Government of Tamil Nadu
State Planning Commission

REPORT

2023 - 2024

The issues of Malnourishment in the first 1000 days of children in Tamil Nadu with specific reference to Convergence

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State Planning Commission

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Foreword

The First 1000 Days: A Crucial Window for Child Development

Tamil Nadu is a pioneer in designing and implementing public health programmes in the Country. The State is also a forerunner in promoting early childhood care for survival, growth and development. Given the importance of early childhood care in sustaining and improving adult health, it is imperative to address issues around malnutrition during the first 1,000 days of life. This period, encompassing pregnancy, infancy and early childhood, represents a critical phase of care to ensure robust human development.

The State Planning Commission took up a study on the existing challenges combating convergence among various implementing departments & schemes and explores potential solutions to ensure all pregnant women, lactating mothers and children have access to proper nutrition during this vital period. The study was assigned to the Integrated Rural Community Development Society (IRCDS), Tiruvallur District.

Sequential listing of services rendered through the Government schemes and programmes, administrative process of delivery by various departments and existing level of convergence between the departments were studied in the sample area of Semmancheri in Sholinganallur zone of Chennai city, representing the urban habitat and Poondi Block of Tiruvallur District, representing a semi rural area.

The study recommends a 'three pronged approach' – individual, household and community level with micro action plan for convergence of the departments to tackle malnutrition during the first 1,000 days of life of the children. Necessary strategies with clear roadmap could be framed for ensuring convergence among departments to improve the nutritional status of children in the first 1000 days.

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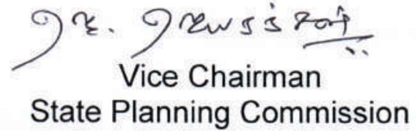
The findings of the study are crucial in framing strategies to combat child malnutrition. Investing in early childhood nutrition is not just an ethical imperative, but critical to sustain socio-economic development. By ensuring children reach their full potential, we build a healthier, more productive future for our society. This is another democratisation, democratisation of health that would reinforce the Dravidian Model of Development.

I commend the study team of the Integrated Rural Community Development Society (IRCDS), Tiruvallur District for their tireless efforts and insightful suggestions for the study. I urge policymakers and all stakeholders to carefully consider the findings and work collaboratively to implement effective solutions.

Together, we can ensure that every child has the best chance to be "Malnutrition Free" in the first 1,000 days and beyond.



Vice Chairman
State Planning Commission

Acknowledgement

The State Planning Commission entrusted the study “The issues of malnourishment in the first 1000 days of children in Tamil Nadu with specific reference to Convergence” to the Integrated Rural Community Development Society (IRCDS), Tiruvallur. In a very special way, we would like to profusely thank Dr.J.Jeyaranjan,Vice-Chairman, Tamil Nadu State Planning Commission for initiating and entrusting the work, Prof. R. Srinivasan, Full-Time Member and Prof. M. Vijayabaskar, Additional Full-Time Member for guiding the work from time to time. We would also like to extend our sincere thanks to Tmt.Sudha.S, IFS., Member Secretary (FAC), State Planning Commission for the facilitation and coordination in conducting the study and for providing enormous support throughout the work. We thank Dr.G.N.Krupa, Head of the Division and all the Staff from Health and Social Welfare Division, State Planning Commission fortheir constant support.

We thank Dr.Rama Narayanan, community nutrition expert, for designing and conducting the study and for report preparation. We are indebted to the parents, child care workers, supervisors, village health nurses and urban health nurses of Poondi Block, Thiruvallur district and Semmancheri, Sholinganallur zone in Greater Chennai Corporation for giving their time and enthusiastically participating in the Focus Group Discussions and observing and documenting the child feeding sessions; but for their patient and sincere co-operation this study would not have been feasible.

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1

Introduction

The first thousand days

While the first six or eight years of life constitute early childhood, the period from conception, birth and upto two years of age, referred to as the first thousand days,holds special significance. It is characterized by rapid growth and neurodevelopment; nutrient requirements are high and any deficiency can cause the entire programming to go wrong affecting the whole life[1]. Hence it is a period of great vulnerability. Paediatric research shows that the brain reaches 80% of its adult size between birth to two years of age and makes about 1 million neural connections[2]. Good nutrition and meaningful interaction between the child and its environment is crucial for optimal development. Any set back during this period causes irreparable damage which affects the human being's growth and development potential. Thus the first thousand days offers an unique window of opportunity for laying the foundation for optimum health, growth and neuro development across the lifespan.

There are three distinct phases in the first thousand days of life. Pregnancy - wherein the fertilized ovum develops into a full-fledged individual in the mother's womb. Safe motherhood resulting in a healthy off spring is possible only when women are well-nourished and above the age of twenty-one. A well balanced diet with adequate amounts of macro nutrients such as energy and protein and micro nutrients such as vitamins and minerals, especially folic acid and iodine[3], is needed during pregnancy to nurture the fetus. Deficiency of folic acid during pregnancy could result in the child being born with neural tube defect, a severe disorder of the brain and the spine[4]. Early macronutrient deficiency is linked with lower IQ scores, reduced school success and behavioural dysfunction[4]. Safe motherhood includes eating a balanced diet with the needed nutrients in adequate quantities, sufficient rest, appropriate ante natal care involving timely immunization, monitoring of weight gain, screening for any fetal anomaly and non-communicable diseases (NCDs), which should culminate in a safe delivery for the mother and infant. Poor intra uterine growth of the fetus during pregnancy, preterm birth or teenage pregnancies can result in low birth weight (LBW). Low birth weight is not only a cause of under nutrition but leads to the development of NCDs such as diabetes and hyper tension in later life.

Infancy, the period from birth to twelve months is a phase of rapid changes for the infant not only from the perspective of growth and development but also with regard to its interaction with the environment. Breastfeeding begins within the first two hours of birth, since colostrum, the 'first milk' is a powerhouse of nutrients and immune factors. Exclusive breastfeeding (only breast milk without even water) is recommended as a best practice for the first six months. Complementary feeding begins from the seventh month wherein, besides breast milk, the infant is gradually introduced to other foods. Starting with easily digestible mashed food the infant proceeds to semi solid and solid food. From being able to only suckle, the infant learns to

eat with the aid of a device or is fed by hand by a caregiver. Different foods should be introduced one by one with gradual increase in the quantity. By the time the child is one year of age it should be introduced to all family foods. New tastes and the different food textures are exciting to infants, who can start picking up food between eight to ten months. Thus within a narrow age range of six months, the infants undergo several transitions. Feeding is a skilled activity requiring knowledge, skill and patience on the part of the caregiver.

In toddlerhood between thirteen to twenty four months, the brain continues to develop by making connections between the neurons. Adequate nutrition with psychosocial stimulation is essential for both physical growth and cognitive development. Feeding is not simply a mechanical activity. Besides nourishment, feeding sessions provide an interactive space between the caregiver and the child, for a satisfactory sensory experience. While lack of access to a balanced diet is usually considered as the causal factor for under nutrition, inappropriate or inadequate feeding practices can also lead to under nutrition.

Undernutrition in young children is manifest as stunting, wasting and underweight. Stunting signifies arrested growth due to long periods of inadequate food intake. In wasting the linear growth is protected but the corresponding weight for the given height is not achieved. This could be due to short term deficiency in food intake caused by episodes of illnesses. Underweight which is inadequate weight for age, is a composite indicator including stunting and wasting. The process of stunting could begin early on, from infancy, due to low birth weight and inadequate catch up growth, or later due to widening gap between intake and requirement. This could manifest as ‘failure to thrive’ or not gaining adequate weight over a period of time. If stunting is not reversed it would result in the individual not attaining her true potential. Hence ensuring adequate growth and development during the first thousand days of life is essential for a healthy citizenry.

The context

Current Scenario

A comparative profile of women, pregnant, lactating mothers and children below five years for India and Tamilnadu, based on the National Family Health Survey data[5 & 6] is provided in Table 1.

Table 1. Comparative profile of nutritional status of women and children in Tamilnadu

No	Category	India (%)	Tamilnadu (%)
1	Women age 20-24 years married before age 18 years	23.3	12.8
2	Women whose BMI* is <18.5 (undernourished)	18.7	12.6
3	Women whose BMI is >or= 25(obese)	24	40.4
4	Children under age 3 years breastfed within one hour of birth	41.8	60.2
5	Children under 6 months of age exclusively breastfed	63.7	55.1
6	Children between 6-23 months receiving an adequate diet**	11.3	16.3
7	Children under 5 years who are stunted	35.5	25
8	Children under 5 years who are wasted	19.3	14.6
9	Children under 5 years who are underweight	32.1	22
10	Children under 5 years who are anaemic	67.1	57.4
11	Non-pregnant women age 15-49 years who are anaemic (hb <12 gm/dl)	57.2	53.6
12	Pregnant women age 15-49 years who are anaemic (hb < 11 gm/dl)	52.2	48.3

*BMI is Body Mass Index, which is calculated as Weight in kilograms (Kg)/Height in meters squared (m^2).

**adequate diet includes breastmilk and atleast four food groups with adequate meal frequency

The national average as well as Tamil Nadu data shows the co-existence of under nutrition, overweight/obesity as well as micronutrient malnutrition among adult women. However,in Tamilnadu, prevalence of undernutrition is lower while that of obesity is much higher. Nevertheless, in a state where 80% of women have attended school and 84% are literate[6], nearly13% each are either undernourished or married off before the age of 21, showing that there is still scope for improvement. Though Institutional delivery is near universal, only 60% of newborns receive mother's milk within the first hour, signifying the role that hospital staff have to play. Percentage of children who are exclusively breastfed under the first six months is 8%

lower than that of the national average. Though percentage of stunted, underweight and anaemic children is nearly 10% lower than that of the national average, it is still high with nearly a quarter of the children being undernourished and more than half being anaemic. Child data is not desegregated for 0-2 years, but combined with the overall data for 0-6 year old children.

The present study was undertaken with the following objectives :

- To list all Central and State Government schemes with the implementing departments, their financial allocations that address the nutritional requirements of pregnant women, lactating mothers and children up to 2 years of age (in the first 1000 days) and the issues that are addressed by the schemes/programmes.
- To document the administrative process of delivery of services and commodities in terms of various interventions carried out by various departments in the first 1000 days sequentially and level of institutional arrangements in terms of convergence between them.
- To identify the challenges and gaps in all programmes in ensuring convergence between various departments.
- Derive a State Specific Strategy and suggest suitable policy measures for convergence of line departments in combating malnourishment among children. The convergence plan at the district level and block level should be clearly spelt out.
- Design standard institutional mechanism /define standard process for addressing malnourishment in Tamil Nadu.
- Prepare a qualitative report on Focused Group Discussion with beneficiaries about the services rendered to public through welfare programmes/schemes related to nutritional development of child, pregnant women and lactating mothers.
- Prepare a micro plan for convergence with related key departments and existing community workers/ SHGs and field functionaries at one PHC and attached ICDS Centre.

Based on the above objectives, the following **key deliverables** have been outlined :

- List of various Central and State Government schemes that address the issue of malnutrition in the first 1000 days of life and their provisions.
- Sequential listing of services rendered through these schemes and programmes, administrative process of delivery by various departments and existing level of convergence between them.
- Perceptions of users of services with regard to implementation of schemes related to pregnant women, lactating mothers and young children and perceptions of service providers with regard to lacunae and convergence, based on Focus Group Discussion (FGDs).
- The challenges and gaps in convergence between various government departments.
- State specific strategy and suitable policy measures for convergence of line departments at district and block levels and micro plan of convergence with related key departments at one PHC and corresponding ICDS centres.

2

Methodology

Definitions of terms

As a first step the following concepts were defined for the purpose of the study

1) Undernutrition – condition where there is a deficiency of nutrients such as calories, proteins, vitamins or minerals manifest as stunting, wasting, underweight or anaemia
2) Over nutrition –condition where there is an excessive intake of one or more nutrients leading to metabolic conditions such as obesity
3) Malnutrition – condition that includes both under nutrition and excess of nutrients
4) Stunting – low height - for - age indicating prolonged period of low food intake
5) Wasting – low weight -for - height indicating recent and severe weight loss
6) Underweight – low weight – for – age which is a composite indicator that includes both stunting and wasting

Criteria for selection of schemes

Since the focus of the study was on malnutrition in the first 1000 days of life, **the criteria** for the selection of schemes were based on the fact that they should influence health and nutritional outcomes in pregnant, lactating mothers, young children and adolescent girls, since they are the 'future mothers'. These included

- All direct food based interventions for pregnant women, lactating mothers and children below two years of age and adolescent girls
- Cash transfers to pregnant women and lactating mothers
- Other health and nutritional services provided to mothers, children under two years of age and adolescent girls at the community level.

To illustrate, the supplementary nutrition provided to mothers during pregnancy has been included in the study, since consumption of nutritious food is supposed to lead to the birth of a healthy child. On the other hand, the Janani Sishu Suraksha Yojana or the JSSY scheme in which mothers who delivered at the hospital are dropped back at home on discharge, has not been included since the scheme does not have any bearing on the health and nutritional status of the mothers or their infants. While breastmilk banks in district hospitals provide milk to the new born children of very sick mothers, these have not been included, since they are not available tothe community at large.Based on the above criteria, the following schemes, their provisions and their convergence with the concerned line departments were studied.

