



Ministry of Health and Family Welfare  
Government of India



# KEY ACHIEVEMENTS FROM 5 YEARS OF COLLABORATION

NATIONAL CENTRE OF  
EXCELLENCE (NCOE) FOR  
SAM MANAGEMENT

KALAWATI SARAN  
CHILDREN'S HOSPITAL,  
NEW DELHI





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## Chapter 1

### BACKGROUND

Kalawati Saran Children's Hospital (KSCH) is a premier institution for child health services under Ministry of Health & Family Welfare (MoHFW). It was started in 1956 and currently is a part of Lady Hardinge Medical College which was founded in 1914.

### Involvement of KSCH in national health programmes

In addition to providing tertiary level care to sick children, Kalawati Saran Children's Hospital, New Delhi has contributions in several public health programme development and implementation. Few important contributions are enumerated below

- ✦ Diarrhea Treatment and Training Unit (DTTU)
- ✦ Integrated Management of Neonatal & Childhood Illnesses (IMNCI)
- ✦ Facility based IMNCI
- ✦ Pre-service IMNCI
- ✦ Infant & Young Child Feeding (IYCF)
- ✦ National Collaborating Centre for Adverse Events Following Immunization (AEFI)
- ✦ Revised National Tuberculosis Control Programme (RNTCP)
- ✦ National AIDS Control Programme- Pediatric center of excellence for HIV treatment
- ✦ Programmes on Adolescent Health Care



One of the busiest children hospitals in the country which caters to a daily OPD attendance of 800-1000 children, 80-100 new admissions from Delhi and other states



One of a few hospitals with dedicated 24-Hour Emergency and Triage room for sick children







Background

## UNICEF extended support to KSCH in 2012 to establish NNRRTC

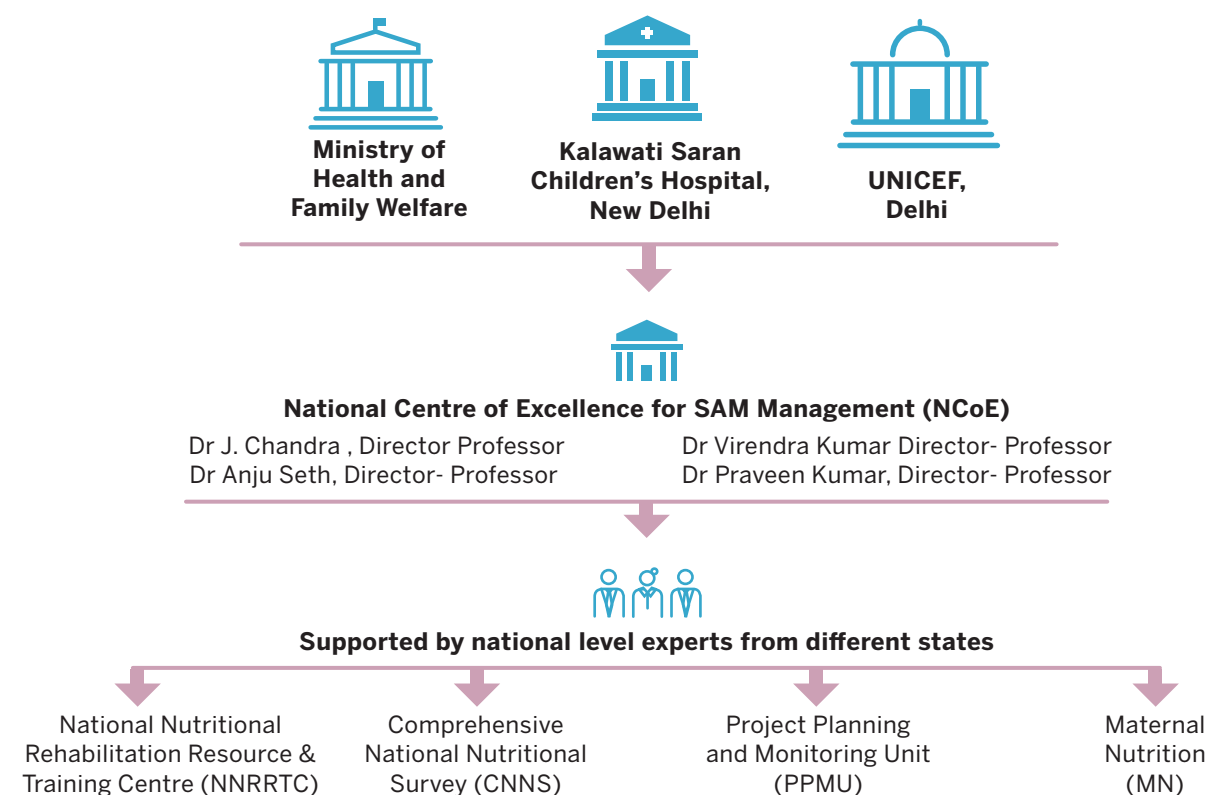
**1 National Nutritional Rehabilitation Resource and Training Centre (NNRRTC)** was established at Kalawati Saran in 2012 with technical and financial support from UNICEF. NNRRTC has 12 dedicated beds for treatment and rehabilitation of children with severe acute malnutrition. As national center of excellence, it also provides technical support to Ministry of Health & Family Welfare and States for improving quality of care provided to children with severe acute malnutrition in health facilities. Since 2017, NNRRTC is also receiving support from NHM, Central Delhi.

**2 Comprehensive National Nutrition Survey (CNNS)** – NNRRTC is providing support to nutrition survey since 2015 by training of master trainers & state trainers on anthropometry and in monitoring data quality from field.

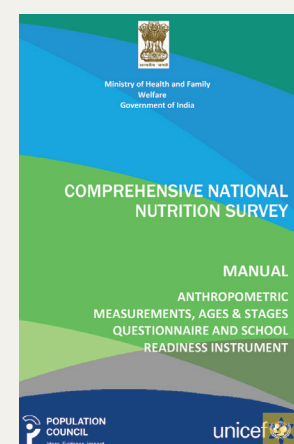
**3 Project planning & Monitoring Unit (PPMU)** established in April 2016 as extension of NNRRTC with the aim to provide technical support in Planning and Quality assurance for implementation of comprehensive Community Based Management of children with Acute Malnutrition (CMAM).

**4 Maternal Nutritional care component (MN)** was initiated under NNRRTC in 2017 by developing & testing the feasibility of maternal nutrition services package for mothers in existing child/maternal health platforms: NRC/IYCF/ANC/PNC.

### ORGANOGRAM OF NATIONAL NUTRITIONAL REHABILITATION RESOURCE & TRAINING CENTRE KSCH- UNICEF PARTNERSHIP



1



2



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3





## Chapter 2

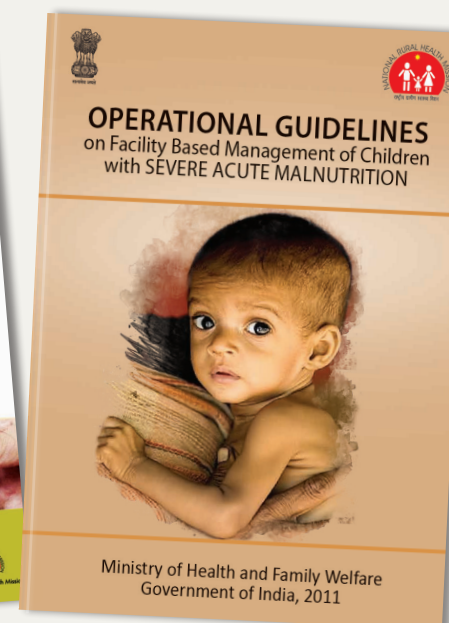
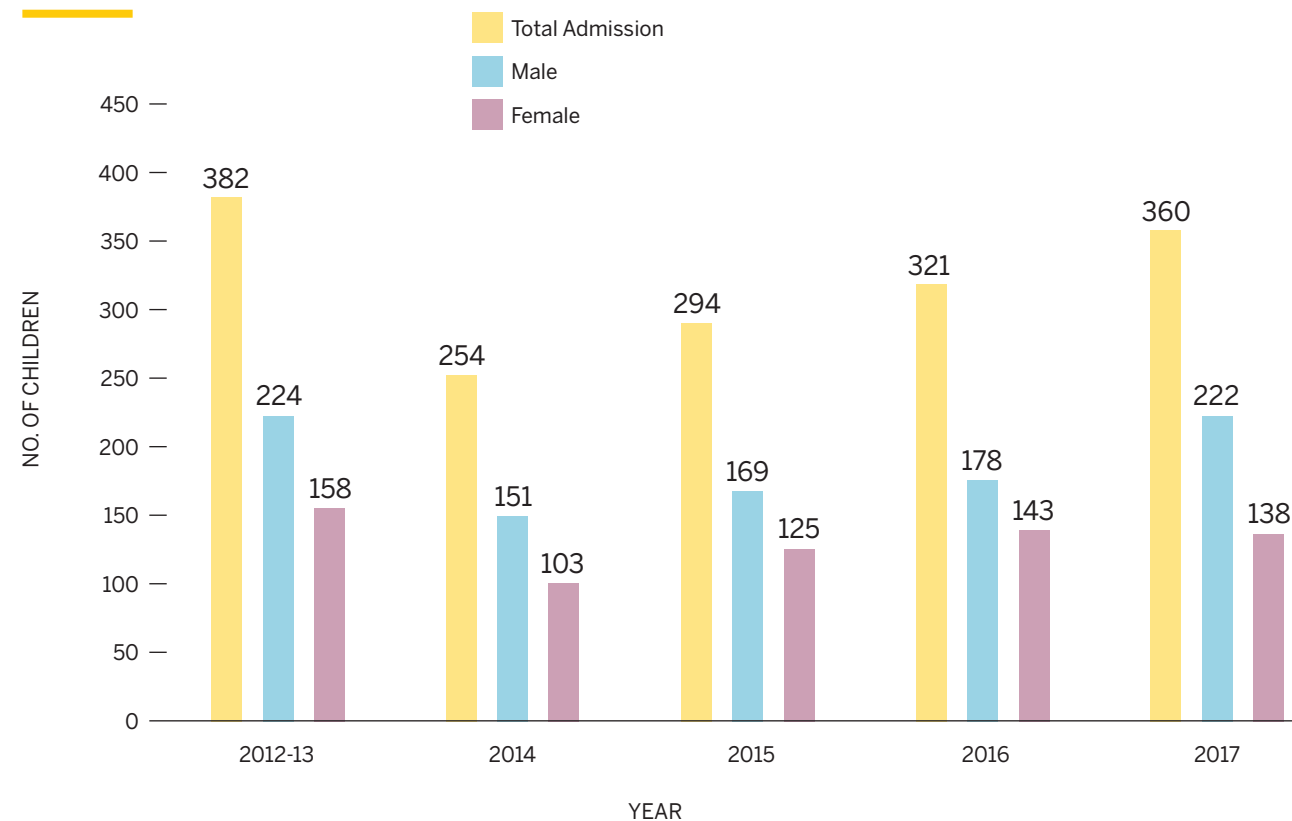
# NATIONAL NUTRITIONAL REHABILITATION RESOURCE & TRAINING CENTRE (NNRRTC): NATIONAL CENTRE OF EXCELLENCE (NCOE)

