

Reducing Underweight Prevalence Among Children Between 0–23 Months

APPLYING QUALITY IMPROVEMENT APPROACH TO IMPROVE COMMUNITY LEVEL HEALTH AND NUTRITION SERVICES



Frontline workers in Wazirganj, Gaya keeping track of weight of children with low weight for age.

CONTEXT

Children who are undernourished during the first thousand-day window risk experiencing lifelong adverse consequences, including poor physical and cognitive development, poor health, and even early death. Research shows that nutrition counselling, growth monitoring and early detection of growth faltering along with timely action can help in addressing undernutrition among children between 0–23 months of age. This case study describes a pilot conducted in the Amethi Health Sub-Centre (HSC) of the Wazirganj block in Bihar state's Gaya district. It applies the point of care continuous quality improvement (POCQI) approach for improving growth monitoring and promotion activities to address undernutrition prevalence at the community level with a focus on children 0–23 months. Within five months following the pilot, the percentage of children aged 0–23 months with weight for age within the normal category increased from 16% to 77%. During the same period, the percentage of children in the severely underweight category decreased from 15% to 2%.

The community-level pilot is part of the ongoing work by Alive & Thrive, India (A&T) along with the government medical colleges, allied hospitals and secondary-level healthcare facilities in Uttar Pradesh and Bihar states. It aims to strengthen and improve the quality of facility-based maternal, infant and young child feeding nutrition (MIYCN) service delivery using the POCQI approach. Positive results from the work at secondary and tertiary care facilities led to further use of quality improvement (QI) methods for improved MIYCN delivery in community-based services.

ADAPTING THE QI APPROACH FOR COMMUNITY-LEVEL SERVICES

The A&T team engaged with the district officials from Integrated Child Development Services (ICDS) in Gaya to partner with on piloting the intervention. In consultation with the local government, the Amethi HSC in Wazirganj was selected as the pilot's location.

The pilot used methods and processes from the WHO endorsed POCQI approach (Figure 1). The POCQI model offers a new paradigm, beyond the often-followed approach of providing clinical training to health workers with the assumption that knowledge-deficit is the primary cause of poor performance and inadequate quality of care.¹ POCQI combines capacity building with a targeted solution-based approach that can be integrated into existing systems.