A) The Integrated Child Development and Services Scheme (ICDS) that provides a package of health and nutritional services to mothers, young children and adolescent girls
B) Dr Muthulakshmi Reddy Scheme of maternity support(Dr Muthulakshmi Reddy Magapperu Uthavi Thittam)– that provides conditional cash transferto women during pregnancy
C) Janani Suraksha Yojana or cash transfer to mothers soon after delivery

Study Implementation

A preliminary meeting was held to conceptualize the study, between the team leader of IRCDS who led the study and the community nutrition expert who was commissioned to conduct the research.It was decided that the study would be conducted at two levels. First – to study the policy notes of the concerned line departments that implemented these schemes for understanding the provisions and their financial allocations. Accordingly the policy notes of Social Welfare and Women Empowerment department (formerly Nutritious Noon Meal Programme department), Health and Family Welfare department and Rural Development and Panchayat Raj department were obtained [7-18]. Second - to understand the existing synergy and convergence between various government departments in addressing under nutrition in children 0-2 yearsand to make suggestions for strengthening the same.This is best addressed through qualitative research, which is concerned with description and interpretation rather than quantitative estimates A mix of methodologies was used for gathering information.

1. A one day workshop separately with Anganwadi workers and Village/Urban Health Nurses (VHN/UHN) to discuss the various services and schemes offered to pregnant and lactating mothers and children upto two years of age at the community level and their implementation.
2. Interviews with government officialsat various levels from the Directorate of ICDS under the Social Welfare and Women Empowerment department, from the Directorate of Public Health and Preventive Medicine operating under Health and Family Welfare Department and Rural Development and Panchayat Raj department.
3. Focus Group discussion and interviews held with mothers and fathers of children below two years of age, who utilized the services
4. Observation of the feeding session of 10 children between seven months and two years along with their feeding and medical history was undertaken to understand care practices at the household level and how they have been influenced by the schemes and services

For the field study two areas were selected namely, Semmancheri in Sholingallur zone of Chennai city, representing the urban habitat and Poondi Block of Thiruvallur District near Chennai, representing a semi rural area (Fig 1).

Figure 1. Map showing study areas

The study participants were parents of children between 0-2 years and various categories of government personnel such as the Anganwadi Workers, Village Health Nurses (VHNs), Urban Health Nurses (UHNs), ICDS supervisors, Child Development Project Officers (CDPOs), Program Officers (POs), Representatives from the Directorate of ICDS, Block Medical Officer, Poondi and Medical Officer of Urban Community Health Centre, Chennai, District Maternal and Child Health Officer, Thiruvallur and staff from the Department of Rural Development. They were considered as major stakeholders. It was decided that 0-2 year old children would include

- households with normal children, native to the region
- Households of special children, native to the region
- families of children of migrant workers

Ponthavakkam and Chaturangapetttai were the two villages chosen in Poondi Block, where FGDs were conducted separately with fathers and mothers. A similar exercise was followed in Semmancheri.Since there is no population listing of households with special children, two such hosueholds were identified by the staff of IRCDS with help from Anganwadi workers. A Semi

structured interviewwas held with parents of two special children from Goonipalayam village in Poondi Block. Since families of migrant workers worked in brick kilns close to the study sites in Poondi Block, FGDs were held with the mothers of young children, with the help of a checklist (Annexure 1). Interviews were held with two mothers in Semmancheri and one each in Ponthavakkam and Chaturangapettai by the community nutrition expert, using a checklist to assess child feeding practices (Annexure 2) In addition observation of child feeding session with the help of an observation schedule (Annexure 3)was undertaken by anganwadi workers in both study sites. The anganwadi worker and the respective VHN/UHN of the area had to discuss the health and nutritional status of the observed child and identify if referral service was needed. While six observations were made in Semmancheri, four observations were made, one each in Monnavedu, Monnavedupettai, Beemanthoppu A and Beemanthoppu B villages in Poondi, by anganwadi workers.

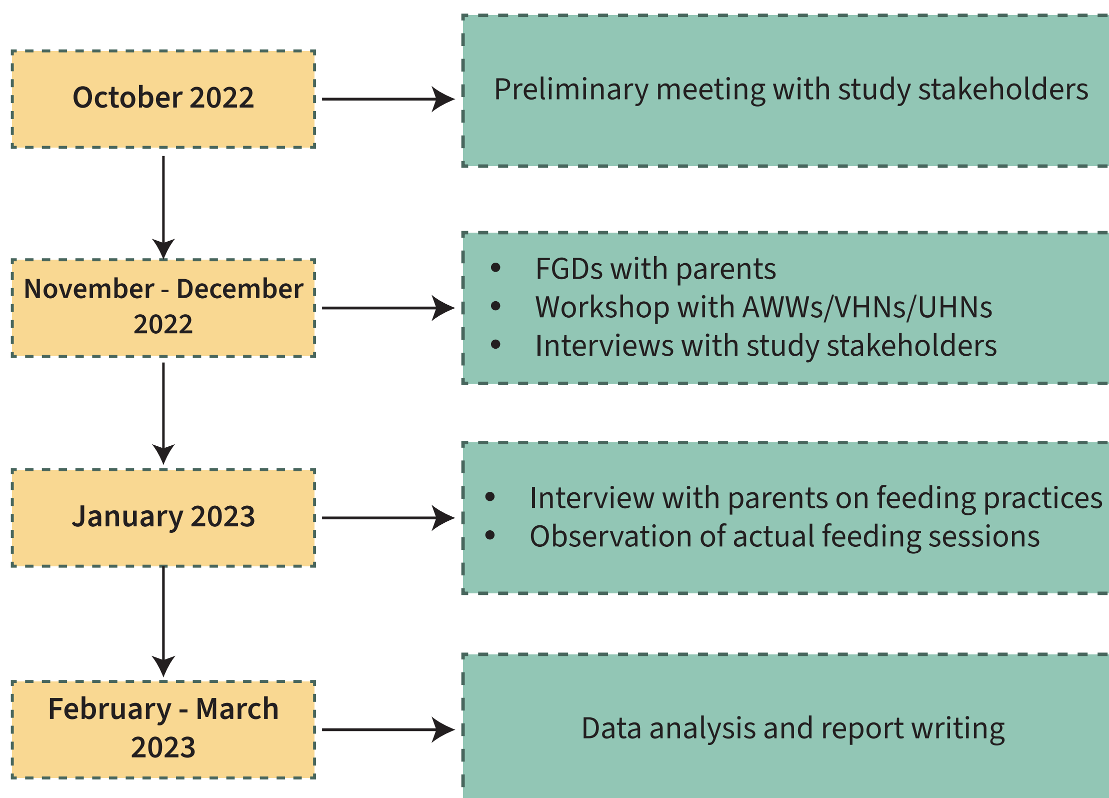
A half a day workshop was conducted foranganwadi workers and VHNs of Kachur PHC in Poondi Block and with Anganwadi Workers and UHNs of Urban Health Care Centre in Semmancheri. In the workshop the participants were divided into four groups. Each group was given a topic namely, ante natal period; delivery and post natal period; period from birth to two years and adolescence. Under each topic, the group members had to list out the services that they provided to the users and identify the other line departments and functionaries who supported them in the endeavour. They were requested to identify the challenges faced in achieving convergence at the field level and suggest ways of addressing them. The information obtained from both groups were compared to identify distinct responsibilities for each group, areas of convergence and networking and duplication of services, if any. Others who were interviewed were CDPOs, supervisors, POs, officials at ICDS Directorate in Chennai, Medical Officers of the PHC and health centre and District Maternal and Child Welfare Officer. The staff of Rural Development Department provided the blueprint of a model ICDS centre (Annexure 4). The power point presentation made by the District Program Officer of ICDS, Thiruvallur in a convergence meeting held under the District Collector's leadership was obtained. Total number of stakeholders who participated in the study was 115 (Table 2).

Table 2. Category and number of participants in the study (N= 115)

No	Category	Poondi Block, Thiruvallur	Semmanchery, Chennai	Total
1	Fathers	8	4	12
2	Mothers	28*	18	46
3	AWW	13	6	19
4	VHNs ,UHNs	21	10	31
5	Medical Officers	1	1	2
6	Program officers	1	1	2
7	CDPO	1	1	2
8	Staff Rural Dev.dept	1	-	1
	Total	**74**	**41**	**115**

*includes migrants living close to the study sites
The timeline of the study was between November 2022 and January 2023.

Figure 2. Timeline of activities



An inception meeting was held on 18th January 2023 wherein the status of the study was presented. Suggestions given by the State Planning Commission members were incorporated in the study. Preliminary presentation of the draft report was made on March 16th 2023. Based on the suggestions provided, the draft report was revised and final report prepared in May 2023. Additional information regarding convergence as well as the budget statement for the year '22-23' was received from the Directorate of ICDS which were incorporated into the report. The recommendations made in this report were open for suggestions and comments by the Directorates of ICDS and Public Health and Preventive Medicine till November 14th 2023 after which the report was finalized.

3

Observations

The contents of this chapter have been presented in the following sections :

Section 1 - Schemes and Programmes that target pregnant, lactating mothers and Young children, their provisions and administrative structures
Section 2 - Financial allocation to these schemes and programmes
Section 3 - Field observations
Section 4 - Convergence action plan
Section 5 - Gaps in implementation

Section 1. Schemes and Programmes for mothers and children, their provisions and administrative structures

The schemes that specifically target pregnant and lactating mothers, adolescent girls and children under two years for optimum nutritional outcomes are provided in Table 3.

Table 3. Schemes for mothers, adolescent girls and children under two years of age

Scheme	Auspices	Provisions	Implementing Departments
Integrated Child Development Services Scheme (ICDS)	Govt of India Govt of Tamil Nadu	1.Supplementary Nutrition Programmeand growth monitoring 2.Nonformal preschool education 3.Nutrition and Health Education 4. Immunization 5.Health checkups 6.Referral services	First three by a separate Directorate for ICDS under the Dept of Social Welfare and Women Empowerment. Next three by the Directorate of Public Health and Preventive Medicine under the department of Health and Family Welfare
Dr Muthulakshmi Reddy Magapperu Uthavi Thittam	Govt of Tamil Nadu. The Pradhan Mantri Matru Vandana Yojanaby Govt of India which provides Rs 5000 for the first pregnancy is dovetailed into the scheme	Conditional cash support of Rs 18,000 (of which Rs 4000 is in kind) to pregnant women in five installments during various stages of pregnancy	Directorate of Public Health and Preventive Medicine
Janani Suraksha Yojana	GOI	Cash transfer of Rs 700 and Rs 600 in rural and urban areas respectively given to mothers immediately after delivery at Govt facility	Directorate of Public Health and Preventive Medicine under the Dept of Health and Family Welfare

Menstrual Hygiene Programme for adolescent girls and Post natal mothers	Govt of Tamil Nadu	18 packs of sanitary napkins with 6 pads /pack distributed annually to adolescent girls in the age group of 10 -19 years through schools and at community level for non-school going girls. Post natal mothers who deliver in Govt. Institutions are provided	Directorate of Public Health and Preventive Medicine under the Dept of Health and Family Welfare
Iron and Folic Acid supplementation programme for adolescent girls	Through the Anaemia Mukt Bharath Scheme under the National Health Mission of the Govt of India through schools and through ICDS centres for non school going children	100 mgs of elemental iron and 500 micrograms of folic acid are given every Thursday	Directorate of Public Health and Preventive Medicine under the Dept of Health and Family Welfare
Provision of de-worming tablets	Through the Anaemia Mukt Bharath Scheme under the National Health Mission of the Govt of India through schools and through ICDS centres for non school going children	Biannual supplementation with deworming tablets	Directorate of Public Health and Preventive Medicine under the Dept of Health and Family Welfare
Supplementary nutrition for non school going adolescents girls(11-14 years)	Govt of India and Govt of Tamil Nadu	165 grams/day	ICDS

Practically all services for mothers, adolescent girls and children below two years are carried out by the two Directorates of ICDS and Public Health and Preventive Medicine, but in the delivery of the various components of these services, other line departments play a supportive role.Provision of supplementary nutrition to mothers and children under two years of age, growth monitoring and nutrition education are exclusively handled by the ICDS functionaries. They also play a supporting roleto the health workers in organizing immunization camps and in health checkups; for example the National Deworming Day conducted on the 10th of February and August involves three stakeholders namely Health and Family Welfare department, ICDS and Education department. ICDS workers and Village Health Nurses (VHNs) or Urban Health Nurses or (UHNs)under the Directorate of Public Health and Preventive Medicine have to converge with regard to referral services for children who are undernourished.

The provision of supplementary nutrition to mothers and children below two years are detailed in Table 4.

Table 4. Supplementary nutrition to mothers and children (0-2) years through ICDS

Age group	Food provided	Quantum of food	Role of other departments
6 months to 2 years	Supplementary nutrition (Take home ration or THR)	125grams/dayto normal and MUW* children. 200 grams/day to SUW** children.	All anganwadi centres are registered under the Food Safety and Standard Act (FSS) by Food Safety Department
1 – 2 years	Supplementary Nutrition as THR (as above) and one boiled egg/ day***	Agmark graded eggs, each weighing 46-52 grams is procured through floating tenders.	
Pregnant mothers	Supplementary Nutrition as THR	165 grams/day throughout pregnancy	
Lactating mothers (first 6 months)	Supplementary Nutrition as THR	165 grams/day	
Adolescent girls (11-14 years) out of school only	Supplementary Nutrition as THR	165 grams/day	

*moderately underweight **severely underweight
*** this has been subsequently enhanced to thrice a week.
Source : Policy note of Social Welfare and Nutritious Meal Programme ’19-’20.

