

**PRINCIPLES OF CONTINUUM OF CARE: AN
ANALYSIS OF NUTRITIONAL CARE AND
REHABILITATION PROGRAMS IN INDIA**

Thesis submitted to the Jawaharlal Nehru University for the award of the Degree of

DOCTOR OF PHILOSOPHY

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DECLARATION

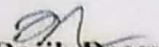
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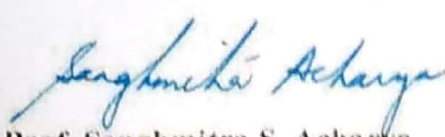
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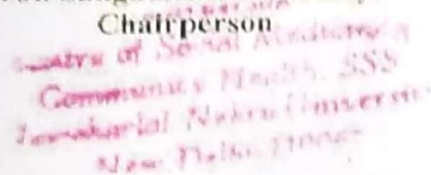


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ABBREVIATION

AAM	Action Against Malnutrition
AHA	American Hospital Association
ANC	Ante Natal Care
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
ATFC	Ambulatory Therapeutic Feeding Center
AWC	Anganwadi Centre
AWH	Anganwadi Helper
AWW	Anganwadi Worker
BCC	Behavior Change and Communication
BMI	Body Mass Index
CDC	Child Development Centre
CDPO	Child Development Project Officer
CHC	Community Health Center
CHSRF	Canadian Health Services Research Foundation
CHW	Community Health Worker
CM	Chronic Malnutrition
CMAM	Community based Management of Acute Malnutrition
CMTc	Child Malnutrition Treatment Centre
CoC	Continuum of Care
CSDR	Child Survival and Development Revolution
CSSM	Child Survival and Safe Motherhood
CTC	Child Treatment Centre
CDC	Child Development Centre
DFID	Department for International Development
DH	District Hospital

DOHFW	Department of Health and Family Welfare
DWCD	Department of Women and Child Development
ECCE	Early Childhood Care & Education
EPI	Expanded Program on immunization
FBNC	Facility Based Newborn Care
FCC	Family Centered Care
FGD	Focused Group Discussion
FHW	Frontline Health Worker
F-IMNCI	Facility based Integrated Management of Neonatal and Childhood Illness
FRU	First Referral Unit
GMC	Growth Monitoring Chart
GNM	General Nursing and Midwifery
GP	General Practice
HBNC	Home Based New Born Care
HBYC	Home Based Care of Young Child
HE	Health Educator
HHCC	Household to Hospital Continuum of Care
HNBC	Home Based Newborn Care
ICDS	Integrated Child Development Services
ICPD	International Conference on Population and Development
IEC	Information Communication Education
IFA	Iron and Folic Acid
IMNCI	Integrated Management of Neonatal and Childhood Illness
IMR	Infant Mortality Rate
ITFC	Inpatient Therapeutic Feeding Centers
IYCF	Infant and Yong Child Feeding

IYCN	Infant and Young Child Nutrition Project
JSS	Jan Swasthya Sahyog
LBW	Low Birth Weight
MAM	Moderate Acute Malnutrition
MCH	Maternal and Child Health
MMR	Maternal Mortality Ratio
MNCH	Maternal Newborn Child Health
MNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MO	Medical Officer
MoHFW	Ministry of Health and Family Welfare
MSF	Médecins Sans Frontières
MTC	Malnutrition Treatment Centre
MUAC	Mid Upper Arm Circumference
MUW	Moderate Underweight
MWCD	Ministry of Women and Child Development
NBSU	New Born Stabilization Units
NCCS	Nutrition Counseling and Child Care Session
NFHS	National Family Health Survey 1
NGD	Natural Group Discussion
NHM	National Health Mission
NHP	National Health Policy
NIPCCD	National Institute of Public Cooperation and Child Development
NLW	Nutrition Link Worker
NPP	National Population Policy
NRC OPD	Nutrition Rehabilitation Centre – Out Patient Department
NRC	Nutrition Rehabilitation Centre
NRHM	National Rural Health Mission

NRP	Nutrition Rehabilitation Program
NTFP	Non-Timber Forest Products
NUHM	National Urban Health Mission
OPD	Out Patient Department
ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
PDS	Public Distribution System
PEM	Protein Energy Malnutrition
PHC	Primary Health Centre
PHRS	Public Health Resource Society
PLA	Participatory Learning Action
PNC	Post Natal Care
POSHAN	Proactive and Optimum care of children through Social-Household Approach for Nutrition
PRIs	Panchayati Raj Institutions
RBSK	Rashtriya Bal Swasthya Karyakram
RCH	Reproductive and Child Health
RCH-II	Reproductive and Child Health – Phase II
RGNS	Rajiv Gandhi National Crèche Scheme
RMNCH	Reproductive Maternal Newborn Child Health
RMNCH+A	Reproductive, Maternal, Newborn, Child and Adolescent Health
RMP	Rural Medical Practitioner
RSOC	Rapid Survey On Children
RUSF	Ready to Use Supplementary Food
RUTF	Ready-to-Use Therapeutic Food
SAM	Severe Acute Malnutrition
SC	Sub Centre

SCM	Severe Chronic Malnutrition
SD	Standard Deviation.
SN	Supplementary Nutrition
SNCU	Sick Newborn Care Units
SNP	Supplementary Nutrition Program
SUW	Severely Underweight
TBA	Traditional Birth Attendants
TFC	Therapeutic Feeding Centre
THR	Take Home Ration
U5MR	Under Five Mortality Rate
UIP	Universal Immunization Program
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
VCNC	Village Child Nutrition Centre
VHND	Village Health Nutrition Day
VHSNC	Village Health Sanitation and Nutrition Committees
W/A	Weight-for-Age
W/H	Weight-for-Height
WHO	World Health Organization

CHAPTER 1

INTRODUCTION

The Global Nutrition report 2018, states that globally, despite of reductions in malnutrition among under 5 children, 150 million children are stunted, 50.5 million children are wasted and 20 million babies are born with a low birth weight. Global prevalence of stunting has declined from 32.6 percent (year 2000) to 22.2 percent in 2017. At the regional level, prevalence of stunting in South Asia has declined from 38.1 percent to 30.3 percent. Yet South Asia bears highest burden with 38.9 percent of the worlds stunted children. Around 26.9 million children, almost half of the world's wasted children live in South Asia. India is one among the three countries (Nigeria and Pakistan) that together host nearly half of the world's stunted children i.e. 47.2 percent. Also India is one among the three countries (other being Nigeria and Indonesia) that have most children with stunting. India ranks at the top with 25.5 million stunted children where as Nigeria and Indonesia with 3.4 million and 3.3 million stunted children respectively (Development Initiatives, 2018).

In 2008, The Lancet came up with a series of studies that focused on malnutrition and acknowledged maternal and child under nutrition as a public health problem. The five article series emphasized on the association between under nutrition and mortality. The series highlighted, global burden on maternal and child under nutrition and acknowledged it as the underlying cause of; under five deaths, disease burden and of disability adjusted life years. Hence, it highlighted stunting, wasting and intra-uterine growth retardation as one of the major public health problems (Black et al., 2008). The series acknowledge long term implication of under nutrition in early years of life and put emphasis on adequate nutrition during the first 1000 days of life (Victoria et al., 2008). The series highlighted the fact that effective programmatic interventions can bring improvement in maternal and child nutritional health outcomes (Bhutta et al., 2008). Also the series put emphasis on monitoring and assessment along with programmatic intervention; and focus on continuum of care during this window of opportunity (Bryce, Coitinho, Darnton, Pelletier, & Pinstруп, 2008). One of the significant point made by the series was that the intervention design and nutrition policy for maternal and child under nutrition showed a weak focus on continuum (Lahariya, 2008). Simply put this series underline; (a) impact of

under nutrition on Under 5 mortality and (b) interventions directed to the ‘window of opportunity’ i.e. first 1000 days of life (from pregnancy to 2 years post birth).

