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GOVERNMENT OF KERALA

Abstract

Social Justice Department - ICDS - Integrated Management of Severe Acute Malnutrition (IMSAM) in Attapady - project proposal of UNICEF - Sanctioned - Orders issued.

SOCIAL JUSTICE (B) DEPARTMENT

GO(Rt) No. 421 /2015/SJD Dated, Thiruvananthapuram:03.07.2015

Read:- 1) Decision taken in the meeting held on 27.05.2015.
2) Project Proposal of UNICEF.
3) D.O Letter No. ICDS/B3/39199/14 dated 05.06.2015 from the Director of Social Justice. Thiruvananthapuram.

ORDER

In the meeting held on 27.05.2015 with UNICEF regarding the setting up of energy dense Therapeutic Food Production Units in Attappady, UNICEF has proposed to assist in introducing a community based care system for management of Severe Acute Malnutrition (SAM) children in Attappady. They also offered to meet the full cost of implementing the proposed community based nutrition rehabilitation programme. The Director of Social Justice has requested to convey the approval of the State Government to UNICEF for implementing the project proposal of UNICEF for Integrated Management of Severe Acute Malnutrition (IMSAM) in Attappady Block.

Government have examined the proposal in detail and are pleased to approve the project proposal of Integrated Management of Severe Acute Malnutrition (IMSAM) in Attappady Block appended herewith.

By order of the Governor,
Dr. K.M. ABRAHAM
Additional Chief Secretary

To

The Chief, UNICEF, Office for Tamil Nadu & Kerala, 37/15, 2nd Main Road,
Kasturba Nagar, Adyar, Chennai - 600 020.
Director of Social Justice, Thiruvananthapuram.
Director of Health Service, Thiruvananthapuram.
Director, ST Development , Thiruvananthapuram.
Executive Director, Kudumbashree Mission, Thriuvananthapuram.
The Principal Accountant General(Audit), Kerala, Thiruvananthapuram.
The Accountant General(A&E), Kerala Thiruvananthapuram.
The Accountant General (DB Cell), Kerala Thiruvananthapuram.
Health & Family Welfare Department.
ST Development Department.
Local Self Government Department.
Web& New Media (for publishing in the website)
Stock file/O.C.

Forwarded/By order

Section Officer

Project Proposal

Integrated Management of Severe Acute Malnutrition (IMSAM) in Attapaddy Block.

Aug. 2014

List of Acronyms

ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activists
AWC	Anganwadi Centre
AWW	Anganwadi Worker
AWH	Anganwadi Helper
BPL	Below Poverty Line
CDPO	Child Development Project Officer
CEO	Chief Executive Officer
CMAM	Community-based Management of Acute Malnutrition
DLHS	Distirct Level Household Survey
DWCD	Dept. of Women and Child Development
EDTF	Energy Dense Therapeutic Food
GOI	Government of India
ICDS	Integrated Child Development Scheme
IEC	Information, Education and Communication
IMSAM	Integrated Management of Children with SAM
ITDP	Integrated Tribal Development Project
MAM	Moderate Acute Malnutrition
MO	Medical Officer
MNT	Medical Nutrition Therapy
MUAC	Mid-Upper Arm Circumference
NFHS	National Family Health Survey
NRC	Nutrition Rehabilitation Centre
NRHM	National Rural Health Mission
OTP	Outpatient Therapeutic Program
PHC	Primary Health Centre
SAM	Severe Acute Malnutrition
SC	Scheduled Caste
SD	Standard Deviation
SF	Special Feed
ST	Scheduled Tribe
SUW	Severe Underweight
THR	Take Home Ration
UNICEF	United Nations Children's Fund
VHND	Village Health and Nutrition Day
WIFS	Weekly Iron Folic acid Supplementation
WHO	World Health Organization

Background

Malnutrition remains the biggest threat to the child survival, growth and development despite of significant development in the social and economic sector across the globe. It continues to be a huge public health challenge and future global prosperity and security are intimately linked with our ability to respond adequately to this urgent challenge. The recent Series in *'The Lancet'* shows that globally under nutrition contributes to the deaths of about 3 million children each year—45% of the total. It results in stunting the physical growth, mental capacity and life chances of millions of people, and for Africa and Asia estimates suggest that up to 11% of national economic productivity is lost due to undernutrition.

Child malnutrition situation in Attapady

Attapaddy block is situated in Palakkad district of Kerala state at the north-eastern side of the Western Ghats. This block is one of the largest tribal settlements (48%), having a population of 66,171 across three gram panchayats of Agali, Pudur and Sholayur.

Attapaddy came into limelight when recurring deaths of 35 infants were reported during July August 2013, from tribal hamlets and also from government institutions such as, Tribal Super Speciality Hospital, Kottathara; Thrissur Medical College and Calicut Medical College. Media attributed these deaths to widespread undernutrition, and extremely poor maternal and child health services from the government programmes.

Nutrition Health Situation of Mothers and Children:

Maternal mortality (MMR) as well as the infant mortality rates (IMR) are alarmingly high than the state average. As can be seen from Figure 1, MMR is 700 as compared to the state figure of 130 per 100,000 live births. While the IMR is 66 and the state average is 14 per 1000 live births.

National Institute of Nutrition, Hyderabad had assessed the nutritional status of women and children in Attapaddy a year ago (2013) which reported that 48% of the adult women suffered from chronic energy deficiency (BMI< 18.5) while the prevalence of anemia was as high as 85 % in them.

Data on nutritional status of children under 5 revealed that 21% infants were underweight, 19% were stunted and 15% were wasted. In infants, overall prevalence of Severe Acute Malnutrition (SAM) was 4%. Vitamin A deficiency among preschool children manifested as conjunctival xerosis and Bitot's spots was as high as 4.7% and 1.2 % respectively. It was further reported that only 15 % of children had received vitamin A supplementation in the past one year, while 41% of the pre-schoolers were not even offered the dose.

Infants and young child feeding practices were also far from satisfactory. Although, initiation of breast feeding within one hour of birth was reported to be 71% by the mothers of infants, exclusive breast feeding was practised only in 37 % of them. Only 6 % of infants received complementary foods at the right age.

In view of the prevailing situation and the stated facts concerning nutrition and health of mothers and children, government of Kerala requested UNICEF to partner and undertake specific interventions to improve the situation of mothers and children and have systems in places to avert further deaths in infants and young children in tribal Attapaddy.

Additionally, with technical support from an external agency, a nutrition surveillance system for all children under 5 years of age her tracking system has been recently developed. This system is called Jatak which tracks all children for their nutritional status and gives alerts for further follow up. One such alert is available from these data are those children suffering with severe acute malnutrition, that need immediate medical and or nutrition attention because the risk of death in them is nine times higher than their normal counterparts. Data till date suggest that of the 4000 children covered for weight and height measurements under Jatak, about 150 children are with SAM. Thus, it will be worthwhile to support systems for setting up community based management for these children as the region already has facility based management of SAM through NRCs established in 3 PHCs (Agali, Pudur and Sholayur).

Components of the Proposal

The present proposal has two parts for the management of children with SAM–

1. Facility-based care - Strengthening of the existing NRCs in Attapady
2. Community-based care- Implementing a community-based management of children with SAM (CMAM)

Facility-based care of Children with SAM

Responding to the needs of the area for the management of children with SAM at the facility level, three NRCs were established in the year 2013 at the following health facilities –

1. CHC Agali
2. PHC Sholayur
3. PHC Pudur
4. PHC Anakkatty

CHC Agali, PHC Sholayur & PHC Pudur , the three NRCs are established by the Government of Kerala with technical support from UNICEF. The staffs posted at the NRCs were trained by National Level trainers using the GoI training package. To further improve the capacity of the NRC staff, few of them underwent Observership at Kalawati Saran Children's Hospital, Lady Hardinge Medical College, New Delhi.

During field visits to these NRCs it was observed that these NRCs were not admitting and treating children according the GoI recommendations. The management protocols are completely different – children with Moderate Acute Malnutrition are admitted to NRC; therapeutic foods like F75 and F100 are not given instead Dosa, Porridge, some local recipe called NRC mix is provided.