The fortified premix is a blend of jaggery, chickpea, malted finger millet and micronutrient fortificant mixed with wheat / maize flour in the ratio of 48:52[19]. Wheat is purchased from the Tamil Nadu Civil Supplies Corporation (TNCSC). Other raw materials are sourced from open market. Thereare two production models. One is a combination of public-private partnership along with a private operator and the other is sole production by private operator. In the first model, the private enterprise manufactures the blend and the women co-operativesproduce the premix alongwith the blend as well as packaging and transportation of the final product. In the second model, the private enterprise is solely responsible for production, packaging and transportation. About 75% of the total requirement is sourced under the first model.

The other services provided to pregnant mothers with the role of other supporting departments are summarized in Table 5.

Table 5. Services provided to mothers during pregnancy

Month of Pregnancy	Service provided	Auspices		Other details
		Directorate of Public Health and Preventive Medicine	**ICDS**	
		VHN/UHN	**AWW**	
1 – 2	Detection of pregnancy through strip test	√		
	By asking around		√	
	Registration of Pregnancy Distribution of Maternal and Child Protection Card (MCP) to mother	√	√	Reg. through PICME app. PICME 2 app rolled out to track visitors, migrant mothers
	Referring to hospital for confirmation	√		
	TT immunization	√		1st dose upon registration. 2nd dose after a month. Doses supplied by Tamil Nadu Medical Services Corporation (TNMSC)
	Blood Test at hospital	√		HIV test for both pregnant woman and husband.
	Checking weight monthly	√	√	
	Awareness about 1000 days		√	Through community based events
	Supplementary nutrition (THR)		√	
	Monthly awareness meetings	√	√	Through Village/Urban Health and Nutrition Day. Through special day for *Jan Andolan* under *Poshan Abhyaan*
Upto 3rd month	Distribution of Iron and Folic acid tablets (upto 3 months)	√	√	For those with Hb levels between 7.1 to 8.9 gm/dl, intravenous sucrose infusion is given at PHC.
	Follow up		√	

Month of Pregnancy	Service provided	Auspices		Other details
		Directorate of Public Health and Preventive Medicine	**ICDS**	
		VHN/UHN	**AWW**	
	Registration for Muthulakshmy Reddy scheme	√		First instalment of Rs 2000 given (between the time when pregnancy is registered and the end of third month)
(3 – 4 months)	First Oral glucose challenge test for detecting gestational diabetes	√		Conducted at the PHC.
	Awareness continues		√	
	First Amma Nutrition Kit	√		
4	Dist.of Iron, calcium, D 3 tablets. Also B complex and Vitamin C tablets. Scan	√		Given throughout pregnancy. Early scan is to check whether fetus is inside uterus or in the fallopian tube.
	Dr MR scheme Scan	√		Second instalment of Rs 2000 given.. To check nasal bone formation
	Second Amma nutrition kit	√		
5	Awareness continues		√	
	Scan	√		Anomaly scan
6	Second oral Glucose Challenge Test			At the PHC.
7	Awareness continues		√	
8	Scan	√		If needed, at the prerogative of the doctor.
	Third glucose challenge test.	√		At the PHC.
9	Follow up by both groups till delivery.	√	√	

	DR MR scheme (soon after delivery)	√		Third instalment of Rs 400 given. Fourth instalment of Rs 4000 given after three doses of pentavalent immunization are given to the new born. Final instalment of Rs 2000 given after MMR vaccination to the new born in the 9th month.
During pregnancy	Follow up of high risk mothers	√		Camps are conducted every month under the *Surakshit Matritva Aashwasan* (SUMAN) initiative sponsored by GOI. Block Medical Officers are mentored by obstetritians from sub district hospitals. Mothers are admitted in upgraded PHCs well before EDD.
After delivery	Adoption of either temporary or permanent family planning methods done at PHC.	√		CuT insertion is the common temporary method adopted. Laprascopic sterilization is the permanent method. Done at the PHC under the auspices of family welfare programme

Table 6. Services provided to lactating mothers

No	Services provided	By whom	
		VHN/UHN	AWW
	At the hospital soon after delivery Initiation of Breastfeeding. Amma Baby Care kit (consists of 16 items for the new born).Amma Mahapperu Sanjeevani is given through Siddha Institutions. Early detection of special children and referral.	√ √	
1	3rd day house visit after delivery to check bleeding and umbilical cord	√	
2	7th day house visit for examining the new born	√	
3	14th day house visit for examining for infection and for monitoring breast feeding	√	

4	21st day house visit – for primis discussion about temporaray family planning measures	√	
5	28th day house visit – in case of second child, discussion about permanent family planning measures	√	
6	42nd day visit for discussion about immunization schedules for the infant	√	
7	Distribution of (THR) supplementary nutrition for mothers		√
8	Follow up of Low Birth weight infant at home		√
9	Nutrition education		√
10	Online entry for GOI sponsored Janani Suraksha Yojana (JSY) scheme of Rs 700 *		√

Note : From March 1st, 2023 even at the time of writing this report, a special nutrition scheme has been initiated by the Govt of Tamilnadu. It provides 'ready to use therapeutic food' for 59 days spanning over eight weeks and mothers of LBW infants are provided with a kit containing iron syrup, dates and nutritional supplements.
**the Rs 700 given underJSY scheme is conditional upon adoption of a family planning method.*

As far as children upto two years are concerned the following provisions exist:

1. From the age of 6 months they receive THR from ICDS.
2. Every month all children upto six years are weighed in the Anganwadi and their heights are also taken once in three months. The data is uploaded in the digital software provided through the smart phones to the anganwadi workers and supervisors.
3. Before one year they receive totally 19 doses of vaccination including BCG (once), hepatitis B (once), oral polio vaccine (4 doses) Rota virus (3 doses), inactivated polio vaccine (2 doses) pneumococcal congenital vaccine (PCV and one booster) pentavalent – 3 doses, Japanese encephalitis vaccine (1st dose) MMR (1st dose).
4. In the second year they receive 4 doses including second dose of MMR, second dose of MMR and Japanese encephalitis and opv booster.
5. Under the Rashtriya Bal Swasthaya Karyakrama (RBSK) a mobile team screens children for birth defects, diseases, deficiencies and developmental delays from birth to 18 years, for treatment and referral of 30 health conditions. New born as well as anganwadi children are benefitted.

Poshan Abhyaan

Under the National Nutrition Mission, Prime Minister's overarching scheme for holistic nourishment or Poshan Abhyaan, was launched in 2018 to reduce undernutrition in children below six years, through a targetted approach. One of the features is the real time tracking of the nutritional status ofchildren. Anganwadi workers and supervisors are provided with smartphones with a common application software (CAP)for recording all services to mothers and children, including monthly growth monitoring. The weights and heights of children are uploaded directly in the software and the nutritional status is instantly determined. Through Jan Andolan or peoples' mass movement the focus is to bring in structured behavioural changes, at household level.

Administrative set up

The organizations set up of ICDS is presented in Table 7

Table 7.Administrative setup of the Directorate of ICDS

Director cum Mission Director
Joint Directors
District Project Officers (DPOs)
Child Development Project Officers (CDPOs)
Anganwadi supervisors (Grade 1 and Grade 2)
Anganwadi workers, mini anganwadi workers, helpers
Distribution of (THR) supplementary nutrition for mothers
Follow up of Low Birth weight infant at home
Nutrition education
Online entry for GOI sponsored Janani Suraksha Yojana (JSY) scheme of Rs 700 *

A full-fledged anganwadi, caters to a minimum of 20 children between three to six years, and has one anganwadi worker and a helper. Mini anganwadis cater to less than 20 children and are provided with only anganwadi workers and no helpers. The anganwadi workers and helpers are the first line of contact for the community in all matters related to nutrition and hence they are a crucial part of programme implementation.

The administrative structure of the Directorate for Public Health and Preventive Medicine is presented in Table 8.

Table 8. Administrative structure of Directorate of Public Health and Preventive Medicine

Director
Additional Director
Joint Director (Programmes)
Financial Advisor and Chief Accounts Officer Personnel Officer and Joint Director (Financial and HR management and Administration)
Deputy Directors of Health Services Regional Entomologist Principals of Regional Training Centres and ANM schools Health Officer
Block Medical Officers Medical Officers Institutional and field health functionaries Village Health Nurses (VHNs) / Urban Health Nurses (UHNs) Health Inspectors

In rural areas the VHNs are the first line of communication between the system and the public, especially mothers and young children. The health sub centres under which they function provide the first institutional contact.The next institutional level is the Primary Health Centre (PHC) in both rural and urban areas. Then comes the upgraded PHC followed by the Block PHC. The upgraded Primary Health Centre in Kachur in Tiruvallur district had health sub centres in rural areas with full complement of VHNs. A village-wise list of households consisting of young mothers and new borns is made out and an Advance Tour Programme (ATP) is drawn up indicating which VNN would visit which mother and child. The urban primary health centres (UPHCs) in urban areas do not have health sub centres .

Section 2. Financial Allocation

ICDS

The ICDS is jointly funded by the Central and State Government. For the supplementary nutrition programme there is equal contribution by GoI and the State Governments. For other components sharing is in the 60:40 ratio, except for salaries which are in the 25:75 ratio. Most States add additional contributions especially for SNP. However financial allocations have been declining, with the actual allocations to MoWCD falling short of the Ministry's projected demand. The ICDS is the largest scheme of the MoWCD accounting for 68% of its allocation in FY '19-'20 and '2021'. In FY '20-'21's Revised Estimates Rs 17,252 crores was allotted to ICDS which is 3% lower than the Revised Estimates for FY '19-'20, which stood at 17.705 crore[20]. The actual cost sharing of GoI and State of Tamilnadu is presented in Table 9.

Table 9. Cost sharing of ICDS between GoI and State of Tamilnadu for the FY '21-22'*

Items	Amount in Crores of Rupees
Gross Total Project Cost	2536.69
Total Funds	1512.79
GoI share	812.66
State Share	700.13
Exclusive State Share	1023.90
Total State Share	1724.03

*Source : GoTN Policy Note no 45, ('21-22') Social Welfare and Women Empowerment Dept

The overall percentage of State share for the year 2021-2022 is 68% and for GoI is 32%, reaching 34,15,335 pregnant and lactating women, children upto six years and adolescent girls, through 54,439 anganwadi centres. The gross total project cost of about two thousand five hundred crores has remained more or less the same for the past three consecutive years. For the year '22 to '23 there has been a slight decline in the actual spending which stood at 2437.82 crores. The allocation of funds for different components of the programme is presented in Table 10.

Table 10. Allocation of funds and actual expenditure incurred under ICDS for 2022-'23*

S. No	Component	Sharing ratio	APIP		Amt released	Expenditure incurred			Total
			Proposed	Approved		GOI share	Normative State share	Exclusive State share	
1	Salary	25:75	49.86	33.48	246.99	30.36	91.08	97.00	218.44
2	Honorarium AWE	60:40	215.32	208.07		207.51	138.34	947.37	1293.22
3	Rent	60:40	21.16	21.16		7.41	4.94		12.35
4	PSE kit	60:40	9.65	9.65		9.65	6.43		16.08
5	Medicine kit	60:40	4.68	4.68		4.68	3.12		7.8
6	Uniform to AWE	60:40	6.24	5.12		4.99	3.33		8.32
7	POL/hiring	60:40	7.01	6.94		5.77	3.85		9.62
8	Admin expenses	60:40	6.23	6.23		4.92	3.28		8.2
9	Equip & furniture	60:40	6.35	0		0	0		0
10	Construction	60:40	18	0	14.40	14.40	9.6		24
11	Upgradation	60:40	4	0	3.95	3.95	2.63		6.58
12	AWC main	60:40	7.56	7.56		7.56	5.04		12.6
13	Toilets	60:40	10.99	0		0	0		0
14	Drinking water	60:40	7.54	0		0	0		0
15	Supplementary nutrition	50:50	413.2	375.67	383.59	406.6	406.6	104.41	917.61
	Total ICDS general		**787.79**	**678.56**	**648.93**	**707.8**	**678.24**	**1051.78**	**2534.82**

*Source : Deputy Director (Trg) ICDS.

Of the total expenditure for the year '22 to 23', the bulk of the spending (ie) nearly 62% is for salaries to the functionaries and another 36% for supplementary nutrition. There has been no allocation for toilets, drinking water supply or equipment and furniture The anganwadi centre is the key platform for convergence since all activities from pre school education, to parents' meeting, immunization andserving of nutritious meals take place there. Just like the food, thebuilding is the single most important investment in the ICDS programme. A baby friendly toilet is a 'must have' feature in every centre. A toilet for the teacher who spends an entire day in the centre should also be considered important. If all the fifty four thousand centres have to be provided with such toilets, then the cost of constructing toilets alone works out to about 200 crores; there is no mention about toilets for the teacher and the helper. For the past two years the GOI has been providing Rs 3000 per centre (fund sharing 60 :40 by GOI and TN) as annual maintenance grant for carrying out minor repairs, but this is hardly sufficient for major repairs or reconstruction. Moreover this is not a separate allocation exclusively for ICDS, but diversion of funds from MGNREGS. Since 2016 onwards construction of centres are being carried out in convergence with MGNREGS. Between 2016-2020, sanction was accorded for 4303 centres, out of which 2202 have been constructed. Even presuming that only fifty percent of the buildings need renovation or reconstruction, it nevertheless works out to several hun-

dred thousand crores of rupees, and at this rate of allocation, it may take several decades before a decent ECCE environment can be provided for the children.

