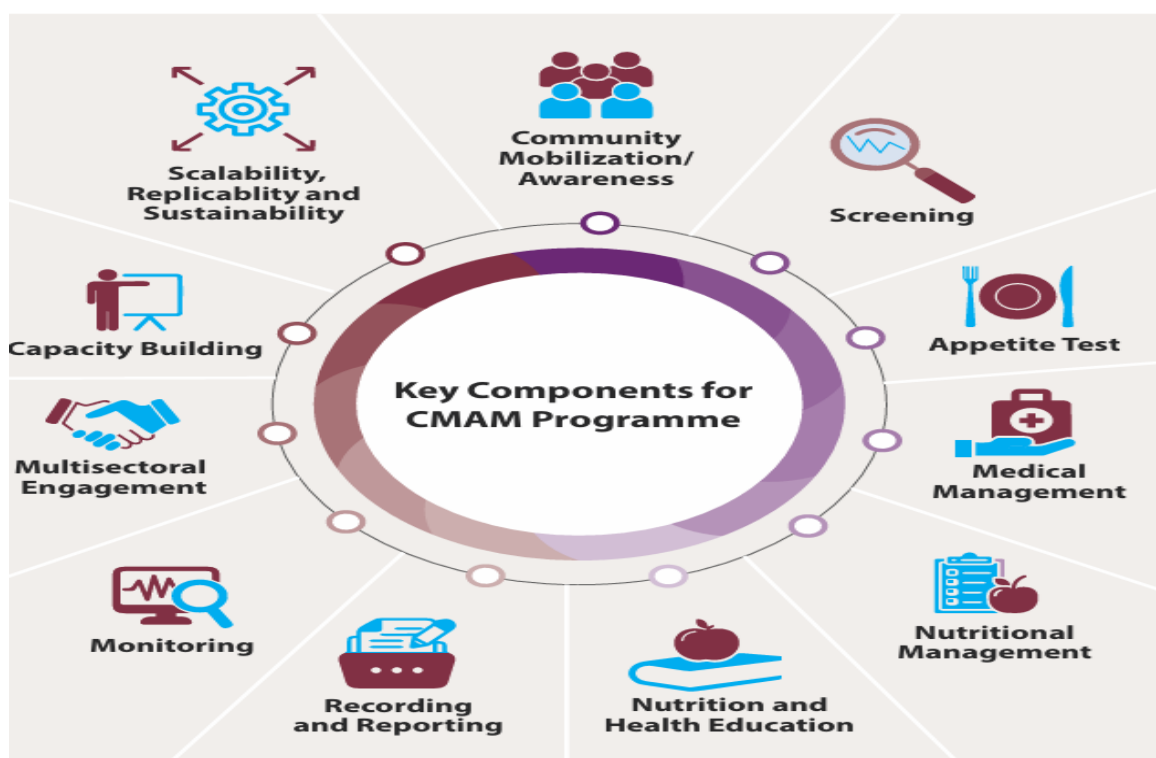
In addition, the study incorporated WHO growth indicators such as weight-for-age, height-for-age, and weight-for-height to classify malnutrition into underweight, wasting and stunting, as detailed below. Along with these indicators, study also included NFHS-5 data to understand the burden of undernutrition among children below five years. These indicators formed the basis for interpreting national trends and comparing programme outcomes.

- A. **Underweight** condition can result from either chronic or acute malnutrition, or both. An underweight child has a weight-for-age Z score of (-2SD) below the median for the World Health Organization (WHO) Child Growth Standards. According to WHO standard, a child is considered moderately underweight when its weight-for-age Z-score falls between -2 and -3 SD, and severely underweight when weight-for-age Z-score falls less than -3 SD.
- B. **Stunting** Failure to achieve expected height/length as compared to a healthy, well-nourished child of the same age is a sign of stunting. Stunting is an indicator of linear growth retardation and chronic growth failure. It is associated with a number of long-term factors including chronic insufficient nutrient intake, frequent infection, inappropriate feeding practices and poverty. A stunted child has a height-for-age Z score that is at least two standard deviations (-2SD) below the median for the WHO Child Growth Standards.
- C. **Wasting** It is acute malnutrition resulting from either failure to gain weight or from actual weight loss. Wasting in individual child and population groups can change rapidly and show marked seasonal patterns, since it is very sensitive to changes in food availability or disease prevalence. A wasted child has a weight-for-height/length Z score at least two standard deviations (-2 SD) below the median for the WHO Child Growth Standards.