It is proposed that appropriate actions will be initiated as a part of this proposal to ensure that the management of children with SAM in the NRCs in Attapady are in line with the GoI management protocols. A two day refresher training will be organised for all the staff of the three NRCs in Attapady.

In addition, a strong link will be established with the proposed community-based program for the management of children with SAM.

Community-based care of Children with SAM (CMAM)

To maximize access, coverage, effectiveness and impact, a community-based management of children with SAM (CMAM) is being proposed to be piloted in the Attapady Block of Palakkad district of Kerala. The proposed CMAM program involves the timely detection of children with SAM in the community and the provision of appropriate home-based therapeutic care for children with SAM free of medical complications. If properly combined with facility-based management for children with SAM and medical complications and implemented on a large scale, the community management of SAM can prevent the deaths of hundreds of thousands of children.

A. **Hypothesis of the project**

1. **Integrated Management of Children with SAM (IMSAM) can be effectively implemented in Attapady Block.**

2. **CMAM services can be implemented effectively* and successfully in the community through the existing Health Services supported by NHM, ICDS and ITDP.**

3. **CMAM services utilizing Medical Nutrition Therapy (MNT) will be an effective treatment for children with SAM in the community, leading to recovery rates of over 70% in children with SAM**

**** Effectiveness will be judged against the recommended GoI and Global recommendations for the outcomes of the program – Recovery Rates; Default rates; Mortality rates etc.***

B. **Objectives of current proposal**

The objectives of the pilot for the Integrated Management of Children with SAM (IMSAM) are –

- To create effective treatment capacity for facility-based management of acute malnutrition using globally accepted protocols at the existing NRCs.
- To create effective treatment capacity for community based management of acute malnutrition using globally accepted protocols.
- To assess feasibility to deliver the community based management of acute malnutrition through existing Govt. system (Health, ICDS, Tribal Welfare, Kudumbshree)by using IAP and WHO recommended energy dense therapeutic food (EDTF).
- To demonstrate and promote linkages between CMAM and NRCs.

C. **Proposed intervention**

It is proposed to pilot an IMSAM program in Attapady Block. The facility-based component is already functional, although there are issues related to the management protocols. The proposed interventions in this proposal will mainly deal with piloting a standardized protocol to effectively treat the children

with severe acute malnutrition through community based approach in Attapady Block. The protocol will take into account the key principles outlined for CMAM i.e. community mobilizations and sensitization; timely and effective screening for case detection; maximum access and coverage; appropriate medical care and nutrition rehabilitation; continued treatment until recovery is achieved; follow-up of children for a period of one year after discharge from the program; and establishing a strong link with the existing NRCs.

The IMSAM program implementation will be led by the Dept. of Health and Family Welfare and will be supported by other departments like ICDS, Tribal Welfare Department, PRI etc and UNICEF. The programme will necessarily focus on following essential components-

1. **Community outreach**: to mobilise the community, to raise awareness, to achieve community support and understanding and to promote community case finding and timely referral
2. **Outpatient care for SAM children without medical complications**: All children are medically examined and receive routine medications such as amoxicillin, measles vaccination, vitamin supplementation, anti-malarial, anti-helminths. Children with SAM will be provided with EDTF/ MNT rations.
3. **Inpatient care for SAM children with medical complications**
4. **Supplementary feeding programme for children following discharge, linking with ICDS.**

Geographic coverage

The proposed pilot will be implemented in Attapaddy Block, covering children with SAM in all health centres under the three PHCs/Panchayats of Agali, Pudur and Sholayur

Estimation of coverage

The pilot will cover xxx children with SAM (with coverage of about 70%) from the Attapady Block; these children with SAM will be identified through screening at the community level.

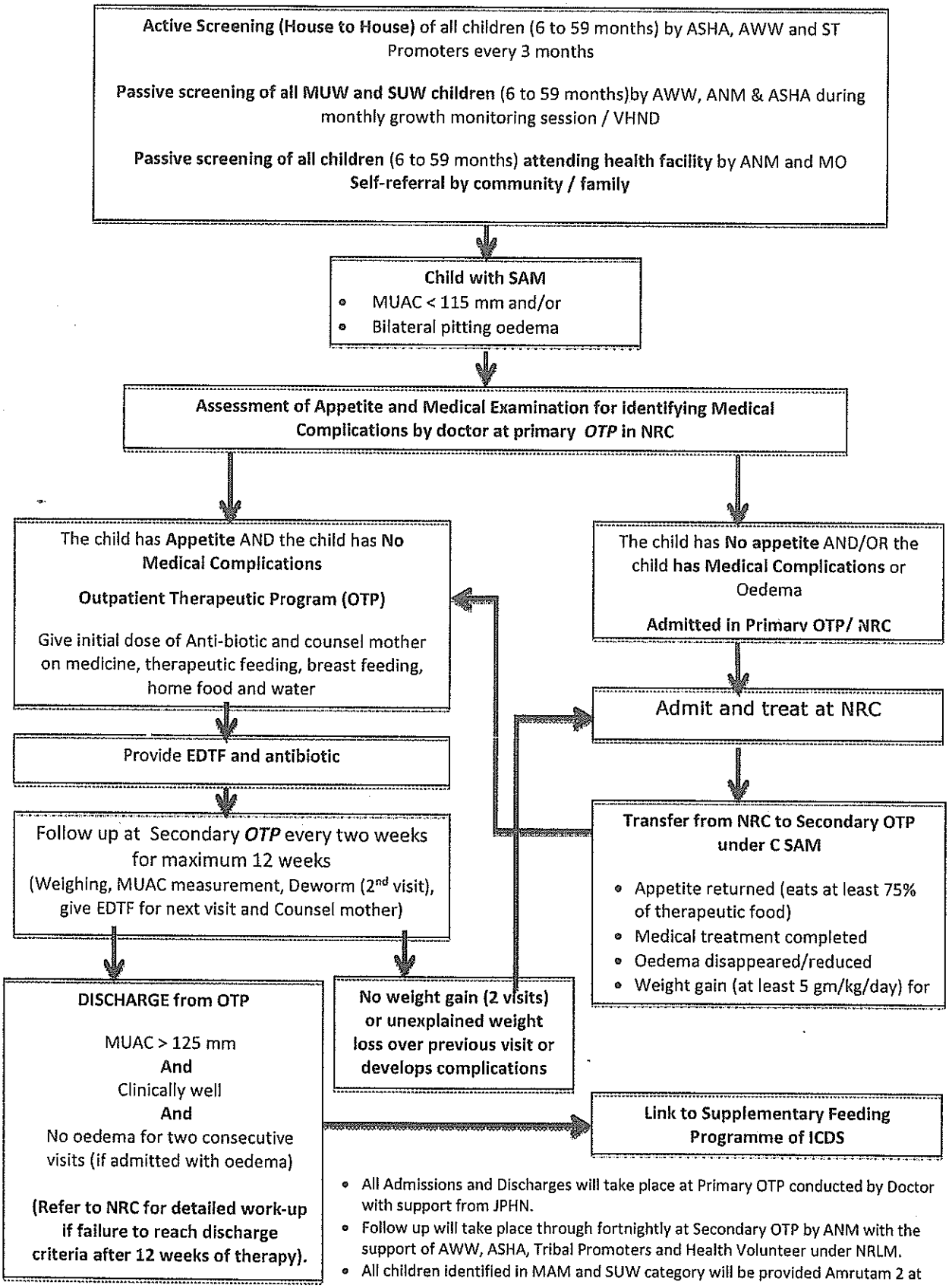
Assumptions underlying the pilot

- The model to be tested must be scalable, meaning they must be structured around the existing capacities, personnel, and routines of state-level stakeholders, especially the Health dept., ICDS and ITDP.

- Additional resources (beyond NRHM, ICDS and ITDP) would also be channelled toward pilot activities. Introducing the new service will require planning, training, supervision and monitoring efforts that will need support from the range of local and international stakeholders. Support for the pilots is expected in varying degrees from UNICEF, Kalawati Saran Children's Hospital, NGOs and others.

- The pilot is not an opportunity to test Medical Nutrition Therapy (MNT) or the energy dense therapeutic food (EDTF), but to test and document the ability of the system led by the NRHM, ICDS and ITDP to diagnose, refer and effectively manage SAM cases in a way that leads to public health impact.