In 2010 the Planning Commission report stated that maternal and child under nutrition alone claims one third of total child mortality in India; and that stunting; severe wasting and restricted intrauterine growth are the largest contributors for mortality risk to Under 5 children. The same report factored in; inappropriate feeding, poor caring practices, poor management of childhood illnesses and infections as probable cause of two third of under nutrition related deaths during first two years of life where children are most vulnerable to malnutrition. The report acknowledged service gaps regarding malnutrition management thereby proposed it’s; prevention through strengthening maternal and child care services¹ and treatment and rehabilitation through health care and services² (Planning Commission, 2010). The Prime Minister Nutrition Council on India’s Nutrition Challenge highlighted; focus on prevention of malnutrition through multi-sectoral approach; direct intervention through a life cycle approach targeting children under 6, pregnant women and lactating mothers; bringing nutrition into focus and restructuring of ICDS (BPNI, 2010). In the same year the Global Hunger Index placed India into ‘alarming category’ with respect to food insecurity (International Food Policy Research Institute, 2010).

In 2011, the then Prime Minister, Mr. Manmohan Singh in his speech called high incidence of under nutrition among children in India as a “*national shame*” and reiterated the fact that almost half of under 5 children in India are underweight (Transform Nutrition, 2011). Later in the year 2012, the World Health Assembly (WHA) at Geneva conceded the significance of malnutrition. This was when the member states of World Health Organization (WHO) adopted six global targets to address maternal and child under nutrition focused on different forms of malnutrition. Under the broad ‘comprehensive implementation plan on maternal, infant and young child nutrition’ the WHA incorporated stunting, wasting among under five children; low birth weight in new born babies and anemia among women between 14-45 years of age. These targets focus on (a) reducing anemia among women of 14-45 years of age, (b) to reduce low birth weight (c) increase in

¹ Through child care centers, house visits by the frontline workers, early breastfeeding, complementary feeding, health and nutrition education to the parents, sanitation etc.

² Through regular growth monitoring, identification of severe malnutrition, treatment through malnutrition treatment centers, extension of malnutrition treatment centers in all states, continuous review of the severely malnourished children and awareness generation regarding Village Health and Nutrition Day (VHND) and Village Health Sanitation and Nutrition Committee (VHSNC).

the rate of exclusive breastfeeding among infants (d) reduce stunting (e) reduce wasting and (f) mitigate rise in obesity among children. India being a member state committed to meeting these targets by 2025. The strategy emphasized on two important approaches: intervention effort from conception to first two years of life and; a life course approach to sustain a good nutrition (World Health Organization, 2012). India as a member state committed to achieving the six nutritional targets stated by the WHA (IFPRI. (2017).

In 2013, the Lancet covered another series on maternal and child under nutrition. This series reemphasized on intergenerational cycle of malnutrition. The series concede that under nutrition along with inadequate breastfeeding, low birth weight, stunting, wasting and micronutrient deficiency lead to child deaths. It emphasized on intervention on women of reproductive age, pregnant women and children of 0-2 years of age (Black et al., 2013). At the same time it emphasized that poor coverage of such interventions leave out many who are in dire need (Ruel & Alderman, 2013). The series put emphasis on taking up nutrition as a priority, improve quality of services and expand its coverage of interventions that are specific to nutrition, especially in the high burden countries (Bryce et al., 2008).

India adopted the National Policy for Children (2013) and identified survival, health and nutrition among one of its four key areas of priority. The policy highlighted on providing access to comprehensive, preventive, promotive, treatment and rehabilitation health care for children before, during and after birth and the following years of their growth and development. The policy restated on protection against hunger, deprivation and malnutrition among children through; improving access, provisioning and promotion for services and support for adequate nutrition to children. The policy acknowledged that health and nutritional care need of children change across different stage of life and hence put special emphasis on addressing their individual need through a life cycle approach. The policy envisioned this through; improving and strengthening service throughout maternal health care and nutritional support; addressing causes of child mortality with special focus on nutrition through services, provision and adequate support for improving nutrition through a life cycle approach i.e. Infant and Young Child Feeding (IYCF) along with health, care and nutrition education to pregnant and lactating mothers; focus on behavior change for appropriate care and feeding at home and affordability and accessibility to preventive, promotive, treatment, care and management services for childhood illnesses. The policy thereby advocates addressing the immediate as well as

underlying determinants of malnutrition in under 5 children (Ministry of Women and Child Development, 2013). Even the Twelfth Five year plan (2012-2017) reinstated addressing of immediate and underlying determinants of malnutrition to prevent of under nutrition among 0-3 children (Ministry of Women and Child Development, 2011).

In response to the global concern for malnutrition and high prevalence of under nutrition among Under 5 children, in India the Government addressed this issue with various interventions. The National Health Mission (NHM) envisaged management of malnutrition (health promotion, prevention, treatment and rehabilitation) through the Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) approach. Improvement in maternal and child health and their survival is one of the health goals of NHM. To address the SDG goal 3 (Good health and well being) NHM adopted strategies to address the malnutrition. Following this the Ministry of Health and Family Welfare launched the RMNCH+A to guide interventions for child mortality and morbidity. The RMNCH+A approach is based on the continuum of care approach, encompassing interventions that focus on a life cycle approach. To be explicit; the strategy advocates for connecting care throughout different health areas (adolescent, reproductive health, maternal health, newborn and child health) to improve child survival (Ministry of Health and Family Welfare, Government of India., 2019). In NHM, The RMNCH+A propose delivery of services for management malnutrition (health promotion, prevention, treatment) embedded within the domain of newborn/infant and child care and child health care. The strategy document recommended set of interventions across continuum for prevention of malnutrition, screening, community based management and facility based management of severe malnutrition among Under 5 children (Ministry of Health and Family Welfare, Government of India, 2013).

India adopted the RMNCH+A approach to develop an understanding of continuum of care across various life stages. It is the first time that the concept of ‘continuum of care’ was being used to contextualize linkages between program component for different life stages such as maternal and child health. It not only emphasized on integration of health , care and nutrition services across life stages but also across different levels of care i.e. home, community and facility through inpatient and outpatient services. This strategic approach adopted two principles of continuum of care, namely time and place emphasizing on connecting care across different care places (health care system) to establish a continuous

care pathway. The community based program was already in place for maternal and newborn health; however the same structure for nutrition care or management of all form of malnutrition was not. The RMNCH+A strategy document clearly state that,

“Currently, the programme provides care to children with severe acute malnutrition (SAM) and this is mainly through facility-based care. Given the magnitude of this problem in India, it is not the most viable approach. Community-based programmes for the management of children with SAM are urgently required” (Ministry Of Health and Family Welfare, Government of India, 2013).

The Rapid Survey On Children (RSOC) report presents some interesting facts regarding the scenario of existing services addressing malnutrition. The RSOC (2013-14) highlighted that there is inadequacy regarding: (a) utilization of ante natal care (ANC) by the pregnant women; poor post natal care delivery (51 percent visited by a Female Health Workers (FHW) within one week of delivery and 47 percent received post natal checkup with first 10 days); Sub-optimal new born care (44 percent of the newborn received health check up within 10 days of birth); Anganwadi Centers (AWCs) worked fine for providing immunization services however for other health (fever, diarrhea and acute respiratory infection) and nutrition care its performance was modest; one fifth of new born had low birth weight, 45 percent children were being breastfed within an hour of birth. Majority of the children (86 percent) were fed colostrum by their mothers. Practice of pre-lacteal feed was prevalent and more than half (65 percent) children were exclusively breastfed; More than half (51 percent) of children received complementary diet between 6-8 months of age, however the frequency, adequacy and diversity of complementary food given to the children were poor; distribution of vitamin supplementation and deforming among children were suboptimal. The report stated that though there had been a decline in under nutrition among children from NFHS-3 to NFHS-4 (stunting, wasting and underweight) the rates were still worrisome (Ministry of Women and Child Development & UNICEF, 2014).