### 1. Continuum of Care

NNRRTC has 12 dedicated beds for management of SAM children. Only children with medical complications are admitted and managed. At any given time, there are more than 40 children with SAM are treated in Nutrition Rehabilitation Centre (NRC) and other wards. In addition to SAM children identified by resident doctors, all under-five children are actively screened by nutritionist for missed out cases within 24 hrs of their admission.

Therapeutic feed is available in other areas of paediatrics wards & Intensive Care Unit (ICU) for critically sick children who need more intensive monitoring. In NRC, in addition to dietary management, mothers and caregivers are counselled for improving child care and feeding practices. During the last five years more than 1600 cases of SAM with medical complications have been treated in the NNRRTC. Infants less than 6 months constitute approximately 20-25% of total admissions.

#### CONTINUUM OF CARE



### 2. Technical support to Ministry of Health & Family Welfare

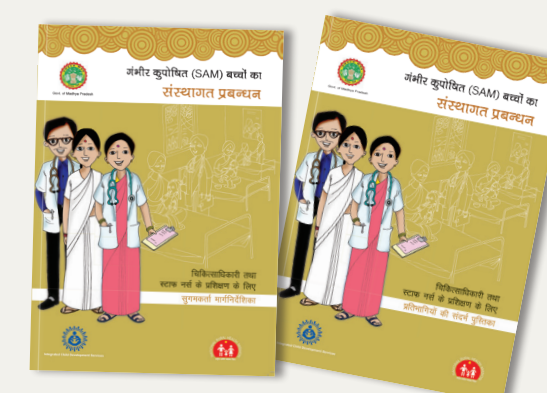
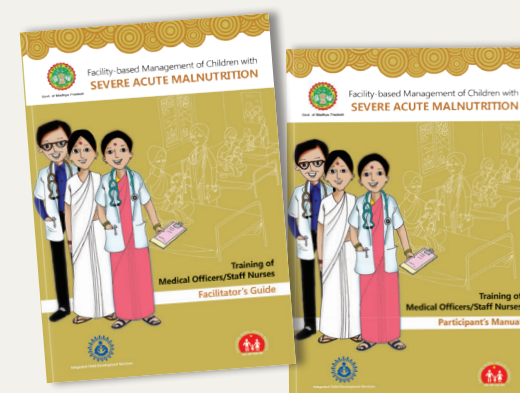
#### Operational Guidelines & Training Package (2011):

Ministry of Health and Family Welfare, Government of India has established 1,151 NRCs across the country to provide clinical management and reduce mortality among children with SAM with medical complications. KSCH team provided technical support in development of the National Operational Guidelines and training modules (Facilitator's guide &

Participant's module) on Facility Based Management of Children with SAM which was released in 2011.

**Provided technical inputs and support to Madhya Pradesh in developing Training Package on Facility based/Community-based management of children with SAM for the Medical Officers, Feeding demonstrators and Accredited Social Health Activist (ASHA) (2013-14).**

This was the first state level package on facility & community-based management of SAM cases.



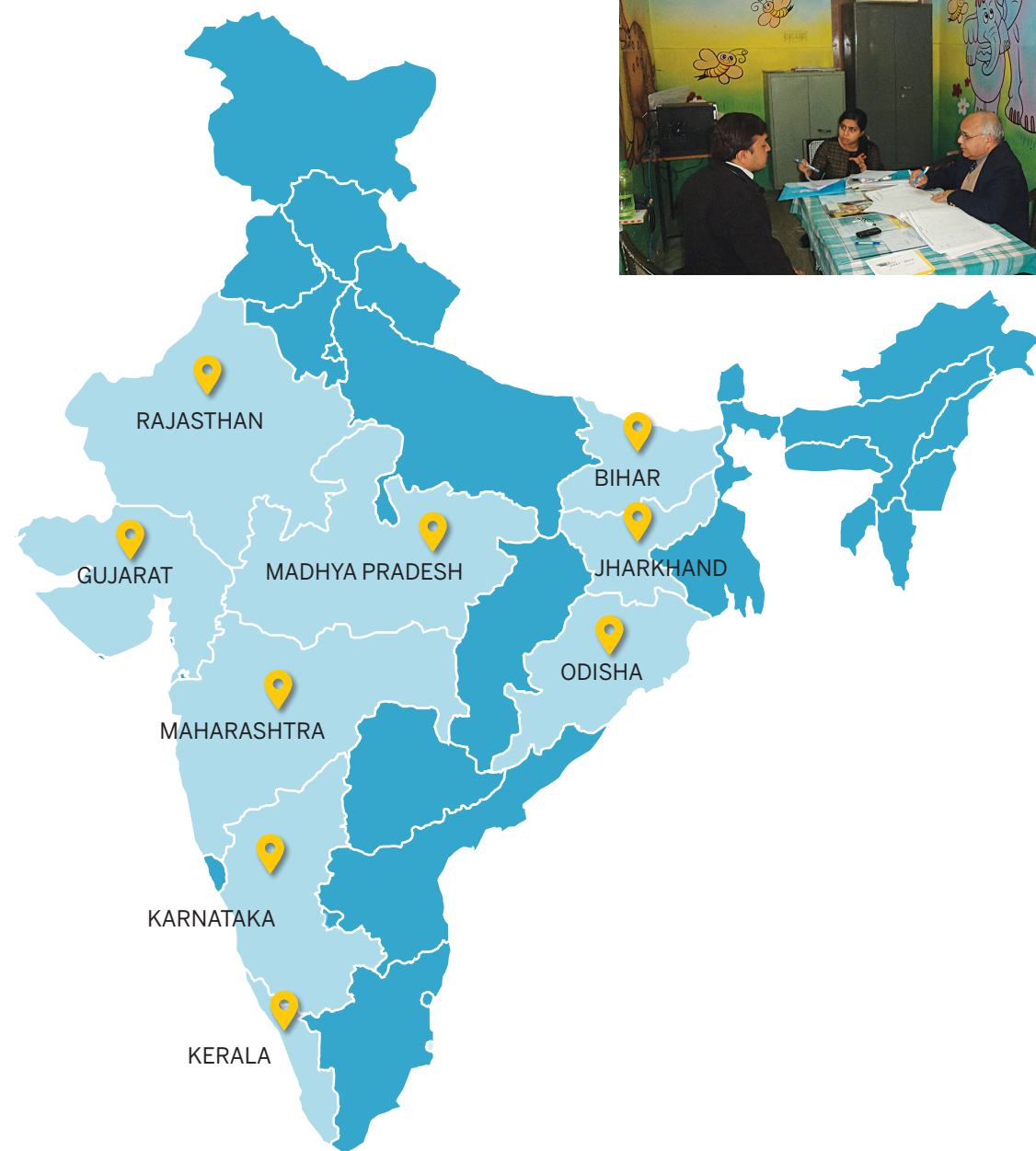




National Nutritional Rehabilitation Resource & Training Centre (NNRRTC): National Centre of Excellence (NCoE)

### Supportive Assessment of NRCs

NNRRTC team assisted MoHFW in rapid assessment of NRCs of Bihar, Jharkhand, Gujarat, Maharashtra, Madhya Pradesh, Karnataka, Kerala, Rajasthan, and Odisha.

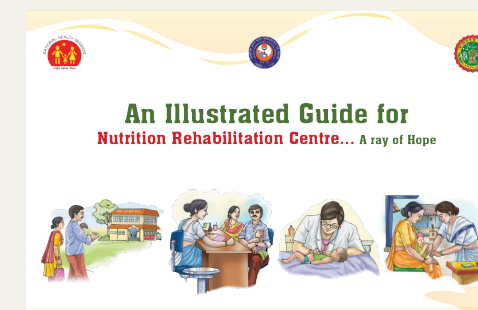


### PARTICIPANT MODULE AND FLIP CHART BOOK WERE DEVELOPED IN ENGLISH AND HINDI AND TRANSLATED IN TAMIL AND TELEGU



### Development of Counselling flipbook for improving quality of health education sessions (2015)

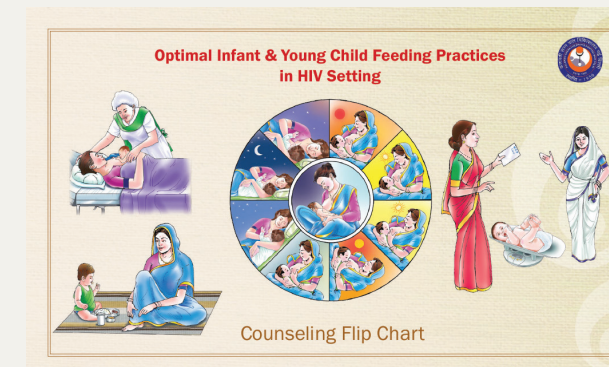
NNRRTC prepared an illustrative guide to help feeding demonstrators/General Nursing and Midwifery (GNM) working in NRCs for improving quality of health education sessions. The illustrated guide has structured counselling sessions related to child care and feeding practices.