Implementation framework



- All Admissions and Discharges will take place at Primary OTP conducted by Doctor with support from JPHN.
- Follow up will take place through fortnightly at Secondary OTP by ANM with the support of AWW, ASHA, Tribal Promoters and Health Volunteer under NRLM.
- All children identified in MAM and SUW category will be provided Amrutam 2 at

D. **Proposed Strategy**

Community mobilization

Community mobilization is a key component of C-MAM strategy. It will help the implementers to interact with community, inform them of the program and seek their participation. It involves – *Community sensitization* on key aspects of malnutrition, the activities under the project and role of community; *Case finding* by community; *Community follow up* for improved compliance. These community outreach activities are critical for the success of CMAM. These activities will be carried out by frontline functionaries with support of their supervisors and field coordinators and will be an ongoing activity continually reinforcing to remain relevant and effective.

Stages in community mobilisation:

Community sensitisation → ***Case-finding*** → ***Community Follow up*** → ***On-going sensitization***

- **Community Sensitization**

WHO: Conducting Community Outreach is the role of the ANM, AWW, ASHA and ST Promoters supported by PHN and Lady Supervisor, Medical Officer, CDPO and ITDP Staff.

WHERE: Community Outreach takes place at a common, acceptable and accessible site in each of the villages preferably AWC.

WHEN: Community sensitization is an ongoing process, the first session needs to be undertaken when the community program is about to be launched, this would help the community understand, participate and own the program. These community sensitization meetings with key stakeholders, key community leaders and members, and caretakers of children in the programme need to be held periodically to raise awareness about the programme and to investigate any issues such as low uptakes, low recovery rates or high default rates. This can be organised along with WHND planned in all AWC every month. The MCP card and other printed materials, reports generated every month all shall be used as tools for community empowerment.

HOW: Community sensitization is organized as community meetings, focus group discussions etc.

- **Screening of children**

Screening will take place in the community using Weight for Height/ Length MUAC and looking for bilateral pitting oedema. MUAC is a simple, accurate, low cost method that is easy to use by community-based workers and is accepted as fair and transparent by the population. The screening comprises of active and passive case finding along with self-referrals.

  - **Active Case Finding** (Screening) –
    WHO: By the ASHA and Anganwadi Worker (AWW) supported by ST Promoters and NRLM Health Volunteers.

WHERE: At the village and all the hamlets surrounding the main village

WHEN: Every three months

HOW: Children with SAM in the community will be identified through repeated periodic (every three months) house to house screening of children 6-59 months of age. Children with SAM would be identified using the MUAC tape and looking for bilateral pitting oedema. This form of active screening would help reach those families that may not be covered routinely by the Anganwadi Centres (AWC) and those children who are unwell to come to the AWC.

Passive Case Finding

WHO: By the JPHN, Anganwadi worker, ASHA and Medical Officer

WHERE: At Anganwadi centre and OPDs of the Health Facilities

WHEN: At every opportunity: the Village Health and Nutrition Day (VHND), the monthly Growth Monitoring and Promotion session, or in the context of children attending the OPDs and paediatric wards at the health facilities.

HOW: In addition to weight-for-age (for growth monitoring and promotion), MUAC will be measured for all children 6–59 months old and bilateral pitting oedema will be looked for.

- **Self-referrals** by families or community, which is well sensitized

The findings of the screening process will be interpreted as follows,

Finding (6 – 59 months)	Action
MUAC < 115 mm (Red) with good appetite and NO medical complications	Refer to Primary OTP at NRC
MUAC < 115 mm (Red) with poor appetite and/or medical complications	Refer to NRC
Bilateral pitting edema	Refer to NRC
MUAC 115-125 mm (Yellow)	Refer to SNP (ICDS) for special feed

Whenever a child with MUAC 115-125 mm (Yellow) **after screening reaches the secondary OTP, ie, at the AWC, the same child needs to be re-screened using weight for height/length criteria. Thus, weight and height measurements should be recorded.**

Basic supplies required:

- MUAC tapes
- Referral slips in duplicate copy
- Home visit form
- Infanto meters / Steadiometer for AWC

<u>OUTPATIENT THERAPEUTIC PROGRAM (OTP) at NRC- Primary OTP Centre</u>

<u>OUTPATIENT THERAPEUTIC PROGRAM (OTP) at Secondary OTP Center - AWC</u>

The OTP provides home-based treatment and rehabilitation for children with SAM who have appetite, are clinically well and are free of medical complications. Around 85-90% of children with SAM can be treated in the OTP directly, while the rest 10-15% with medical complications will initially be admitted and treated at NRCs and following transfer to secondary OTP/ AWC will

continue their rehabilitation phase. Children can be admitted directly into the Secondary OTP/ AWC, treated with routine drugs and given energy dense therapeutic food (equivalent to F-100 of facility based management) to eat at home.

WHO will manage the OTPs (Staff): The Primary OTP is at NRC and this could be taken care of by the specially trained Medical Officer that can be supported by the Staff present in the NRC itself. While, the Secondary OTP Centre is at AWC, which can be managed by the specially trained JPHN/ ICDS Supervisor, supported by the AWW, ASHA, and ST Promoters. Since there are two JPHNs in each sub-centre, both will receive training, however, each will be made responsible for two separate AWCs for OTP related activities.

WHERE (Location of OTP): Primary OTP will be operated from the NRC, covering all children (6-59 months) from one Panchayat. The secondary OTP at AWC level will cover preschool children from about 1-2 hamlets, i.e., from the population under the AWC jurisdiction.

WHEN: A fixed-day, fixed-site approach will be followed. Primary OTPs will be operated at the NRC on a daily basis taking care of children referred from the designated AWC on specific days. Secondary OTP will be operated once every two weeks on a fixed day (e.g. every 1st and 3rd Friday of the month), for admitting children **with SAM but without medical complications** into the CMAM program. This opportunity will also be used for the follow-ups of children that have left the NRCs after completing their stay. The discharge will occur from the primary OTP site at NRC for which children needs to be referred back.

All children with SAM (6 to 59 months) enrolled at the primary OTP (except transfer from NRC) would receive first dose of antibiotic from NRC Doctor. He/She will also counsel mother on giving antibiotic for five days which will be supported by the Staff Nurse there and JPHN concerned and the nutrition counsellor at the NRC will counsel regarding dispensing therapeutic food at home as per the details below (Annex. XX). The Medical social worker in the NRC will ensure the linkages with secondary OTP and other social support mechanism available in the community.

- **Admission Criteria through OTP**

Secondary OTP at AWC will be conducted on fixed days once every two weeks e.g. first and third Fridays of every month by the ANM, ASHA, AWW and supported by ST Promoter at the Health Sub-centre, where all children screened as SAM at AWC and through the periodic house-to-house visits will be assessed for appetite and medical complications.

Children from the following category will be enrolled in Secondary OTP:

Category	Criteria (any of the following)
Children 6-59 months	MUAC < 115 mm
	Mother/caretaker refuses inpatient care despite advice*
Other reasons for OTP enrolment	
Transfer from NRC**	Child referred to OTP after initial treatment at the NRC**
Transfer from other OTP	Child transferred from other OTP
Return after default***	Children who return after default continue their treatment if they still fulfill the enrolment criteria for OTP***

**Mothers/caretakers who refuse transfer to inpatient care* despite advice and counseling, should be enrolled in the OTP and the child should be carefully monitored in the OTP and followed up by community health workers.

***Children transferred to OTP from NRC will be provided EDTF on any working day at NRC; the quality will be sufficient to meet the requirements of the child till the next regular OTP.*
***Return after default*: Children who return after defaulting (absent for 2 or more consecutive visits). Returning defaulters are readmitted if they still fulfill the admission criteria.