The second International Conference on Nutrition, 2014, envisaged eliminating malnutrition in all forms through targeting the immediate as well as underlying factors of malnutrition. It emphasized that the nutrition shall be integrated with the health system and take up a continuum of care approach for providing integrated health services through health promotion, prevention, treatment and rehabilitation. It also highlighted on

addressing of specific nutritional need and vulnerability of different population groups (Food and Agriculture Organization & World Health Organization, 2014). In 2015, the United Nation (UN) member states agreed to the target of ending all forms of malnutrition as stated in Sustainable Development Goals (SDGs) by 2030 in all phases of a life cycle; India is one of the member nations (Development Initiatives 2018, 2018).

The Government of India has implemented various interventions under different ministries to improve nutrition and target malnutrition, such as; (i) targeting nutrition component in different schemes/programs across sectors and departments, (ii) supplementary nutrition, health care, immunization, health check up and referral under the Integrated Child Development Services (ICDS) scheme, (iii) Promotion of appropriate Infant and Young Child Feeding (IYCF) practices; malnutrition and common childhood illness at community level; treatment of severe acute malnutrition among children through nutrition rehabilitation centers (NRC); specific interventions to address micronutrient deficiency through NHM of Ministry of Health and Family Welfare, (iv) addressing nutrition of children, pregnant women and lactating women through Village Health and Nutrition Days a joint venture of ICDS, Ministry of Women and Child Development and NHM, Ministry of Health and Family Welfare (Ministry of Health and Family Welfare, 2014b).

In 2011, India launched its operational guideline with support of National Health Mission for facility based management of children with severe acute malnutrition. Major concern was regarding the fact that it was not feasible to treat all malnourished children at the facility considering burden of child malnutrition in India and availability of malnutrition treatment centers. Now the NRCs have expanded in states of India providing inpatient therapeutic care to severely malnourished children. In 2009, the first community based management for malnutrition was initiated through Medecins Sans Frontieres (MSF). Later many development organizations took similar initiatives addressing prevention and treatment of malnutrition. Most of these interventions are either at a pilot phase or limited to certain states (Mathur, Halim, Gupta, Panda & Syed, 2018). The Integrated Child Development Services and National Health Mission are only two national programs in India that are vested with the responsibility of delivering nutrition interventions to mitigate malnutrition among under 5 children. However the coverage of interventions under ICDS and NHM is still low. Apart from this the delivery of nutrition sensitive services, such as; coverage of ANC, consumption of Iron Folic Acid (IFA) tablets by pregnant women,

supplementary food during pregnancy, post natal care, new born check up and care, breastfeeding, IYCF, de-worming, vitamin supplementation, supplementary nutrition, management of childhood sickness, additional nutrition for malnourished and facility based management of severe acute malnutrition (SAM) across continuum of care is fragmented (Chakrabarti, Kapur, Vaid & Menon, 2017).

The National Family Health Survey 2015-16 (NFHS-4) report states that under nutrition among children is declining in India, however the decline is not adequate to meet the SGD signed during WHA. Stunting has declined from 48 percent to 38.4 percent; wasting on the other hand shows an increase from 19.8 percent to 21 percent; underweight have shown some improvement from 42.5 percent to 35.7 percent (International Institute for Population Sciences IIPS and ICF, 2017b). So far the performance of India in comparison to other Saharan and South Asian countries has been unsatisfactory. Stunting among Under 5 children show second highest prevalence in India (38.4 percent) after Pakistan, but it shows highest prevalence of wasting (21 percent) and underweight (35.7 percent). The recent data on nutritional status of children in India show a mixed outcome, malnutrition, anaemia and low Body Mass Index (BMI) among children have shown improvement since last 2005-06 to 2015-16. Stunting, underweight children and anaemia among children have declined by 20 percent and 16 percent each. Whereas wasting among children have been on a rise (by 6 percent). The data on stunting, wasting, underweight and anaemia among children is high enough to raise concern (Pingali & Abraham, 2019).

This scenario is stranger at the state level more so at the district level where there are stark variations (Dasgupta, Sinha & Yumnam, 2016). Malnutrition among children (especially stunting) show a higher prevalence in northern and central states than elsewhere. Delivery of nutrition interventions across continuum of care, such as; registration of pregnancy, ANC, IFA during pregnancy, supplementary nutrition during pregnancy and lactation, newborn check up, Home Based Newborn Care (HBNC), full immunization, vitamin A supplementation, IFA and de-worming, supplementary nutrition and Oral Rehydration Solution (ORS)/zinc supplementation during diarrhoea (Chakrabarti et al., 2017), socio-economic inequalities and provisioning of basic public services such as food, sanitation, drinking water, health care etc. show large interstate differences (Menon, Headey, Avula, & Nguyen, 2018). Despite of improvement in nutritional status of children, India have the highest child under nutrition rate Globally; with children under 3 years of age either being

stunted or underweight as well as wasted and stunted under 5 children. States of Uttar Pradesh, Jammu and Kashmir, Bihar, Manipur and Jharkhand had experienced least variation in nutritional status among Under 5 children (Raykar, Majumdar, Laxminarayan, & Menon, 2015).

The latest addition in this regard is from the Niti Ayog, National Nutrition Strategy that envisions “Kuposhan Mukht Bharat” by 2022. The strategy emphasise on breaking the intergenerational cycle of malnutrition through focusing on maternal nutrition and child care and nutrition. The strategy document identifies the most vulnerable period namely, prenatal, birth, neonatal and early infancy and suggests preventive action during this phase. One of its core strategies rests on continuum of care across life cycle to address maternal and child nutrition; which include promotive, preventive and curative care linked through family, community, Anganwadi Centres (AWC) and health centres/facilities. It put special emphasis on community mobilization, counselling, growth monitoring and community involvement thereby moving beyond ICDS and reaching out to the unreached mothers and children (Niti Ayog 2017).

Organization of Chapters

Chapter I- *‘Introduction’*. The first chapter introduces to the current scenario of child malnutrition, globally as well as in India. The chapter have tried to capture the events that have shaped nutrition care and malnutrition management interventions in India. This background was placed to introduce the reader to the study topic and foregrounding the three primary themes of study, namely nutrition care and rehabilitation interventions, life cycle approach and continuum of care.

Chapter II- *Review of Literature*. This chapter presents literature review on two themes, namely; continuum of care and malnutrition. The first section of this chapter introduces the concept of continuum of care. The concept of continuum of care was first used in the 1950’s, since then it has been understood and used differently by different health domains befitting the need of their care setting. Till now the concept do not have a distinct definition but have been defined differently by different health domains such as; Mental Health, Diabetes, Nursing etc. This chapter presents the concept of continuum of care perceived, understood and practised by different health domains.

The second section of this chapter presents the concept of malnutrition. It lay out the experience of malnutrition among children between 0-5 years of age as a public health issue in India. Gradually the section present an overview of different interventions those are operational in India for management (preventive, curative or both) of malnutrition and their limitations. The section wraps up providing a glimpse of the issues pertaining to the interventions for management of malnutrition among 0-5 years of children in India.

