



Participatory Approach for Nutrition in Children Strengthening Health Education Engineering and Environment Linkages

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Problem of Undernutrition in India

India has the highest burden of undernutrition in the world, hosting 30% of the world's stunted children and nearly 50% of severely wasted children under the age of five. In order to achieve the global SDG targets, India and its high burden states must improve their picture of childhood nutrition. The profound impact of undernutrition on health, education and economic productivity are well known. Undernutrition contributes to almost half of the country's under-five mortality, through direct and indirect means. The World Bank has called the current landscape of childhood malnutrition "India's silent emergency."

According to the National Family Health Survey-4 data, only 9.6% of children aged 6 to 23 months in India receive a nutritionally adequate diet. The rate of children receiving an adequate diet drops to 3.4% in Rajasthan and as low as 0.8% in one of its tribal districts, Banswara. Additional indicators of child health in Banswara further highlight the issue of undernutrition in children below 24 months of age, with only 34% of newborns being breastfed within the first hour of life and very low rates of exclusive breastfeeding up to 6 months (56%).

Policy Drivers in India

In India, the PM's Overarching Scheme for Holistic Nourishment (POSHAN) Abhiyaan lays out five goals with specific targets to be achieved by 2022. Of these targets, three are directly related to undernutrition among children. POSHAN Abhiyaan, in its conceptualization and operationalization, brings existing Government of India programmes under a single umbrella in order to provide a synergy of purpose. In doing so, it frames the proximate and larger determinants in a socio-ecological model, which necessarily entails a multi-sectoral approach for operationalization. Thus, in the current policy and programme environment, interventions to address complementary feeding are firmly rooted within the broad rubric of the POSHAN Abhiyaan and the conceptual framework for this study closely overlaps with that of the Mission, linking together Health, Education, Engineering and Environment (HEEE).



POSHAN Abhiyaan Goals for 2022



1. Prevent and reduce stunting in children (0-6 years) by 6% @2% per annum.
2. Prevent and reduce undernutrition (underweight prevalence) in children (0-6 years) by 6% @2% per annum.
3. Reduce prevalence of anaemia among young children (6-59 months) by 9% @3% per annum
4. Reduce the prevalence of anaemia among Women and Adolescent Girls in the age group of 15-49 years by 9% @3% per annum.
5. Reduce Low Birth Weight by 6% @2% per annum.

Our Research Approach

Funded by the Global Challenges Research Fund (GCRF) and Medical Research Council (MRC), the PANCHSHEEL study is a collaboration between University College London (UCL), Save the Children, India, Jawaharlal Nehru University (JNU), Delhi and Indian Institute of

Technology (IIT), Delhi. The aim of this study is to develop a socio-culturally appropriate, tailored, integrated and interdisciplinary HEEE intervention in rural India and test its acceptability for delivery through Anganwadi Centres (AWCs) and schools.