Transfer from NRC to OTP

- Appetite returned (eats at least 75% of therapeutic food)
- Medical treatment completed
- Medical complications controlled
- Edema reduced to at least +
- Weight gain (at least 5 gm/kg/day) for 3 consecutive days

- **Management at OTP**

Management of children with SAM at the community level can be broadly divided into the following 10 steps:

Step 1 Anthropometric assessment

Step 2 Medical assessment

Step 3 Appetite assessment

Step 4 Decide if the child should continue in CMAM programme or be transferred to NRC and explain the overview of the OTP clinic to the mothers

Step 5 Nutritional treatment

Step 6 Medicines

Step 7 Health education

Step 8 Follow-up while in CMAM programme

Step 9 Discharge criteria for CMAM programme

Step 10 Follow-up after discharge from CMAM programme

Step 1: Anthropometric Assessment

- Measure MUAC
- Measure Weight and Height/Length
- Check for oedema

All cases identified by community mobilisers, AWWs or ASHAs or ST Promoters should be reassessed by NRC team at primary OTP or by JPHN in case if they are not willing to go to NRC, they shall be screened at Secondary OTP site at AWC by measuring weight for height/length, MUAC and looking for bilateral pitting oedema to confirm whether the child is SAM or not. The child will also be weighed at the time of admission as well as during all the follow-up visits.

Step 2: Medical Assessment

The child's medical condition will be assessed by the doctor i/c of NRC at primary OTP during initial assessment and the ANM during follow up at the secondary OTP and medical complications will be ruled out; the medical examination includes checks for oedema, appetite, vomiting, temperature, respiration rate, anaemia, superficial infections, alertness, and hydration status. All information from the medical check is recorded on the child's OTP card. In malaria endemic area, the JPHN will prepare a blood smear for detection of MP.

- Take medical and dietary history and record results on OTP card.
- Conduct physical examination, and record results on OTP card.
- Use the Action Protocol to determine if there are any medical complications *(Annexure XX)*
- If the child has one or more medical complications transfer the child to NRC.

A child with SAM with any of the medical complications will be referred to the NRC for further management. Similarly, Infants < 6 months, who are visibly wasted, are oedematous or are too weak or feeble to suckle, if identified they will be referred to the specific health facility (GTSH Kottathara).

Step 3: Appetite Assessment

Appetite will be assessed by ANM at the OTP by giving the child EDTF to eat at the site.

Appetite	Observation	Action
Pass (Good appetite)	Child eats therapeutic food eagerly or with encouragement	Continue in OTP
Fail (Refused)	Child refuses therapeutic food even after persistent encouragement	Transfer to NRC

Children might refuse to eat the therapeutic food because they may have just received a feed or they are in a new environment - in this case the caretaker should take the child to a quiet place and gently encourage them to eat the therapeutic food. It is, however, essential that the health worker observes the child eating the therapeutic food before the child can be accepted for outpatient treatment.

STEP 4: Decide if the child should continue in OTP or transferred to NRC

If the child refuses to eat therapeutic food and/or has any medical complications (IMNCI) and/or has oedema, the child would be referred to the NRC following the following procedures:

- Explain the situation to the caretaker.
- Advise the caretaker to keep the child warm and give frequent small amounts of 10% sugar water and if possible give the first antibiotic dose.
- Complete a transfer slip (OTP to NRC) to the nearest NRC. Give one copy to the caretaker and keep one copy for your file.
- Note the transfer from OTP to NRC in the OTP register and file it under "Transfers to Inpatient Care."
- Ensure that either the ASHA or ST Promoter accompanies the child to the NRC.

Step 5: Nutritional Treatment

Nutritional treatment is a critical component of SAM management. Children with SAM need more energy and protein so that in addition to their normal energy and protein requirement, lost body mass is rebuilt. The most effective therapy is based on the use of EDTF as a part of the Medical Nutrition Therapy (MNT). EDTF has a composition prescribed by WHO and IAP and meets all the recommended safety standards; EDTF is energy dense micronutrient enriched therapeutic food that is designed to treat severe acute malnutrition in the CMAM programme. This energy-dense EDTF can be given as take home ration and fed to the child as instructed by the ANM/AWW.

The amount of EDTF given to the child should be sufficient to take care of the caloric requirement of 175-200 kcal per kilogram of body weight per day (175-200 kcal/kg/day).

Step 6: Medicinal Treatment

1. Antibiotics (Amoxicillin): The important principle of community based management of SAM is that all children should be given oral amoxicillin for five days. Amoxicillin is also effective in reducing overgrowth of bacteria in the Gastrointestinal (GI) tract which is commonly associated with severe acute malnutrition.

2. Albendazole: Albendazole is given on the second visit, it is metabolised efficiently by children over twelve months of age and should therefore be given only to children over twelve months of age.

Step 7: Health Education

The CMAM programme provides a good opportunity for health education. The aim of treatment is not only to treat the child but also to empower mothers and caregivers so that they are able to maintain the child's nutritional status after discharge from programme. This step is critical in preventing relapse and occurrence of malnutrition in other children of the family.

OTP provides a good opportunity for health education

Health Education during admission in the program at OTP:

- When a child is first admitted to the program, it will be ensured that information about how to give therapeutic food, how to take the antibiotic at home and basic hygiene are clearly understood.
- No other health education messages would be given on the first visit to avoid overloading the caregiver with new information.
- At the end of the first OTP visit, it will be vital to check whether caretakers have understood the advice given by the health worker by asking some simple questions before they leave.

To accompany basic hygiene messages, soap would be given to all OTP caretakers at every visit to the OTP so that caretakers can wash their hands and the child's hands before feeding.

Health Education during follow-up visits at OTP:

Additional health, nutrition and hygiene messages will provided during follow-up visits to the OTP, as part of an extended health and nutrition education program.

These messages will focus on –

- Basic hygiene such as hand washing,
- The importance of frequent and active feeding
- What local foods to give young children
- How to enrich and improve the quality of complementary foods
- Continued feeding during illness
- Identifying malnutrition (when to bring children to OTP);
- Management of diarrhoea and fever and recognizing danger signs

Before discharge, children enrolled in the OTP should begin to transition to appropriate high energy nutrient rich home foods. Community health workers would ensure that the mother/caretaker knows what foods to give the child; how to prepare local foods; how to enrich home foods by adding locally available culturally acceptable foods; how to make it energy dense by the addition of oil/ghee; and how often and frequently to feed the child before the child leaves the OTP. It will also help the child adjust slowly from eating mostly therapeutic food to eating mostly local foods.

Step 8: Follow-up while in CMAM program

Children's progress is monitored regularly at OTP until children are discharged from the programme.

Secondary OTP will be held at AWC on fixed days twice every month for follow-up of the children initiated on therapeutic feeding.

Activities undertaken During Follow-up Visit

- MUAC and weight measurement; and assessment of weight gain and oedema
- Appetite is assessed at every follow up visit.
- Medical check-up and medical history (illness in the previous week) at every follow up visit; determine if there are complications, if there is a need to transfer to inpatient care or if follow up by a community health worker or community volunteer is needed at home.
- Maintain records by ANM and AWW.
- Counselling on BF and hygiene

Transfer from OTP to NRC

Children admitted in the CMAM will need to be transferred to the NRC in case of:

- No weight gain for two continuous visits
- Severe medical complication or anorexia or development of oedema.
- Unexplained Weight loss between any visit
- Non recovery after three months in the secondary OTP.

Follow-up Home Visits

Routine home visits for follow-up between the OTP visits may not be required. However, in some cases follow-up home visits are called for by AWW when –

- There is weight loss or
- Mild deterioration in the medical condition or
- Where the care giver has refused admission to the NRC or
- During the first week following admission into OTP or

- Cases in the first two weeks after transfer from the NRC or
- All defaulters/absences from the OTP, it is important to gain an understanding of the reason for absence and to encourage return

Routine home visits for follow-up between the OTP visits will be conducted by ASHA and/or ST Promoters once every week till the time the child is enrolled in the program.

Linkages with NRC

Secondary OTP centre will have linkages with the nearest NRC for referral of children with SAM having any medical complication or who develop complication during OTP. Similarly, children transferred from NRC after initial stabilization will be enrolled in OTP and continued on therapeutic feeding (without anti-biotic) till they achieve discharge criteria decided for OTP.