Chapter III- '*Methodology*'. This chapter presents the methodology adopted for this research study. The chapter begins with presentation of the conceptualization framework developed through extensive literature review on the concept of continuum of care and interventions for nutrition care, treatment and rehabilitation. Further, this chapter enunciate research objective and the research questions. The next section describes the method for selection of study site, selection of participants, designing of the tool, method used for data collection and analysis of the data collected. The last segment provides operational definition of some of the terminologies used in the study for the reference of the reader. As case study was adopted as the method for research, the following chapters i.e. data chapters have been presented according to the case settings explored through this research.

Chapter IV- '*Facility based clinical management of SAM*'. This chapter exhibits the first case setting; facility based management of severe acute malnutrition (SAM) among children. This chapter presents the government intervention for treatment of severely acute malnourished children with associated medical complications that cannot be managed at the community level, known as the Nutrition Rehabilitation program. These inpatient therapeutic care units are known as the Nutrition Rehabilitation Centers (NRC). The chapter put out in detail about the care and treatment procedure of children with complicated SAM under nutrition rehabilitation program; challenges or barriers faced in management of SAM children and reviewing SAM management under this program through the lens of continuum of care.

Chapter V- '*Community based management of Malnutrition*'. This chapter exhibits the second case setting; the model of Community based Management of Acute Malnutrition (CMAM) among children. This chapter describes the model for management of acute malnutrition among children that do not bear associated medical complications. Such children's need not require treatment at the facility or hospital but can be managed at the

community level. The CMAM model operationalized by Medecins Sans Frontieres (MSF) has been described in detail. The chapter explains; management of acute malnutrition among children under the CMAM model; bring forth the challenges or barriers faced in management of acute malnutrition and lastly review the CMAM model through the lens of continuum of care.

Chapter VI- '*Prevention and management of Malnutrition at the community*'. This chapter put across the interventions at community or to be specific at the village level for management of malnutrition among children. This chapter describes the role of government flagship program, the ICDS in management of malnutrition among children of 0-5 years of age. The role of ICDS in health promotion, prevention of malnutrition, treatment and rehabilitation of malnourished children has been described at length.

The second segment of the chapter details the crèche (Day care) model under the Action Against Malnutrition (AAM) project operationalized by the Public Health Resource Society (PHRS). The role of crèche model in management of malnutrition among children 0-3 years of age (that is largely left out under the ICDS scheme) is described in detail.

The chapter discusses the challenges and barriers associated to management of malnutrition among children through these two interventions. The chapter also review intervention for prevention and management of malnutrition at the community level through the lens of continuum of care.

Chapter VII - '*Discussion and Conclusion*'. This chapter sums up the conceptualization of continuum of care within the interventions for management of malnutrition among 0-5 years of children. The chapter has three sections. The first section of this chapter sets the tone by discussing the concept of continuum of care; the researchers understanding of the concept within nutrition care and rehabilitation interventions drawn from the data. The second section sums up the different interventions studied as three different case settings and describe the nuances that construct continuum of care within these individual case settings. These sections also highlight the continuum gaps within each of these setting. The third section twine all the three case setting into a single continuum i.e. continuum in nutrition care and management; highlight the gaps and concludes the study.

CHAPTER 2

REVIEW OF LITERATURE

2.1 THE CONTINUUM OF CARE APPROACH

Continuum of Care has been acknowledged as one of the core elements of healthcare, which facilitates improvement in quality of care, improvement in health, equity and lowering the cost of health care. However the definition of CoC have changed over time which at present shows to envelope other concepts of care and is often used interchangeably with other concepts such as; coordination, integration, patient centred care and case management to name a few. The concept of continuity was first used during 1950s, where the personal health care provider remained a crucial element of CoC. During 1970s, coordinated and incessant care came into focus. The concept of continuum of care was based on connecting care provided in the past to the present care need of a beneficiary. This approach emphasised on strengthening linkages of care throughout time, i.e. coordinating care provided in past to be in synchronization with the care delivered at present times. During this period the understanding of continuum of care was limited to seeing the same provider; provider having complete knowledge of their beneficiaries and continuous contact with the beneficiaries. By the middle of this decade, continuity was being used synonymously for consulting same doctor (with knowledge of and implicit contract with their patient) time and again. In this approach the providers' perspective was central to the understanding of CoC.

Post 1970's phase the continuum of care model emphasised on the role of the provider to stay in continual communication with the beneficiaries. This approach highlighted certain characterises for continuum of care such as; the health care provider shall bear knowledge of their beneficiaries; keeping a track of their changing health care need; ensuring care despite of the location of the beneficiary and have a strong bond of trust with the beneficiary and its family. Other characteristic include; individuality of the beneficiary i.e. care plan according to the specific need of beneficiary; constant communication with the beneficiary and the other care providers; continuous connection with the beneficiary; and facilitating the beneficiary to steer through different care services in an orderly manner over time and through a wide range of services; facilitating beneficiaries access to

these services and providing flexibility within the care plan for easy movement of beneficiary through one care service to another.

During 1990s multi-dimensional models of continuity were developed which focused on the patient's perspective to define continuum of care. During this phase the concept reshaped and the beneficiaries' perception and their experiences of a coordinated and seamless care became central. The approach put forward a clinical model of continuum of care focused on the beneficiary. This model moves forward incorporating understanding of the beneficiary by the provider(s); involvement of beneficiary in decision making; strengthening the inter-personal relationship between provider and beneficiary; and health promotion and disease prevention. The multidimensional models of continuity in 1990s identified the following core elements of continuity, namely; chronological continuity, interdisciplinary continuity, geographical continuity, interpersonal continuity, informational continuity, individual dimension (planning care as per the patient's need), relational continuity, communication, longitudinal continuity, cross sectional continuity, flexibility and accessibility. Thus three core themes emerge out of the concepts of continuity, namely; providers' knowledge of its patient, communication between providers and cooperation between providers. The terms coordination of care, integration of care, case management and patient centred care are often used interchangeably with continuum of care. The term, Coordination of care emphasise on '*connected and comprehensive care to patient in a timely and complementary manner where the care services are delivered by different care providers*'. Integration of care states the linkage³, coordination⁴ and full integration⁵ between the different care providers', where the providers have complete information on the patients health needs and update themselves through effective communication and integration of different programs, remaining within their own functional domain. However the unique feature of integration of care is sharing of responsibilities by the providers within a single organization. Here the 'case managers'⁶

³ Linkages- is where different providers function within their own responsibilities, limits and resources.

⁴ Coordination- is information sharing regarding the patient between providers.

⁵ Full integration- is when responsibilities, resources and funding from various systems of services are pooled under a single organization.

⁶ Case managers- case managers are, "*individuals who is responsible for helping the patient to coordinate their care within a complex care system to ensure that patients receive the care they need in an efficient manner*", through case identification, assessing needs, drawing plans to meet those needs, implementation, linking patient to different services, facilitating in accessing care,

act as a link between the providers thereby facilitating full integration of care. However the responsibility/role of the case managers varies depending on the care setting, i.e. within a single care setting or fulltime care provided to the patient. .

The definitions that followed in the coming decade emphasised on the providers' knowledge of their beneficiary, their context and its influence in the care provided. Defining continuity as; *'the patient's experience of a coordinated and smooth progression of care'*, through information transfer, communication, flexibility, relational continuity and care from few providers. However the boundaries of these concepts are blurred and often overlap. Regardless of overlaps, the core continuum of care have three distinct themes; (a) A care provider (along each care setting) in close connection, communication and follow up with the beneficiary (b) Communication and information sharing between providers across care setting and (c) cooperation between the care providers to ensure connected care within a care setting and across different care setting (Uijen, Schers, Schellevis & Bosch, 2011).