Under the National Nutrition Mission, all the awareness activities held so far through the years as well as new initiatives are combined and celebrated throughout the year under the 'Jan Andolan' scheme. In addition nutri gardens are being set up in some anganwadis to promote awareness about micro nutrients with the help of the agriculture and horticulture department. A total of Rs 118.58 crores (GOI and TN share at 80:20) was presented in the budget estimate of '22-23' for National Nutrition Mission.

Directorate of Public Health and Preventive Medicine

The total outlay for the department of Health and Family Welfare and the share there of for the directorates of public health and preventive medicine and reproductive and child health for three consecutive years is presented in Table 11.

Table 11. Financial outlay (in crores) for the Directorate of Public Health and Preventive Medicine and Reproductive and Child Health

Division	Fin year '19-20'	Fin year '20-21'	Fin year '21-22'
Health and Family Welfare Department	12,563.83	15,863.37	14.07
Directorate of Public Health & Preventive medicine	3317.01	3612.75	3578.51
RCH Project	1952.79	2043.91	2820.77
Towards civil works by Public Works Department (PWD)under demand no 39	391.34	413.59	207.44

The Tamil Nadu government has increased its budget to health sector during the financial years '19-20' to '20-21'. The slight fall in the allocation during the year '21-22' is likely to be due to the unforeseen expenses incurred due to the covid-19 pandemic in the year '20-21'. However this has not in any way reduced the proportionate allocation for the Directorate of Public Health and preventive medicine whose share of the allocation has been around 25%. The share of the RCH project has been around 16%, 13% and 20% respectively.

In addition to the annual financial allocation, the health sector receives support from the Public Works department for construction of buildings. The PWD undertakes building work for all the 29 government departments. As per the government policy note of 2019-'20, of the total outlay, 40% goes for health and family welfare, 5% for public works, 10% for judiciary, 15% for revenue and disaster management, 1% for commercial taxes, 2% for registration. Twenty three percent of the outlay is shared between remaining departments.

In addition, to improve functioning and provide autonomy to field units, untied funds are distributed under the National Health Mission,. District headquarters hospitals are given Rs. 10 lakhs per year, sub district hospitals and community health centres are given Rs. 5 lakhs per year, PHCs are given Rs 1.75 lakhs per year and health sub centres are given Rs 10,000 per year. These flexi pool funds are available with the Medical Officer for undertaking minor civil work, repair of equipment or upkeep of facilities.

Dr Muthulakshmi Reddy Maternity Benefit Scheme

The performance under the scheme has been presented below.

Table 12. Performance under Dr Muthulakshmi Reddy Maternity Benefit Scheme

Year	Amount allotted (Rs in crores)	Amount disbursed (Rs in crores)
2015-2016	667	621.66(93%)
2016-2017	667	609.37(91%)
2017-2018	675	640.68(95%)
2018-2019	957.87	895.79(94%)
2019-2020	957.87	842.25 (88%)

Source : Department of Health and Family Welfare, policy note '20-'21

The allotment under the scheme has been increasing, with a nearly 30% increase during the period '18-19' and '19-20'. However the disbursement during '19-20' had declined to less than 90% when compared to the previous years.

Section 3. Qualitative observations from the field

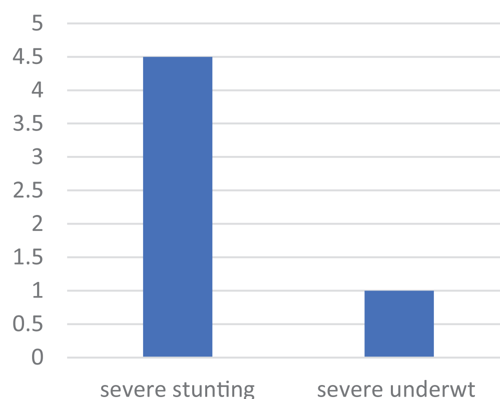
Nutrition Status of 0-6 year old Children and Feeding Practices in the study sites

Mothers who were interviewed in Poondi Block belonged to the low socio economic group, with the fathers working as skilled labour in private companies. They had a steady monthly income. The mothers were mostly housewives. A majority had studied upto 10 or 12th standard. Most of them owned their homes which were semi pucca. Except for one household, all had toilets and piped water supply. In Semmancheri, which was a settlement for the Tsunami victims, most of the fathers were engaged in day to day labour work as painters, carpenters etc, with the mothers staying at home. Many had about eight to nine years of schooling while some had never been to school. One of the mothers was a graduate and was employed in a private firm. Most houses had toilets and water supply.While the homes in Semmancherry had very little space with the entire house consisting of a 10 by 10 feet single hall, those in Poondi Block were comparatively more spacious and some even had a small patch of garden. All houses in both sites had electricity and a colour TV. Almost all had a washing machine and about 50% had a refrigerator.

The percentage of severely stunted and severely underweight children in both study sites is presented in Figures 3 and 4.

Fig 3. Nutritional status of children in Poondi Block (%) (0 - 2 years)

Fig 4. Nutritional Status of children in Alandur Block (%) (0 - 6 years)



Disagregated data for childenupto two years is presented for Poondi Block. Within the two years, the data is further disaggregated as 0-6 months, 6-12 months and 13-24 months. For Alandur, the consolidated data for 0-6 years is presented. Stunting appears early on in life, since nearly 4% of children between 0-6 months in Poondi Block are stunted. Stunting below six months is likely to be due to low birth weight. Though the infant is born with a disadvantage, it can be mitigated to a large extent with exclusive breastfeeding and support with adequate care for the mother.The drop in the percentage of stunted children between 6-12 months of age (2.7%) is indicative of this. After 12 months, as the role of breastmilk declines, nourishment has to come mainly from supplementary feeding. If the diet is found lacking, the gap between the required and actual intake gradually increaes, leading to a spike in the percentage of undernourished children, as is seen in the increase in the percentage of undernourished children between 13 – 24 months. Consolidated data for 0-6 years from Alandur Block, was comparable to that of Poondi Block, Four percent and 1% of children were severely stunted and underweight respectively. However averages are deceptive since they very often hide a wide range. The percentage of severely stunted children attending the various anganwadis, varied from 1% to 37% in Alandur Block, showing that there is no level playing field for all the children.

The total number of undernourished children will be much higher than the percentage shown here since the data does not include moderately undernourished children. According to the Medical Officer of Poondi Block moderate undernutrition was much more prevalent than severe forms of undernutrition.In order to understand the link between feeding and undernutrition, observation of the feeding session of 10 children was undertaken by AWWs. Recall of the previous day's diet as well as the past nutritional and medical history of the 10 children were obtained.The nutritional and health history of the children are presented in Table 13.

Table 13. Nutritional and illness history of sample children

No	Age in months	Sex	Birth wt(kg)	Initiation of breast feeding	Present weight (kg)	Present nutritional status	Wt gain during the last two months(gms)	Current feeding practice	No of Episodes of illnesses so far	Type of illness
Child 1	15	F	1.6	After 2 hrs	6.4	Severely Underwt	100 – 200	1*	3	RTI#
Child 2	15	M	2.9	1 hr	9.7	Moderate underwt	100	2**	6	RTI
Child 3	10	M	2.1	1 hr	7.2	Moderate underwt	200 – 300	1	3	RTI
Child 4	14	M	3.5	1 hr	10	Moderate underwt	300	1	4	RTI
Child 5	17	F	1.9	After 2 hrs	7.5	Moderate underwt	300	1	4	RTI
Child 6	21	F	2.7	1 hr	8.2	Moderate underwt	100	2	3	RTI
Child 7	18	F	2.7	1 hr	9.6	severe Underwt has come to mod. underw	500	1	3	RTI
Child 8	19	M	2.5	1 hr	9.2	Moderate underwt	100-300	1	2	RTI
Child 9	10	F	2.7	1 hr	6.7	Normal	100-200	1	4	RTI
Child 10	18	F	3	2hrs	10.9	Moderate underwt	100-300	1	4 – 5	RTI

1*breastmilk &complementary food 2** only complementary food #respiratory tract infection

Of the 10 children, three had been born with a low birth weight (less than 2.5 kg).Two mothersof these children were themselves stunted. The children were kept in the incubator for sometime and put to the breast only after 2 hours, thus missing the 'golden standard' of initiating breastfeeding within the first hour.Of the three, one continued to be severely stunted even at 15 months, while the other two were moderately undernourished. All the children were between 10 and 21 months of age and were being given both breast milk and complementary food, except for two mothers who had stopped breast milk; one had conceived again and the other reported that the child had lost interest.

Though majority of mothers gave both breast milk and other food, the monthly weight gain of most children varied between 100 to 300 grams. An increase of 500 grams per month is considered an adequate weight gain. A lower incremental gain is suggestive of either insufficiency of food intake per se or poor intake due to attacks of illnesses which affect growth. Of the ten children only one had normal height and weight. Even this child showed only a 100gm weight gain All children have been affected by Respiratory Tract infection and most have experienced three to four episodes. Two children had been hospitalized twice. Each attack results in lesser food intake and hence duration and frequency of attacks is a marker for inadequate weight gain. The 24 hour recall of food intake and the observation sessions revealed more insights (Table 14). The dietary pattern typically consisted of the following with minor variations

Early Morning 6 to 8 am - mother's milk or other milk,
Morning 9 to 12 noon - idli / dosa
Noon meal 12 - Rice and dhal
Evening around 3 to 4 pm - Milk or biscuit or sathumaavu kanji
Night 6-8 pm - Rasam rice or rice with milk or dosa

A child below two years requires three meals and two snacks. While the main meals would contain rice, dhal and vegetables, fruits or milk/milk based food could be given as a snack Except for two children most of the children were being fed five times a day. However the lack of dietary diversity was evident, since no one reported giving fruits or vegetables other than potatoes. On an average three food groups were given instead of four or five.One mother gave nuts and raisins periodically. The diet was monotonouswith a predominance of carbohydrates and very little of micro nutrient rich foods like fruits and vegetables.

Table 14. Observations made during feeding episode (N=10)

Observation items	No
Food was cooked properly	All 10
Food was easy to chew and swallow	All 10
Quantity	1 cup (actual quantity could not be estimated)
Time taken for completing feeding	Half an hour to one hour
Child was interested in eating	Only 2 were interested. Most were disinterested
Food was stuffed down the throat	No
TV was used as a diversion to feeding	No, but some mothers took the children outside to feed
Whether child completed the portion	Except for one child the rest completed the portion.

In all cases mothers fed the children. Feeding was considered a mother's responsibility with other family members performing other tasks such as putting the child to sleep or entertaining her. A feeding session (main meal) lasted about half an hour to one hour. It was reported that generally main meals were fed by the mother and children were not allowed to eat on their own or experiment. There was no practice of the family members eating together during week days, since adults had different time schedules. Eating together was only on Sundays or holidays and very rarely were young children encouraged to sit with the family, eat or mess and experiment with the food. Only snacks, usually consisting of chips or biscuits were given to the children to eat on their own. In one of the home visits it was observed that the child was given a snack to munch while watching TV.

On an average mothers spent about three hours everyday in feeding their children and were quite patient. However the quantity of food eaten by the child could not be measured. Since all children from the age of 12 to 24 months were reportedly given food in a standard 'cup' it is likely that the quantity of food did not increase for older children. Most of the children were disinterested in eating probably because they found the meals to be repetitive and monotonous. Even the mother of the normal child said that feeding was a challenge since the child was disinterested in the food.

Information about the habit of passing stools by children was collected from six households in Semmancheri (Table 15). All the children had a regular habit of passing normal stools everyday and there was no constipation.

Table 15. Stool habits of children N=6)

No	Frequency	No of times	Consistency	Problem of constipation	Colour
Child 1	Everyday	2	Firm	None (they pass easily)	Yellow
Child 2	Everyday	2	Semi solid	None	Yellow
Child 3	Everyday	Sometimes 3 times	Firm	None	Yellow
Child 4	Everyday	2	Firm	None	Yellow
Child 5	Everyday	1	Firm	None	Yellow
Child 6	Everyday	1	Firm	None	Yellow

II Perceptions of parents regarding health and nutrition services

1. In general parents felt that the health and nutrition services were not commensurate with their expectations. With regard to ante natal care, fathers were of the view that *'nothing is told to us'.* Though they accompany their wives to the the PHC for a check up, they are called in only when there is something wrong. As one father remarked ' *When we go to the PHC for a checkup a whole day is gone, travelling up and down and the waiting time for the doctor to examine.We just hang around and nobody explains anything to us'.* Mothers reported that in order to test for gestational diabetes they were given glucose water for consumption and they had to wait for two hours before the blood sample could be drawn. They felt that if the packets are given to them they could consume at home and directly go and give the blood sample which would cut on the waiting time.

2. A main concern was the inadequate accountability of the health system. According to a father, *'when my child fell ill I took her to the health centre. The child was examined and medicines were given, However after coming home the condition deteriorated and the child became unconscious. When we rushed her again to the hospital, no one gave a responsible reply or explained what had occurred. Everyonr disappered and we had to take the child to a private health centre'*

3. Mothers availed the take home rations (THR) regularly. However several of them said that they could not consume, since they had nausea and vomiting (a common occurrence

during pregnancy) in which case the family members consumed the THR.The entire ration for the whole month is given in bulk in two instalments. Several mothers hade no idea as to how much quantity they had to consume each day and usually the ration got over in a week's time. The household consumption of THR by mothers and children could not be monitored by anganwadi workers, since they could not leave the premises.