Step 9: Discharge criteria from CMAM program

Discharge criteria for OTP

- MUAC > 125 mm
  And
- Alert and clinically well

Exits from OTP

Discharged Recovered	MUAC >125 mm and child is "clinically well"
Discharged Not Recovered	Children who do not meet discharge criteria after 12 weeks when all investigation and treatment options have been carried out.
Defaulted	Children who left the program before reaching the discharge criteria **or** those who were absent for two consecutive visits **or** medical referrals who do not return.
Died	Died while in treatment in OTP
Transferred to NRC	Condition has deteriorated and requires inpatient therapeutic (NRC) or hospital care
Moved out to other OTP	Child has moved to other OTP for further management

Step 10: Follow-up after Discharge from CMAM Program

Children discharged from the CMAM program will be enrolled in the Supplementary Nutrition Program (SNP) of the ICDS and their growth monitored monthly; children who have not recovered (not met the discharge criteria) after 12 weeks in the program will be referred to NRC for medical examination and a detailed work-up before being sent to the SNP and classified as Discharged not recovered.

All children identified as MAM and SUW category will be provided special feed with micronutrient through *Sneh Shivirs* in AWC as is the practice in Attapaddy using Amrutam 2. The AWW will mainly be responsible for this activity and will be supported by the ASHA and ST Promoter.

Every child discharged from the programme must be followed up at least four times at the OTP during the first 12 months after discharge from the programme. The following is the proposed schedule for the follow-up visits at the OTP –

First Visit – One month after discharge
Second Visit – 3 months after discharge
Third Visit – 6 months after discharge
Fourth Visit – 12 months after discharge

Activities to be undertaken during each follow-up visit

1. Weighing the child
2. Measuring MUAC
3. Assessing the appetite
4. Measuring height/ length
5. Medical examination and recording medical history (any illness between the intervening period from the last visit)

Role of field functionaries

NRC and its staff

- Organize Primary OTP on all days in a month
- Confirm diagnosis of SAM
- Assess appetite
- Assess for edema
- Measure height/ length
- Take weight of every child referred
- Assess medical condition and rule out medical complications: The medical examination includes checks for temperature, respiration rate, clinical signs of anemia, superficial infections, alertness and vomiting and hydration status.
- At the time of initiation of treatment, allot SAM No. to all new cases and fill in OTP Card
- Initiate treatment: routine medicines and therapeutic food
- Facilitate in distribution of the therapeutic food
- Record weight, MUAC and other details of the child on the OTP Card
- Ensure record maintenance
- Counselling of mothers/caregivers
- Inform the mother/caregivers about the progress being made by the child
- Routine follow-ups while in program: record weight and MUAC; assess appetite and medical examination.
- Ensure timely submission of monthly reports
- Follow-up after discharge: record weight and MUAC; assess appetite and medical examination

- Upload all relevant information to the NRC Module of JATAK software through Android device available with NRC (admission details including the SAM number, anthropometric details, follow up information, etc.)

JPHN at Secondary (OTP)

- Organize Secondary OTP on fixed days at least twice every month with the support of AWW, ASHA, etc.
- Assess appetite
- Assess for oedema
- Assess medical condition and rule out medical complications at the time of each follow up: The medical examination includes checks for temperature, respiration rate, clinical signs of anemia, superficial infections, alertness and vomiting and hydration status.
- Initiate treatment: routine medicines and therapeutic food
- Facilitate in distribution of the therapeutic food
- Record weight, Height, MUAC and other details of the child on the OTP Card in every follow up visit.
- Ensure record maintenance
- Counselling of mothers/caregivers
- Inform the mother/caregivers about the progress being made by the child
- Routine follow-ups while in program: record weight and MUAC; assess appetite and medical examination.
- Ensure timely submission of monthly reports. Upload all relevant information to the NRC Module of JATAK software through Android device available with JPHN (details including the SAM number, anthropometric details, follow up information, etc.)
- Follow-up after discharge: record weight and MUAC; assess appetite and medical examination

ASHA, AWW and ST Promoters at the OTP

- Facilitate the smooth functioning of the OTP centres. They need to ensure the primary screening of all children and in time referral to OTP sites.
- Ensure that the children identified for admission and those due for follow up attend the OTP
- Inform about the next follow up.
- Ensure 100% Program follow-ups(routine- while in program) and mandatory follow-up after discharge
- Educate mothers and caregivers on basic hygiene

AWW, ASHA and ST Promoters at the Village

- Active and passive case finding.
- Upload the screening data to the JATAK software through IVRS
- For each child, facilitate Program follow-up at the OTP
- Ensure compliance to medicines and therapeutic food

- Home visits when indicated and uploading information to the C SAM Module of JATAK Software through IVRS.
- Links the child with the ICDS following discharge
- Ensures the four follow-ups after discharge from the program

- **Supervision**

Convergence between Departments of Health, ICDS and ITDP implementing the CMAM programme is crucial for achieving the synergistic impact. Good and effective service delivery requires that trained and motivated workers are in place and have the supplies, equipment, transportation and supervision to do their job well.

District and Block level Supervisory staff from the Health, ICDS and ITDP should monitor the CMAM programme and provide supportive supervision to the ANM, AWW, ASHA and ST Promoter. The state should clearly define the role and responsibility of different supervisors like the Medical Officers and PHN/PHNS from the Health Department and Lady Supervisor and CDPO from the ICDS and TEO **from the ITDP.**

The following table could be used to define the roles of the supervisors:

Activity	Responsibility (MO. CDPO, LHV, LS)
• Supervision and support for Community Sensitization and Mobilization	JPHN, PHN, ICDS Supervisor, CDPO, Medical Officer
• Supervision of OTP sites	PHN, CDPO, Medical Officer
• Checking of Active and Passive Screening	JPHN, PHN, ICDS Supervisor, CDPO, Medical Officer
• Checking of case selection	CDPO, Medical Officer, RCH Officer
• Checking of quality of care	RCH Officer, DPM, DMO(H), external expert team.
• Checking of cards and registers	PHN, CDPO, Medical Officer
• Compilation and dissemination of monthly and monitoring reports	PHN, CDPO, Medical Officer
• Checking of stocks and its storage	PHN, CDPO, Medical Officer
• Coordination and problem solving	Block level/ District level Committee
• Interaction and feedback from the community	Block level/ District level Committee

- **Monitoring**

Essential data are recorded to track the child through the CMAM program components, ensure the follow up of defaulters, and monitor the effectiveness of the program.

In order to know whether the CMAM program is making progress towards achieving its objectives, monitoring is essential. By systematically monitoring progress and impact during the course of the program, strengths and weaknesses can be identified, informed judgments made, and timely adjustments carried out.

To support independent monitoring of the pilot, subject experts from Kalawati Saran and GMC Palakkad of the state will be involved in monitoring and guiding the program, ensuring that the pilot is progressing well and all essential data is being captured, analysed and acted upon. This

being the first such community-based program in the state, the quality of data generated is of paramount importance.

To monitor the programme, the following indicators can be used:

Performance Indicators

- Recovery (cure) Rates
- Mortality Rates
- Defaulter Rates
- Non-responder Rates

Output Indicators

- Number of health sub-centres established as OTP
- Number and percentage of villages where active screening was conducted
- Number and percentage of children under 5 screened
- Number and percentage of children under 5 with SAM identified and referred for treatment
- Number of children with SAM admitted to OTP
- Number of children with SAM referred to NRC
- Number or percentage of frontline workers trained in SAM case management
- Number of children readmitted in OTP
- Number and percentage of children completing the four follow-ups after discharge
- Number and percentage of children who did not become SAM again till one year after discharge
- Number and percentage of children who died while in community after discharge

Qualitative information collected from the community to monitor the program for:

- The treatment the program is providing;
- Its appropriateness;
- Its coverage; and
- Its effectiveness
- Regularity of services

Monitoring of individual child

Children move between the components (OTP SAM treatment and AWC supplementary feeding and inpatient care at the NRC) as their condition improves or deteriorates. It is important to be able to track children between the programme components and programme sites. To allow this, there must be strong links between the OTP, AWC and the NRCs and information have to be well managed between the different components. A child's progress will be closely monitored and recorded throughout their treatment. The OTP weight, MUAC, appetite assessment, medicines provided, illnesses reported and attendance will be all noted regularly. This information together with information on transfer and follow-up visits will be used to ensure that progress is monitored and problems identified in a timely manner and action taken. Key elements of a system to track and monitor the child are:

- Unique number for the child for tracking
- Routine collection of information and follow-up data recorded on cards and maintained in an reliable filing system at the OTP and NRC;
- Effective exchange of information on individual children among the programme's components, and between the programme and the community.