The continuity of care cannot be seen in isolation but needs to be examined keeping in mind the other concepts too with which it shares its realm. CoC in long term care has been defined by Evashwick, (1987) as, *'a client-oriented system composed of both services and integrating mechanisms that guides and tracks clients over time through a comprehensive array of health, mental health, and social services spanning all levels of intensity of care'*. The concept explain CoC as an integrated system of care designed for a holistic approach that incorporate both medical (physical) and non medical (mental, social and financial) aspect of a beneficiary while providing the care services. The author argues that realm of CoC encompass wide array of services which is delivered through a comprehensive and coordinated system of care, specially designed to meet the needs of people. Thus CoC extends beyond mere collation of different services, where mechanism for organising and operating services as an integrated system is crucial. The continuum of care approach emphasise on fostering wellness. Therefore wellness and health promotional activities form an integral part of the continuum. This implicate that a sick person is not only aided in accessing the required services but also supported by regular follow up services through; monitoring, guiding and tracking illness.

coordinating care providers, integration, support continuous patient-provider relationship, advocacy for patient's right, referral, monitoring the patients' response to care and their changing needs and evaluation.

An effective CoC relies on integration of services for acute and long term care, from various providers, facilitating patients for an easy access to services as the need arise. Even so, multiple continuums may co-exist within a single organization, each having its own set of services, structured by its own continuum⁷, which might overlap in the selection of services offered to their clients⁸. Consequently, primary objective of CoC is integration of different services, so that although they function separately, but together accrue to one cohesive whole. However operational differences may craft challenges in planning and managing of such services (Evashwick, C. J. 2005).

So far the concept of continuum of care had been studied and understood from the perspective of a provider and in the years that followed gradually the framework incorporated the beneficiary perspective and experience of a seamless and coordinated care. In this approach besides the previous two components; (a) care experience of a beneficiary (b) care received over time; there was a third component that received significance, namely (c) interaction between providers and beneficiary (Reid, Haggerty & McKendry, 2002). Haggerty et al., (2003) further elaborated continuity stating that is as the experience of integration and coordination of services by an individual beneficiary. They also acknowledge time as another important dimension of continuum of care. They stated that the time for experience of a care service vary between a short experience (such as single encounter with the provider) and experience of long term care (such as primary care). Haggerty et, al, highlighted the significance of a beneficiaries experience of those aspects of care that lead/facilitate linking of care from one care setting to another; one care provider to another; one level of care to another or one care service to another in a coordinated and seamless manner (Haggerty, Reid, Freeman, Starfield, Adair & McKendry, 2003).

The initial conception of CoC focused on general practitioners. Guthrie et al. (2008) state that, over the years there was transition in the health care scenario, such as; expansion of primary care practices, increase in contribution of multiple organizations in care services, involvement of various providers, and expansion in the role of these multiple providers;

⁷ A health care setting may have its health units; each of them having a core set of services. Each of these units might have their own continuum for planning and providing of services to their beneficiaries; having a system of their own for information sharing, care planning, case management etc.

⁸ The multiple care units within a care setting might have overlaps. Meaning, the health units within a care setting might use; interact and coordinate services directed towards a single beneficiary addressing their health care need.

and along all these transitions the general practitioners started to lose out their significance in the continuity pathway. However it also meant that beneficiaries were now moving to different health care providers for their different health care needs, leading to the probability of discontinuity or fragmented care (Guthrie, Saultz, Freeman & Haggerty, 2008). Though a continuum of care services is required for health and wellness, health care is rather episodic. Therefore health care services shall be such that it bridges the gap between a provider-beneficiary encounter for the same (Guthrie, 2008).

The work following in the coming decades also took into account; the therapeutic inter-personnel relationship between provider(s) and the beneficiary, individual health care need of beneficiary, changing health requirement over time, considering the personal and social context of the beneficiary, effective communication between providers(s) and beneficiary and information sharing, shared decision making, beneficiary's choice, beneficiaries' experience of care coherent and connected services and the care environment into understanding the concept of continuum of care. These characteristic were summed up under three types of continuity, namely; informational continuity, management continuity and relational continuity (Guthrie, 2008; Haggerty et al., 2003; Reid et al., 2002).

Similar to this argument Gulliford et al., (2006) emphasised on the aspects that facilitated continuum in delivery of care services, such as; support for self management of care, multidisciplinary team of care providers, case management and care pathway (Gulliford, Naithani & Morgan 2006).

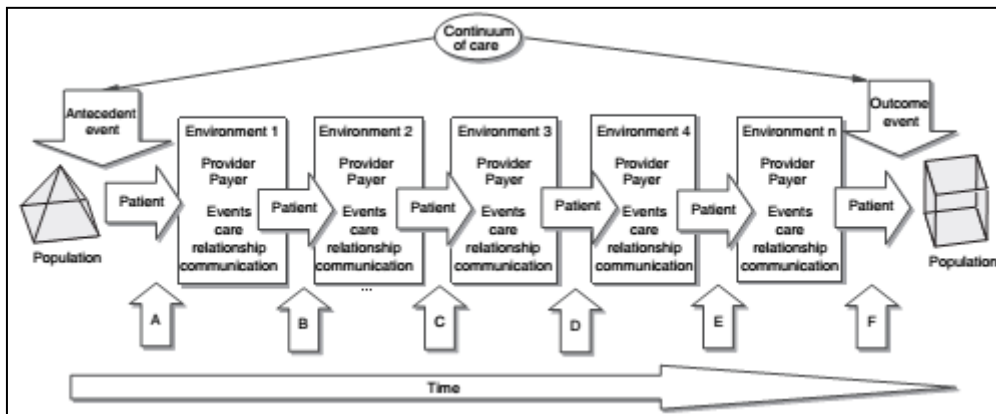
Foster and Allen (2005) defines continuum of care as, “a series of initiating, continuing and concluding care events that result when the patient seeks providers in one or more care environments within the health care system”. The authors argue that there are four principle characteristic of continuum namely; people, environment, place and time. These characteristics are sub-classified as per their specific elements, such as; (a) *people* are categorised according to their role of *patient*⁹, *provider*¹⁰ and *payer*¹¹; whereas (b) *care*

⁹ Patient- Patient is an individual who come from a distinctive population and acts as the antecedent of continuum.

¹⁰ Provider- Provider can be understood as the attribute of environment or as an attribute of the continuum depending on the design of the environment in a continuum; providers working within an environment or across different environments.

environment can be grouped into *location of care, service structure and resources in the care setting*; (c) *care events* classified as those events that occur prior to the experiences of CoC (antecedents¹²), during experiences within the continuum¹³ and events that construct the end result of the continuum. Here the *patient's experiences* act central to the understanding of care events; and lastly (d) *Time*. The authors identify two more events that occur along each level of care across time, namely *relationship and communication events between the provider and beneficiary*.

FIGURE NO.2.1 Attribute, relationships and care pathway for the continuum of care.



(Source: Foster and Allen, 2005).

A conceptual framework demonstrating elements of CoC, its interaction with the antecedents, pathways and the outcome was proposed by Foster and Allen. The authors argue that when a patient come across an antecedent event, first it makes a contact with the care environment which then instigate a series of care events conducted by the provider/providers within the care environment and is reimbursed by the payer (for example government or insurance. Every care environment might have a payer but each care environment may or may not have the same payer.). The patient progress across the

¹¹ Payer- A payer is the one who finances care. A payer is associated with each environment of care, though not necessarily all environment of care has the same payer. A payer controls the resources of a care environment.