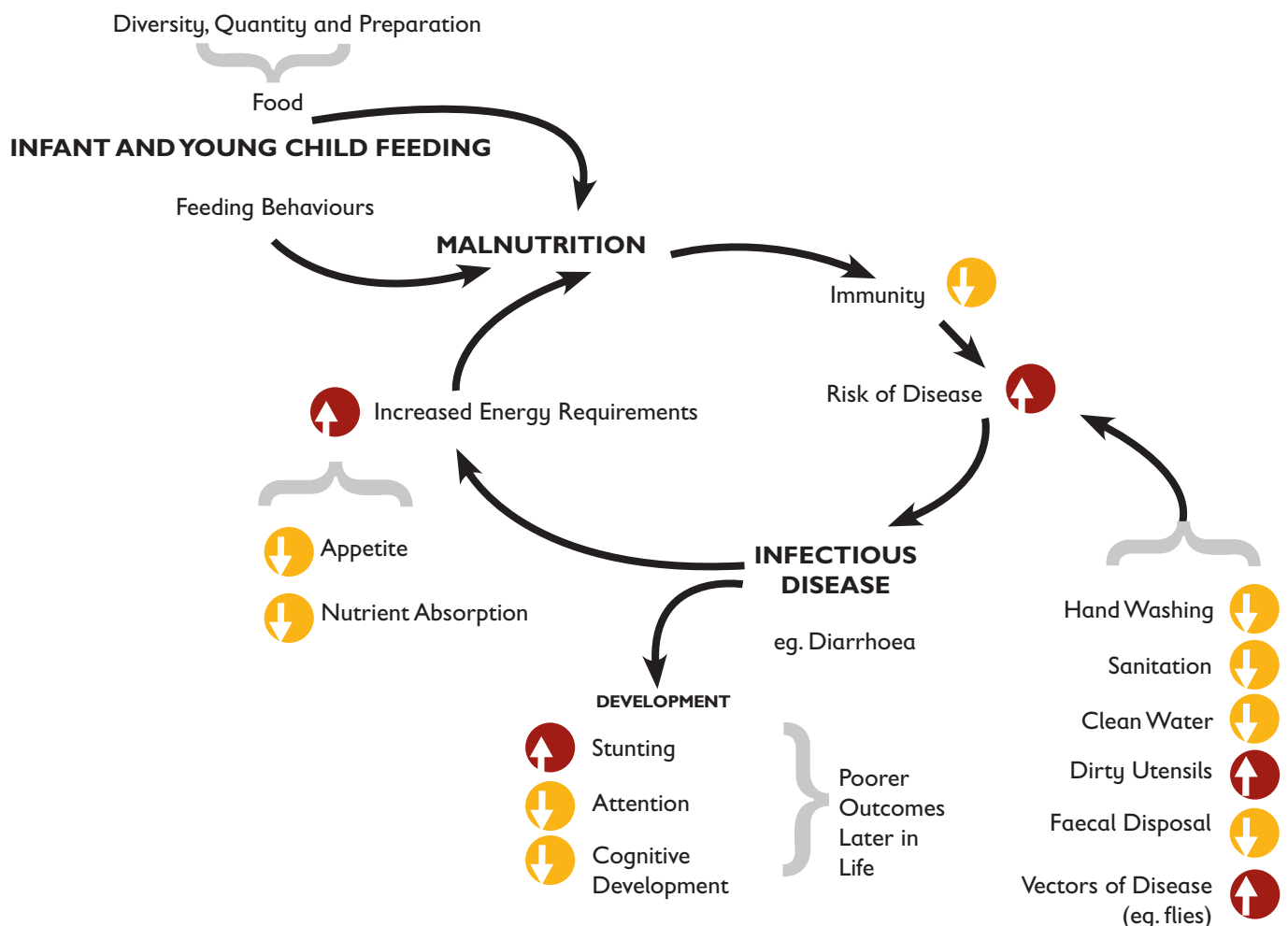


Fig 1. Feeding, Malnutrition and Infection linkages

The CODE FASTER (Lakhanpaul et al. 2018) principles guided each phase of the project to ensure the tailored intervention was co-designed, feasible, acceptable, sustainable, scalable, targeted, equitable and resource efficient. The links between infection, undernutrition, feeding practices

and child development are well established (Figure 1) and are influenced by a complex array of interrelated factors, highlighting the need for an integrated approach. The conceptual framework of the study incorporated all these factors while designing the formative research (Figure 2).