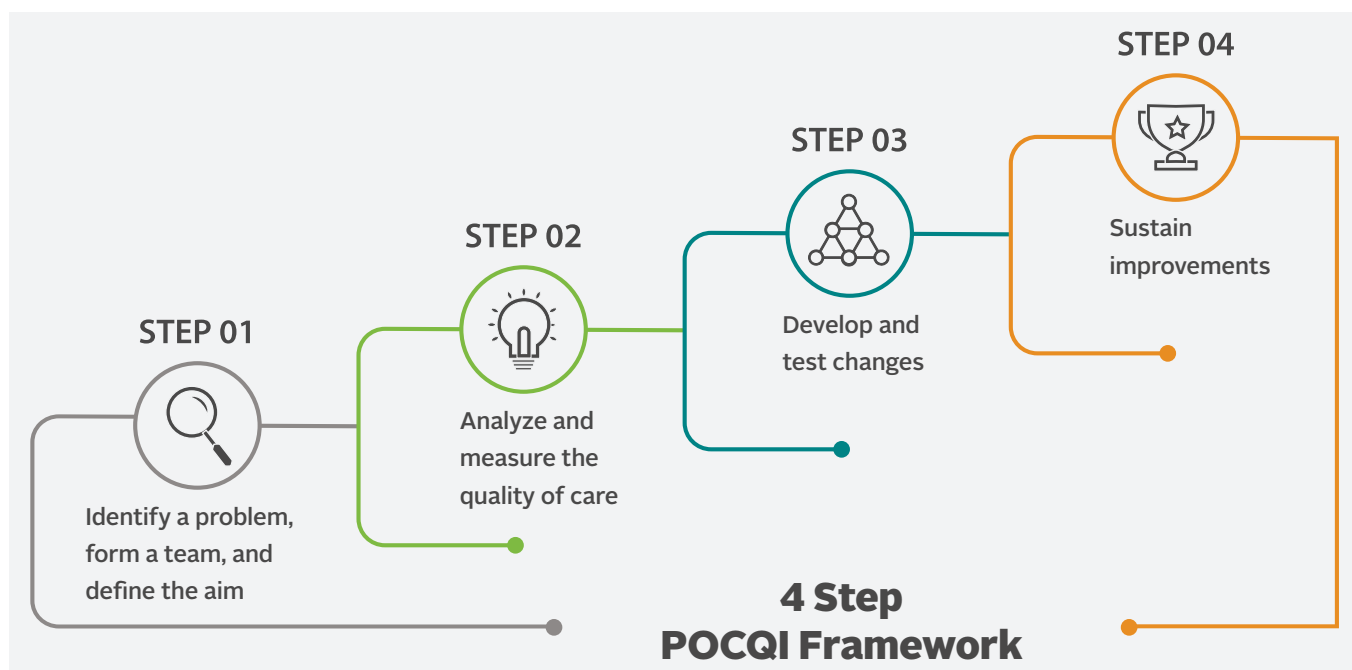


FIGURE 1: POCQI FRAMEWORK

CAPACITY BUILDING

In June 2022, QI and MIYCN experts from A&T conducted training sessions in Amethi HSC on QI approaches and undernutrition. Technical training for accredited social health activists (ASHAs), Anganwadi workers (AWWs) and auxiliary nurse and midwives (ANMs) covered topics such as the importance of the first thousand days of life, the importance of exclusive breastfeeding, age-appropriate complementary feeding including feeding a diverse diet in adequate quantity, regular weighing and growth monitoring of children, feeding during illness, and management of diarrhoea. Special emphasis was put on key counselling messages to be given to mothers with children between 0–23 months of age.

IDENTIFYING THE PROBLEM, TEAM FORMATION, AND ESTABLISHING THE AIM

Some of the globally accepted benchmarks considered vital to addressing undernutrition among children between 0–23 months of age include contextualized counselling of mothers and other caregivers on age-appropriate infant and young child feeding (IYCF) practices, regular weighing of children for growth monitoring, and administering iron folic acid (IFA) syrup. However, the implementation of these proven interventions was observed to be suboptimal at Amethi HSC at the beginning of the pilot. Over 15% of children at Amethi HSC were categorized as severely underweight for age (also known as 'red zone' in this pilot), and around 24% were moderately underweight (also known as 'yellow zone' category). A QI team was formed based on the different roles played by frontline workers and their supervisors. The team included three AWWs, Ms. Reena Kumari (Team Leader), Ms. Munni Kumari and Ms. Malti Devi; two ASHAs, Ms. Rubi Kumari and Ms. Yashoda Devi; one ASHA Facilitator (AF), Ms. Sonmati Devi and Mukhiya of the Panchayat, Mr. Ashok Paswan and Kumari Lolita, Supervisor.

¹ World Health Organization Regional Office for South-East Asia. 2020. [Improving the Quality of Care for Mothers, Newborns and Children in Health Facilities Facilitator Manual, Version 3.](#)

SPECIFIC AIMS

After the QI training, the team selected two aims for the pilot in Amethi HSC to begin July 2022:

- To improve the nutrition status of severely underweight children 0–23 months of age falling in the red zone by reducing the current prevalence from 15% to 5% by October 2022
- To reduce the percentage of moderately underweight children 0–23 months of age falling in the yellow zone from 24% to 4 % by October 2022

PROBLEM ANALYSIS

A problem analysis with the QI team and other Amethi HSC frontline workers yielded underlying factors connected to undernutrition prevalence among children under two years of age (Figure 2).

