

The malnutrition turnaround: A proof of concept of the end malnutrition initiative in Karnataka, India

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ABSTRACT

India faces a persistent public health challenge with malnutrition, particularly among children under five, as highlighted by NFHS-5 data (2019–2021). In Karnataka, malnutrition rates are alarmingly high, with 36% of children stunted and 26% wasted. Severe acute malnutrition (SAM) affects over 10% of children, further compounding this crisis. Climate change acts as a threat multiplier, worsening food security and triggering a malnutrition-poverty-hunger cycle. Implemented in Yelburga district of Karnataka, end malnutrition initiative (EMI) emphasized parental ownership, low-cost dietary interventions, capacity building, and leveraging technology. The initiative engaged community volunteers, faith leaders, and government stakeholders, achieving significant reductions in SAM and moderate acute malnutrition (MAM). From January 2022 to March 2023, SAM cases decreased from 105 to 9, while MAM cases declined from 1067 to 300. These results validate EMI's model as an effective strategy. The program's success underscores its scalability across India and globally where the burden of Malnutrition remains high subject to serious financial support. By transforming policies and emphasizing social, commercial, and climate determinants of health, EMI demonstrates that malnutrition can be addressed sustainably. This initiative serves as a roadmap for combating malnutrition, ensuring a healthier future for children worldwide.

Keywords: Community-centered approach, Edward & Cynthia Institute of Public Health (ECIPH), India, CHD Group, Severe Acute Malnutrition

Introduction

India's ongoing battle with malnutrition remains a significant public health challenge, especially among children under five. In response, the Edward and Cynthia Institute of Public Health (ECIPH) - a unit of CHD Group designed the End Malnutrition Initiative (EMI) to reduce malnutrition through a community-centered, multi-sectoral approach.^[1] According to NFHS-5 data^[2] (2019–2021), 32.1% of children under 5 years of age are stunted, and 19.3% are wasted.

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Karnataka, a southern state, has particularly concerning statistics, with regional disparities among children aged below five. 21.6% wasting was reported in Urban Mysore, which is much lower than the state average of 27.1% as mentioned in NFHS-5.^[2,3] On the contrary, a regional study carried out in the rural area of the Yadgir district found wasting at 15.3% and stunting at 53.6%, both these elucidate the critical condition of acute and chronic malnutrition prevailing within the rural regions of the country.^[4] Severe acute malnutrition (SAM) affects over 10% of children in the region compounding the crisis. Inadequate food intake and comorbid conditions, such as infections exacerbate this burden, leaving many children at risk of irreversible developmental milestones.^[5,6] Further, climate change acts as a threat multiplier to aggravate the nutrition-agroecology and food systems space triggering a malnutrition-poverty-hunger crisis seen like never before in past

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generations.^[6-8] This is further complicated due to regional wars and migratory crisis.

In response to this crisis, the EMI, a flagship concept curated by the ECIPH, a unit of CHD Group was designed and implemented to address cascading risks and bottlenecks to tactfully build co-ownership for nutritional needs. This initiative focuses on reducing the prevalence of malnutrition through a community-centered approach that emphasizes parental ownership, low-cost dietary interventions, early detection, efficient monitoring and evaluation, nutritional boosters, and multisectoral collaboration with public health diplomacy.^[9,10] India’s mission to end malnutrition is closely associated with Sustainable Development Goal 2 (Zero Hunger), focusing on ending all forms of malnutrition by 2030.^[11] The National Nutrition Mission commonly called Poshan Abhiyaan, launched in the year 2018, forms the government’s flagship to decrease stunting, wasting, and undernutrition through the intersection of governing bodies and major stakeholders.^[12] The EMI provides an alternative solution to these goals by implementing the program on the ground that amplifies the mission’s emphasis on community commitment and engagement, continuous monitoring, and targeted nutritional assistance.

Achievements in reducing severe acute malnutrition and moderate acute malnutrition levels

The EMI program was mainly carried out in Yelburga region and the larger programmatic context had a spillover impact across the district of Koppal in the state of Karnataka. The then-sitting Hon’ble Minister for Women and Child Welfare, Government of Karnataka also endorsed this and all cooperation needed was extended by the District Administration, Koppal and the Department of Women and Child, Government of Karnataka, and the Deputy Director—Women and Child, Koppal District. ECIPH, deployed a field-level team through CHD Group—which operationalizes the field arm and had a backend team engaged in monitoring and evaluation on the ground. Multiple stakeholders were involved but at the high level, ECIPH was

directly working with the District Administration and the Minister for Women and Child Welfare, Government of Karnataka.

While the program aimed at improving the condition of under-five malnourished children, it comprehensively focused on building knowledge literacy for parents and Anganwadi workers, it looked at engaging community volunteers and faith-based leaders, it looked at empowering communities, particularly, parents by capacity-building them for preparing low-cost energy-rich diet which had snowballing potential to improve weight and height in real-time. The low-cost dietary food menu was prepared and shared with the parents and grass-root field facilitators who were asked to cook the food and provide it to the child without fail. Volunteer networks would randomly monitor if such food was made and tech-savvy parents were invited to video record the food prepared as well at times to ensure compliance and efficiency. Weekly monitoring of weight gain was tracked. With the mapping of malnourished children through the support and records of the district administration, targeted interventions were created by the ECIPH team, besides cumulatively leveraging technology to spread better nutritional ideas and home-based nutritional dietary possibilities.