4. All the mothers were able to narrate the nutrition messages that they had heard through the ICDS staff. As one mother put it *'They are constantly calling us for meetings and telling us these things; how many times to go and listen to the same things ?however it is difficult to get my child to eat anything. How to handle that?'.* They were however deeply appreciative of the *'samathuva valaikappu'* which is organized like the traditional celebration of pregnancy done at homes.

5. The lack of basic infrastructure facilities like toilets and electricity at the ICDS centres is a major point of dissatisfaction for most parents. As one mother remarked *'my house has a toilet and a fan. Why should I send my child to the centre which does not have any of these facilities?*

6. Another major concern was that about 50% of the mothers did not receive the maternity entitlements and the nutrition kit.Despite complying with all the specifications nearly half of the interviewed mothers had received only partial payment and were awaiting the pending instalments for more than a year. While some technical difficulties were reported by the UHN/VHNs such as non-linking of aadhar for women who had registered their pregnancies elsewhere and had come to Chennai only during delivery and the husbands withdrawing the money when it was credited in the wife's account, these accounted for only about 40 – 50% of the cases and a near equal legitimate claimants had not received some of the instalments or received only one nutrition kit.

7. The parents of two siblings with special needs were interviewed. The children had 80% disability. An older child had died earlier. The children were seven and three years old respectively, but have not had any intervention whatsoever; nor were they receiving the monthly maintenance amount of Rs 2000, though the father had applied and had made a lot of follow up effort. According to the parents they had undergone an anomaly scan during both pregnancies and had even consulted the gynaecologist before the third pregnancy to ensure about the possibility of a 'safe' outcome. However no abnormality was detected at that time. Since the early intervention centre was located in the District Hospital quite far away from the village where they lived, the parents were not in a position to take the children for the intervention programme everyday.

8. FGD with a set of migrant families in Poondi Block was carried out. The families worked in brick kilns and lived in the site. They usually came to Chennai during January and June from Vadamaruthur village in Villupuram district. During this time they do not have any work in their home town and so they come to Chennai in search of jobs. They have been doing this for about 8 to 15 years. In their hometown they were engaged in weeding and other agricultural activities. Though they had aadhar and ration card in their villages, they do not have them here and buy provisions from the open market. They earn about Rs 12,000 to Rs 15,000 per month. Nearly half of their monthly earnings is spent on food. With

the help of an NGO they were linked with the anganwadi services for food and supplementary feeding. However the children do not have preschool education.

III. Perceptions of Government functionaries regarding delivery of health and nutrition services

1. The anganwadi workers reported that pregnant mothers reach out to the VHNs immediately upon suspecting a pregnancy, forconfirmation and to start availing the services. Therefore the VHNs are the first to receive information about pregnancy and to register it. However this information is not shared with anganwadi workers who are then forced to go out into the community to identify the pregnant mothers for distributing the THR and providing nutrition education. In the same coin, the VHNs sometimes lack support from the AWWs for storing and distribution of materials in the anganwadi centres. A routine system of sharing has to be put in place.

2. There was unanimous view among ICDS personnel that the primary role of an anganwadi worker was to conduct preschool activities. She had to be present in the centre from 9.30 am to 4 pm. She had to prepare low-cost teaching aids for classroom activities. Attending meetings, organizing other events, outreach activities and providing support to other department functionaries reduced the time spent on preschool activities, resulting in lack of job satisfaction and decline in the learning outcomes in children.

3. Outreach service by anganwadi workers was possible only in main centres when there was a helper available to take care of the children if the teacher stepped out of the centre. How ever in mini anganwadis where no helper was posted, outreach activities were affected.

4. According to the VHNS and UHNs while they could examine the physiological condition of the mother and children during home visits, there was little time for elaborate counselling. Home visits were spread over time and so they were not in a position to regularly monitor the progress of the baby and the mother, which could be only done by anganwadi workers, who did the monthly weighing of mothers and children at the centres.

5. Both ICDS and health functionaries agreed that nutrition counselling required strengthen ing. One off awareness events helped bring the issue to the spotlight but repeated and consistent one on one dietetic counselling would be more effective in bringing permanent behavioural transition. The Medical Officer of the upgraded Kachur PHC in Thiruvallur district felt that moderate under nutrition was rampantly present (corroborated by field observation) which was the major causal factor for some children to relapse to more severe forms of under nutrition. Dietary mitigation strategies using locally available nutritious foods needed to be developed and shared with communities.

6. According to the District Maternal and Child Welfare Officer, home-based counselling requires multiple visits and considerable time to be spent with the families. Moreover, receptivity to messages is higher from someone from the community itself and hence outreach progrmmes that include counselling, monitoring and persistent follow up are best handled by a community-based volunteer. Possibility of utilizing existing village volunteers of other line departments or SHG members could be explored.

From peoples' perspective, the nutrition communication activities are repetitive and do not have a problem solving approach. They are not available to them when they need them. The service providers are struggling to cope with a dilapidated work place devoid of basic facilities, lack of appropriate materials for classroom activities, unsatisfactory outreach and shortage of manpower. The perceptions of parents and functionaries though differing in perspectives nevertheless touched upon common themes such as sharing of information, duplication of work, impediments to delivering quality service and gaps in the information provided.

IV. Infrastructure, manpower and material support

One of the huge challenges confronting ICDS today is the state of the buildings, several of which are in a dilapidated condition. Repairs, renovation and construction of new centres are taken up only sporadically.

- One centre in Poondi Block was being run in the school premises that had neither windows, electricity nor toilets. Though a new building had been built, the key was not handed over to the CDPO due to lack of settlement of bills.
- A centre in Semmancheri had a hall, a kitchen, a tiny store room and child friendly toilet. However the wash area for cleaning kitchen utensils was inside the child friendly toilet posing risk of contamination.

According to the Joint Director of ICDS (infrastructure), in the urban areas, the Corporation was in charge of providing buildings. Space was a huge challenge in urban areas with several centres running in rented premises. The rising rental costs have forced officials to club two or three centres in one building leading to congestion[21]The poor condition of the anganwadis has figured prominently in the Greater Chennai Corporation Council Meeting recently[22], where the councillor of Ward 107 complained that seven out of ten anganwadis were unusable because of loose poor connection and rat infestation, because of which there was poor attendance. Some councillors used some of the Councillor's fund for improving the condition.

The ICDS centres are the venue for all activities for below six year old children and their parents. The experiences they have in these centres play a strong role in deciding the continued utilization of the government centres. A child friendly environment should ensure safety of the children, promote health and facilitate preschool activities for children's physical, social, cognitive and emotional development. The term infrastructure includes the building which should have space for holding classroom activities for twenty children, a kitchen, pantry or store room, wash area for washing vessels, child friendly toilets, a toilet for the teacher and helper, activity / play materials, storage cupboards, outdoor play equipment such as swing and drinking water facility. To ensure safety of children, independent centres that have outer space should have a compound wall. For those functioning in apartment buildings there should be a short gate at the entrance to prevent children from running out.

In rural areas the Rural Development and Panchayat Raj department is responsible for the construction of the centres. The standard design shared by the officials include a hall, kitchen, storage and provision for child friendly toilets but no toilet for the teacher or for storage space. There is periodic allocation of funds through MGNREGS, but they are sporadic and patchy since anganwadi centres seem to have the least priority.

With regard to material support, four gas cylinders are supplied in a year for cooking. However, it was reported that the cost of the cylinders are still reimbursed at the old rate of Rs 400 per cylinder though the actual cost has escalated to more than Rs 1000. The deficit is managed by the AWWs and sometimes the supervisors and CDPOs pitching in their money. In the centres that the study team visited there was hardly any preschool activity materials, except for some broken toys and a few materials collected by the AWW. ECCE materials have to be provided by the Ministry of Women and Child Development. However for a long time there has not been a separate budgetary allocation for activity materials for children. Unfilled vacancies at the supervisory level has led to administrative and programmatic bottleneck A dedicated fund of atleast 2% of the total budgetary outlay may be allocated for the ICDS programme.

The district staffing position at Tiruvallur and Chennai are presented in Annexures 5 and 6. In Tiruvallur among the technical staff, out of 13 sanctioned posts for CDPOs, 12 have been filled and 1 is vacant. Of the 66 Grade II supervisory staff, only 35 (53%) are in position and the remaining 47% have not been appointed. Of the 1718 sanctioned posts for anganwadi workers, 1334 (76%) have been filled and nearly a quarter stands vacant. Of the 42 mini anganwadi workers eligible for appointment, 36 have been recruited. With regard to vacancy among clerical staff, out of 14 junior assistants, only 5 were in place. There was no typist or watchman. Out of 14 office assistants' and drivers' posts, only 2 had been filled in each category respectively.

For Chennai district, out of 18 sanctioned posts for Grade II supervisors, 12 have been filled and 6 (33%) are vacant. In the place of 1452 Anganwadi workers and helpers respectively, 1337 anganwadi workers and 1183 helpers have been appointed. Ninety-two percent of the posts of workers and 82% posts of the helpers have been filled. In the 46 mini anganwadis, 40 (87%) workers have been appointed. Among the clerical staff, 8 (47%) office assistants against the full strength of 17 were in position. Five (29%) of 17 junior assistants were in place.

The Semmanchery UPHC was the only 24/7 UPHC in Chennai Corporation but did not conduct deliveries. Except for this, all antenatal and postnatal care were being carried out for pregnant, lactating mothers and young children. All staff are hospital based. The staffing pattern and the number of sanctioned posts against each post is given in Annexure 7. Of the four sanctioned posts of medical officers, only two have been filled and two are vacant. Of the four posts of staff nurses, one was vacant. Three of the five posts for urban health nurses have been filled. There was no office assistant. Since there was not a single clerical staff, one technical staff had to double for the role with the result that only two UHNs were available at a time. While a few UHNs had been recruited on a contract basis, the Medical Officer of Semmanchery UPHC felt that there was less accountability and commitment with such recruits.

Section 4. Convergence between various departments

Provision for convergence

According to the Convergence Action Plan (CAP) chalked out under the National Nutrition Mission, committees have been formed at the State / District / Block levels to facilitate convergence across various health and nutrition related schemes between various departments. Guidelines have been issued on the points to be taken up for monitoring that include aspects of safe delivery, child feeding, treatment of illnesses and so on alongwith a set of activities with concerned government ministries and departments for synergy and convergence to achieve nutrition goals (Table 16). These committees are mandated to meet once in three months to review the progress of the Nutrition Mission with clear targets.

Table 16. Action Plan for Convergence Format

No	Areas of convergence	Concerned department	Component
1	Referral services	Health and Family Welfare Department, ICDS, Department of Rural Development and Panchayat Raj, Tribal Affairs	Referral of high risk pregnancy Children with Severe and Acute Malnutrition and anemia to be screened to CHC, NRC and DASH
2	Strengthening of AWC infrastructure	Department of Rural Development and Panchayat Raj	Construction of AWCs under MGNREGS and identification of gaps
3	Provision of basic ameneties at AWC	ICDS, Ministry of Drinking Water and Sanitation, PRI	Drinking water, Electricity and Toilets
4	Ensuring ECCE and ICE	Human Resource Development and Ministry of Women and Child Development	Early Childhood Care and Education
5	Trans – media	Information and Broadcasting, Dept of Information and Public Relation	Information and Education Campaigns
6	Disability	Department of Welfare of Diffrently Abled	Early detection of disability
7	Nutri garden in AWCs	Horticulture, Agriculture and Forest department	Implementation of nutrition garden in all anganwadis.

Source : CDPO, Poondi Block, Tiruvallur District.

According to information furnished by ICDS as part of POSHAN 2, block and district level convergence committees have been set up comprising of officials from ICDS, health department, Rural Development, MAWS, agriculture, civil supplies, Public Works department, School Education and locally elected representatives. These committes are expected to come together periodically to review the issue of convergence.

Data sharing between ICDS and Directorate of Public Health and Preventive Medicine is proposed to be achieived through the following measures : (i) integration of PICME software used by the health sector with the TN ICDS software for transferring data of pregnant mothers registered with the VHNS to AWWs to enable them to deliver nutritional supplements without omission. (ii) Data of all children born after April 2022 have been transferred from PICME to ICDS software through integration. All low birth weight babies are specially monitored by Anganwadi supervisors through ICT enabled growth monitoring devices. (iii) Home Based Young Child Care (HBYC) is provided by the Anganwadi workers and the entered data goes to concerned PHC medical offier for further follow up.

A combined review of AWWs and VHNS is supposed to be undertaken every Tuesday by the PHC Medical Officer. For immunization activity, the AWW mobilizes the mothers and children in the Anganwadi centre and the VHN provides the service. Health and nutrition awareness for adolescent girls, pregnant and lactating mothers are provided in unison by ICDS and Health department through Village Health Sanitation and Nutrition Day.

Actual convergence observed at field level

In Thiruvallur, the district convergence had been held on September 22nd 2022. The District Program Officer had listed out a set of items that were required to be provided byother departments, for strengthening the anganwadi centres and their activities in the district (Table 17).