As per the National Family Health Survey (NFHS-5) 2019-21, the prevalence of stunting (35.5%), underweight (32.1%), wasting (19.3%), and severe wasting (7.7%) remains very high among children under 5 years (U5) of age (Figure 2). Although a decline in undernutrition from NFHS-2, 3, 4 to NFHS-5 has been witnessed, the progress seems to be very slow.



Thematic Areas for Community-Based Management of Acute Malnutrition



IV. IV STATUS OF CMAM IMPLEMENTATION IN INDIA

As of 2023, 14 states have implemented CMAM statewide, while others operate district-level pilots. Programmes operate under different names but share a common service architecture.

As per the information received from the states, CMAM programme is operational in different states by different names, varying with regards to its scale of implementation and salient features. State-wide implementation of the CMAM programme has been reported by Assam, Bihar, Chandigarh, Chhattisgarh, Gujarat, Haryana, Maharashtra, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Telangana, Uttar Pradesh and Meghalaya. In other states, it has been implemented on a smaller scale catering to few districts. Details of CMAM implementation in several states of India is summarized in Table 1

Table 1: Status of Implementation of CMAM Programme in India

S.No	State	State-wide implementation	Scale of implementation of CMAM programme	Name of the district(s)	Title of the CMAM programme in the state
1	Assam	Yes	State-wide	All districts	Community Based Program for Children with Severe Acute Malnutrition (CP-SAM)
2	Bihar	No	6 districts	Purnea, Araria, Begusarai, Katihar, Sheikhpura, Sitamarhi	Samvardhan: Comprehensive Health and Nutrition Interventions for Community Care of SAM

3	Chandigarh	No	4 high risk areas	Bapu dham colony (East), Hallomajra (West), Dhanas (North), Maloya (South)	Chatur Dishai Poshan on Wheels
4	Chhattisgarh	Yes	State-wide in phased manner	17 districts in first phase: Durg, Mohla-Manpur Ambagadh, Chowki, Mahasamund, Kanker, Kondagaon, Bastar, Bijapur, Dantewada, Narayanpur, Korba, Bilaspur, Raigarh, Surguja, Jashpur, Koriya, Kawardha (Kabirdham), Balrampur	Community Based Management for Children with Severe Acute Malnutrition (CC SAM)
5	Gujarat	Yes	State-wide	All districts and 8 Corporations Kuposhan	Kuposhan Mukht Gujarat Maha Abhiyaan – Integrated management of Severe Acute Malnutrition
6	Haryana	Yes	State-wide	All districts	Strategy for Identification & tracking of SAM & MAM Children
7	Jharkhand	Yes	State-wide in phased manner	6 districts in first phase: West Singhbhum, Godda, Sahibganj, Simdega, Chatra, Latehar	Known as: » Johar Poshan in West Singhbhum district SAAMAR programme
8	Madhya Pradesh	Yes	State-wide	All districts	Mukhya Mantri Baal Aarogya Samvarshan Karyakram
9	Maharashtra	Yes	State-wide	All districts	Village Child Development Center
10	Odisha	Yes	State-wide	All districts	Community-Based Management of Acute Malnutrition (CMAM)
11	Rajasthan	Yes	State-wide in phased manner	Accelerated action in 20 priority districts: Udaipur,	Acute Malnutrition Management

				Dungarpur, Chittorgarh, Pratapgarh, Banswara, Rajasmand, Jodhpur, Jaisalmer, Jalore, Barmer, Pali, Sirohi, Jaipur, Tonk, Bundi, Baran, Karauli, Dholpur, Alwar, Bharatpur	Action (AMMA) Programme
12	Telangana	Yes	State-wide	All districts	Supervised Supplementary Feeding Programme (SSFP)
13	Uttar Pradesh	Yes	State-wide	All districts	SAMBHAV
14	Meghalaya	Yes	State-wide	All districts	Collaborative Actions to improve nutrition status of SAM and MAM children in Meghalaya

Table 2. CMAM Coverage Across Indian States

Implementation Status	States
Statewide CMAM	Assam, Gujarat, Maharashtra, MP, Odisha, UP, Telangana, Rajasthan, Jharkhand
Phased / District-level	Bihar, Chandigarh, Meghalaya, Chhattisgarh

V. EMPIRICAL EVIDENCE AND KEY THEMATIC PRACTICES

5.1 Community Mobilization

States employed IEC campaigns, SHG engagement, participatory learning, and culturally adapted tools. Innovations such as LED nutrition vans (Jharkhand), food-basket games (Bihar), and ICDS mascots (Uttar Pradesh) improved caregiver engagement and programme uptake

5.2 Screening and Identification

Regular growth monitoring at Anganwadi Centres forms the backbone of CMAM. States enhanced detection through:

- Campaign-mode screening (Gujarat, UP)
- Fixed monthly weighing days (MP, Haryana)
- Joint DWCD–Health Department drives (Maharashtra)

5.3 Medical and Nutritional Management

Uncomplicated SAM cases receive:

- Antibiotics, deworming, micronutrients
- Locally prepared energy-dense foods or enhanced THR
- Weekly follow-ups by frontline workers

States adapting locally available food recipes achieved better adherence and cultural acceptability than reliance on standardized therapeutic foods alone

5.4 Digital Monitoring and Data Systems

Several states deployed android-based MIS platforms and Poshan Tracker for real-time child tracking, reducing data gaps and enabling supervisory reviews

VI OUTCOMES AND EFFECTIVENESS

Evidence indicates that CMAM:

- Treats 80–90% of SAM cases without hospitalization
- Reduces pressure on NRCs
- Improves continuity of care post-discharge
- Enhances community ownership and caregiver compliance

States reported substantial increases in identification and recovery rates, even during COVID-19 disruptions, underscoring programme resilience

VII CHALLENGES

Key implementation constraints include:

- Frontline worker workload
- Variability in data quality
- Supply chain interruptions
- Behavioural resistance to dietary change

However, states addressing these through capacity building, convergence, and digital tools demonstrated stronger outcomes.

VIII POLICY IMPLICATIONS AND WAY FORWARD

For India to achieve nutrition security under Viksit Bharat @ 2047, CMAM must be:

- Fully integrated with Poshan 2.0
- Linked to preventive IYCF and WASH interventions
- Supported by sustained financing and institutional convergence

Scaling CMAM nationally offers a cost-effective pathway to reduce wasting, improve child survival, and strengthen human capital.

IX CONCLUSION

Acute malnutrition remains a major public health concern across states of India, particularly from infancy to preschool age children (0-5 years). Dealing with malnutrition in under five children requires both facility based and Community-based comprehensive care that integrates prevention, treatment and continuous monitoring. Various State in India have already implemented CMAM model with situation specific guidelines to address area based priorities. For all that, strengthening these models remains crucial for breaking the intergenerational cycle of malnutrition and achieving equitable development outcomes.

X REFERENCES

1. UNICEF-WHO-The World Bank: Joint child malnutrition estimates – levels and trends – 2021 edition - UNICEF DATA [Internet]. [cited 2022 Feb 3]. Available from: <https://data.unicef.org/resources/jme-report-2021>
2. World Health Organization (WHO 2021). 2021 Global Nutrition Report: The state of global nutrition [Internet]. 2021 [cited 2022 Jan 13]. Available from: <https://globalnutritionreport.org/reports/2021-global-nutrition-report/>
3. National Family Health Survey (NFHS-5) [Internet]. [cited 2022 Jan 13]. Available from: http://rchiips.org/nfhs/factsheet_NFHS-5.shtml
4. Comprehensive National Nutrition Survey. 2016

5. Rana R, Vaze G, Christian P, Gupta P. Determinants of Acute Malnutrition among Under Five Children in Aravalli District of Gujarat, India: A Community-Based Case-Control Study. Int J Heal Sci Res [Internet]. 2019 [cited 2022 Jan 13];9(6):1. Available from: www.ijhsr.org
6. Paul L, Chellan R, Sahoo H. Unmet Need of Integrated Child Development Services (ICDS) among Economically Weaker Sections in Indian Society. Soc Sci Spectr [Internet]. 2018 Mar 8 [cited 2022 Jan 13];3(3):141–53. Available from: <http://www.socialspectrum.in/index.php/sp/article/view/105>
7. World Health Organization. Guideline: updates on the management of severe acute malnutrition in infants and children, Geneva: World Health Organization; 2013. Guidel Updat Manag Sev acute malnutrition infants Child Geneva World Heal Organ 2013. 2013;(August 2013):111.
8. Child wasting and concurrent stunting in low- and middle-income countries - Andrew Mertens et al. medRxiv preprint doi: <https://doi.org/10.1101/2020.06.09.20126979> June 2020
9. Causes and consequences of child growth failure in low- and middle-income countries - Andrew Mertens et al. medRxiv preprint (<https://doi.org/10.1101/2020.06.09.20127100>) June 2020
10. Early childhood linear growth failure in low- and middle-income countries - Jade Benjamin-Chung et al. medRxiv preprint (<https://doi.org/10.1101/2020.06.09.20127001>) June 2020
11. <https://www.enonline.net/fex/67/indiawastingsummaryreport> - Analysis of wasting & severe wasting and its associated risk factors among under-5 children in India
12. Food and Agriculture Organization of the United Nations, technical report series. Available at: <https://apps.who.int/iris/handle/10665/40921>