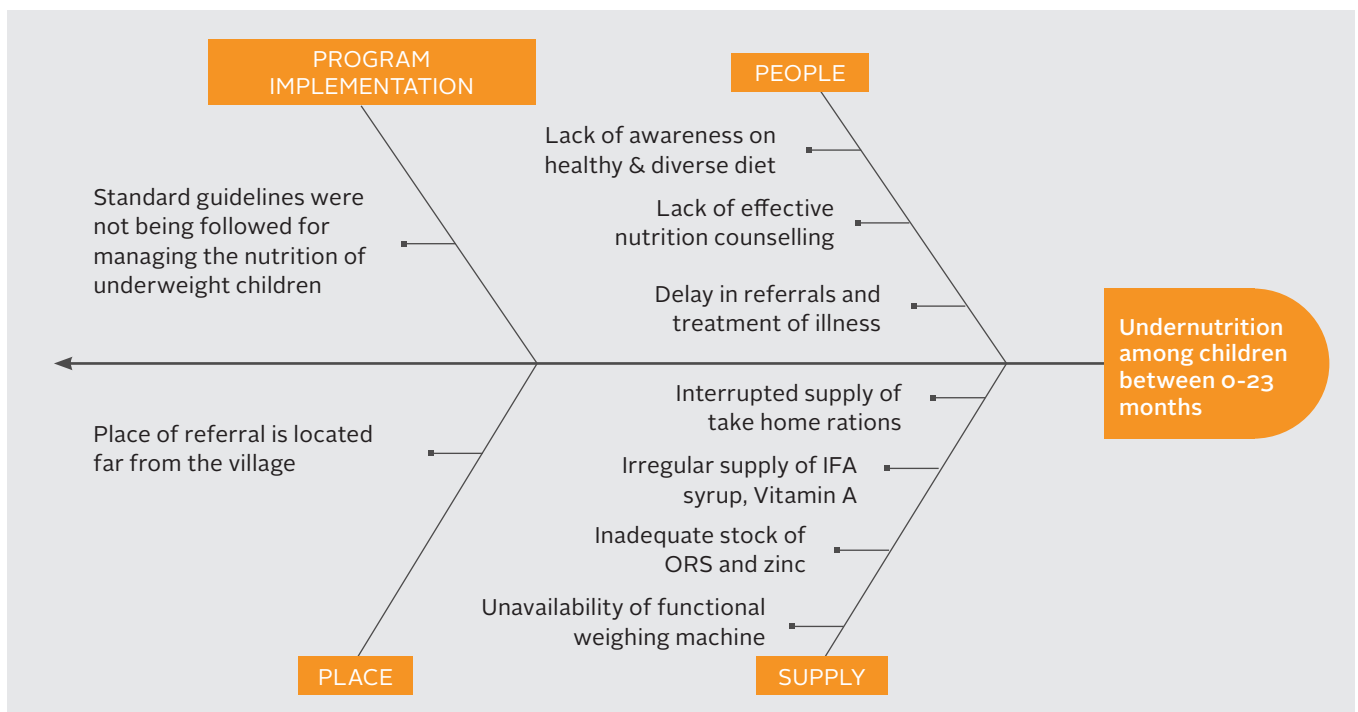


FIGURE 2: FISHBONE DIAGRAM BASED ON PROBLEM ANALYSIS

DEVELOPING A MEASUREMENT SYSTEM

The QI team, with support from the program manager and QI experts from A&T, developed a measurement and reporting mechanism for the intervention, with process and outcome indicators. Process indicators included the number of counselling sessions conducted during home visits for families with children between 0–23 months, number of children between 6–23 months receiving IFA syrup twice a week, number of children having diarrhoea who received oral rehydration solution (ORS) and zinc supplement, number of sick children referred for treatment and treated, and number of severely underweight children identified, counselled and referred to the Nutrition Rehabilitation Center (NRC). The outcome indicators included percentage of children between 0–23 months falling in the categories of normal weight, moderate and severely underweight.