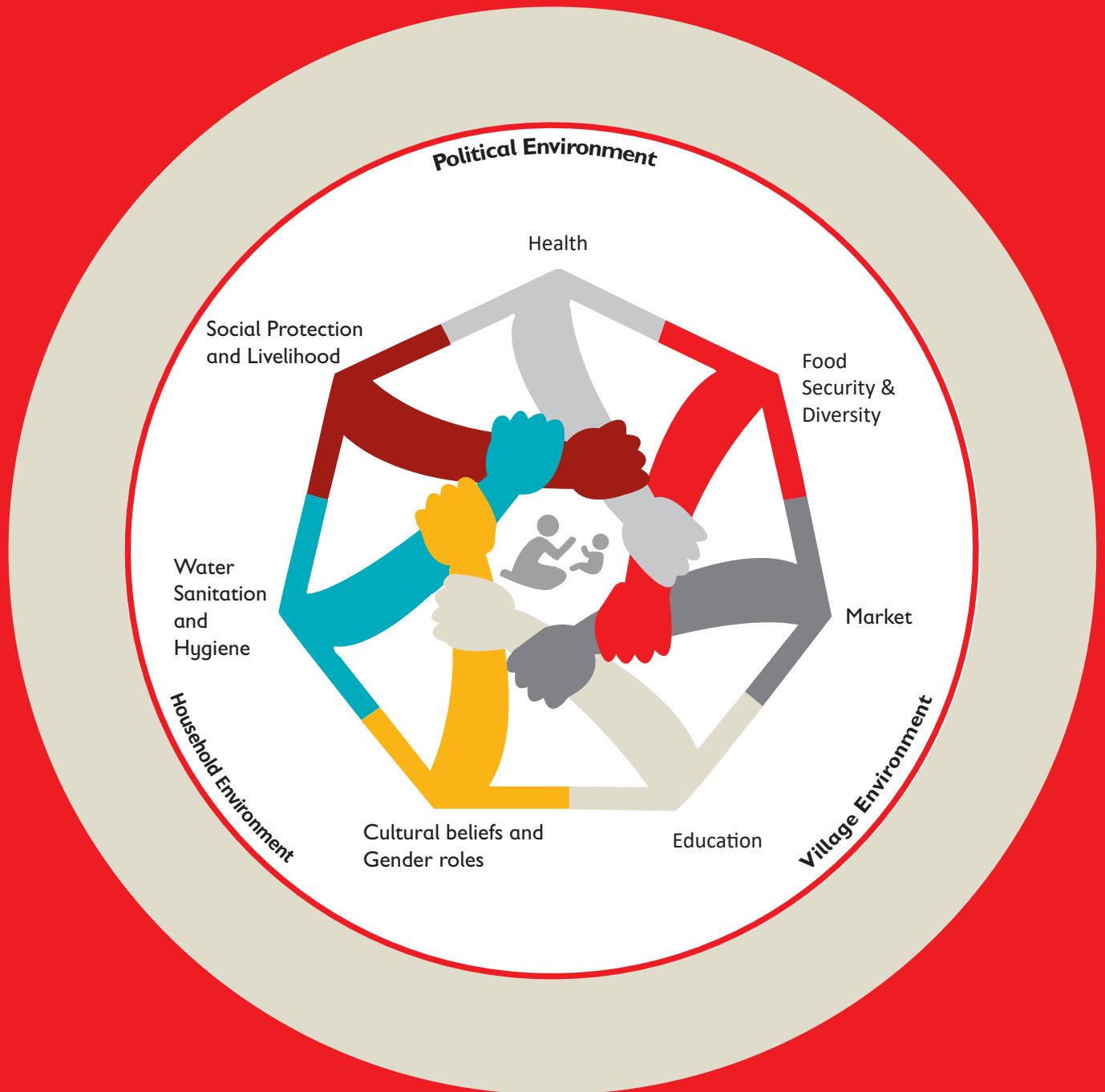


Fig 2. Factors affecting feeding practices and undernutrition among children

Formative Research

Study Area

The study was conducted in two blocks of Banswara, namely Ghatol and Kushalgarh, where 37% of the total population of the district resides (Figure 3). These two blocks were selected purposively based on access to water; while Ghatol is a canal area, Kushalgarh is not. It was hypothesized that canal areas yield better agricultural outputs, which influences food availability and reduces seasonal migration, leading to improved child nutritional status. Based on pre-determined selection criteria, nine villages (five from Ghatol and four from Kushalgarh) were selected for the study.



Fig 3. Study Area

Methodology

A mixed methods approach with both quantitative and qualitative aspects was adopted to assist understanding of the multitude of factors that influence Infant and Young Child Feeding (IYCF) practices. Quantitative data was collected through a household survey and maternal time use survey in households with children under two years of age. Qualitative data was collected using two methods:

1. Key Informant Interviews (KII) with the Anganwadi Workers (AWWs) and the Accredited Social Health Activists (ASHAs), Auxiliary Nurse Midwives (ANM), Elected Panchayat Representatives (PRI members) and School teachers and
2. Focus Group Discussions (FGD) with mothers and grandmothers of children 0-2 years of age.

A social mapping and transect walk exercise was also conducted in each of the nine study villages to map resources related to Water, Sanitation and Hygiene (WASH) as well as energy that are environmental influencers of risk of infection.

Findings

Through these mixed methods, different perspectives and data were obtained on IYCF and care practices e.g.

1. Early initiation and exclusive breastfeeding,
2. Complementary feeding and
3. Other practices for proper growth and development of the child, environmental factors, available resources (e.g. time, food, milk) which all may collectively contribute to malnutrition (Table 1).

Table 1. Key Findings of Formative Research

<p>Health and Nutrition</p> 	<ul style="list-style-type: none"> • Water given during exclusive breastfeeding period. • Consumption of convenience food was very high during complementary feeding period. • Less than 7% infants were receiving animal milk despite majority of households having dairy animals. • Low intake of Pulses due to poor availability; mostly purchased from the market. • Low intake of Vitamin A rich food despite easy availability of vegetables and fruits. • Consumption of non-vegetarian food was rare due to religious reasons. • Supply of Take-Home Ration (THR) was regular in AWCs; but mothers had little knowledge on its preparation. • Few mothers reported regular weighing of their children; MUAC tapes used selectively for children who 'looked malnourished'.
<p>Education</p> 	<ul style="list-style-type: none"> • 5 out of 9 villages had AWCs co-located within the school building • School Management Committees met once a month. • Teachers have very limited role in care of children below two years. • Awareness generation activities in school limited to issues of hygiene. • Parental participation at school was low.
<p>WASH</p> 	<ul style="list-style-type: none"> • Hand pumps were the commonest source of drinking water in both blocks. • 37% and 58% households in Ghatol and Kushalgarh respectively did not have household toilets. Only 26% and 35% of those who had toilets, used them. • Insufficient monetary incentives for toilet construction and delay in payment found to be the main reason for not constructing toilets. Non-use of toilets in Ghatol was lack of water connection in the toilets while in Kushalgarh it was due to scarcity of water. • 83% households in Ghatol used ash and mud for washing hand, while only 24% households in Kushalgarh practiced this; most mothers and grandmothers had information about correct hand washing practices. • Most households mixed kitchen waste with cow dung and used as fertilizer.
<p>Energy</p> 	<ul style="list-style-type: none"> • Majority houses use firewood and dung cakes for cooking. • BPL houses have poor access to LPG. Cost incurred in refilling and altered taste of food when not cooked over wood were some of the main reasons for not accessing LPG. • Families with LPG connection did not get kerosene based on government policy.