### HIV-IYCF Project

NNRRTC, KSCH was also the nodal centre to implement UNICEF - Tefal project on Human Immunodeficiency Virus (HIV)-IYCF. This was a multicentre project implemented simultaneously across four states of India namely Andhra Pradesh (Guntur District), Delhi (Baba Saheb Ambedkar Hospital (BSA), Deen Dayal Upadhyay Hospital (DDU), Dr. Ram Manohar Lohia Hospital (RML) and Kalawati Saran Children's Hospital (KSCH), Tamil Nadu (Chennai and Krishnagiri Districts) and Telangana (Karimnagar District).

The project was envisioned in two phases: First phase consisted of assessment and capacity building phase. During this phase situational analysis of Antiretroviral Therapy (ART)/Prevention of Parent to Child Transmission (PPTCT) and Integrated Counselling and Testing Centres (ICTC) centres regarding Infant and Young Child Feeding (IYCF) counselling was done, which was followed by capacity building of the health care providers involved in care and support of HIV positive mothers. Second phase consisted of supportive supervision of the centres in the implementing states and end line assessment







National Nutritional Rehabilitation Resource & Training Centre (NNRRTC): National Centre of Excellence (NCoE)

**Developed videos on SAM management in collaboration with National Health Mission (NHM)- Madhya Pradesh (MP) & supported by UNICEF-MP (2014-2015)**

NNRRTC, KSCH conceptualized videos on SAM management. All Videos shooting were done inside

NNRRTC where NNRRTC staffs demonstrated key skills. These videos are important resource materials to train NRC staffs on SAM management. NNRRTC also uploaded these videos on YouTube for NRC staffs and other health workers for refining their skills.



**ANTHROPOMETRY**

<https://www.youtube.com/watch?v=yTsfpPahxdQ>  
<https://www.youtube.com/watch?v=uQb8fge-BWs>



**CLINICAL SIGNS**

<https://www.youtube.com/watch?v=ikf9PeyYTLQ>  
<https://www.youtube.com/watch?v=hGTyk6CM-5A>



**NASOGASTRIC FEEDING**

<https://www.youtube.com/watch?v=lgbkUKKqBSU>



**COUNSELLING & STRUCTURED PLAY THERAPY**

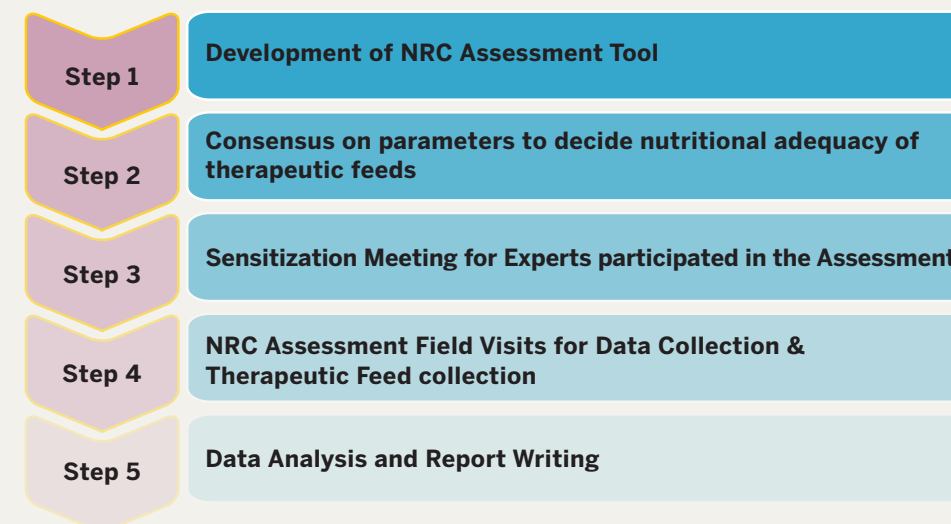
<https://www.youtube.com/watch?v=tgpGndcMMq8>

**Supportive Assessment for improving Quality of Care at NRCs**

Ministry of Health & Family Welfare, in 2013, described its quality assessment & focus approach for programmes under NHM. NRCs were established with a noble idea of preventing deaths and consume considerable public health resources; there was a felt

need to assess quality of services provided at NRCs.

NNRRTC coordinated and participated in supportive assessment of different states. In 2014-2015 NNRRTC evaluated key aspects of management protocol in six states on the request from Ministry of Health in collaboration with UNICEF. This assessment had following steps.



**GLIMPSES OF NRC ASSESSMENT AND FIELD VISIT**



**1 Sensitization meeting**



**2 Skills assessment**



**3 Sample collection for quality of feed assessment**

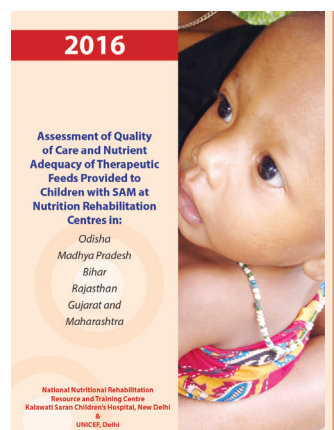


**4 Therapeutic feed sample**





National Nutritional Rehabilitation Resource & Training Centre (NRRRTC): National Centre of Excellence (NCoE)



**NRC**  
**"ASSESSMENT REPORT"**

### Key Findings

The assessment highlighted the need for improving anthropometry skills of staffs, provision of dietary scales, adherence to protocols, improving linkages with Women & Child Development (WCD) department and regular supply of drugs.

### Revision of FSAM training package & guidelines (2015- ongoing)

World Health Organization (WHO) updated the SAM management guidelines in the year 2013. Based on the updated WHO guidelines, the national guidelines were revised by NRRRTC. The guidelines were finalized after several rounds of national technical expert group consultation meetings which were organized with the



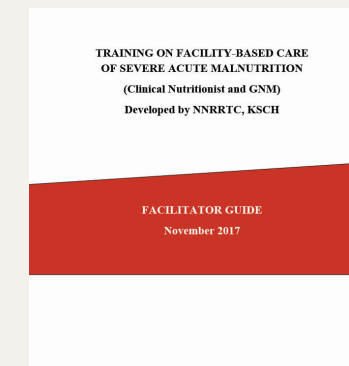
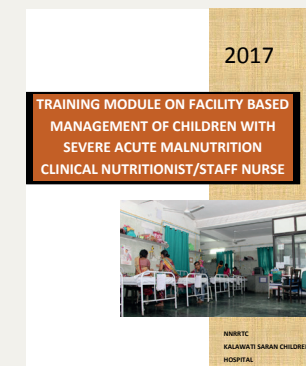
**ANNEXURE 1**  
**List of Contributors in Assessment Tools Development**

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32.	Ms. Sandeep Kumar	Secretary, Dept of Paediatrics, KSCCH, New Delhi
33.	Mr. Vikas	Field Worker Therapeutic Assessment, KSCCH-UNICEF

support from the UNICEF's Delhi. Guidelines have been submitted to the MoHFW and are likely to be published soon.

### Expert Group consultation meeting to update FSAM guidelines

Expert group, under the guidance of MOHFW recommended separate training packages for different



level of NRC functionaries. NRRRTC, KSCCH has developed training packages for Medical Officers, Nutritionist and Managers with the support from UNICEF which will be available once the updated guidelines will release.

### Trainings

Since 2011, KSCCH is organizing Training of Trainers (ToT) to create pool of master trainers. Some of the trainings organized were:

- Pilot training on "Facility-based Care of Severe Acute Malnutrition (FSAM)" supported Hindurao Hospital from

21-23 February 2011

- 1<sup>st</sup> National TOT workshop on "Facility-based Management of SAM" organized in collaboration with WHO & NHM MP in Bhopal from 17-19 August 2011

- 2<sup>nd</sup> National TOT workshop on "Facility-based Management of SAM" was organized by KSCCH in collaboration with WHO in Jodhpur between 24-26 November 2011

- Two National level TOTs on Facility based management of SAM children were organised between 11-13<sup>th</sup> July 2013 & 28-31<sup>st</sup> August 2013 on the request of Ministry of Health & Family Welfare, Government of India (GoI).







National Nutritional Rehabilitation Resource & Training Centre (NNRRTC): National Centre of Excellence (NCoE)

### TRAININGS AND OBSERVERSHIP

So far, NNRRTC has provided technical support to many states which have established NRCs. List of states where trainings were facilitated:

1. **UP:** Aligarh
2. **Bihar:** Patna
3. **Tamil Nadu:** Chennai
4. **Gujarat:** Ahmedabad
5. **Kerala:** Palakkad & Kozikhode
6. **Haryana:** Delhi & Panchkula
7. **Madhya Pradesh:** Bhopal
8. **Odisha:** Bhubaneswar/ Behrampur
9. **Delhi:** KSCH/Hindurao Hospital
10. **Rajasthan:** Jaipur
11. **Jharkhand:** Ranchi
12. **Telangana:** Hyderabad (for Telangana, AP & Karnataka)
13. **Chattisgarh:** Raipur



### Technical Support to other countries

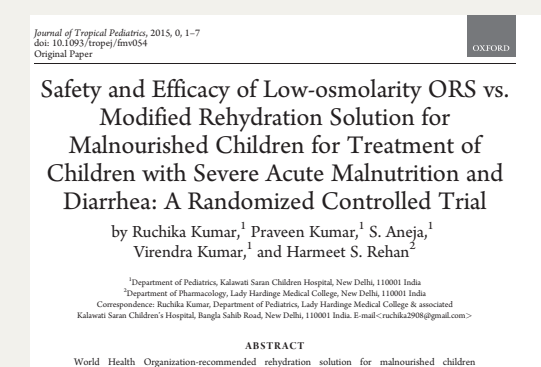
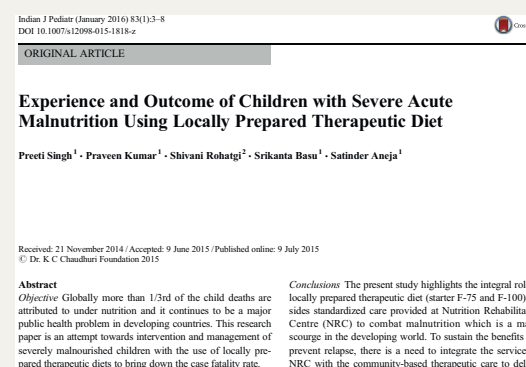
☞ Solomon Island and Fiji in 2014– Dr S. Aneja and Dr Praveen Kumar from NNRRTC facilitated Training on Facility & Community Based Management of children with SAM for health workers of Solomon Islands, Fiji and other pacific island countries.