¹² Antecedents in CoC are events which initiate contact with a care environment, such as risk, disease or injury.

¹³ Events occurring during the continuum are (a) those which initiate interaction between the patient and the care environment (b) events that are experienced during the continuum (c) events that conclude the continuum of care.

care environment through transition points¹⁴ depending on the outcome of care events at each of the care environment. The transition points give away space for barriers, duplication and deficiencies affecting the outcome of care. With the positive or negative change gained across care events, the patient retrieve in response contributing to the change in health characteristic of the population (Foster & Allen 2005).

Adnanes and Steihaug (2013) explain CoC as the process of coordinating advancement of beneficiaries through the care system. The authors argue that continuity of care has a social and psychological effect on the beneficiary's life leading to their improved functional ability within the community, satisfaction with the care services and positive impact on the care system. They opine that the definitions of continuity are multivariate, effected by different incidents along the care pathway.¹⁵ They classified the care pathways following certain typologies, namely; acute health problem with needs for treatment (Type A); chronic health problem with complications and a need of constant change in health services (Type B) and chronic health problem without complication and a stable treatment (Type C). These typologies were characterised by; duration of health problem, presence of co-morbidities or complications and stable care services. In their study they put forward system's inability to facilitate beneficiaries' access to the services, lack of integration¹⁶ between services, lack of progress in the care pathway¹⁷ and inadequate coordination¹⁸ to prevent fragmentation of care as obstacles to continuum of care. Long waiting time for treatment was seen as a hindrance in improvement in the condition of a beneficiary and even as a factor for deterioration of their condition. The authors emphasised on the relationship between accessibility and continuum of care and opine that without facilitating beneficiary's access to services, the system cannot ensure their smooth

¹⁴ Transition points are the events that mark the conclusion of one care event within a care environment and stepping into another care event within the same environment, different environment or exit from the continuum.

¹⁵ Care pathways defined in Norwegian reform document as, "the chronological chain of events that make up patients meeting with different health-care systems. These events are put together in an efficient and coordinated manner to meet the patient's individual needs".

¹⁶ The authors opine that when beneficiaries access care service from multiple providers for different health care need; the problems need to be looked in a holistic manner; so that the service provisioning is integrated and the services are provided simultaneously.

¹⁷ Progressing at the care pathway by means of a treatment/ care regimen that is planned in accordance to the situation, context and health need of the beneficiary. Otherwise the beneficiaries are left at the 'wrong service level' indicating that the pathway is stagnant and the progression of beneficiary in the care pathway is not appropriate.

¹⁸ Such as by means of an individual care plan, case managers, continuous follow up etc.

progression along continuum of care. On the other hand an organized movement of patients along the diverse health care system; access to services; coordinated, coherent and uninterrupted care events suitable to the health care need; context of the patient; and lastly the patient's experience of series of care along the care pathway sum up their experience of continuum of care (Adnanes & Steihaug, 2013).

Sweeny et al. (2012), brings in the aspect of 'service users experiences' to add to the multi-dimensional construct of continuum of care. The authors emphasise on users' definition of continuum of care to assess continuity in the services provided. The authors opine that access, range, information and individual progress acts as a precondition to CoC. Timely access to the needed services and quality information are the fundamental elements of user-defined CoC. Lack of access to needed services and information makes a patient unable to negotiate with the complex health system. The authors argue that in understanding CoC, while information continuity has been defined and understood as the sharing of information between the care service providers, the aspect of information sharing between the patient and care providers has been highly neglected; thereby they emphasise on information sharing between the provider(s) and beneficiaries as a significant block to informational continuity. The authors state that contact with the providers serves as an important element of continuity/discontinuity of care i.e. frequent change of the care providers imply the need for beneficiaries to repeat their life history each time they meet a new provider. On the other hand change in providers serve beneficial under circumstances where the patient-provider relations begins to fail. The authors therefore state that the quality of provider-beneficiary relationship is crucial rather than mere repeated contacts with the same providers. The authors acknowledge that managed transitions between services have significant impact on the beneficiary, especially during shift between services. They further state that the individuals detached/fallen out of the CoC require easy access to the range of services that suit their felt needs in order to facilitate their engagement and address discontinuity of care (Sweeney et al., 2012).

At large continuum of care can be understood in context to individual care, access to seamless care, case management, post discharge care directions, appropriate linkages and follow up. However each contact with the health system intensifies the effect of the consequent contacts, the continuum during care transitions are significant in preventing

beneficiary from falling out of continuum due to poor connection between care providers and transfers within different care programs and/or levels of care within same program. Whereas, integration and quality of services throughout continuum and linkages between care services serve crucial to effectiveness of all integrated and interlinked care (Kerber et al., 2007).

The concept of continuum of care lacks a consensus on its definition and its construct. The concept is still evolving. The understanding of continuum of care varies across different domains of health care. Each of the health domains perceive and practice continuum of care befitting to their operational need. The conceptualisation and adaptation of continuum of care by these health domains are as follows:

MENTAL HEALTH

The Canadian Health Services Research Foundation (CHSRF) report (2002), identify continuity as one of the care components which encompasses two core elements: (a) an individual's experience of care which is uninterrupted and coordinated through a healthy patient-provider(s) interaction and (b) care received over time. The element of time is identified as one of the dimensions of continuity, where the time frame can vary from a short term care to a long term care relationships. In mental health CoC exhibit three forms of continuity, namely, '*informational continuity, relational continuity and management continuity*'. Informational continuity facilitates in collating disconnected elements of care overtime and serves as one of the essentials for coordination of care. However, most health domains focus primarily on medical information than non-medical information about beneficiaries which is least likely to be shared among the care providers and organizations. (p. 5)

Mental health care on the other hand, emphasise on seeing the same care provider(s) over time as a prerequisite for relational continuity. This facilitates amassing of information over every visit, links care over time and fosters a sense of responsibility within care provider. The quality of relational continuity depends on duration and type of care which mean, relational continuity operates differently within domains of primary care and mental health care. In primary care, emphasis is on patient-providers relationship, where the patient acts as the principal agent of relational continuity. This put the onus on patient where he/she is solely responsible for the visits; whereas in mental health the emphasis is

on care provided by a team of providers and maintaining the continuity of contact¹⁹. This continuity of contact serve crucial for chronic health problems, acute instability or crisis among patients arising due to loss in contact with their providers (p. 6).

Management continuity in mental health care refer to, ‘the provision of separate types of healthcare over time in ways that complement each other so that required services are not missed, duplicated, or poorly timed’. In management continuity, focus is laid on a specific illness that is chronic or recurrent in nature. The timely and uninterrupted delivery of care is maintained through a management plan also referred as care plan. This may either cover a specific time frame such as a hospitalization episode or stretched over a time span beginning from the diagnosis, treatment to palliative care. The care plan forms an integral part of management continuity (especially when care is delivered by more than one provider) and is often referred as Continuity of care or care pathways, defined as; plans for lengthy illnesses, in which the content, timing and sequence of health intervention over time are prescribed, for multiple episodes of same sickness or for managing different facade of a chronic sickness (p. 7).

However merely sharing of a care plan among providers is not continuity but coordination among providers must result in observing the care plan/care path ways for coherent care delivery to the patient. Flexibility in care plans is crucial to meet the changing needs of a patient which is a practice in mental health and also in primary health care. However in primary care the provider has autonomy to adapt care protocol in synchronization to the needs, values and context of their patient. This can be achieved through outreach and ongoing monitoring which helps in tracking and making changes in care delivery as per change in the patients care needs.