The prospect of shifting public health nutrition ownership into the hands of parents, grandparents and community elders with influencers enabled the achievement of targeted goals in addressing the burden of malnutrition. For too long, government policies have looked at malnutrition from a lens of ad-hoc response and freebies, our concept demonstrates that ending malnutrition is possible through focused parental ownership and hand-holding with cooperation from the Government departments [Figure 1].

Results

The data showed a steady decrease in SAM cases during the period of intervention and there was a continued decline in SAM cases from January 2022, starting near 105 and reaching close to 20 by December and then falling to 9 by march 2023. This



Figure 1: Key stakeholders in malnutrition intervention at a multisectoral level

establishes and proves that the EMI interventions in Yelburga have been progressively and consistently effective in reducing SAM cases. In 2022, moderate acute malnutrition (MAM) cases also showed a decreasing trend from nearly 1067 in September to below 400 by December to about 300 by March 2023. These results reflect the impact of the EMI and other related efforts in the region which has the potential for scale anywhere in the country and around the world, contributing to the decrease in malnutrition rates [Figure 1].

Scaling up the end malnutrition initiative model

The success of EMI in Karnataka, India demonstrates its potential for replication in other regions facing high malnutrition rates. To scale up the program across India and other parts of the world, the following strategies are essential. The involvement of all concerned stakeholders must be outlined and clearly defined. Figure 1 provides an overview of the stakeholders involved in addressing malnutrition among children, reflecting a holistic and collaborative approach. The roadmap on how the malnutrition battlefield will look is further elaborated in Figure 2, outlining the sequence of strategic actions and critical steps required to plan, execute, and monitor the operation effectively. Based on the field assessments, data mapping is carried out to identify malnourished children, frontline workers will be trained, and a detailed micro-plan will be developed for implementation. The interventions include parental engagement, community mobilization, handholding of Anganwadi Workers, nutrition supplementation, regular health checkups, supportive supervision to supply chain systems and monitoring, ensuring parental compliance, effective resource utilization, and continuous evaluation to improve outcomes. Besides looking at cultures, customs, and practices, ECIPH recognizes the importance of socio-political and geographical proliferations which influence outcomes. Hence ECIPH believes that before The Malnutrition Battlefield is implemented, mild tweaking of strategy remains essential in every place. This is also being mindful that not always, will we have passionate politicians or civil servants willing to pursue end-game goals and, they may have other priorities, hence may not fully be involved to see the program through.

The impact and nature of how the program will take shape with key interventions that ought to be done on the ground is elaborated in Figure 3, involving a systematic approach from identifying funding partners to engaging with district-level administration, followed by stakeholder consultation and formulation of an implementation plan. At the grassroots level, this is supported by six key interventions to translate a strategic intent into a measurable impact, fostering sustainable improvements in child nutrition outcomes. Whereas Figure 4 provides an insight into what SAM and MAM looked like in Yelburga in 2018–2022. The trend highlights a speedy decrease in SAM cases, by 2022–2023 reflecting the impact of targeted interventions and stakeholder involvement as implied in other programs.

Further, policy interventions for malnutrition reduction call for a radical shift that addresses the nutritional problems from a social, commercial, and climate determinant of health perspective. Currently, all policies focusing on ending the burden of malnutrition are obsolete and national governments must revise their approach to integrated nutritional management built on holistic determinants of health and development, also factoring in climate ambitions and food system strengthening. The involvement of faith leaders, community volunteers, and retired personnel has been a critical factor in the success of EMI. Scaling this approach across other malnutrition hotspots in India will help build trust within communities and ensure early detection of malnutrition.

Through the EMI, we propose reevaluating the role of Nutritional Rehabilitation Centers, suggesting that resources could be more effectively allocated elsewhere and must be a thing of the past. Shifting the focus toward empowering parental care, supported by supervision and capacity-building efforts for Anganwadi workers, has demonstrated measurable success. These results highlight the potential for scaling such approaches to achieve a broader and more sustainable impact. EMI also proposes that children with birth-induced defects such as cerebral palsy or other global development delays must not be counted into the SAM and MAM general category of children, otherwise this will not achieve the right results.