### Demonstration unit for state nominated Participants

NNRRTC provided hands-on training in the form of 'Observership' to the NRC functionaries of different states (Jammu & Kashmir, Kerala, Haryana, Assam, Manipur, Madhya Pradesh, Bihar, Uttar Pradesh) & post graduate students of Safadarjung Hospital, New Delhi.

### RESEARCH ACTIVITIES: LIST OF PUBLICATIONS FROM NNRRTC, KSCH

Sequencing as per year of publication	Current status
Kumar P, Mishra K, Singh P, Rai K. Should we screen children with severe acute malnutrition for celiac disease? Indian Pediatr. 2012; 49:330-1.	Published
Mishra K, Kumar P, Basu S, Rai K, Aneja S. Risk factors of Severe Acute Malnutrition in children below 5 yrs of age in India: A case-control study. Indian J Pediatr 2014; 81(8):762-5.	Published
Shivani Rohatgi, Praveen Kumar, Preeti Singh, Srikanta Basu, Satinder Aneja. Assessment Of Feeding Practices In Children Under 2 Years With Diarrhea. 47th Annual National Conference Of Indian Dietetic Association. 2014. Scientific Proceedings	Presented & Published
Shivani Rohatgi, Praveen Kumar, Preeti Singh, Srikanta Basu, Satinder Aneja. Management of Children with Severe Acute Malnutrition Using Locally Produced Therapeutic Feeds at A Tertiary Care Hospital. 47th Annual National Conference of Indian Dietetic Association. 2014. Scientific Proceedings.	Presented & Published
Singh P, Kumar P, Rohatgi S, Basu S, Aneja S. Experience and Outcome of Children with Severe Acute Malnutrition Using Locally Prepared Therapeutic Diet. Indian J Pediatr.2015; 83 (1): 3-8.	Published
Kumar R, Kumar P, Aneja S, Kumar V,Rehan HS. Safety and Efficacy of Low-osmolarity ORS vs. Modified Rehydration Solution for Malnourished Children for Treatment of Children with SAM and Diarrhoea: A Randomized Controlled Trial. J Trop Pediatr. 2015 Dec;61(6):435-41. doi: 10.1093/tropej/fmv054. Epub 2015 Aug 27.	Published
Praveen Kumar, Shivani Rohatgi, Purnima Arora, Preeti Singh & Srikanta Basu: Assessment of Feeding Practices in Children with Severe Acute Malnutrition (SAM). 52th Annual National Conference of Indian Academy of Pediatrics, 2015 organized in Delhi. Scientific Proceedings.	Presented & Published
Kumar P, Rohatgi S. Diagnosis and Management of Infants Less Than Six Months Old with Severe Acute Malnutrition. Indian J Prac Pediatr. 2016;18(4): 316	Published
Shivani Rohatgi, Praveen Kumar, Anju Seth, Priti Kumari, Purnima Arora Assessment of maternal nutritional status of mothers of children with severe acute malnutrition (SAM). 54th Annual National Conference of Indian Academy of Pediatrics, 2017. Scientific Proceedings.	Presented & Published
Kumar P, Sareen N, Agrawal S, Kathuria N, Yadav S, Sethi V. Screening maternal acute malnutrition using adult mid-upper arm circumference in resource-poor settings. Indian J Community Med. 2018;43(2):132-134.	Published







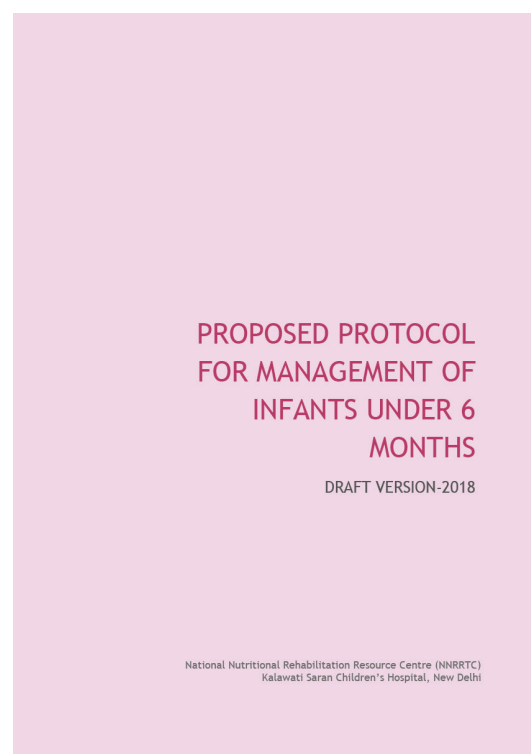
National Nutritional Rehabilitation Resource & Training Centre (NNRRTC): National Centre of Excellence (NCoE)

## Technical Support to other states

- Provide technical guidance for development of protocol, monitoring tools for study entitled "To Assess the Effectiveness of World Health Organisation Recommended Nutrition Therapy in Management of Children with Severe Acute Malnutrition in Nutrition Rehabilitation Centres of Madhya Pradesh. NNRRTC also monitored the project implementation for quality control.
- On request from Nutrition Mission, Govt. of Jharkhand & UNICEF Jharkhand, NNRRTC trained experts from

Jharkhand to undertake Malnutrition Treatment Centre (MTC) supportive assessment.

- A large number of NRCs do not admit and manage infants under 6 months (UGM) with SAM due to lack of skills. Also, Sensory Stimulation and Play Therapy which is an integral part of management of children with SAM is not being conducted due to lack of skills. To improve quality of care for the children with SAM, NNRRTC has developed a training package to improve sensory stimulation & structured play therapy activities & to strengthen management of infants under 6 months.



## Chapter 3



# COMPREHENSIVE NATIONAL NUTRITION SURVEY (CNNS)

NNRRTC facilitated National ToT on Anthropometric measurements & Pilot test (23rd Nov- 18th Dec 2015) organized in Noida by Population Council of India in collaboration with MoHFW & UNICEF.

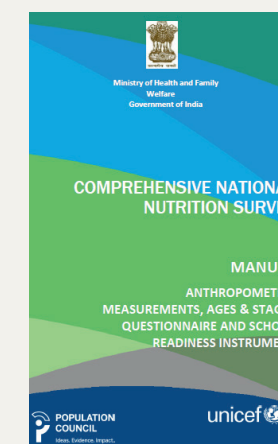
### Technical inputs in the training manual of CNNS

KSCH team provided technical inputs in revision and updating anthropometric measurement component of CNNS manual.

They were trained on identification of physical deformities, trained on anthropometrical measurements (Weight, Height/Length, Mid upper arm circumference, Triceps skin fold thickness, Subscapular Skinfold thickness, Waist circumference, hand grip strength) and looking for Oedema. KSCH team supervised the standardization exercise of entire anthropometric measurements and helped in selection of candidates.

### Facilitated State level trainings & Standardization

Health investigators were briefed regarding the CNNS

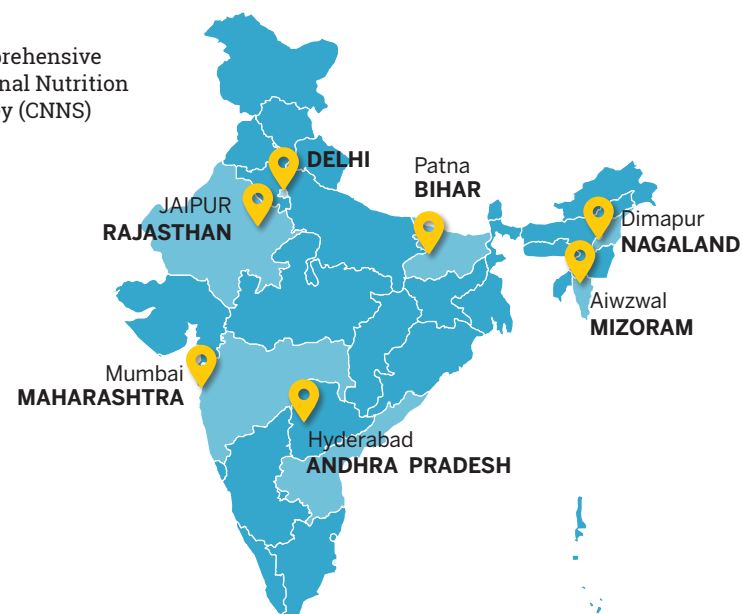




Comprehensive National Nutrition Survey (CNNS)

**STANDARDIZATION EXERCISE**

**PHASE-1**



**PHASE-2**



**PHASE-3**



**KSCH EXTENDED SUPPORT IN FIELD MONITORING OF THE SURVEY**

- Phase-1
- Phase-2
- Phase-3

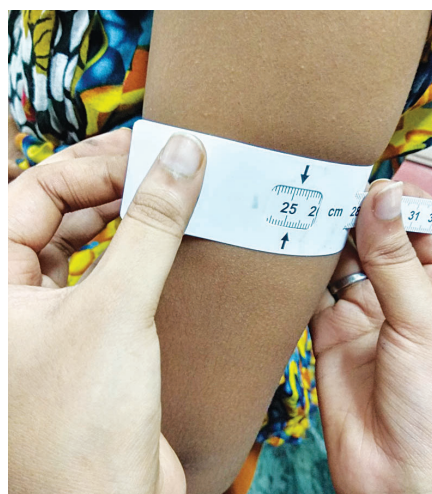






Comprehensive National Nutrition Survey (CNNS)

**GLIMPSE FROM FIELD MONITORING**



**Chapter 4**



**PROJECT PLANNING & MONITORING UNIT (PPMU)**

UNICEF India has been supporting the Ministry of Health and Family Welfare (MoHFW) Government of India (GoI), and State Governments in providing quality care to children with SAM in hospitals through 1151 NRCs. To generate evidence on the operational aspects of community management of acute malnutrition (CMAM), the MoHFW granted approval to UNICEF India to implement a learning project consisting of a phased succession of CMAM pilot programmes in 13 states where UNICEF has field presence. The states included Assam, Andhra Pradesh (now Andhra Pradesh and Telangana), Bihar, Chhattisgarh, Gujarat, Jharkhand, Kerala, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Uttar Pradesh, and West Bengal.