A joint decision was taken to do a weekly review during the first month of intervention, followed by monthly meetings for the remainder of the pilot. The block level functionaries of ICDS and A&T's block coordinator were involved in providing regular support.

DEVELOPING THE TEST

Gaps identified during problem analysis provided the foundation to develop targeted solutions to be tested. The QI team with support from QI mentors identified issues and developed probable solutions such as:

- Providing easy-to-use guidelines to service providers for following age appropriate IYCF counselling, protocols for timely identification and referral /management of severely underweight children, and prioritizing counselling for severely underweight children in compliance with government guidelines
- Regular weighing of children as per guidelines
- Individualized counselling for mothers and caregivers using information, education and communication on optimal IYCF practices, IFA supplementation, weight measurement, prevention and timely treatment of diarrhoea with ORS, zinc and feeding during illness

To resolve supply and adequacy related issues the following steps were taken:

- Advocacy to ensure adequate IFA syrup supply and stocks of ORS and zinc
- Support to procure functional weighing machines through escalation to Child Development Project Officer



PLANNING THE TEST

In the next step, responsibility was assigned to QI team members for deploying probable solutions identified in the previous steps, and ensuring changes to the processes were integrated in the day-to-day work of health workers and their supervisors. They decided to test the following changes:

- Counselling on optimal IYCF and nutrition practices for mothers and caregivers of children between 0-23 months (once a week) and group counselling (thrice a month) during community-based events such as Annaprashan Day, Take Home Ration Distribution Day, and Village Health Sanitation and Nutrition Day.
- Regular weighing of children and immediate referrals for treatment in cases of moderate and severe underweight.
- Intensified counselling, whereby more time was allocated for counselling, along with demonstrations of techniques for breastfeeding and complementary feeding for mothers and caregivers of severely underweight children and referrals were made as needed to the NRC located in Manpur.



Weight measurement during a community-based event at Wazirganj, Gaya.

DOING THE TEST (IMPLEMENTING THE CHANGES)

The planned changes were tested in July 2022 at Amethi HSC.

STUDYING THE CHANGE TEST

The following observations were made during the testing phase:

- Counselling during home visits on the baby-related ceremonies of Godhbharai and Annaprashan were observed to be the most useful and were made a continued practice.
- As functional weighing scales were unavailable at certain Anganwadi centres, frontline workers borrowed functional weighing scales from nearby centres until new scales could be procured.
- Parents were unwilling in most cases to take their severely underweight children to Manpur NRC despite continued referrals and counselling.

ACTING ON THE OBSERVATIONS

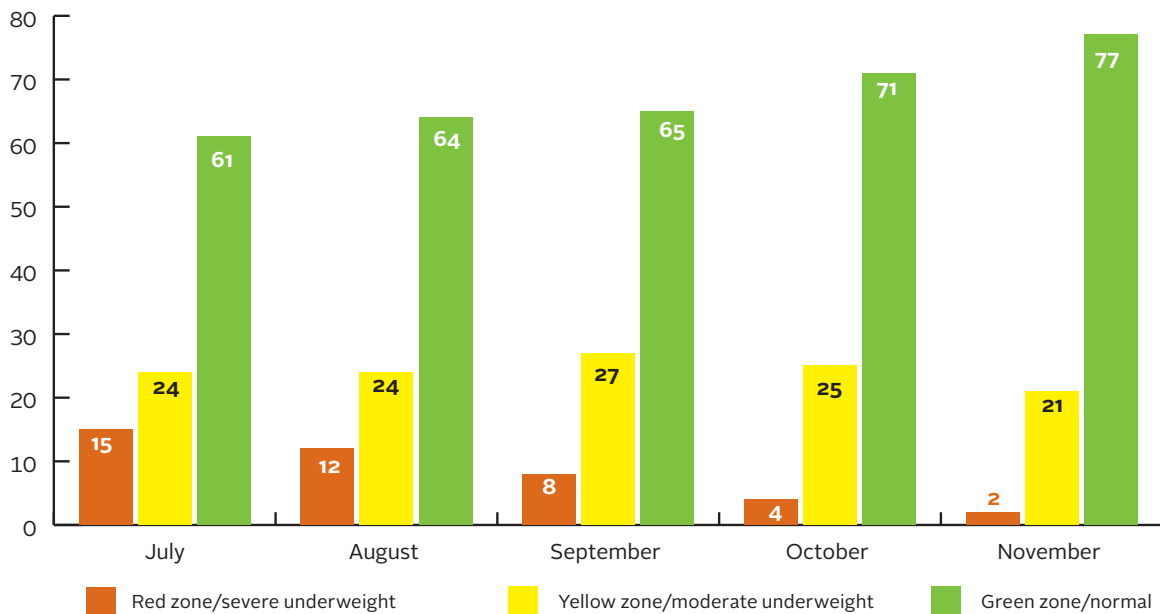
Most of the changes introduced were found to be feasible and were integrated into the system. Resistance from parents to take severely underweight children to NRC continued. However, a decision was made to continue with the counselling and convincing parents of the importance to avail treatment for their children's health.