- **Equipment and supplies**

Basic Equipment	Basic Supplies
• Weighing scales • MUAC tapes, • Thermometer • Time watch • Infanto meter • Studio meter • Torch	• OTP Cards/OTP Registers/ Ration Cards for mothers/ Transfer Slips from OTP to NRC/ Referral Slip from OTP to SNP of ICDS • Energy Dense Therapeutic Food (EDTF) • Medicines (Amoxicilin, Albendazole, paracetamol etc.), • Stationary • Utensils • Safe drinking water • Soap and water for hand washing and soap for distribution to the caretakers.

Activity plan for roll out

- **Formation of State Coordination Committee**

  A State Coordination Committee will be constituted under the Chairmanship of the Additional Chief Secretary, Govt. of Kerala and will have Secretaries of the Department of Health, Women and Child Development and Integrated Tribal Development Program, other senior State level Govt. of Kerala Officers and Chief of Field Office, UNICEF. The coordination committee will provide leadership, guidance and coordinate the overall implementation of the project activities, ensuring that all the concerned departments are actively participating and supporting the project.

- **Formation of state core group and sensitization on roll out plan**

  State core group of experts will be formed under the leadership of MD, NRHM. It will include senior state level representatives from the ICDS and ITDP along with experts from paediatrics, public health, UNICEF and NGOs. The group of experts will recommend and guide for all necessary approval / ethical clearance and review the progress of implementation and guide the process by meeting and providing recommendations every quarterly.

- **Identification of monitoring institute / agency**

  Kalawati Saran Children's Hospital, New Delhi along with Government Medical College will support the monitoring of the project throughout implementation.

- **District and Block sensitization**

  Sensitization of key officials from the Palakkad district and Attapady block will be conducted. The officials will be briefed about the project and roles of all the stakeholders / staff. The necessary guidelines will be provided and administrative directives will be issued by the district administration.

- **Equipment and supplies**

  The availability of necessary equipment will be mapped in the intervention areas and gaps if any will be identified. The plan to provide the necessary equipment will be developed and provided by NRHM.

  The supplies of registers and stationary will be printed at the district. The medicine will be made available through PHCs for the respective areas.

- **EDTF (MNT) procurement**

  Therapeutic food based on the recommendations of the WHO and IAP will be provided to the children with SAM without any complication. The therapeutic food that gives the recommended nutrients (*Annexure I*) will be procured by the state. The process of procurement will be decided by the State Government.

  Children will be given weekly ration of EDTF (as per weight and calorie requirement of 200 Kcal/kg/day per child) for consumption at the household level. Care giver/mother will be counselled on dos and don'ts of administering therapeutic food. However, for the initial days the

mother will be visited at home by AWW/ ASHA/ ST Promoter for observing at least one feeding at home.

- **Human Resource**

Human resource involved for the implantation of the project will be as follows,

Level of implementation	Human resource	Availability
Village / community	ANM	Existing Health Dept. staff (Govt.)
	AWW	Existing worker (under ICDS)
	ASHA	Existing community level volunteer (incentivised under NRHM)
	ST Promoter	Existing community level worker (ITDP)
Supervisory	Health Assistant	Existing Health Dept. staff (Govt.)
	ICDS supervisor	Existing staff under ICDS (Govt.)
	TEO	Existing ITDP staff
Block level	Medical Officer	Existing Health Dept. officer (Govt.)
	Block level MO	Existing Health Dept. officer (Govt.)
	CDPO	Existing officer under ICDS (Govt.)
	ITDP PO	Existing ITDP staff
	Sub-Collector	Existing Staff –District Administration
District level	District Health Officer	Existing Health Dept. officer (Govt.)
	Deputy CEO (WCD)	Existing officer under ICDS (Govt.)
	Dy Director, Tribal	Existing ITDP staff
	District Collector	District Administration (Govt.)

- **Capacity building**

Capacity building of frontline functionaries and supervisory staff will be conducted to understand the protocol for implementation and clearly understand everybody's role during implementation. The training material developed by other states through UNICEF's support will be reviewed and suitably adapted for the context.

UNICEF and Kalawati Saran Children's Hospital, New Delhi will train State Level trainers, who in turn will train the field health functionaries at Block Level. The Trainings for ANM and AWW is for three days and will be conducted in batches of 20-24 participants per batch at the Block Level by District Level Trainer. ASHA and ST Promoters will undergo one day sensitization at the block level on community mobilization; identification and referral of children with SAM; and ensuring timely follow-ups. Quality of the training programmes will be monitored in order to achieve high quality implementation.

- **Community mobilization and IEC**

Community mobilization and sensitization would begin once staff is trained. The community level staff and block co-ordinators will conduct sensitization meetings / *gram sabha* in the villages and sensitize the community on the issue of malnutrition, its consequences and the activities to be undertaken in the CMAM project and their role in the project. The team will have a sensitization kit that can be used in the village. IEC efforts will be intensified in these villages through existing IEC strategies.

- **Incentive for AWW/ASHA/ST Promoters and mothers**

Additional incentive (if any) to be provided to the staff for mobilization/follow-ups admission to CMAM will be decided by the state. However it is suggested that there be an incentive for ASHA and ST Promoters @ of Rs. 100/child/visit (out of which Rs 25/ is for supporting her travel to the Health Sub-centre). She will also be provided an additional incentive of Rs 150/child who has recovered completely. The ASHA/ST Promoter will also be given an incentive of Rs. 100/child/visit for each of the four mandatory follow-up visits after discharge from program.

Unique registration number for the child

A unique registration number is given to each child when the child is first admitted into the CMAM programme or NRC inpatient care. Given that each OTP, the SAM registration number will comprise of code for the state / district / block / name of OTP / year / / program component / number allocated to child.

Eg. KR / PLK / ATP / XXX /2015 / OP (or IP)/ 001

To ensure that children at greatest risk can be tracked, the full number allocated to a child in OTP or inpatient care is retained until the child is discharged from the CMAM programme. The number does not change even when the child is admitted to SFP to complete their recovery.

Returning defaulters retain the same number that they were first given, as they are still suffering from the same episode of malnutrition. Their treatment continues on the same monitoring card.

Readmissions after relapse are given a new number and a new card as they are suffering from a separate episode of malnutrition and therefore require full treatment again.

Routine data collection

Children in the CMAM programme are monitored using an OTP card which will have admission and follow-up details, and the carer is given a therapeutic food ration card.

OTP card: Admission & follow-up details would be mentioned on the card. These are kept in a file at the OTP where the child is being treated. The cards are used to fill out the tally sheets at the end of each OTP.

Cards for mothers: Carers are given a therapeutic food ration card to take home. This contains key information about the child and basic information on their progress (MUAC, weight, ration received). The carer should be advised to keep the card with the child's other health card and informed that the card can be presented at any clinic or home visit to inform AWWs and health workers of the child's progress.

OTP register: Key information of all children enrolled will be recorded in the prescribed register from the OTP cards.

JATAK NRC Module: Through this software which is already existing with adequate customisation shall be utilised for data collection, compilation and Analysis. This is a-web based GIS system on-line, which can be accessible from any location.

Supervision and case review

It is important that records are accurate. Health, ICDS and ITDP supervisors should visit the OTP sites once in a month preferably on OTP day and check that admissions and discharges are made according to protocols, and that routine and supplemental medicines and EDTF have been given correctly. They must also regularly check the status of children not doing well in the program.

The ANM should review the management of children with static weight (no weight gain for 2 consecutive visits)or weight loss (between any two follow-up visits), or those that have not recovered after 12 weeks in the SAM programme, and the same should be reviewed by the MO at monthly meetings. The workers should discuss the information on the admission card in order to decide on appropriate action. These monthly meetings should also include a review of deaths and defaulting occurring in the programme in order to identify any problems in the system.

Exchange of Information

An important element of the monitoring system is the tracking and exchange of information on individual children between components and between the programme and the community.

Transfers to inpatient care - Contact needs to be established to ensure that children are admitted and transferred with adequate information to ensure correct medical and nutritional treatment.