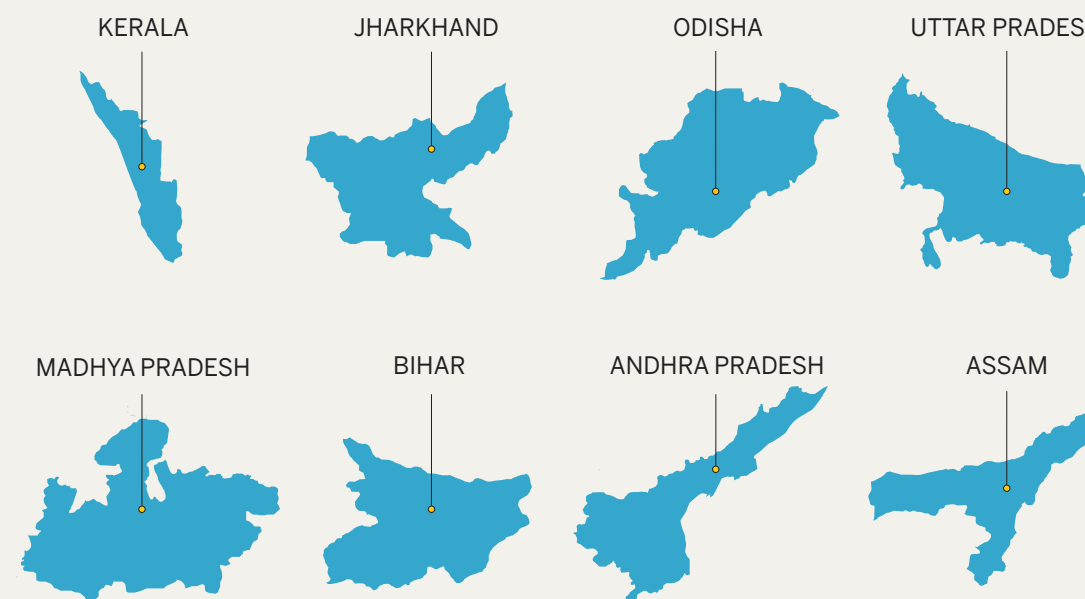
program aimed to strengthen and provide services at two levels: first, by improving care already provided through facility-based Nutrition Rehabilitation Centres (NRCs); and second, by piloting and scaling up a model for the provision of services at the community level, so that both preventive and curative services are available to children in both locations, and efficiencies of care and cost are achieved. With this background, The Project Planning and Monitoring Unit (PPMU) was established at Kalawati Saran Children's Hospital as extension of NNRRTC with UNICEF support.

The MoHFW asked UNICEF to find out requirements to deliver CMAM services in a sustainable, efficient, cost-effective, and integrated manner that builds upon existing government systems and infrastructure. The proposed Integrated Management of Children with SAM (IMSAM)

**Development of state specific CMAM pilot implementation and strategic plan**

PPMU assisted State Health and Integrated Child Development Services (ICDS) Departments to plan, develop and implement CMAM programme. So far, PPMU provided Technical Support to states that have initiated

**SUPPORT FOR CMAM IN DIFFERENT STATES**







Project Planning & Monitoring Unit (PPMU)

CMAM pilots and/or planning to start CMAM pilots. With UNICEF support, PPMU has also provided support to the states in monitoring & implementation of these pilot projects by engaging district & block level consultants in Kerala, Jharkhand, Odisha, Madhya Pradesh (MP) and Uttar Pradesh (UP).

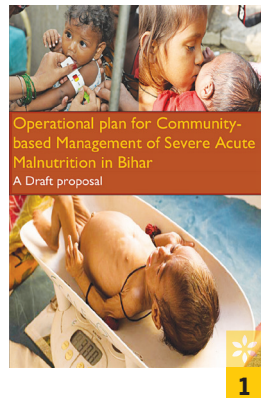
### Technical Support to the States in developing Training package on community-based management of children

Dr Praveen Kumar & Ms Shivani Rohatgi from NNRRTC, Kalawati Saran Children's Hospital, assisted WCD, Government of Madhya Pradesh in developing a comprehensive CMAM training package, treatment protocols, and reporting forms. They also participated in Pilot trainings organized in Gwalior for ICDS functionaries

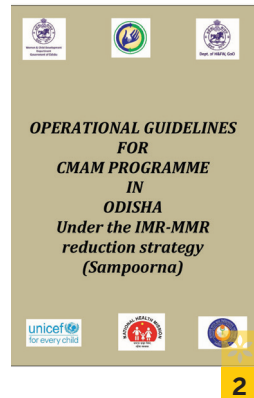
where roles of different level staffs were agreed upon.

### PPMU provided technical support in developing training package on CMAM for the Frontline workers and counseling kit for the community (Jharkhand/Odisha/MP/UP)

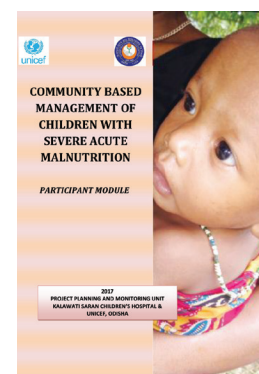
PPMU developed counselling flip charts to be used by the frontline workers and community workers to promote essential nutritional practices which are important to improve feeding and child caring practices.



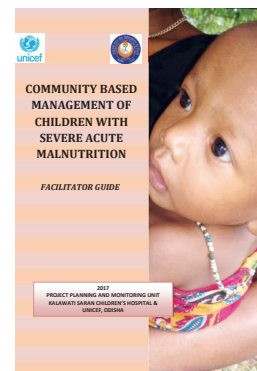
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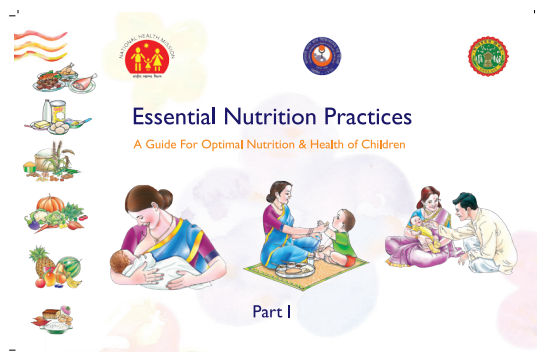
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### COUNSELLING TOOLKIT FOR PREVENTING MALNUTRITION AT COMMUNITY LEVEL (2016)



## Capacity building for piloting CMAM- State level TOT

### Training of Frontline workers (Auxillary Nurse Midwife (ANM), AWW, ASHA) on CMAM within the pilot areas

Frontline community workers (ANM, AWW, and ASHA) were trained on components of the CMAM program, including SAM screenings, home identifications and referrals to and CMAM clinics or NRC by the PPMU with the support from UNICEF & the states.

### PPMU organized & facilitated following CMAM Trainings- TOTs

- ✦ Kerala: Palakkad: One batch - 2014
- ✦ Jharkhand: One batch -April 2017

- ✦ Odisha: Six batches - April & May 2017
- ✦ Madhya Pradesh: One batch – June 2017
- ✦ Uttar Pradesh: October- December 2017

### CMAM Trainings- Block Level

- ✦ Jharkhand: One Day orientation training for Master trainers & Manki Mundas : Two Batches of ANM -August 2017

### Support state to develop state specific community mobilization plan

PPMU with UNICEF support developed community mobilization plan to sensitize households in pilot blocks for early identification of SAM in children and the presence of CMAM programs in their villages.