Transition of care (between and across levels of care) within different settings disrupts the management continuity, hence discharge plans are significant in transition of care between different health settings, through professional care providers within hospital based care or informal care providers for home based care. This discharge planning is usually done by a provider within the hospitals who has more knowledge about care services at non-hospital setting, thereby sealing the gap of services between different care settings. The mental

¹⁹ Continuity of contact- the providers see themselves as the principle agent of continuity. They are responsible for maintaining contact with the patient, monitoring the health progress, follow up and facilitating access to care when necessary.

health literature emphasise on continuity of service/treatment during transition of care from inpatient to community care services, ensured through a connected and coherent care strategy, which involves the community health providers who are responsible for regular follow-up post discharge. The need for coordinating medical and non medical services led to the emergence of case managers, responsible to link the services to the patients and facilitating access to these services. Bachrach, cited in Reid et al., 2002 opine that case management as an important driver of care continuity (Reid et al., 2002, p. 6-8). Thus continuity of care can be understood as delivery of consistent care to the patient.

The American Hospital Association (2014) acknowledges integrating behavioural health integral to CoC for better health management and ensuring care at a low cost. It emphasises on integrated care²⁰ (p. 6), towards managing population health outcomes at the minimal total cost with a maximum patient satisfaction (another prime component of continuum). The process includes different steps, namely; health coverage: routine screening and checkups; reducing the total cost: lowering the cost of treatment by providing timely treatment; covering people with co-morbidities and risk behaviours minimising the chances of readmissions. The AHA proposes a CoC model with stages of integrated care as; coordinated, co-located and integrated care.

According to AHA; the primary stage of CoC is coordinated care which involves behavioural and physical health clinicians but within their own separate clinical setting. Exchange of patient's information takes place as and when required even beyond referrals. In coordinated care the treatment plans and beneficiary data base are maintained separately. The treatment or care is provided in their separate clinical setting. The second stage is co-located care, where behavioural and physical health clinicians provide care within a common setting. The emphasis is on communication and consultation. The provision of care is not restricted to a particular service but might include a range of services. Patient information is maintained and coordinated among the providers. This model follows the beneficiaries but not necessarily coordinate care across providers. The last stage is of integrated care; where behavioural and physical health clinicians

²⁰ The Agency for Healthcare Research and Quality define Integrated care as; The care that results from a practice team of primary care and behavioral health clinicians, working together with patients and families, using a systematic and cost-effective approach to provide patient centred care for a defined population. This care may address mental health, substance abuse conditions, health behaviours (including their contribution to chronic medical illnesses), life stressors and crises, stress-related physical symptoms, and ineffective patterns of health care utilization.

collaborate to design care delivered to a patient. In this system the treatment plan developed by behavioural health providers and clinical care providers is integrated. The patient follow-ups are practiced through an updated register. Some of the mental health care model provide extensive coverage to the entire patient population and focus on the total health outcome at the population level.

However, integration framework for CoC encompassing behavioural health emphasise on facilitating communication, collaboration and treatment between providers at the same time increasing providers capacity and knowledge by support of behaviour health specialists. This integration of behaviour health within CoC has been emphasised irrespective of the care setting²¹ including following key elements; behavioural health screening, unified treatment plans, actionable results, care delivery based on protocol, health record and patient centric care (American Hospital Association, 2014).

DIABETES AND CARDIOVASCULAR DISEASE

Gulliford et al, in their work cite the definition of continuum of care put forward by the American Academy of Family Physicians, “the process by which the patient and the physician are cooperatively involved in ongoing health care management toward the goal of high quality, cost-effective medical care”. Here the continuity of care stands with a very different connotation than merely improved delivery of care. While better delivery of care contributes to enhanced continuity, continuity of care itself provides a patient centred outcome. This denotes that CoC is not merely limited to delivery of care, but it is a process of prevention, early diagnosis, management and follow up for any health condition. CoC for diabetes is classified into four major types, namely; (a) Longitudinal continuity, this includes a close interpersonal relation between the patient and the care giver, regular monitoring of the sick overtime and involvement of a few physicians; (b) Experienced relational continuity, where interpersonal relation between the sick and the care giver bears familiarity, closeness and trust. This implies that the sick get to consult their regular care providers (doctors/nurses)²² for advice on their health condition as and when required; (c) Experienced flexible continuity refers to flexibility of clinicians to respond in accordance to changing health requirements of the sick with time; and lastly (d)

²¹ Care setting- Primary care, inpatient care, long term care, outpatient care, community based care etc.

²² Regular doctors/nurses- in a given setting those doctors/nurse who knows their patient and their medical condition best

Experienced team and cross boundary, which emphasise on a consistent and coordinated care between different care settings²³ and clinicians. CoC is hence examined within the purview of patient satisfaction with the care received unlike prior understanding of CoC as a process of measuring care (Gulliford, Naithani & Morgan, 2006). However a significant factor remains unaddressed, that those with poor health behaviour not only have the maximum risk but are also vulnerable with minimal means to overcome the perils of poor health. Hence absolute risk (intensity and interplay of multiple risk factors) needs to be taken care of, in order to prevent poor health outcome.

Tonkin and Chen (2008), proposed a model for continuum of care for chronic heart disease, through three primary steps, namely prevention, management and care during transition. According to their model; the first level includes prevention and management of a poor health condition (through identification of early risk factors) and its symptoms that indicate onset of a negative health condition. The second phase includes secondary prevention programs and transition of care from hospital to community. The model proposes that continuity of care between the hospital and living environment (community) is imperative to health gain. Hence a follow-up is required by the care providers, ensuring continuum of care delivered to the diseased and promotion of positive health behaviour even post discharge. Beside this, ongoing prevention for recurring events of health peril and bridging of gap between the evident symptoms and its treatment is needed. The proposed model emphasise on the investment for primary care including prevention of new cases as well as identification of the high risk individuals. Nonetheless the authors opine that primary care is easy to access, more equitable and cost effective than the facility based programs (Tonkin & Chen, 2009).

GERIATRIC CARE

In Geriatric care CoC is defined as a, '*continuum of safe and quality care even during transition through different health care providers and settings*' (p.1). The model of care transition among health care organizations focus mainly on two care points; (a) during admission in a facility, (b) discharge from the care facility (through sharing of information on medical history, medications and reason for discharge and transitions).

²³ Different Care settings- refer to the care provided in a family practice setting, the hospital clinical care setting or shared care (family practice based care along with hospital care through advice from a specialist).

Here, the discharge procedure involves health screening by an interdisciplinary team for patients with higher risk factor, which could lead to a readmission post discharge. When an assessment of patient's health care requirements are made, it needs to be met, though outside a hospital setting. Case managers/discharge planners are responsible to make these assessments and together with an interdisciplinary team plan for organizing care needs of a patient after discharge. The patient is discharged, with a discharge instruction and a follow up plan.

Some transition care programs even arrange for follow up visits by a home health nurse within two days of discharge, this continue to the next 30 days along with, medication, multidisciplinary intervention and patient education pertaining to their disease. However the new model of continuing care during transitions, through community collation involves different organization/hospitals which operate amidst a cross continuum care process. The same document put forward the challenges of smooth transition of care such as; incomplete, inaccurate or inadequate referral information, exchange of contrasting of confusing information where more than one care provider is involved, primary care physicians unaware of the admissions or discharge of beneficiaries from higher level of care, poor health literacy of the beneficiaries, non-compliance by beneficiary to the care provided during transitions, delay in movement from one health care provider to another, inadequate availability of health care personnel or clinical staff as and when required.