Table 17. Issues raised by ICDS Thiruvallur for achieving convergence with other departments

No	Support required	Concerned department
1	Construction of new AWC (201) buildings and toilet construction (115)	DRDA and PRI
2	Creation of Community Kitchen garden with Murungai leaves	Agriculture / horticulture department
3	Rain water harvesting (1220 centres) Water connection (314 centres	Jal Jeevan Mission of the department of drinking water and sanitation
4	Strengthening of anaemia camps through community resource persons (CRPs) Seeds / saplings for ICDS beneficiaries Share date of next SHG meeting at Block level	Project Director, Magalir Thittam
5	School health camp for anaemia screening (11 – 17 years) Follow up of SAM children Data sharing requested for pregnant women under 18 years	Health and Family Welfare
6	Health and nutrition messages to school children	Education department
7	Seeds and seedlings to AWCs	Horticulture / Agriculture department

Source : District Program Officer, Tiruvallur.

Issues in convergence

At the ground level, health and nutrition activities are distinct and there is a clear demarcation between the roles of the VHNs/UHNs and anganwadi workers. Nevertheless, since they serve the same target group, synergy is required when referral is needed. This does not take place, since joint convergence meetings between the health sector and ICDS have not taken place during the past two years. In Thiruvallur district, the joint meeting held for Anganwadi workers and VHNs at the PHC died a natural death since the anganwadi workers did not find them to be useful. Since information sharing does not take place, each enumerates the target groups separately, resulting in duplication of work.

Both groups undertake communication activities and organize special events for the same. There is an immunization day in the centre, a Village Health and Nutrition day, monthly meetings organized at the anganwadi centres for community members under the Jan Andolan initiative, the ‘buddy mother’ initiative (in Poondi Block) wherein mothers of young children assemble every Friday to share experiences and learn from each other and so on. During September the entire month is devoted for nutrition awareness activities. On an average a mother visits the centre for atleast seven days in a month. Both groups face the dissatisfaction of the community members for repeated programmes carrying the same messages.

Besides the AWWs and VHNs, there are field workers under other auspices. In Poondi Block of Thiruvallur, the women health volunteers under the Mahalir thittam implemented by the Tamil Nadu Corporation for Development for Women (TNCDW), support SHGs in developing kitchen gardens. Under another scheme, community resource persons belonging to TNCDW have taken an awareness campaign on anaemia. This issue was raised by the DPO of Thiruvallur ICDS in the

convergence meeting (refer table 17 also). All these initiatives are independent of eachother, yet share a nutritional goal. These initiatives by other departments even if temporary also need to achieve synergy with the existing progammes.

There is a dearth of manpower at both sites. Kachur PHC in Poondi Block is an upgraded PHC and has full complement of ANMs, senior nurses and medical officer. All the sub-health centres are also fully manned. However, in ICDS, there were only 2 Grade II supervisors in the place of 6 The two supervisors had to manage all the six sectors. The Urban Community Health Center in Semmancheri catered to 50,000 population. Though it does not have health sub centres and does not conduct deliveries, home visits are undertaken. This is much affected since they are understaffed. According to the Medical Officer, though there are contract employees, they do not have the same degree of accountability as regular employees.

At the Block level, the CDPO of Poondi, who had recently taken charge was trying to organize a convergence meeting with the Rural Development department, at the time of the study. According to the VHNs, convergence meetings were held between VHNs and anganwadi workers at Kachur PHC, but these had died a natural death and anganwadi workers stopped coming since they did not find it very relevant. In Chennai district, there were two lines of authority namely the city Commissioner and the Collector, either of whom could preside over a convergence meeting. The ICDS Directorate had recently made a representation to the Government of Tamil Nadu for considering the Collector as the convening authority for convergence among line departments.

In Poondi block, there is an initiative to conduct convergence meetings once in three months, facilitated by the CDPO and presided by the District Revenue Officer (DRO). The CDPO at her own initiative has formed a Whats App group with the block coordinator, Grade 1 supervisor, VHN and Medical Officer. Administrative issues especially with regard to infrastrucuture, ameneties and planning events are proposed to be discussed in these meetings. The Collector of Thiruvallur has taken a special interest in health and nutrition issues and addresses convergence in his meetings. He has suggested targets for reducing undernutrition, and directed the Rural Development Officer to improve the infrastructure in selected anganwadis through MGNREGS. He has also directed the horticulture department to supply seedlings of fruits and vegetables to households with young children.Nevertheless, these are administrative meetings held sporadically and there is an unmet need for convergence at various levels.

In Semmancheri of Sholinganallur zone in Chennai, the Project Officer of ICDS takes the lead for convergence. The concerned file is first put up to the Joint Commissioner of Education after which it goes to the Commissioner of Education.Separate notes have to be put up to the individual departments (for eg) corporation commissioner for maintenance of buildings. According to the PO since convergence requires coordination between various government agencies,it is best addressed by the Collector, who has the authority to convene the various departments.

Both the health sector and ICDS have multiple levels of leadership and convergence and synergy is needed at all levels. Two kinds of convergence were identified namely technical convergence to assess progress, impact of interventions and strategies for improving service delivery.Administrative convergence was needed for improving infrastructure, sharing of resources and planning joint activities.

4

Discussions and Recommendations

General observations

Tamil Nadu is in a phase of nutritional transition with decreasing levels of under nutrition, increasing levels of obesity and other non communicable diseases and high prevalence of micro nutrient deficiencies such as anaemia among adult women and moderate to severe under nutrition and anaemia among young children. In this phase, for progress to happen, besides effective utilization of the State sponsored feeding programmes, household dietary and feeding practices will have to improve, alongwith access to safe drinking water and sanitation. Based on the field observations, the following are the challenges confronting ICDS in achieving nutritional goals:

1. ICDS is geared to address under nutrition and there is relatively less focus on NCDs such as diabetes, hypertension and obesity. Dietary management of diabetes, hypertension and obesity during pregnancy and lactation is an important theme to be included in the training of the anganwadi workers.

2. ICDS workers are familiar only with some key nutritional messages such as importance of colostrum, sprouted grains, a balanced diet and so on, which they disseminate as part of their awareness generation activities. They lack training in handling practical problems related to breast feeding, child feeding and planning low-cost nutritious meals (for eg) mothers need guidance and support in overcoming nausea during pregnancy and in improving food intake. Similarly they require practical solutions in addressing problems such as sore nipples, engorged breasts, expression and storage of breast milk for feeding the baby during mothers' absence and so on. Psycho social aspects of feeding such as children's lack of interest in eating, likes and dislikes, introducing variety in the daily diet, how to increase quantity gradually, how to improve the nutritive value of a diet without increasing bulk, management of feeding during illnesses especially respiratory tract infection are areas in which they need training.

3. Community based and household level management of moderate to severe and acute under nutrition among children without medical complications is now being advocated as a cost effective and sustainable strategy for addressing stunting, wasting and underweight. This involves timely detection and day-to-day monitoring of the feeding of undernourished children in their homes. Since ICDS is a centre based programme of day care and pre school activities for children between 3 to 6 years of age, such an intense monitoring will be possible only with dedicated workers for this purpose. While anganwadi workers can provide the dietetic counselling, growth monitoring and hold discussions with caregivers at the centre, it is suggested that a dedicated village based volunteer be hired to undertake the household monitoring of severely underweight and stunted children. An incentive on a case by case basis can be provided to the volunteers for follow up of SAM children. Women health volunteers of the Tamil Nadu Development Corporation for Women could be given

additional training and utilized for these services. This needs to be discussed between the concerned departments. Some anganwadis have been converted to LKG and UKG class rooms and special teachers have been appointed. In such centres the existing AWW can monitor the 0-2 children at the household level.

4. Households with SAM children should be given priority by line departments for seeking all eligible entitlements; for (eg) every household member will be eligible for some entitlement or the other such as old age pension, mid day meal, job card under MGNREGS and so on. The households may also require access to toilets and safe drinking water. An entitlement card listing all entitlements to which the households are eligible should be made by the Rural development and PRI department with the help of the anganwadi workers and submitted to the concerned line departments for action. This will ensure convergence of all government services at the households of undernourished children.

5. At the community level, the members of the Village Sanitation committee, PRI members and SHG members should be trained in basic nutrition literacy with special emphasis on the first 1000 days of life. A village action plan can be evolved by the committee for making their villages under nutrition free.

6. A number of activities such as anaemia screening and awareness programme in schools through planting of drumstick leaves are undertaken by ICDS. While these do have nutritional goals, they will not have any effect on the under nutrition levels in children below two years. It is suggested that 80% of the communication efforts in ICDS be targeted at households with children below two years such that a gradual process of reduction in under nutrition will set in.

7. The poor condition of anganwadi buildings, lack of toilets and electricity is a major deterrent to effective utilization of services. Aspirational communities equally value health and education and are likely to under utilize services if they do not match their expectations. Unlike the health sector which has multiple sources of funding for improving infrastructure, ICDS is dependent only on MGNREGS funds. Since MGNREGS fund is also diverted for other job work at the village level, the pace of improvement is very slow. A dedicated fund is needed for repairing and maintaining existing anganwadis and construction of new ones. Two or three percent of the total allocation of the Public Works Department can be earmarked for anganwadi buildings. New anganwadis can be designed in consultation with ICDS on the features that will make it child and teacher friendly. An untied amount of Rs one lakh annually could be made available to each District Program Officer to undertake urgent repair and maintenance work.

8. The reimbursement for the gas cylinder utilized for cooking in the centres is based on a fixed rate on a per child basis which works out to about Rs 400 per cylinder. This is much below the actual cost of about Rs 1000 per cylinder and results in outof pocket expenditure for the workers. Actual cost of the cooking gas cylinders must be reimbursed.

9. For the public, the anganwadi worker, supervisor and health workers are the first line of contact with the system. Vacancies at this level would mean that the first link between the people and the system is broken. The services will be affected. Hence the vacancies at the level of field workers and supervisors must be filled at the earliest.

10. Maternity support to mothers under the Dr. Muthulakshmi Reddy Scheme (Magaperu Uthavi Thittam) consists of a cash incentive of Rs.14,000 disbursed in four instalments at various stages of pregnancy and well after the birth of the baby. This defeats the entire purpose for which it was originally started. When the scheme was introduced in 1987, cash was given in two instalments during the 7th month of pregnancy and immediately after delivery. Women from underprivileged household drop out of paid work towards the end of pregnancy and stay at home for a few months after the birth of the baby. Consequently they loose wages. The amount was given as compensation for wage loss (as the name of the scheme suggests) and for them to use it for eating nutritious food and to manage out of pocket expenses. At present the money is split into four instalments and each tied with the goal of ensuring compliance to services. The first instalment is given during registration, later, on complying with immunization, on adoption of family planning strategies after delivery and so on. This defeats the purpose for which it was started. In Tamilnadu, institutional delivery and immunization have reached nearly 100%. Fertility rates have fallen. There is no need for coercive measures. Moreover by making the adoption of a family planning method by the mother compulsory as the final qualifying aspect for receiving the rest of the money, it puts the onus on women. The male sterilization rate is abysmally low. Counselling can be provided to the fathers to adopt family planning strategies. Irrespective of whether she avails family planning services or not, every mother who delivers a child requires the maternity support. Hence it is recommended that an unconditional cash support be given in two instalments, during the 7th month of pregnan cy and immediately after delivery.

11. There should be a grievance redressal mechanism for all the mothers for whom payment is pending. The help desk being set up at the district level, in the ICDS Directorate at Taramani, should act as a nodal point for all service related queries and complaints.

12. Nutrition education in PHCs for both in patients and outpatients is a felt need. Since patients spend the whole day at the PHC their time can be effectively spent by watching educational videos on health and nutrition. Posting of a dietitian in upgraded PHCs can be considered. The dietitian can provide dietary counselling to inpatient and outpatients on all nutrition aspects and support mothers who deliver at the facility to initiate breastfeeding within the first hour.

13. Co-ordination with other departments happens in an adhoc manner; other than ICDS, most of the other departments are yet to understand the vulnerability of the first thousand days and the value of these services; they do not perceive themselves as stakeholders and for them it is not a priority.

State specific policies for addressing malnutrition during first thousand days

Policy of addressing malnutrition

Tamil Nadu is in a phase of nutritional transition with triple burden of malnutrition namely under nutrition, prevalence of NCDs and micro nutrient deficiencies. There is increasing incidence of gestational diabetes, hypertension and obesity among mothers. Both under nutrition and NCDs are two sides of the same coin. Low birth weight infants while suffering from adequate weight gain during early childhood, may become diabetic and obese adults in later

life. Similarly mothers who suffer from NCDs in turn will give birth to infants with health complications. At present anganwadi workers are trained only to address under nutrition. The job training provided to anganwadi workers includes IYCF practices, breastfeeding, feeding of children below five, immunization and health issues. The nutrient and dietary management of NCDs should be incorporated into the training programme of anganwadi workers, supervisors and CDPOs.

Policy of inclusion

Tamil Nadu has achieved universalization of ICDS with the establishment of about 54,439 anganwadi centres. A main centre caters to a minimum population of 400 and a maximum population of 800 in rural and urban areas respectively. A mini centre caters to a minimum population of 150 and a maximum population of 400. However there are still inclusion challenges for certain groups of children such as those of migrant workers and special children. Most migrant workers live in the work sites and do not form part of the mainstream population. Hence they need to be specially enumerated. While the PICME app 2 accessed by health workers is meant to capture migrant workers, this will not work unless there is self declaration by migrants. The Rural Development and PRI department is best equipped to undertake their enumeration and link them up with the health and ICDS sectors.

ICDS is not geared to cater to the needs of special children, who require special intervention therapies. At present there is an early intervention centre at the district level at both study sites. However for those parents who have to travel a long distance every day for therapy and development inputs, it is impractical to carry the children to a centralized service far away. In co-ordination with Sarva Sikhsha Abhayaan, 42 block level early intervention centres have been started. Even this may not be accessible to several children. Novel methods of reaching out have to be initiated. It would be worthwhile to first map out the distribution of special children in a given community and then decide the location of the early intervention centre at a midpoint wherein the population can readily avail the services.