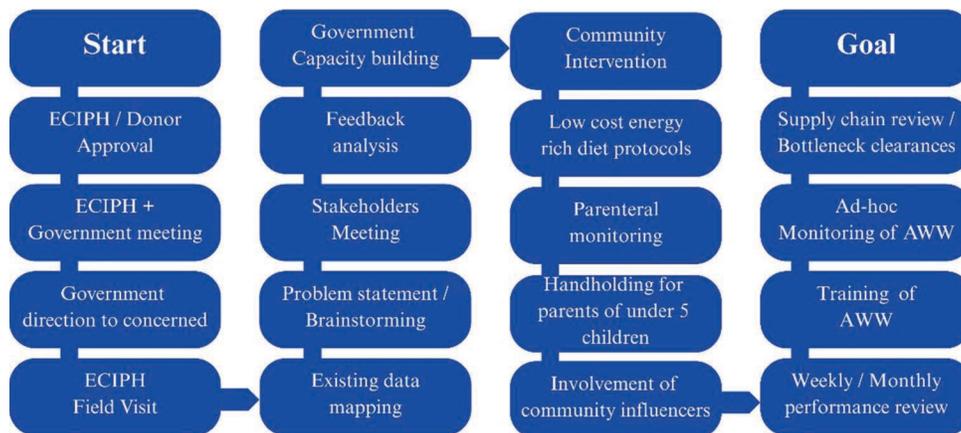


Figure 2: Flowchart of the malnutrition battlefield

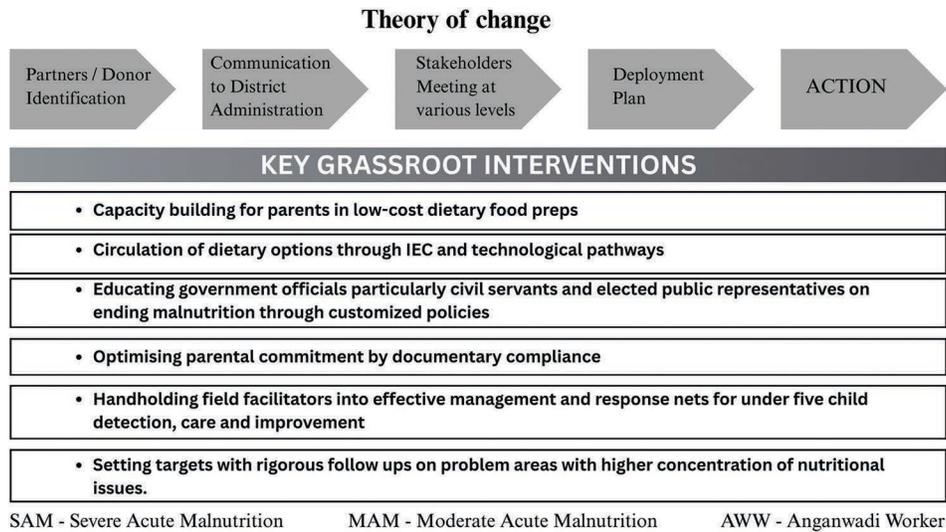


Figure 3: Theory of change and grassroots interventions in malnutrition

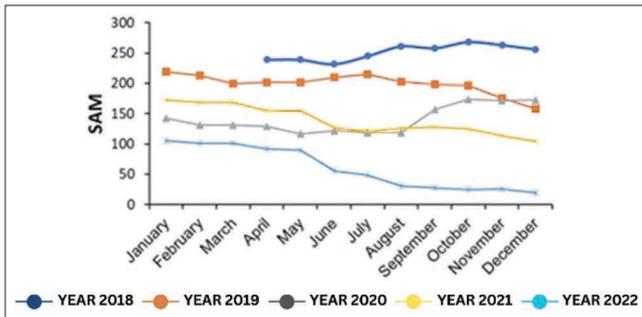


Figure 4: Year-wise trends in severe acute malnutrition in Yelburga Model (2018–2022)

Challenges and opportunities

The initiative provides clear evidence for at scale potential. But political will, budgetary allocation and customized policies will be critical to achieve success. A one size fits all approach to end malnutrition will not work and thus transforming such policies is essential. Further, this model presents a great opportunity for companies who believe in corporate social responsibility and wish to transform locations and regions. Passionate elected public representatives, civil servants also can leverage this model for successful and sustainable regional development for the citizens in any country.

Conclusion: A Sustainable Model for At-Scale Impact Around the World

The EMI by ECIPH has proven to be a transformative program in tackling SAM and MAM in Karnataka, India as evident by scientific data and maintained government records. Through community engagement, parental ownership, faith-based leadership, low-cost dietary transformation, capacity building of field facilities and improved nutritional literacy, the program has demonstrated its potential for long-term permanent impact.

As India and parts of the world, continue to face a malnutrition crisis, scaling up this model could have a profound effect on children’s health and development across the country that will change the landscape for future generations. By building on the strengths of the EMI program, including data-driven interventions and multisectoral collaboration, India and other countries can move closer to ending under five malnutrition and securing a healthier future for its children. EMI thus offers a roadmap for sustainable and effective change and continues to evolve factoring in climate, food systems, agro-ecology, and other thematic updates to constantly improve the approach and scale. Diplomatic missions can serve to further transmit this learning to their home country to fight malnutrition and achieve national goals, indulge in measurable philanthropy and sustained future.

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Conflicts of interest

There are no conflicts of interest.

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