Intervention Designing

In order to create an intervention which was tailored to the community needs, the study adopted a participatory approach at every phase. This enabled us to achieve a deeper understanding of the facilitators and barriers around optimal IYCF practices. This community approach is also echoed in our focus on utilising schools as a platform for community engagement and mobilization. We structured our work around the existing AWC network in India, which is heavily involved in current health initiatives and is now co-located with schools, creating an opportunity to develop 'community education and innovation hubs'. This was complemented by expert advice, evidence (existing and new from the project) and Non Government Organization (NGO) partner expertise (Figure 4).



Fig 4. Sources of input for intervention design

Two Unique Features of PANChSHEEEL Study

Schools as a Community Hub

For the delivery of the PANChSHEEEL intervention, schools were identified as a potential platform by both teachers and community members. The teachers and schools were vital sources of information about the village, were well respected by the community and were interested in further engaging children as well as with their parents. Enrolment in school was high across the nine villages and schools were also functioning regularly as well as efficiently to deliver initiatives such as the mid-day meal to children, highlighting their potential reliability as an intervention delivery platform. The recent co-location of schools with AWC provided an additional opportunity and the school teachers proactively suggested engaging with the community.



Photo 1 Community engagement for co-designing of activities



Photo 2 Community Awareness Event in School on 26th January

Community Engagement

The community engagement approach was used in formative research as well as for co-designing of the intervention package to impress upon the principle of bottom up research. This facilitated a deeper understanding of the facilitators and barriers around optimal IYCF practices. To this end, the PANChSHEEEL team consisted of two members selected from the community who took on the role as Community Researchers (CR), A group of 26 Community Champions (CC) who were trained through four phases of capacity building process including: (i) building understanding of health and nutrition issues in the community (ii) improving awareness of village level for a and service delivery institutions, (iii) learning the roles and responsibilities of village level functionaries, and (iv) discussing their potential roles and responsibilities for promoting IYCF with these institutions. To successfully overcome the barriers in explaining the concept of CCs to community, a Speech Note was prepared by the team. Creative methods of engagement will be required for sustaining long term motivation of CCs.

A cascaded iterative process was adopted to arrive at a syncretic intervention package to holistically improve IYCF (Figure 5). The approach was based on principles of intervention mapping, underpinned by psychological behaviour change theory (Steps 2 - 3), followed by practical translation into an intervention package based on the Motivation, Awareness, Resources, Knowledge and Skills (MARKS) approach (Lakhanpaul et al, 2018) in Steps 4 - 5.

Step 1 was the analysis of the formative research, which captured current feeding practices as well as facilitators and barriers to optimal feeding practices. In this step, the data was summarized at three levels: (i) household, (ii) village and (iii) governance, across four themes: (i) Health and nutrition, (ii) Education, (iii) WASH and (iv) Energy (see Figure 7). While Community Researchers (CR) and Core Team (CT) conducted the data collection in the formative phase jointly, the CT did the analysis of the data. The output of this step was an emergent model (Figure 6) comprising various factors that were associated with or influenced IYCF and care practices in the community.

Step 2 was dedicated to creating a joint understanding of CT and CR about the Settings Approach to Health Promotion. After building the capacity of the CR about the theory and practice of health promotion, they classified the factors into modifiable and non-modifiable across four levels: Household, Community, Organization and Government.

Step 3 involved sharing the framework with the CCs to record their views about modifiability of these factors and map the community stakeholders who would be appropriate for engagement in co-designing.

Step 4 involved selection of one village from each block for an intensive co-designing exercise with the community. (See Photo 1) In addition, teachers and School Management Committeemembers of the nine villages were also consulted.

Step 5 included mapping the responses of the community as well as experiences of the partners and evidences from national and global programmes to arrive at a consolidated intervention package (IP1) of possible interventions, which was then discussed through an iterative exercise among key CT.

Step 6 included discussions related to IP1 with the Block and District officials of the relevant departments to arrive at the second intervention package (IP2).