Policy of a 'three prongedapproach' – individual, household and community level.

At present, services for addressing malnutrition focus on individuals such as pregnant women lactating mothers and young children. Empowering thesehouseholds with the needed infrastructure, material support and knowledge to tackle malnutrition would go a long way in reducing the incidence of stunting,wasting and underweight in young children. In this initiative, all government departments converge at the household level, to fulfill the entitlements needed by the households.

Every member of the household is listed and if they are eligible for some government scheme or the other, whether food or cash based such as mid day meal or old age pension are linked with the concerned government departments. Similarly the households are linked with the department of drinking water and sanitation for provision of toilet and safe drinking water if needed. Any sick member of the household is referred to the hospital and covered under the Chief Minister's Health Insurance Scheme. Saplings of fruits and vegetables are provided to the households through the horticulture / agriculture department. Livelihood opportunities through MGNREGS are provided to able bodied adult men and women. In addition, the father of the young child and elders are given awareness on the feeding and care of young children and mothers at the anganwadi center. Thus through convergence with various services,a conducive climate is created at the household level for tackling the issue of malnutrition.

At the community level, there is already a platform in the form of Village Health and Sanitation Committee consisting of SHG members, PRI members, anganwadi worker and school teacher. An annual grant of Rs 10,000 is given to this committee for undertaking any activity considered relevant to achieving 1the goal of total health. These committees can be converted to 'Champions of Nutrition' for achieving a malnutrition free village. Capacity building of this committee on select nutrition themes such as a balanced diet, IYCF practices, care of pregnant and lactating mothers, can be undertaken. Those villages that show an annual 2% decline in undernutrition among children between 0-2 years can be given an additional incentive of Rs 5000.

Micro action plan for convergence

There are two levels and two dimensions to convergence; at the field level - between the grassroot workers of various departments and at a programmatic level between supervisors and officials. The two dimensions to convergence are technical and administrative. Technical convergence includes discussions between the functionaries on the reach, progress and effectiveness of the services, lessons learnt, goal setting and impact evaluation. Administrative convergence includes supportive actions, sharing of data and resources and joint planning for service delivery.

Convergence starts at the village level between the various field level functionaries of line departments in providing basic services to the target groups (Table 18)It is recommended that a village level local volunteer be appointed for following up households with children between 0-2 years of age.

Table 18. Convergence of grassroot functionaries at Village level

Activities	Functionaries	Periodicity
Enumeration of Pregnant and Lactating mothers	VHN / UHN	As and when pregnancy is reported and soon after delivery.
Enumeration of 0-6year old children	AWW	Monthly
Enumeration of special children under 6 years	Dept of disability Rural dev and PRI dept	Initial screening and mapping with periodic updation.
Enumeration of migrant families with young children	Rural dev and PRI dept	Seasonal or quarterly around time of migration
Sharing of data	VHN/UHN/AWW/dept of disability/Rural dev and PRI dept	Between VHN/UHN/AWW it should be monthly. Frequency of sharing of data with other departments can be mutually decided.
Nutritional Assessment of Children	AWW with VHN if possible	Monthly
Medical Assessment by RBSK team for surgeries and medical intervention	RBSK / VHN / AWW	Quarterly or as decided by the teams

Follow up visit of highrisk pregnant cases at household level (health condition, dietary intake, consumption of THR). Follow up of other pregnant woman for consumption of THR	VHN / AWW Village volunteer	Monthly or as decided upon by the functionaries Weekly once
Follow up visit of new born to check on breastfeeding and to see if lactating mother is consuming the THR	AWW / VHN (also checks on bleeding and health status of mothers) and village volunteer hired for monitoring0-2 households	
Daily follow up of SAM children (7 – 24 months) to see if children are receiving complementary diet adequate in quality and quantity / counselling to family members. Follow up of children under 6 months for exclusive breastfeeding.	Village volunteer Village Health and Sanitation committee member (could go periodically)	Every day till child comes back to normal status
Health and Nutrition awareness activities	AWW/VHN/Village sanitation committees and volunteer	Twice a year
Review meeting to check progress in child feeding, reduction of undernutrition and health status of mothers	To be convened by supervisors of ICDS and attended by AWW, VHN, village volunteer, members of health and sanitation committee	Quarterly

Table 19. Action Plan for convergence at PHC level to be held quarterly

Activity	Tasks	Convenors	Participants
Technical Review meeting	• Rev of high risk cases, follow up • Early initiation of breastfeeding at PHC • Status of children receiving Corrective surgery and referral • Status of adequacy of comple-mentary feeding at community level for 7-24 months • Special children referral to block / district early intervention centres • Reduction in stunting, wasting undernutrition & anemia in women and children	CDPO of ICDS and MO of the concerned PHC	AWW, VHNs, staff nurses at PHC, ICDS supervisors, special invitee from RBSK

In addition administrative meetings can be held through whats app group calls by the CDPO with Medical Officer of PHC, Rural Dev and Panchayati Raj department, water and sanitation dept and horticulture department.

Table 20. Quarterly Action Plan for convergence at Block Level

Activity	Tasks	Convenors	Participants
Review meeting	• Data sharing& consolidation of pregnant, lactating women and children below six years • Review of progress of reduction / management of under nutrition, gestational diabetes, hyper tension and obesity • Training needs of field level functionaries • Collaborative community Activities	District Program Officer (DPO) ICDS	DPO, Block Medical Officer, staff nurses, CDPOs

Table 21. Half yearly Action Plan for convergence at District level

Activity	Tasks	Convenors	Participants
Review of convergence under Poshan Abhiyaan for reducing under nutrition	• Performance review with regard to reduction in undernutrition and anemia levels. • Convergence at household level • How many households with SAM children have received necessary govt entitlements applicable to them. • Convergence at anganwadi level • How many centres newly built ? how many repaired ? other facilities at anganwadis. • Vacancy position of functionaries and filling up of posts • Financial sanction for projects	District Collector	District Program Officer (DPO) ICDS, District Medical Officer, District Maternal and Child Health Officer, Director of Pub health , Director Rural Dev and PRI, Director drinking water and sanitation, Director Horticulture, Public Works Department, Tamil Nadu Development Corporation for women

The Way Forward

Operationalizing the above recommendations can be done through the following steps :

1. Preliminary meeting with the Heads of Social Welfare and Women Empowerment department, Health and Family Welfare, Director of ICDS, Director of Public Health and Preventive Medicine, Head of Rural Development Department and members of the State Plannning Commission to discuss the above recommendations, modifications and implementation.

2. **SOP FOR Convergence with Health and Nutrition Department**

2.1. Convergence required in the following activities

- Earlier Antenatal Registration
- Making the mother to get five antenatal visits
- High Risk identification and followup
- Ensuring institutional Deliveries
- Ensuring the consumption of
    - IFA tablet
    - Calcium Tablet
    - Utilisation of nutrition kit beneficiaries
    - Consumption of THR by the mothers
- Family counselling to avail services
- Reporting and recording of Birth in their area
- Visitor Mother identification registering and follow-up care
- HBNC and HBYC visits
- Immunisation Activities
    - Identification ofDue beneficiaries
    - Mobilising them
    - Recording and reporting
- Family welfare services
- Reporting of Child death and maternal death
- Participant in the
    - National health program activities
    - Camping
    - Committees
    - Health days
    - Coordinating with the RBSK Team
    - Attending the meetings
- Referral services

2.2 Action plan required for Convergence in the Successful manner

- Village Level
    - Joint Home visit by the AWW, VHN
    - Sharing of the following lists by the VHN to AWW and AWW to VHN

- Newly registered AN Mother
- Visitors
- HR mother
- Unimmunised List
- EDD
- Malnourished children (SAM/MAM)
- Child Death and Maternal Death
- Low Birth Weight
- SNCU Discharge

- Visiting the AWC by VHNs regularly
- Conducting AN clinic , Immunisation Clinic, VHN Day and Mothers Meeting
- Rerecords and Report Updating
- Jointly conducting meetings, Camps etc
- Informing about the visit in advance to the AWW
- Involving the supervisors H&N
- Sharing the information on H&N and Knowledge
- Guiding the AWW where ever Necessary
- Continuous focus on dropout uncovered beneficiaries
- Involving other agencies PRI, SHG, ASHA and Voluntaries
- Creating the community awareness.
- Attending the Training programs and meetings

PHC Level

- Monthly Review meeting at GPHC by the AWW with their supervisors
- Reviewing and Getting the Data by SHN from AWW
- Getting the list of Sam / MAM HR Visitor, Sick child List and HBNC, HBYC visited details
- Any Doubtrose regarding Health Programs to be clarified
- Review by the PHC MO
- Providing Information Education and Communication on monthly specific activities and Program
- Periodical knowledge updation in health programs
- Allow the supervisors to share their Health and Nutrition Issues of AWCs, Mother, Children in their area AWW and Helper
- Clients referred by the AWW to the PHC and Referred to AWC for nutrition supplementation are to be discussed; issues to be short it out then and there.

Block LEVEL

- Cooperation coordination among the CDPO and BMO
- Attending the block Level CNS meeting by the CHN/BMO
- Attending the Block Level review meeting monthly once by the CDPOat Block PHC
- Organising the training program where ever needed
- Jointly conducting the training programs
- Graveness to be addressed on both sides

- Constrains in availing the H&N services by the beneficiaries' field staff need to be discussed And activities to be carried out elevate the constrains
- Sharing the Data among H&N department monthly review points submitted to District level officials
- Better mobilisation of beneficiaries to be monitored
- Increasing the regular meeting and trainings

District LEVEL

- District level meeting attending by DMCHO at CDPO with coordination meeting with H&N
- Attending the Meeting at DDHS office by the CDPO monthly once during MO/BMO meeting
- Data validation to be done at dist. level in related to H&N activates
- Role of the AWW in AMB program to be strengthened and implementing at the field level need to be monitored and coverage to be improved the plan for low coverage areas to increase the coverage rate
- Cooperation and coordination in implementing the H&N program at district level
- Participant in the training programs
- Preparation of review format at village level PHC, block district level on need base, consolidation and compilation and review it Various level
- Visiting the AWCs , attending the H&N coordination meetings getting feedback
- Arranging the training program at PJHC and Block level
- Participating in the maternal death and child death audit meetings, planning the activities to reduce the MMR, IMR and implementing the activities.

3. Reorienting the training curriculum for Anganwadi workers to include dietary management during diabetes,obesity and hyper tension and other life style related diseases along management of Tuberculosis and handling of problems during pregnancy such as nausea, vomiting and addressing breastfeeding and complementary feeding problems.

4. Monitoring by the District Collector during monthly review meeting. Sensitization workshop / meeting for collectors on the importance of first 1000 days, need for conducting convergence meetings for addressing malnutrition, scope of such convergence meetings, identifying key government departments for participation and periodicity of such meetings.

5. A joint workshop with representatives of ICDS and Public Health and Preventive medicine to discuss about data sharing, areas of collaboration, periodicity of review meetings for grass root functionaries of both departments as well as other departments who may be implementing health and nutrition activities, scope of such meetings, their periodicity and impact assessment.

6. Identifying 'community champions' and building their capacity for supporting households with malnourished children and following up with them till the children reach the 'well nourished' category.

5

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6

Annexures

Annexure 1

Checklist for interview with families of migrant workers with young children

General

1) From which part of the country do the migrants come ?
2) During which time of the year are they here ? Why did they choose Chennai ?
3) What jobs were they doing in their native place and what job are they doing here ?
4) How much is the pay per day ? Where do they stay? Do they pay rent ? Do they have a ration card? Do they have Aadhar card ? Do they get rice / wheat from the ration shops? Or do they buy all provisions from the market ?
5) How much do they spend in a day or month ? Are they able to make both ends meet ? Are they able to save money and send home ?
6) Do they come with their entire family or with only few members or alone ? (does it include wife and children)
7) Are they getting any services from the Government ? if yes, which are these ? If no, why?
8) Approximately how many families are there in the settlement /area where migrants stay
9) Do they stay as a group of their own or as part of the local community ? or do they stay in the work site ?

Specific (only to be asked to households with children under 2 years)

1. Name of the child :
2. Age of the child : Date of birth : Gender : M / F
3. Where was the child born?
4. What was the birth weight ? (In case they do not know, check if child was kept in an incubator or with the mother)
5. Was it a normal delivery or caesarian ?

6. When was breastfeeding initiated ?

a) within one hour
b) within one to two hours
c) more than that

7. What food is being given now ?
a) only breastmilk
b) only other food
c) both breastmilk and other food

Also ask why ? (if child is less than 6 months old and they have stopped breastfeeding or giving other food ask why? If child is more than 6 months old and they are giving only breastmilk ask why ? Also ask when they will start giving other food)

8. If breastmilk has completely stopped, ask why ?
9. If other food is being given, find out as to what all is being given ?

10. Routine feeding schedule : Note what is being given and when it is being given.
    Approximate quantity such as one bowl or two bowls or one tumbler and so on.

    Morning 6 – 8 am
    Mid-morning 9-11 am
    Afternoon 12 – 2 pm
    Evening 3-5 pm
    Night 6-9 pm

11. Is the child ill at the time of the survey ? If yes, what is the illness ? Have they shown to a doctor ? If yes, what was the diagnosis and any medicine given ? If no, why ?
12. Which health service do they opt when the child is sick? Private hospital or govt hospital ? why?
13. What problems do they have in child rearing, especially feeding ?
14. Anything else that they want to say ?