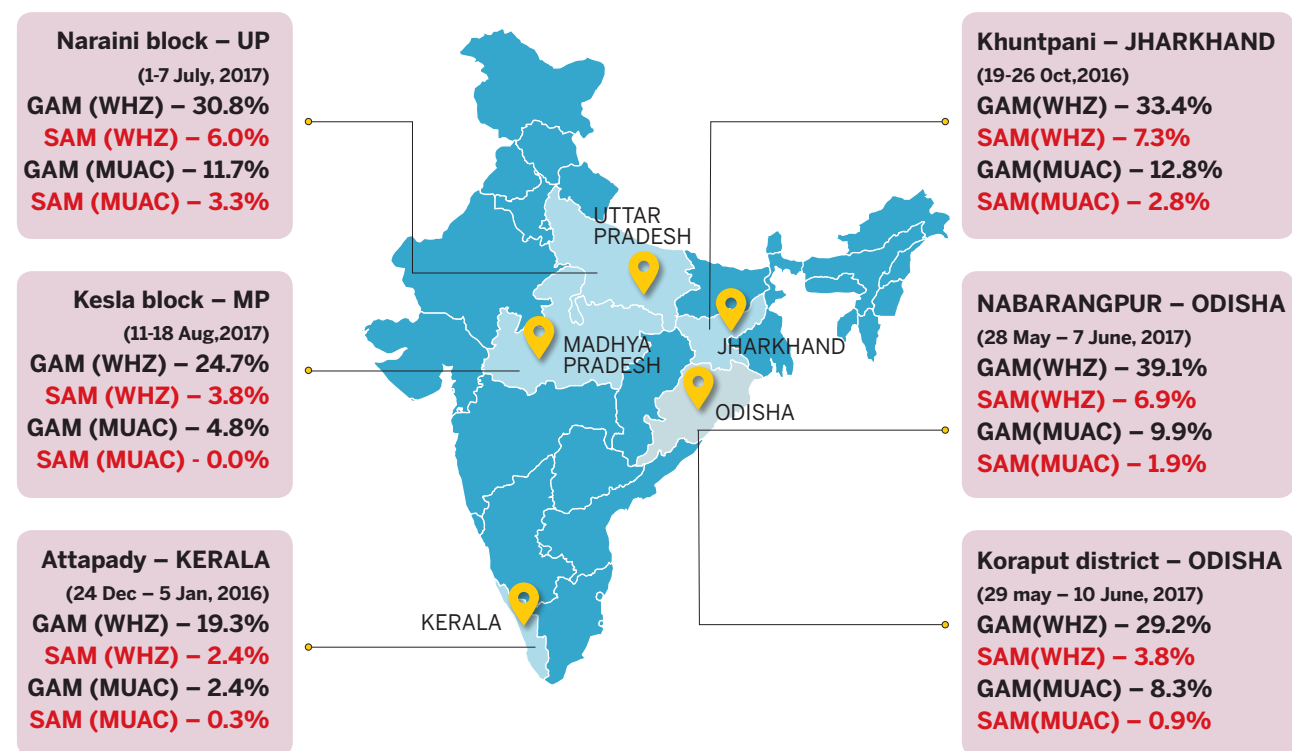
Project Planning & Monitoring Unit (PPMU)

POSTERS AND READY RECKONERS FOR CMAM PROGRAMME

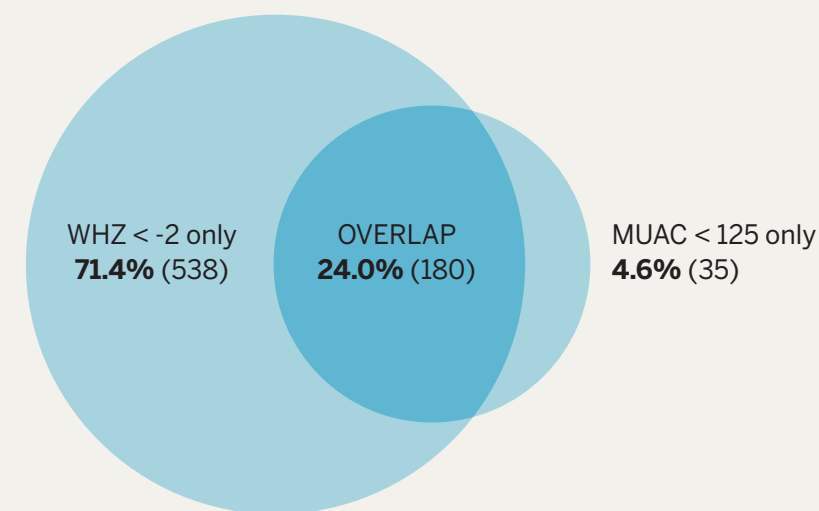


Posters for early identification: Uttar Pradesh

KEY FINDINGS FROM 6 SMART SURVEY (2016-17)



INTERFACE BETWEEN WHZ AND MUAC AMONG CHILDREN WITH GAM IDENTIFIED WITH WHZ ONLY. MUAC ONLY AND BOTH CRITERIA (N=753)



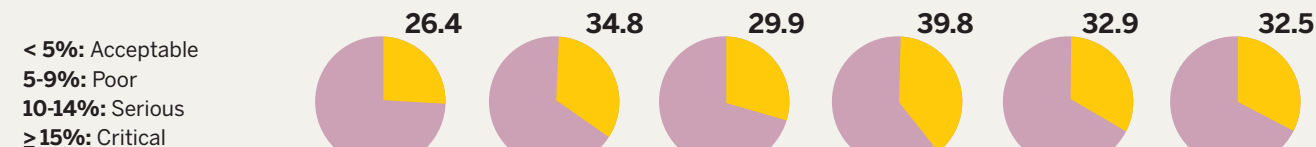
Growth monitoring is integral part in WCD. However, intersection between Underweight and Wasting identified by MUAC and WFH is weak.

COMPARISON OF SURVEY RESULTS WITH WORLD HEALTH ORGANISATION (WHO) CLASSIFICATION FOR PUBLIC HEALTH SIGNIFICANCE (1995)29

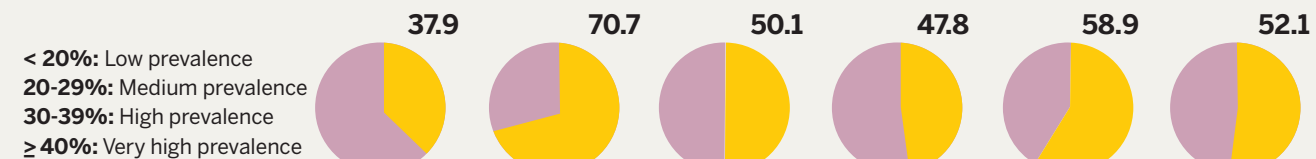
WHO CLASSIFICATION FOR HEALTH SIGNIFICANCE	KESLA BLOCK (MADHYA PRADESH)	KHUNTPANI BLOCK (JHARKHAND)	KHORAPUT DISTRICT (ODISHA)	NABARANGPUR DISTRICT (ODISHA)	NARAINI BLOCK (UTTAR PRADESH)	POOLED DATA
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CHILD NUTRITIONAL STATUS

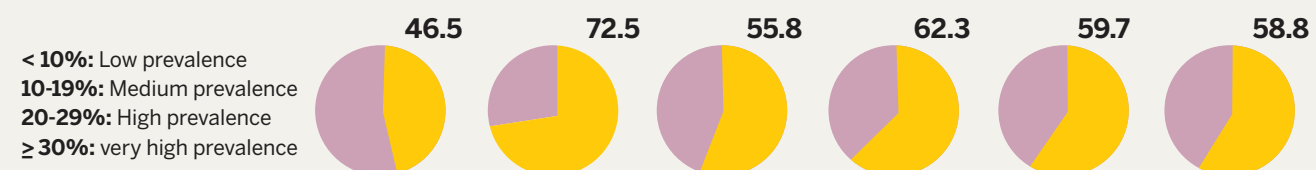
GLOBAL ACUTE MALNUTRITION (GAM) (WHZ<-2 Z-SCORE AND/OR MUAC <125 MM AND/OR EDEMA)



PREVALENCE OF GLOBAL STUNTING



PREVALENCE OF GLOBAL UNDERWEIGHT







Project Planning & Monitoring Unit (PPMU)

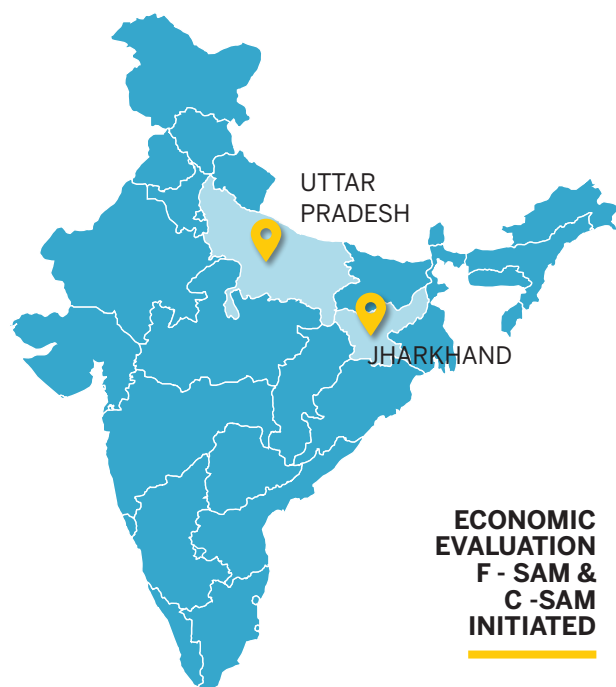
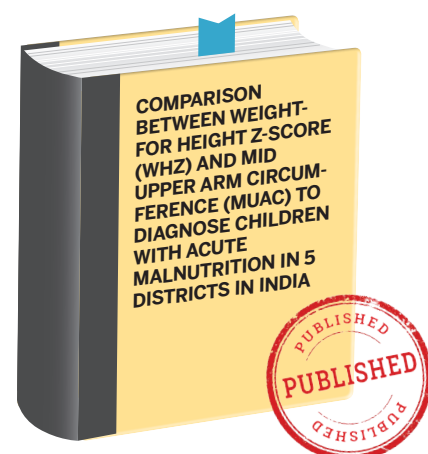
**SMART SURVEYS AS BASELINES FOR CMAM IN INDIA**



FINDINGS USED TO ADVOCATE APPROPRIATE TOOLS FOR SCREENING

6 SMART SURVEYS COMPLETED IN 5 STATES

ENABLED REALISTIC PLANNING OF CMAM PROGRAMS



**ECONOMIC EVALUATION F - SAM & C -SAM INITIATED**

**Cost-effective analysis of FSAM & CMAM pilots**

There is a scarcity of evidence (especially evidence of cost effectiveness) of facility and community based management of SAM. Hence, as part of building evidence, cost effectiveness analyses have been planned to assess cost effectiveness ratios of facility based management of SAM and community based management of SAM. These cost effectiveness analyses are being conducted either from a provider's perspective or societal perspective. Protocol of proposed analysis "Protocol of the cost effectiveness analysis of a CMAM intervention with children in India" has been published and analysis is being led and conducted by a dedicated "Health Economist" working with PPMU.