Step 7 included refinement (acceptability) workshop where IP2 was shared with key members from all nine study villages across the two blocks. Based on the comments received in these workshops, the intervention package 3 (IP3) was prepared (Figure 7). To further inform refinement of the intervention package, pilot events were held to assess the promotion of schools as a community hub. On 26th January 2019, the PANChSHEEL team hosted events in government schools in Garnawat (Ghatol Block) and Devdasath (Kushalgarh Block). The activities included a skit on hand washing and

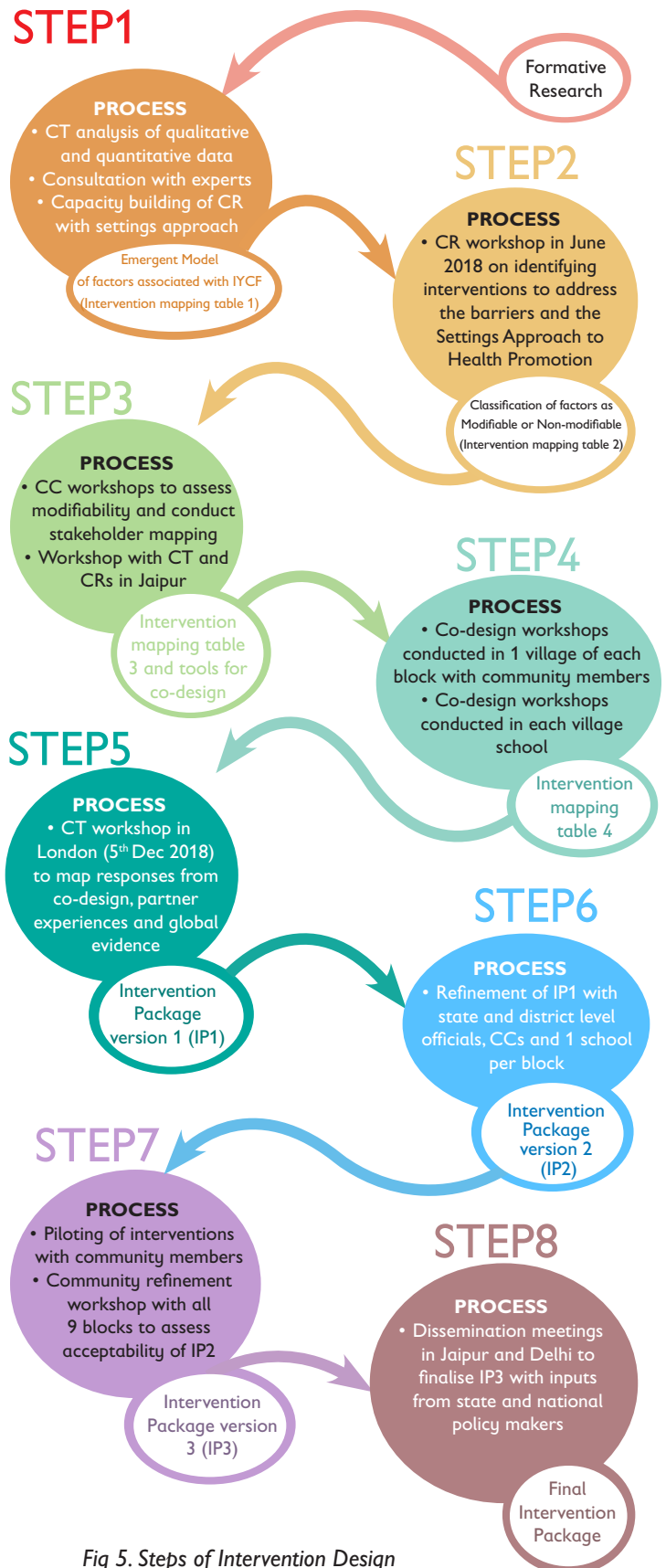


Fig 5. Steps of Intervention Design

nutrition, movie on Nutrition, and Health & hygiene, a quiz, a nutrition pyramid session and a pledge taken by community members and leaders. (See Photo 2)

Step 8 is the final step in the co-creation exercise aimed to finalize the IP3 with inputs from state and national policy makers respectively through dissemination meetings organized in Jaipur and Delhi.