Annexure 2

Checklist for interview with mothers of children between 7 months & 2 years

General

1. Name of the child :
2. Name of the mother :
3. Address :
4. Age of child (in months):
5. Is the mother (a) separated (b) widow (c) living with husband
6. Is the mother doing paid work ? (yes) (no)
7. If yes, specify
8. What job does the father do ?
9. Is it her own home or rented ?
10. Is there a toilet in the house ?
11. How many members in the house and how many are earning ?
12. Caste :

Feeding Practices

1. What food is now being given to the child? Are both breastmilk and other foods being given ?
2. If only breastmilk is given what are the reasons ?
3. If only other foods are given what are the reasons ?
4. Tick all the food items being given to the child :
   a) Rice –
   b) Dhal –
   c) Ghee –
   d) Greens -
   e) Root Vegetables –
   f) Other vegetables –
   g) Milk –
   h) Curd –
   i) Egg –
   j) Meat
   k) Fish –
   l) Biscuit –
   m) Tea –
   n) Chips –
   o) Chocolates –

p) Other beverages (like Horlicks,boost etc)
q) ICDS supplement
r) Idli, dosa and other tiffin items (specify)
s) Fruits
t) Any other food

5. Is milk being given in a bottle ?
6. Previous day's feeding schedule
   Morning – (6 am to 8 am
   Mid morning - (9 am to 11 am)
   Noon (12 – 2 pm)
   Evening (3 to 5 pm)
   Night – (6 pm – 8 pm)
7. Who feeds the child ?
8. What feeding challenges does the caregiver face ?
9. What support do they expect from the anganwadis and from the health workers ?

Breastfeeding experience

1. How soon after delivery did you initiate breastfeeding ? Why?
2. Who helped you in the hospital?
3. Did you have successful lactation ?
4. What challenges did you face in breastfeeding (sore nipples, engorged breasts, cluster feeding by baby, problems in extracting and keeping if going out etc)
5. Did you get enough rest during the first six months ?
6. Were your family members supportive ?
7. What support did you get from health and anganwadi workers ?

Annexure 3

Child Feeding Practices and Observation schedule

General

13. Name of the child :
14. Name of the mother :
15. Address :
16. Age of child (in months):
17. Is the mother (a) separated (b) widow (c) living with husband
18. Is the mother doing paid work ? (yes) (no)
19. If yes, specify
20. What job does the father do ?
21. Is it her own home or rented ?
22. Is there a toilet in the house ?
23. How many members in the house and how many are earning ?
24. Caste :

Feeding Practices

10. What food is now being given to the child? Are both breastmilk and other foods being given ?
11. If only breastmilk is given what are the reasons ?
12. If only other foods are given what are the reasons ?
13. Tick all the food items being given to the child :

a) Rice –
b) Dhal –
c) Ghee –
d) Greens -
e) Root Vegetables –
f) Other vegetables –
g) Milk –
h) Curd –
i) Egg
j) Meat
k) Fish –
l) Biscuit –
m) Tea –
n) Chips –
o) Chocolates –
p) Other beverages (like Horlicks,boost etc)
q) ICDS supplement
r) Idli, dosa and other tiffin items (specify)
s) Fruits

t) Any other food
u) Is milk being given in a bottle ?
v) Previous day's feeding schedule
  Morning – (6 am to 8 am
  Mid morning - (9 am to 11 am)
  Noon (12 – 2 pm)
  Evening (3 to 5 pm)
  Night – (6 pm – 8 pm)

w) Who feeds the child ?
x) What feeding challenges does the caregiver face?

Observation about stools

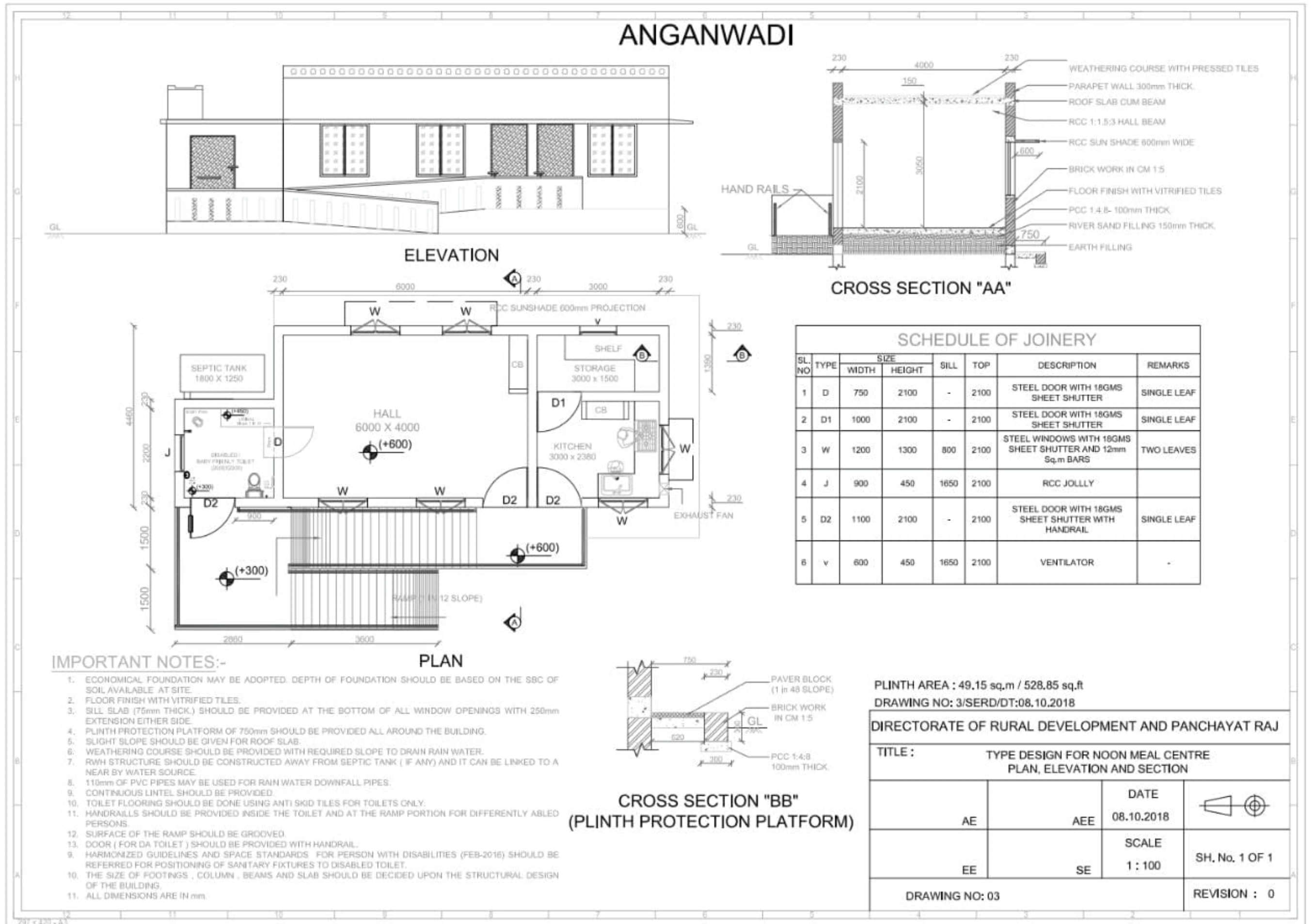
1. Is your child passing stools regularly ? (yes, no)
2. If yes how many times in a day ? (once, twice, more than that ?)
3. If the child does not pass stools everyday, then how often does it pass stools ?
4. What is the consistency of the stools ? (formed, loose)
5. Does the child pass stools easily or is there constipation?
6. What is the colour of the stools ?
7. In case there is constipation have you taken any action ?
8. If yes, please describe

Child Health History

1. How many times has the child fallen sick since birth ?
2. What was the illness ? (cold, fever, cough, all of these)
3. Was the child taken to the health worker ? (yes, no)
4. If yes, what treatment was given ?
5. In which facility (govt hospital or private)
6. What advice was given regarding feeding and care ?
7. Were they able to follow that ? If no what was the reason?
8. Was the child sick in December 2022?
9. If yes, please give details
10. Is the child now under treatment ? How is the health ?

Annexure 4

Anganwadi blueprint



SL. NO	TYPE	SIZE WIDTH	SIZE HEIGHT	SILL	TOP	DESCRIPTION	REMARKS
1	D	750	2100	-	2100	STEEL DOOR WITH 18GMS SHEET SHUTTER	SINGLE LEAF
2	D1	1000	2100	-	2100	STEEL DOOR WITH 18GMS SHEET SHUTTER	SINGLE LEAF
3	W	1200	1300	800	2100	STEEL WINDOWS WITH 18GMS SHEET SHUTTER AND 12mm Sq.m BARS	TWO LEAVES
4	J	900	450	1650	2100	RCC JOLLLY	
5	D2	1100	2100	-	2100	STEEL DOOR WITH 18GMS SHEET SHUTTER WITH HANDRAIL	SINGLE LEAF
6	v	600	450	1650	2100	VENTILATOR	-

Annexure 5

Vacancy position in Tiruvallur District, ICDS

Tiruvallur District - ICDS				
Sl.No.	**Name of the Post**	**Sanction**	**In Position**	**Vacant**
1.	DPO	1	1	-
2.	CDPO	13	12	1
3.	ICO	1	1	0
4.	Superintendent	14	13	1
5.	Statistical Inspector	1	-	1
6.	Assistant	2	2	0
7.	Junior Assistant	14	5	9
8.	Typist	13	0	13
9.	Supervisor Grade - I	13	13	-
10.	Supervisor Grade -2	66	35	31
11.	Driver	14	2	12
12.	Office Assistant	14	12	2
13.	Watch Man	13	0	13
14.	AWW	1718	1334	384
15.	AWW (Mini)	42	36	6
16.	AWH	1718	1439	279

District Program Officer, (ICDS), Tiruvallur

Annexure 6

Vacancy details in Chennai ICDS

Sl.No.	Name of the Post	Sanction	In Position	Vacant
1.	DPO	1	1	0
2.	CDPO	16	16	0
3.	Superintendent	17	17	0
4.	Statistical Inspector	1	0	1
5.	Assistant	2	1	1
6.	J.A.	17	5	12
7.	Typist	1	0	1
8.	Supervisor Grade 1	55	55	0
9.	Supervisor Grade 2	18	12	6
10.	Driver	1	1	0
11.	O.A.	17	8	9
12.	Anganwadi worker	1452	1337	115
13.	Anganwadi helper	1452	1183	269
14.	Mini anganwadi worker	46	6	40
15.	Nutritionist	1	1	0
16.	Industrial cooperative officer	3	3	0

Annexure 7

Vacancy in Semmanchery UPHC

SHOLINGANALLUR ZONE 15				
SEMMANCHERY 24 HRS UPHC (ONLY 24 HRS UPHC IN GCC)				
Sl.No.	**Name of the Post**	**Sanction**	**In Position**	**Vacant**
1.	MO	4	2	2
2.	STAFF NURSE (SHIFT DUTY)	4	3	1
3.	NCD - STAFF NURSE	2	2	0
4.	POLY CLINIC	1	1	0
5.	SHN	1	1	0
6.	UHN / ANM	5	3	2
7.	PHARMACY	1	1	0
8.	DEO	1	0	1
9.	FSW	3	2	1
10.	OA	1	0	1
11.	SECURITY	2	2	0
	TOTAL	**25**	**17**	**8**

Participatory exercise with the Village Health Nurses in Poondi Block, Tiruvallur District

Focus Group Discussion with the Anganwadi workers in Semmenjeri, Chennai

Focus Group Discussion with the young fathers in Pondavakkam village, Poondi Block, Tiruvallur District

Interview with the Deputy Director of Health services, Tiruvallur

Focus Group Discussion with the Anganwadi workers and Supervisors in Poondi Block, Tiruvallur District

Interview with the District Program Officer, ICDS, Tiruvallur

Group discussion exercise among Anganwadi workers in Poondi Block, Tiruvallur District

Group discussion exercise among Anganwadi workers at Semmencherry, Chennai

Focus Group Discussion with Anganwadi workers, VHN and Medical Officer at Semmencherry, Chennai

Interview with CDPO and District program Officer, ICDS, Chennai

The issues of Malnourishment in the first 1000 days of Children in Tamil Nadu with specific reference to Convergence

The first 1000 days of life - between a woman's pregnancy and her child's second birthday - is the critical window to ensure that children survive and thrive, and influences not only survival of a child, but also the child's ability to grow, learn and rise out of poverty. As such, it contributes to society's long-term health, stability and prosperity . This report is the result of a Qualitative Study conducted on **"The issues of malnourishment in the first 1000 days of Children in Tamil Nadu with specific reference to Convergence"** by Integrated Rural Community Development Society (IRCDS) for the Tamil Nadu State Planning Commission.

The objective of this study is to map interventions during the first 1000 days of children by various departments, identify the challenges and gaps in ensuring convergence among various departments, derive a State Strategy, and suggest suitable policy measures for ensuring convergence of line departments in combating malnourishment among children. The report also suggests a Standard Operating Procedure (SOP) for the Convergence plan, at the local, block, and district levels. It serves as a comprehensive guide, providing valuable insights for researchers, policymakers, and stakeholders, particularly focusing on Nutrition in the first 1000 days of a child's life.

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