OUTCOMES

The data from the pilot showed positive outcomes. Efforts ensured that all children between 0–23 months of age were weighed regularly at the Anganwadi centre and individualized counselling was provided to their caregivers based on the status of the child's weight. At the beginning of July 2022, 61% of children between 0–23 months were in the normal category based on their weight for age.

Within a month of the pilot, the percentage of children under normal category reached 64% and subsequently increased to 77% in November 2022, a 16% increase from the baseline. During the same period, children falling in the red zone or severely underweight category reduced from 15% to 2%. However, the percentage of children in the yellow zone or moderately underweight category reduced from around 24% to 21%.

GRAPH 1: PERCENTAGE OF CHILDREN FROM 0-23 MONTHS OF AGE FALLING IN DIFFERENT CATEGORIES BASED ON THEIR NUTRITION STATUS



WHAT WORKED WELL?

- Identifying the most useful approaches and maximizing the same, helped to calibrate processes for specific targets.
- Providing training on content and technique for counselling helped in building capacities of the frontline workers and their supervisors.
- Mentoring support provided by ICDS, health functionaries and A&T was pivotal in maintaining the momentum.
- Weekly reviews of not just outcome indicators but also process indicators helped in strengthening the service quality.

SUSTAINING THE CHANGE

The intervention has been layered on to the existing government program, leveraging the existing systems. It does not require additional measures or resources, but focuses on strengthening existing processes using intensified efforts for quality improvement. Government is supporting the scale-up of intervention in the block and there are plans to subsequently scale it up across the entire district.

“The intervention supported us in providing improved counselling during home visits and helped us to encourage mothers and their families to come for community-based events such as Annaprashan Diwas. After the training, we became particular about including the mothers-in-law and other family members during counselling sessions.”

Reena Kumari, AWW



“The state has taken several measures to strengthen quality and one of our approaches is to use one platform for multiple services. We have received support from A&T, especially in building capacity and conducting targeted training programs. We consider quality initiatives extremely important for ensuring beneficiaries get the right services at the right time.”

Mr Nilesh Kumar, District Program Manager, Gaya



“Even after running multiple programs, several women are still anemic and many children suffer from undernutrition. Extensive counselling, training of AWWs, their capacity building and motivating the AWWs are important components to ensure the success of nutrition programs, and we are constantly working towards it. Quality-centric approaches can be used to design interventions focusing on improving processes to improve indicators.”

Ms Kavita Kumari, Child Development Project Officer, Bodh Gaya



Photo credits: Abhijit, Sushila Kumari, and Anumeha Verma



The Alive & Thrive initiative, managed by FHI 360, is currently funded by the Bill & Melinda Gates Foundation, Irish Aid, the Tanoto Foundation, UNICEF, and the World Bank.

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