Inpatient deaths and defaulters - If a child is transferred from the OTP to the NRC inpatient-care his/her card remains in the OTP file. If that child does not return to the OTP after one or two weeks, information should be sought from the NRC inpatient care unit, or through ASHA / AWW visiting the child's home. If a child dies whilst being treated in the hospital or defaults, this information should pass to the OTP site so that the card can be completed and the case exits from the program.

Note: For programme reporting purposes, to ensure not counting deaths and defaulters twice the child should be transferred to inpatient care when transferred, and accepted back when they return. Events will be noted and reported from the site where the child was being treated last.

OTP absences and defaulters - Absences and defaulters from the OTP visit should be followed-up by ASHA / AWW/ST Promoters and the carer encouraged to return with the child to complete treatment. If the child does not return the reason for defaulting should be recorded on the card to help health workers understand the family's circumstances and avoid further absences. In some cases this information can help health workers to modify protocols.

Deaths - If a child dies while in the OTP treatment or inpatient care, a record is kept of their symptoms and the suspected diagnosis. This information is collected by ANM and should be recorded on the child's card as it can help to identify problems in treatment and action protocols. Home visits should be made for all deaths while in the program by the Medical Officer of the area and exact cause of death must be ascertained. For all deaths while the child is being followed up after exit, home visits must be made by the Lady Health Visitor/Lady Supervisor.

Non-recovered - When follow-up visits are required for children not responding well in the programme, information collected by AWW / ASHA during follow-up visits is important for the analysis of underlying causes of non-recovery. A child will be classified as non-recovered when the child does not meet the discharge criteria after being in the program for 12 weeks. Such

children need to be referred to a hospital where a paediatrician can do a detailed work-up to diagnose and treat any other associated conditions. While the child is being investigated and treated for any associated conditions, the child should be discharged as non-recovered from OTP.

Reporting mechanism

Monthly reports will be generated from the OTP at health sub-centre level. The sub-centre reports will be collated at PHC and further at block level. The defined reporting format will be used.

Supervisory checklists will be collated at PHC level and feedback will be given to the respective implementing staff. The analysed report of supervisory checklist will be submitted to block.

Additional data analysis through concurrent monitoring and evaluation

Support from Kalawati saran Children's Hospital and Government Medical College would be sought for concurrent monitoring and evaluation including data analysis, feedback reports and documentation of the programme. The institute will focus on following indicators for analysis, feedback and documentation,

- Recovery (Cure) rate
- Mortality rate
- Defaulter rate
- Non-responder rate
- Relapse rate
- Average length of stay
- Weight gain (g/kg/day)
- Coverage rates

The monitoring agency will support Block/District/State health authorities in the detailed analysis of following -

Cause of death - When a child dies in the OTP or inpatient care, a record is kept of suspected diagnosis and management.

Reasons for default - This information is collected either by AWW or ASHA and recorded on the child's card. The MO of the area will through analysis of program data identify areas/villages with high default rate (> 20%) and ensure that the community is more actively involved, reasons for high default rates should be understood through Focus Group Discussion (FGDs) in the community. It can help to identify trends in defaulting and identify adjustments to the programme that should be considered (e.g. the need to open new sites to facilitate access).

Reasons for non-recovery (non-cured) - Routine review of this information can help to identify common problems of non-recovery such as tuberculosis, other concurrent medical conditions, sharing food in the household or poor access to clean water. It can indicate the need for stronger sectoral links and advocacy for general ration distributions, directly observed therapy, short course (DOTS) tuberculosis programmes, link with RBSK or water and sanitation interventions.

Length of stay - The length of stay of each child can be calculated for OTP for all admissions after the child is discharged from the program. The ALOS for programme discharges may be calculated every month, quarter, bi-annual and annually to see the trends.

Regular Reviews at all levels

Monitoring cell will be established at block, district and state level. Regular reviews will be undertaken at all levels from block to district to state level by the state core group.

Implementation schedule / timeline

Pilot will be implemented during the period of April 2014 to March 2015. The detailed timeline is at ***Annexure XII***

Key stakeholders and their role

Stakeholder / partner	Roles and Responsibilities
Department of Health and Family Welfare	• Formation of State Coordination Committee • Formation of state core group of experts and administrators to guide implementation and monitoring • Request letter from Govt. of Kerala to Kalawati Saran and Govt. Medical College for supporting monitoring and evaluation • Issuing necessary technical guidelines to the district and block • Ethical clearance of the pilot • Refresher training of NRC staff • Admission and management of cases referred to NRC • Providing training of all functionaries involved in implementation • Procurement and distribution of EDTF for the initial three months till own production unit established by Kudumbashree. • Implementation of CMAM protocol at ICDS level – active screening, distribution of EDTF and conducting program follow up and follow up after discharge at the disposal of JPHN. • Nutrition education and Counselling on the administration of therapeutic food of care taker/mother by the ANM and AWW • Referrals of stabilized case from NRC to OTP • Supervision and monitoring of implementation by health assistant and MO • Record keeping and reporting by ANM • Review, reporting and documentation for further scale • Provision of incentives to ANM, AWW, ASHA and mothers through NRHM • Village Health SANITATION AND Nutrition committee members to be involved in screening and follow-up • Facilitate other logistic support required – cards, registers, etc. • Facilitate dissemination of results, documentation and develop scale up plan

Department of Women and Child Development	• Issuing administrative guidelines to ICDS functionaries and AWCs to function as secondary OTP centres under the leadership of JPHN or ICDS Supervisors. • Referral of children with complications to NRC • Provide necessary equipment at AWC level including studio meter and infant meter • Nutrition education and Counselling on the administration of therapeutic food of care taker/mother by the AWW • Supervision and monitoring of implementation by ICDS supervisor and CDPO • Procurement and supply of EDTF from Kudumbashree unit once they starts production based on the requirement
ITDP	• Issuing administrative guidelines to ITDP functionaries • Community mobilisation. • Home visits, screening, facilitation participation of children • Supervision and monitoring of implementation by ITDP supervisor
NRLM	• Issuing administrative guidelines to their functionaries • Community mobilisation. • Home visits, screening, facilitation participation of children through SHG members and Health volunteers • Supervision and monitoring of implementation by supervisor
UNICEF	• Technical support for the implementation of programme • Sharing of training materials • Supporting Resource Persons for state level ToT • Monitoring the implementation of the pilot
Kalawati saran and Govt. Medical College, Palakkad	• Monitoring and Evaluation • Documentation

Exit strategy / future prospects

The pilot aims at establishing an evidence of integrated facility- and community-based management of acute malnutrition which the existing system can deliver.

Annexure I

IAP, WHO, UNICEF and WFP Recommended Therapeutic Food

Moisture content	2.5% maximum
Energy	520-550 Kcal/100g
Proteins	10 to 12 % total energy
Lipids	45 to 60 % total energy
Sodium	290 mg/100g maximum
Potassium	1100 to 1400 mg/100g
Calcium	300 to 600 mg/100g
Phosphorus (excluding phytate)	300 to 600 mg/100g
Magnesium	80 to 140 mg/100g
Iron	10 to 14 mg/100g
Zinc	11 to 14 mg/100g
Copper	1.4 to 1.8 mg/100g
Selenium	20 to 40 µg
Iodine	70 to 140 µg/100g
Vitamin A	0.8 to 1.1 mg/100g
Vitamin D	15 to 20 µg/100g
Vitamin E	20 mg/100g minimum
Vitamin K	15 to 30 µg/100g
Vitamin B1	0.5 mg/100g minimum
Vitamin B2	1.6 mg/100g minimum
Vitamin C	50 mg/100g minimum
Vitamin B6	0.6 mg/100g minimum
Vitamin B12	1.6 µg/100g minimum
Folic acid	200 µg/100g minimum
Niacin	5 mg/100g minimum
Pantothenic acid	3 mg/100g minimum
Biotin	60 µg/100g minimum
n-6 fatty acids	3% to 10% of total energy
n-3 fatty acids	0.3 to 2.5% of total energy

Reference document for F100 composition: Management of severe malnutrition - a manual for physicians and other senior health workers. WHO, Geneva, 1999

Available at: http://www.who.int/nutrition/publications/en/manage_severe_malnutrition_eng.pdf

Note: Iron is added to EDTF in contrast to F100.