Currently, cost effectiveness analyses are being conducted for

- ☒ Facility based management of SAM for Malnutrition Treatment Centre (MTC) Hazaribagh and MTC Chaibasa
- ☒ Community based management of SAM of the CMAM pilot in Khuntpani block of Chaibasa district of Jharkhand
- ☒ Nutritional pilot on managing children with SAM and SUW in Naraini block of Banda district of Uttar Pradesh.

**Programme Implementation and Monitoring**

An Health Management Information System (HMIS) system for states (Jharkhand & UP) was developed and fine-tuned in the early stages of the project by a dedicated M&E consultant at the PPMU. Information gathered from the analysis of monthly reports,

monitoring visits and concurrent evaluation helped in improving the quality of information gathered. This HMIS system will be the repository for the data obtained from the pilot blocks, and the M&E consultant is monitoring and analysing the data to identify and rectify any gaps in service delivery



**Harmonising Reporting Systems for Community based Management of Severe Acute Malnutrition**

Screening register for children 6- 59 months - AWC									
District:		Block:		Panchayat:		Village:			
Sub centre:		Name of the AWC:		AWC Number:		MTC (for referral):			
Name of AWW:					Name of Sahiya:				
Mobile number of AWW:					Mobile number of Sahiya:				
S. No		Child's Detail			Quarter Screening by AWW/Sahiya				
		Date	Age (mo)	Bilateral Pitting Edema (Y/N)	MUAC (mm)	Nutritional status (SAM/ MAM/ Normal)			
		1	2	3	4	5			
Name	DOB	Sex M/F	Caste (Gen/SC/ST/OBC)	Parent's Name					

**Example from Jharkhand**

**RESEARCH ACTIVITIES**

Study Title		Status
Uttar Pradesh (Naraini)	KAP study to investigate community perspective on malnutrition to inform community mobilization activities in the pilot block	Completed & report submitted
Jharkhand (Khuntpani)	Understanding seasonality, pattern and determinants maternal and child undernutrition and food insecurity in Khuntpani block of Chaibasa district of Jharkhand.	Data collection work completed. Data cleaning exercise is going on. Data analysis and report preparation will be done by end of October 2018
Rajesh Kumar Sinha, Richa Dua, Praveen Kumar, Virendra Kumar. Protocol of the cost effectiveness analysis of a CMAM intervention with children in India. J Dis Global health. 2018, 11(2): 84-92		Published
Praveen Kumar, Vasundhara Bijalawan, Narendra Patil, Abner Daniel, Rajesh Sinha et al. Comparison between weight-for-height Z-Score and Mid Upper Arm Circumference to diagnose Children with Acute Malnutrition in five districts of India. Indian J community Med, 2018, 43		Published
Relationship between Mid-Upper Arm Circumference and Body Mass Index for Identifying Maternal Wasting: A Cross-sectional Assessment, Submitted to Public Health Nutrition		Under publication
Determinants of Stunting, Wasting and Underweight in Five High Burden Pockets of Four Indian States. Submitted to Indian Journal of Community Medicine		Under publication





Project Planning & Monitoring Unit (PPMU)

### CMAM- PREVENTIVE ACTIVITIES



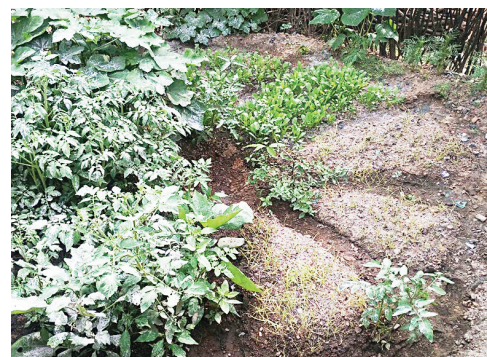
**Knowledge Attitude & Practices (KAP)**  
(Interviews: & FGDs: A small study to understand community's perspective of malnutrition)



**Poshan Pakhwada**  
(Nutrition Exhibition)



**Tippy-Tap**  
(Promoting convenient hand washing)



**Poshan Vatika**  
(Kitchen garden)



**Linkages**  
(Block consultant providing field level support to UP-State Rural Livelihood Mission (SRLM) to form self help group among mothers of SAM/SUW children)



**Dandi Sankalp**  
(Promoting Iodized salt)

## Chapter 5



# MATERNAL NUTRITION (MN)

It is globally acknowledged that the nutritional status of mother and child is interlinked with each other like a vicious cycle. Maternal under-nutrition, over-nutrition and anaemia, before and during pregnancy, adversely affect fetal growth and a women's own health and increase risk of maternal mortality.

admitted children are managed by providing medical and nutritional therapeutic care.

❖ **IYCF**- Infant Young Child Feeding (IYCF) are the centre where mothers are counselled about the "feeding practice of children up to 2 years of age". The counselling on IYCF practices include:

- Early Initiation of Breast feeding
- Exclusive Breast feeding
- Helping mothers with Breast Conditions
- Complementary feeding

❖ **ANC**- Antenatal Care clinics (ANC) is the place where comprehensive care is provided to pregnant mothers.

❖ **PNC**- Postnatal care (PNC) ward is a place where mothers and their babies are observed for 48-72 hours after the birth of the baby.

### Continuum of care

**Maternal nutrition services were tested at 4 platforms includes:**

❖ **NRC**- Nutrition Rehabilitation Centre (NRC) is a facility-based care unit in a health facility where children with Severe Acute Malnutrition (SAM) and medical complications are admitted and managed. In NRC the

### MATERNAL NUTRITION SERVICES

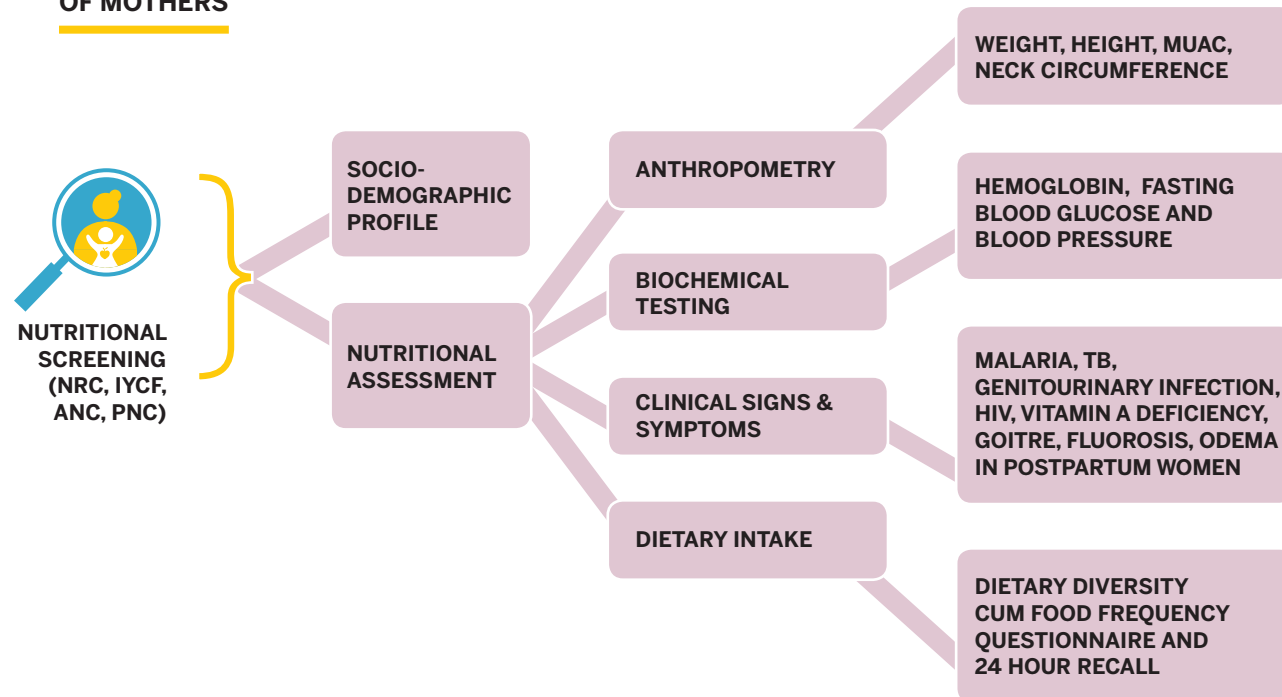




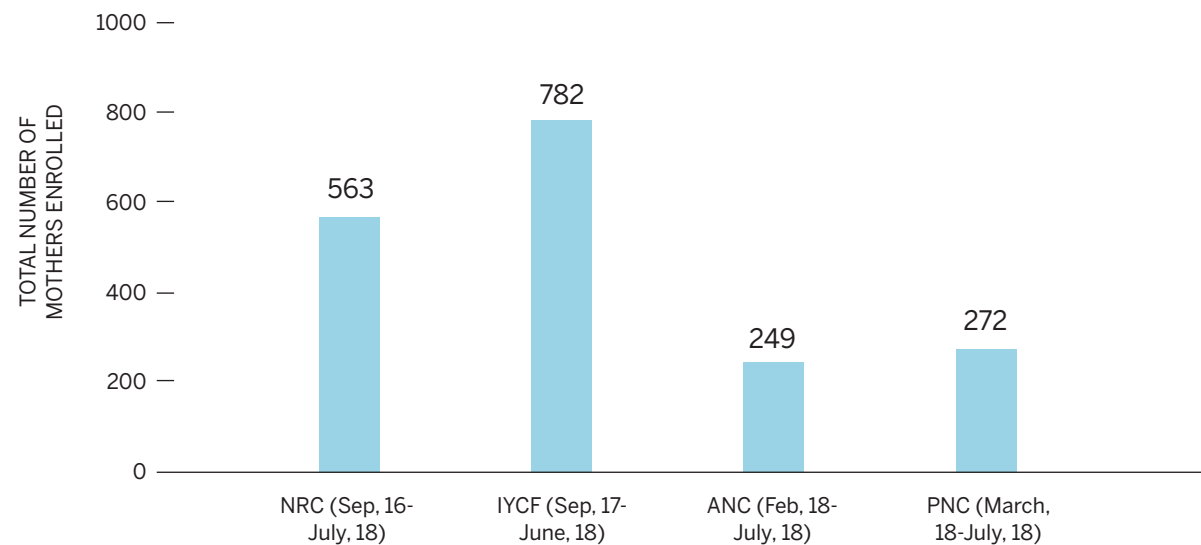


Maternal Nutrition (MN)