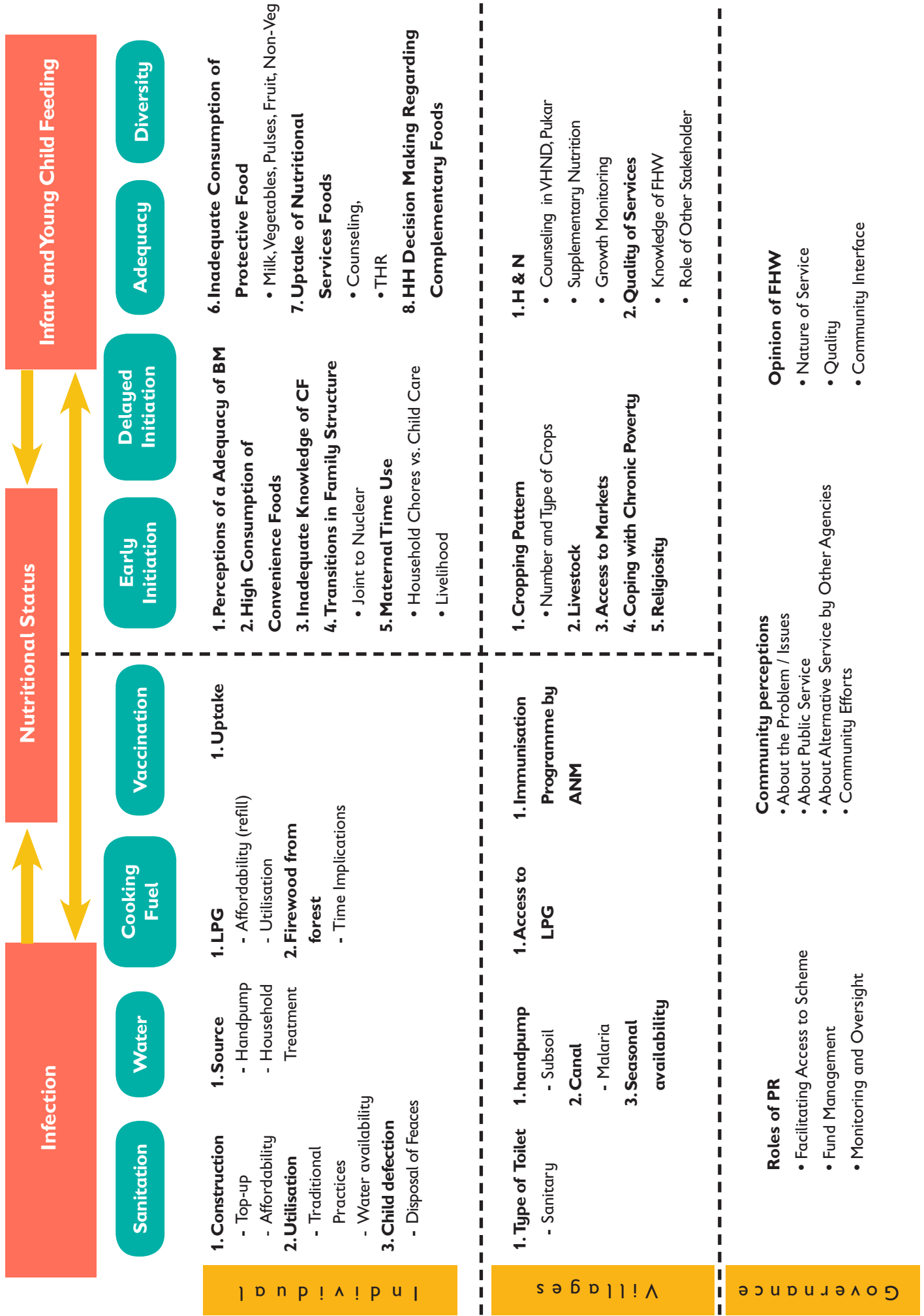
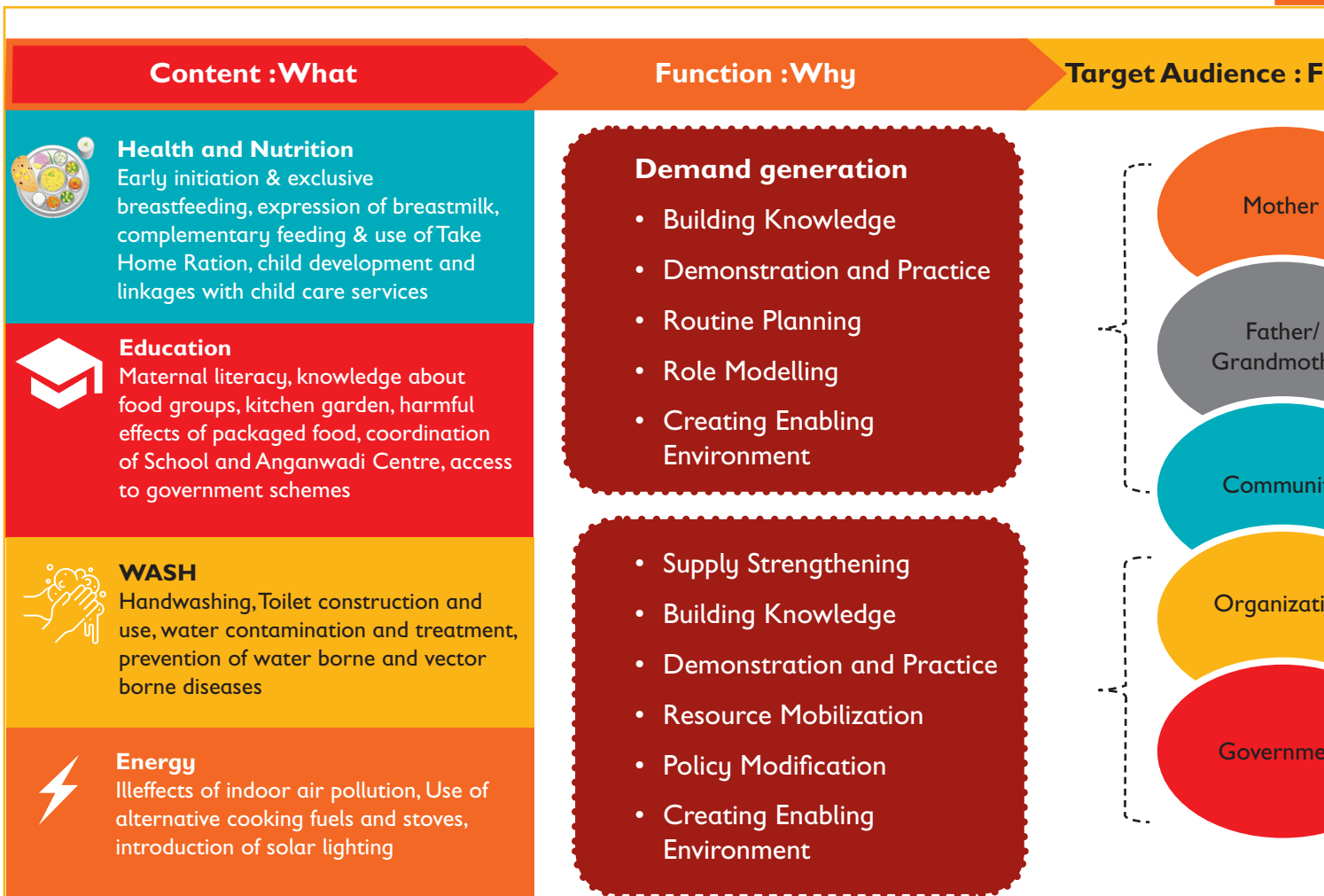
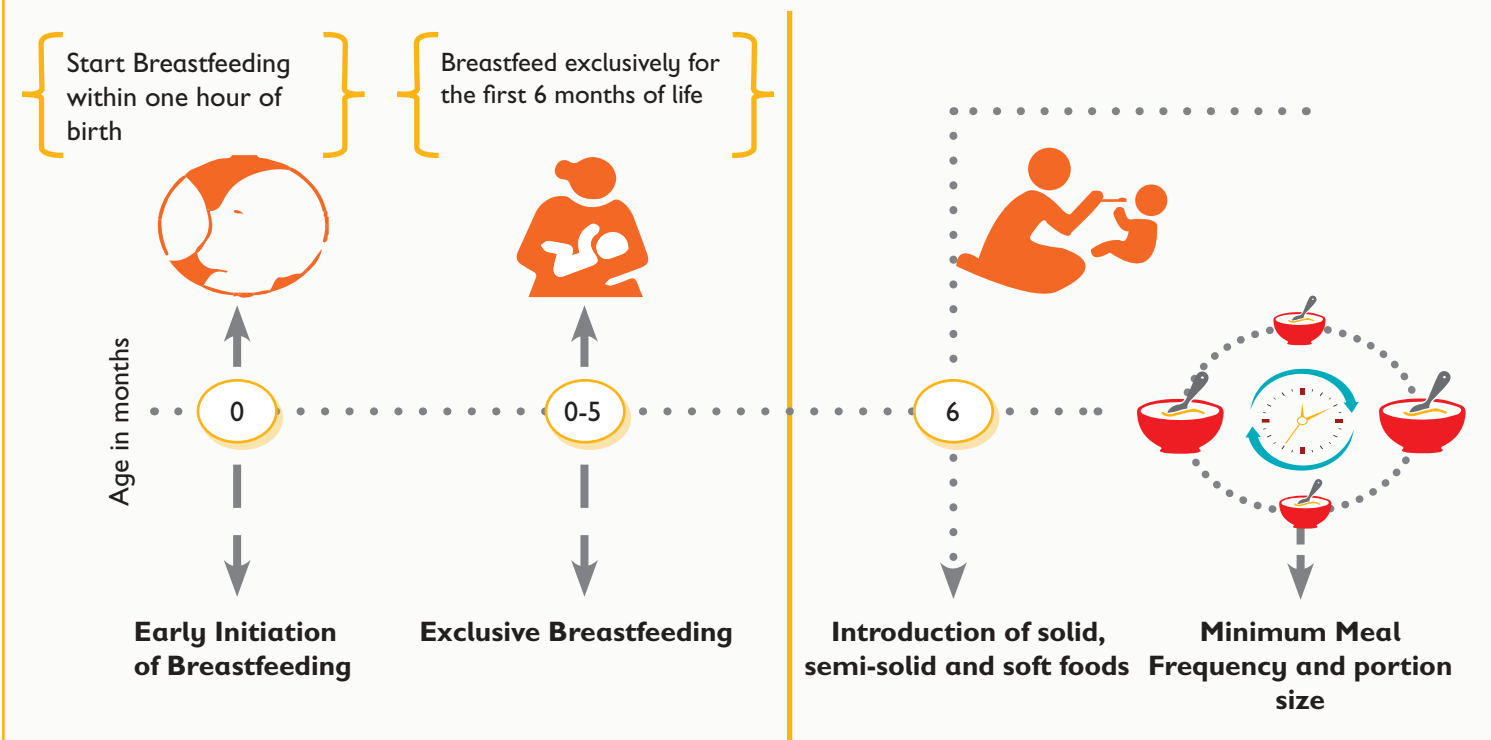
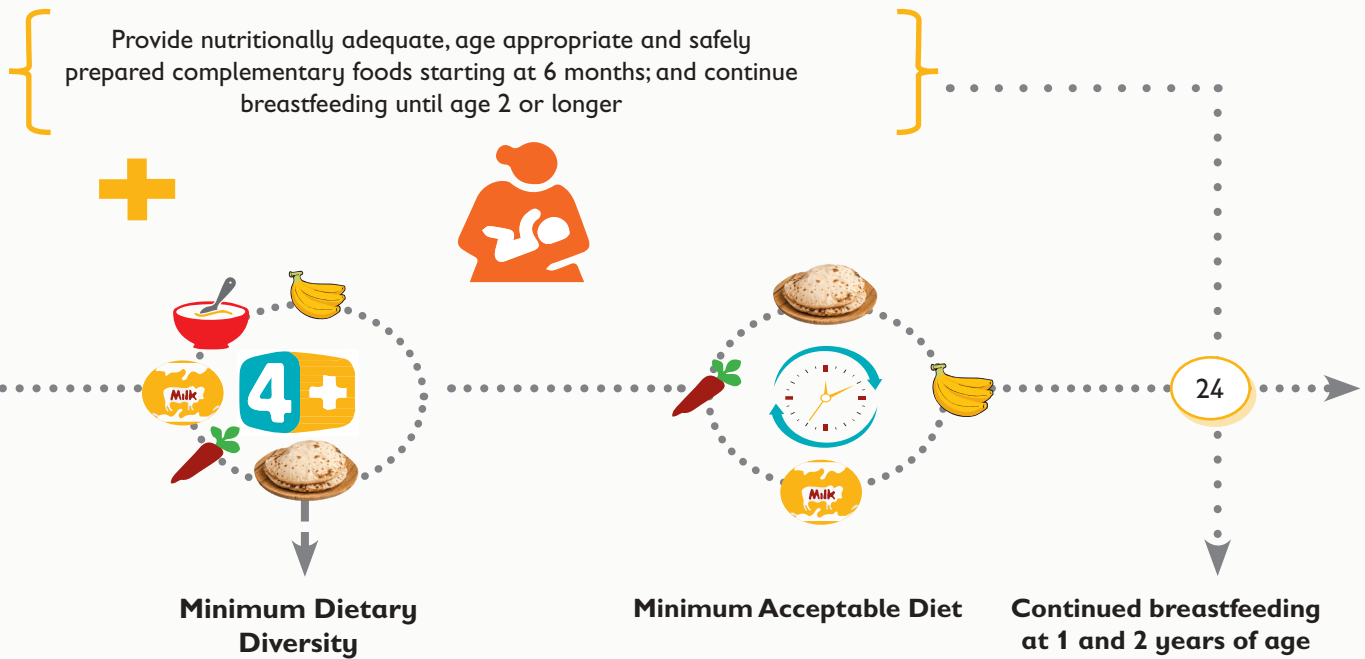


Fig 6. Emergent model

Fig. 7 Development of an inter-disciplinary and socio-culturally appropriate intervent



Intervention package to optimize Infant and Young Child Feeding Practices



For Whom

Platform : How

Channel : Who

- Home visits
- Community Meetings: Mothers, Mothers + Grandmothers, Fathers.
- Committee Meetings: Village Health Sanitation and Nutrition Committee, School Management Committee
- Video shows, Puppetry
- Students' Rally
- Use of pictorial tools

- On-job Training
- Supportive Supervision
- Advocacy Meetings
- Media Campaign

Frontline Health Functionaries – ANM, AWW and ASHA
 School Children
 Community Champions
 Teachers
 Self Help Groups
 Elected Representatives and Village Level Officials
 Non-Government Organizations

Block and District level officials
 Non-Government Organizations



Journey at a glance...

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