Safety: The food shall be free from objectionable matter; it shall not contain any substance originating from micro organism or any other poisonous or deleterious substances like antinutritional factors, heavy metals or pesticides in amounts that may represent a hazard to health of severely malnourished children.

- Aflatoxin level: 5 ppb maximum.
- Micro-organism content: 10 000/g maximum
- Coliform test: negative in 1 g
- Clostridium perfringens: negative in 1 g
- Yeast: maximum 10 in 1 g.

- Moulds: maximum 50 in 1g.
- Pathogenic Staphylococci: negative in 1 g.
- Salmonella: negative in 125g
- Listeria: negative in 25g

The product should comply with the International Code of Hygienic Practice for Foods for Infants and Children of the Codex Alimentarius Standard CAC/RCP 21-1979. All added mineral and vitamins should be on the Advisory List of Mineral Salts and Vitamin compounds for Use in Foods for Infants and Children of the Codex Alimentarius Standard CAC/GL 10-1979

The added mineral salts **should be water soluble**[1] and readily absorbed, they should not form insoluble components when mixed together. This mineral mix should have a positive non-metabolisable base sufficient to eliminate the risk of metabolic acidosis or alkalosis. [2]

[1]Many manufacturers use insoluble salts such as magnesium hydroxide, zinc oxide, ferrous fumarate, copper oxide etc. This is unacceptable as although these salts are cheap and tasteless, they are not available for the malnourished child. **Any RUTF made with these salts should be rejected by the purchaser as failing to conform with the generic specifications.**

[2]The nonmetabolizable base can be approximated by the formula: estimated absorbed mmoles (sodium + potassium + calcium + magnesium) - (phosphorus+chloride). The mineral mix recommended for F100 by WHO is an example of mineral mix with suitable positive nonmetabolizable base.

Annexure II

Action Protocol (OTP)

To determine the need for transfer to NRC: On admission and on each follow up visit

SIGN	TRANSFER TO INPATEINT CARE
APPETITE	Refuses to eat or has difficulty taking/swallowing Therapeutic Food
EDEMA	Grade +/++/+++
VOMITING	Vomits everything
TEMPERATURE	Fever >39°C
	Hypothermia <35°C
FAST BREATHING (according to IMNCI guidelines for age)	>60 respirations/minute under two months
	>50 respirations/minute from 2-12 months
	>40respirations/minute from 1-5 years
	Any chest in-drawing
HYDRATION STATUS	Severe Dehydration - poor urine output, sunken eyes, skin pinch goes back very slowly
ANAEMIA	Severe palmar pallor
SUPERFICIAL INFECTION	Extensive infection requiring IM treatment
SKIN	Extensive/ open skin lesions/infection
ALERTNESS	Very weak, lethargic, unconscious, had convulsions or is convulsing now
WEIGHT CHANGES	Weight loss for 3 consecutive weeks
MALNOURISHED INFANTS <6 MONTHS (who were transferred from the NRC)	Static weight for 5 consecutive weeks Require supervised and special treatment
NOT RECOVERING	If not recovered after 3 months refer to NRC/hospital for investigation

Annexure III

Routine Medical Protocol for OTP

Drug	When	Age/Weight	Prescription	Dose
Amoxicillin	On enrolment	2-12 months (4-10 kg)	Syp 125 mg 5ml	3 times/day for 5 days
		12 months – 5 years (10-19 kg)	Syp 125 mg 10 ml	
Albendazole	Second visit	< 1 year	Do not give	None
		12 – 23 months	200 mg	Single dose on second visit
		≥ 2 years	400 mg	

Annexure IV

Equipment and supplies

Basic Equipment	Basic Supplies
• Weighing scales • MUAC tapes, • Thermometer • Time watch	• OTP Cards / OTP Registers / Cards for mothers / Transfer Slips from OTP to NRC / Referral Slip from OTP to SNP of ICDS / Supervisory checklist • Therapeutic food – RUTF /MNT • Medicines (Amoxicilin, Albendazole, Vitamin A, paracetamol etc.) • Stationary • Utensils • Safe drinking water • Soap and water for hand washing and soap for distribution to the caretakers.

Annexure V

Format Estimation of number of children in Attapaddy.

PHCs	0 - 5 year population	Children with SAM considering Prevalence of SAM as 4%	Case Load = Prevalence x 2.6 x coverage (70% assumed)	Health Sub-centres	JPHN	AWC	ASHA	ST Promoters
Agali								
Pudur								
Sholayur								
Total								

- *The project will be piloted in the entire Attapaddy Block and is expected to cover 70% children with SAM ---*

- ***The MNT / EDTF requirement would be,***

  Number children to be covered : xxx
  Average Number of sachets : 3 per child per day
  Average length of stay : 50 days (8 weeks)
  Number of sachets / cups required : 150 per child
  Total requirement of MNT / EDTF : xxx sachets per year
  :xxx sachets per month

Annex VI: Total Training Load for the pilot (CMAM and NRC)

S.No.	Level of Training	Number of persons per batch	Total number of participants	Number of Training for pilot
1.	ToT for Master Trainers	14	14	One batch
2.	Training of Supervisors, TEO, ANMs and AWW (three days)	~~40~~ 24	240	~~6~~ 10
3.	Orientation of ASHA, NRLM Health Volunteers and ST Promoters (one day)	50 / 3	435	~~9~~ 15
4.	Refresher Training for NRC Staff (two days)	24	24	One batch

Annex VII: Total Training Budget for the pilot

S.No.	Level of Training	Cost per Batch	Total Cost for pilot
1.	ToT for Master Trainers (one batch)	452900	452900
2.	Training of ANM and AWW (6 batches)	92200	553200
3.	Orientation of ASHA and ST Promoters (9 batches)	39150	352350
4.	Refresher Training NRC Staff	280000	280000
	TOTAL Training Budget		

Annex VIII: Total Budget for Incentives for ASHA and ANM

S. No.	Health Worker	Activity	Incentive amount	Total Cost	Total Cost for treating xxxx children
	ASHA/ST Promoter	Bi-weekly visit per child (average 4 visits/child) including travel	100	400	
		Discharged as recovered	150	150	
		Four mandatory follow-ups after discharge	100	400	
	ANM	Bi-weekly OTP per month	0	0	
		Children who completed four mandatory follow-ups after discharge	-	0	
	Mother	Travel support (@ 100 x 2 (2 primary OTP))	-	200	
	TOTAL				

Annex IX: Total Budget for the pilot

S. No.	Item	Total Cost
EDTF		
1	Cost of EDTF	
2	EDTF transportation costs	
	TOTAL	
Program Implementation		
3	Soap to be provided to caretaker at every OTP visit	
4	Community sensitization for 150 villages (Rs 500/ per village); 2 sensitizations per year	
5	Equipments (MUAC tapes, weighing scales etc)	
6	Printing of Cards, Registers etc.	
7	Training (CMAM and NRC)	
8	Monitoring & Evaluation	
9	Monitoring support to Kalawati Saran and xxx Medical College	
10	Incentive to Field Workers including Travel support to mother (@ 50/ per visit; total 4+4 visits)	
11	State Review meeting (one per quarter)	
12	State Sensitization meeting + 3 District Sensitization meeting	
13	State Dissemination of results meeting	
	Total Program Implementation	

Annexure X

Implementation timeline

Activity	Month 1	Month2	Month3	Month 4	Month 5	Month 6	Month 7	Month 8
Formation of State Coordination Committee								
Formation of state core group								
Review of proposal								
Necessary approval from Govt.								
Meeting of key stakeholders								
Procurement of EDTF /MNT								
Production / procurement of EDTF								
Tie up with Institute for monitoring								
Training of Trainers								
Training of Health, ICDS and ITDP staff								
Refresher Training of NRC Staff								
District and Block level sensitization								
Mapping of equipment								
Gap filling (equipment)								
Stationary logistic printing and supply to blocks								
Medicine supply to blocks								
EDTF supply to OTP								
Community mobilization in villages								
Active screening of children								
Passive screening								
Enrolment and discharges through OTP								
Implementation of OTP								
Supervisory visits								

Activity	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8
Monitoring visits and support by other agencies								
Monthly reports								
Review Meetings at District and State level								
Data analysis and concurrent evaluation reports								
Final evaluation								
Dissemination of results								
Discussion on scale up plan								
Development of scale up plan								