### NUTRITIONAL SCREENING OF MOTHERS



### TOTAL NUMBER OF MOTHERS ENROLLED



## Maternal nutrition services

**Objective: To develop and test the feasibility of maternal nutrition services package**

**Outcome:**

- ☒ % of mothers who were screened for nutritional risk
- ☒ % of mothers attending group counseling
- ☒ % of at risk mothers receiving individual counseling
- ☒ % of mothers who were screened for medical risk
- ☒ % of mothers recovered: those mothers whose MUAC 23-25.9 cm/BMI 18.5-22.9 kg/m<sup>2</sup> at 12 weeks Follow Up (FU) (use parameter which has been used at admission); Number of mothers with Hb ≥ 11g/dl (pregnant) and Hb

≥ 12g/dl (Non-Pregnant) if mother had anaemia at admission.

☒ % of mothers non-recovered: those mothers whose MUAC/BMI use parameter which has been used at admission; or Hb status is same or less than the enrolment at 12 weeks of FU.

☒ % of mothers partially recovered: those mothers whose MUAC/BMI (use parameter which has been used at admission) has improved but still is below or lower than the normal cut offs at 12 weeks FU.

☒ % of mothers who did not report for two consecutive follow up visits while she is under follow up.

### SERVICES PROVIDED TO MOTHERS

NRC	IYCF	ANC	PNC
<ul style="list-style-type: none"> <li>✓ Counselling (individual &amp; group)</li> <li>✓ Diet</li> <li>✓ Diet Demonstration</li> <li>✓ Micronutrient supplementation</li> <li>✓ Referral</li> </ul>	<ul style="list-style-type: none"> <li>✓ Counselling (individual &amp; group)</li> <li>✓ Referral</li> </ul>	<ul style="list-style-type: none"> <li>✓ Counselling (individual &amp; group)</li> <li>✓ Micronutrient supplementation</li> <li>✓ Referral</li> </ul>	<ul style="list-style-type: none"> <li>✓ Counselling (individual &amp; group)</li> <li>✓ Micronutrient supplementation</li> <li>✓ Referral</li> </ul>

### COUNSELLING SESSION AT 4 PLATFORMS



Group counselling at NRC



Group counselling at IYCF



Group counselling at PNC



Group counselling at ANC





Maternal Nutrition (MN)

**Trainings:** Orientation program and capsular training on developed protocol, clinical signs and symptoms, data entry, diet and counselling skills.

**Meetings:** NNRRTC organized several meetings with DC (I/C) Maternal Health Division & UNICEF to share analysis of collected data & finalise protocol for Maternal Nutrition.

## Consultations: Two days consultation was jointly organised with Lady Irwin College & other partners

### Objectives-

- Review maternal nutrition indicators in India's aspirational districts.
- Review WHO (2016) nutrition component of antenatal care guidelines in context of Government of India's maternal nutrition component in antenatal care programmes to identify gaps.
- Seek global and national expert views on developed tools and algorithms for maternal nutrition assessment in antenatal care package and defining the criteria for "at-nutritional risk" pregnant women.
- Seek global and national expert advice on minimum universal package (focusing on counseling) for pregnant women and "Extra" service package for at-nutritional risk pregnant women (focusing on counselling) in context of

India and based on ongoing evidence generation.

- Seek field insights from different work being carried out on maternal nutrition across Indian geographies in tribal, urban slum and rural contexts on the three areas.
- Deliberate on new emerging areas for which WHO/ National policies/guidelines are not available
  - Gestational weight gain charts for India
  - Screening and management of maternal over-nutrition in pregnancy
  - Newly-wed Preconception nutrition (working definition-married, never pregnant 15-24 years)
- Seek expert opinion on various maternal nutrition research topics for which nested programme evaluations are warranted for India

**Participants: 100+ Global and National subject matter experts working in the area of maternal nutrition.**

### Outcomes:

- Agreement on nutrition assessments for antenatal care
- Criteria for screening at-nutritional risk pregnant women
- Types of nutrition counselling packages for pregnant women and those at nutritional risk
- Gestational weight gain charts for India
- Screening and management of maternal overnutrition in facilities
- Management of anaemia in pregnancy using point of care treatment
- Identifying research areas for nested evaluations



Trainings



Meetings



**Development of materials:** Maternal Nutrition services package for NRC, Counselling aids for ANC, PNC and IYCF.

communicable diseases which may affect maternal nutritional status.

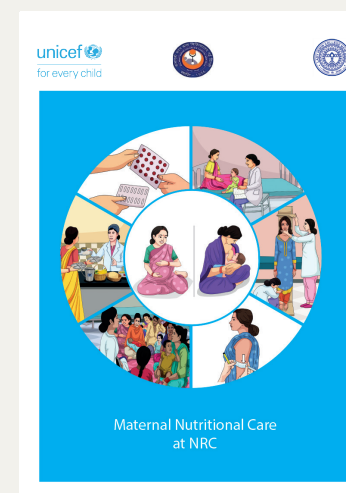
## Maternal Nutrition services Package for NRC

**Target group –** Mothers of SAM children admitted in NRC  
**Benefit –** To increase pregnant women/ maternal knowledge about diet and healthy lifestyle and make them aware about different communicable & non-

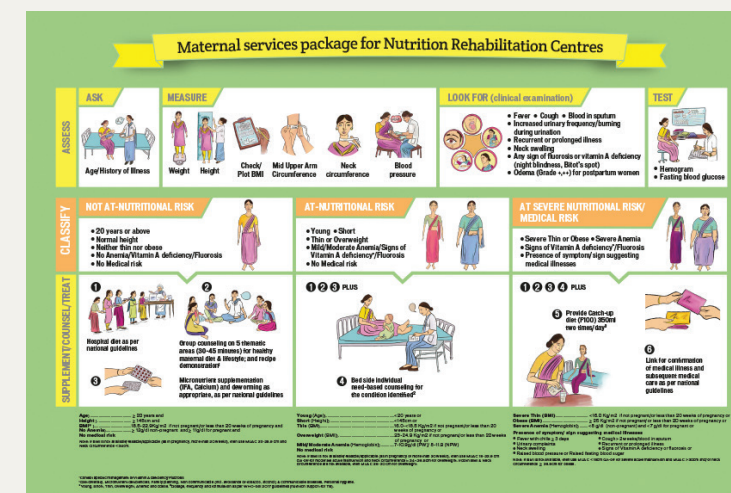
### Counselling aids for IYCF

**Target group-**Mothers of children <2 years attending IYCF-CC

**Benefit –** To increase their knowledge about maternal diet and healthy lifestyle and make them aware about different communicable & non-communicable diseases which affects nutritional status.



Operational and Technical guidelines



Protocol Algorithm





Maternal Nutrition (MN)

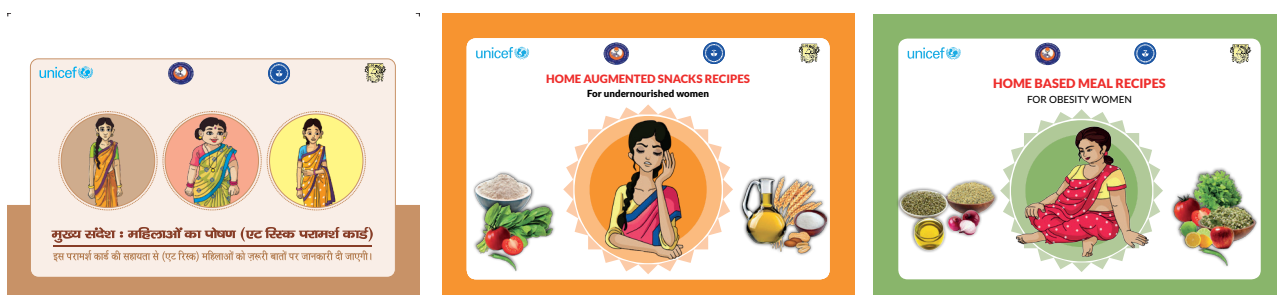
**MATERNAL NUTRITION- IEC MATERIALS**



Counseling aids on 5 thematic areas



Food thali



At risk cards

Recipe Books (for under and over nourished mothers)



**Counseling aids for ANC**

**Target group**– Pregnant women attending ANC

**Benefit**– To increase their knowledge about importance of adequate diet during pregnancy and healthy lifestyle. Also sensitize them about different government schemes like Public Distribution system (PDS) , ICDS.

**Benefit**– To increase their knowledge about early initiation of BF, EBF for six months, maternal diet and healthy lifestyle etc.

**Visits to other states: Bihar & Telangana**

Field visit to study implementation challenges on ground

To identify new strategies for addressing malnutrition in women

**Counseling aids for PNC**

**Target group**– Mothers admitted in PNC wards







**Disclaimer:** This is a working document that has been compiled by editor(s) of the document. It is the compilation of activities carried out by Kalawati Saran Children's Hospital (KSCH), New Delhi with support from United Nations Children's Fund (UNICEF). It has been prepared to facilitate the exchange of knowledge and stimulate State Centre of Excellence to conduct research activities. The statements in this publication are the views of the author(s) and do not necessarily reflect the policies or the views of KSCH..

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