On the other hand the document highlights improving transition care by strengthening of linkages between the care provider discharging and the provider receiving a beneficiary. The document emphasise on bridging the service gap between care organizations since the time a beneficiary is prepared by one provider for discharge till the time another provider receive the beneficiary in another care setting (Joint Commission Resources, 2013).

GENERAL PRACTICE

Freeman, Olesen and Hjortdahl (2003) hold interpersonal continuity significant to General Practice (GP), which the authors argue, cannot be substituted through informational continuity. Here the beneficiary satisfaction is fundamental to continuum of care. The authors argue that therapeutic and inter-personal relationship can develop over multiple care episodes or even through a single care episode which is much valued by the beneficiaries and hence provide a multi-dimensional definition for CoC as, "*The*

experience of a co-ordinated and smooth progression of care from the patients' point of view. To achieve this central element a service needs: excellent information transfer following the patient; effective communication between professionals and services and with patients; to be flexible and adjust to the needs of the individual over time; care from as few professionals as possible, consistent with other needs and to provide one or more named professionals with whom the patient can develop a therapeutic and interpersonal relationship" (p.624). This definition focuses on patient's experience (with the quality of care and care provider or providers) and patient's context as central to the concept of CoC. The authors argue that strong interpersonal relationship capacitates provider for multidimensional diagnosis, keeping in mind a patient's background (p.624). The model proposed by Freeman et al. depicts the concept of multidimensional diagnosis and role of GP in system of health care, keeping up the continuum in health care. In GP, functioning of the care system depends on access. Here access is understood as an initiative on part of the patient rather than, as an outcome of continuous clinical review process. The care setting is community based, familiar and acceptable to the beneficiary. General practice includes provisioning of longitudinal care based on health needs of a care seeker. The authors opine that informational continuity can be maintained either through clinical records or through therapeutic relation, between beneficiary and by having fewer care providers. These care providers shall be responsible for coordinating and managing care which can be observed within general practice. However while information can be transferred through documents or registers, there is always a possibility of; missing out on information, losing out of more relevant information, suppression of information by care seeker from a care provider or poor contextual understanding of information by the care providers as the information is shared. Under these circumstances interpersonal and therapeutic relationship between care seeker and care provider facilitate mitigation of such loss of information (Freeman, Olesen & Hjortdahl, 2003).

Hill and Freeman (2011) argue that continuum of care in general practice is focused on care experience of an individual and not the entire population. They opine that continuum of care experience of a beneficiary is dependent on relationship continuity (sometimes called as interpersonal continuity) and management continuity (sometimes called as organizational continuity). Informational continuity i.e. communication and information sharing on the other and is a mechanism that facilitate access to seamless care by a beneficiary. The authors define relationship continuity as; 'longitudinal, personal,

continuing and caring'. This understands place the service providers and beneficiaries at the same pedestal as stakeholders; where knowledge, trust and commitment of both the parties are significant. It requires effort of provider as well as the beneficiary to develop and maintain relationship continuity. A beneficiary might access care services from a single provider or multiple providers for co-morbidities. In either case the care provided to the beneficiary shall be suitable to the care need of the beneficiary. This can be ensured by maintain flexibility to the care provided that is suitable t a beneficiaries changing health need and their changing social context.

The authors define management continuity as, 'seamlessness of care'. Hill and Freeman opine that management continuity is a co-construction of a beneficiary specific care. This requires coordination between different care providers, if required across organizations by means of effective communication and information sharing. The core of management continuity is to assist a beneficiary to navigate across the health care system. Availability and sharing of clinical records of a beneficiary is crucial to information sharing across providers and coordinate care. Informational continuity thus facilitate in maintaining relational continuity and management continuity.

Continuity of care is important for beneficiaries with acute condition as much as beneficiaries with long term condition. In due course explanation or counselling to the beneficiaries over time by the same providers improves their knowledge on their disease, their condition and self management. On the other hand knowledge about the beneficiaries facilitates providers to tailor their care advice according to the need and context of a beneficiary. Coordinated care avoid conflict and confusion where more than on care provider is involved; by establishing clarity of their role and accountability. Access, shared decision making and beneficiaries choice of a care provider and treatment option play a significant role in shaping their experience of continuity of care. The authors argue that a beneficiaries capability to choose between providers and treatment options provide a better treatment outcome. When beneficiaries have to choose between multiple options, they either consult their family, relatives and/or peer for recommendation or experience care through different providers before making a choice. Here the General Practitioners play a crucial role of facilitating informed choice by a beneficiary through consultations and care advice to avoid discontinuity in care (Hill & Freeman, 2011).

REPRODUCTIVE MATERNAL NEWBORN CHILD HEALTH (RMNCH)

RMNCH perceive continuum of care through a life cycle approach. This approach states that maternal, newborn and child health comprise of a series of sequential stages and transitions, from one stage to another throughout the life cycle. The understanding of continuum of care in RMNCH is based on the premise that the health events occurring at a particular stage of life has its bearing on the later stages. Driven by this understanding the RMNCH encompass and emphasise on linking services from pre-conception (choosing reproductive health care services), child birth and even extending to timely and adequate newborn and child health care services to ensuring child survival. The RMNCH program emphasise on continuum of care through transitions across life stages, where care services for adolescents, mothers, new born and children are consecutive, uninterrupted and extends from household to hospitals. This also includes providing timely referrals and emergency management as and when required.

Kerber et al. (2007) defines continuum of care for maternal newborn and child health emphasising on the aspects of care across stages of life cycle and coverage:

“The continuum of care for maternal, neonatal, and child health requires access to care provided by families and communities, by outpatient and outreach services, and by clinical services throughout the lifecycle, including adolescence, pregnancy, childbirth, the postnatal period, and childhood. Saving lives depends on high coverage and quality of integrated service-delivery packages throughout the continuum, with functional linkages between levels of care in the health system and between service-delivery packages, so that the care provided at each time and place contributes to the effectiveness of all the linked packages.” (p. 1359).

The RMNCH approach identifies two primary dimensions of continuum of care namely; time of care i.e. seamless health care throughout the life cycle and place of care i.e. delivery of health care across different levels of care. The component of care over time, within RMNCH includes; pre pregnancy, planning a pregnancy, care services during pregnancy, child birth and post natal care. Continuum of care in RMNCH includes a smooth transition from maternal to child care through a , comprehensive approach of (i) maternal care post birth and (ii) preventive and curative care services for the newborn. This transitional care focuses on preventing child mortality and improving chances for

their survival. The dimension of place in continuum of care refers to physical location of care i.e. care at different levels or different care setting (primary, secondary and tertiary level of care). The continuum of care approach ensures availability of care where it is required and linked across level of care if needed, thereby placing an emphasis on the access to appropriate care by the beneficiary (p. 1359).

The authors classified three different approaches for providing care in any health system, namely:

- a) Clinical care with individual patient case management (mother, child) through a primary care or referral care setting.
- b) Outreach and outpatient are population based services where a pre-standardised care is made available on a regular (scheduled) basis.
- c) Community based care include home based care practices focusing on improving family and community based care, health behaviour and demand generation for quality care.

The authors emphasise that in either of the case, prerequisite of appropriate care available and linked to other necessary services is imperative. Strengthening of linkages between existing care services and between different levels of care contribute to a functional continuum in public health (p. 1361).

Kerber et al. (2007) proposes a continuum of care model for RMNCH. The model encompasses an integrated service delivery throughout life cycle through packages of services targeting; maternal, newborn and child health. This model identifies eight distinguished packages each addressing to a phase in life cycle, namely; adolescence and pre-pregnancy, pregnancy, birth, post natal care for mothers and maternal health, post natal care for new born, infant care and child care. The authors argue that these packages can be delivered through either clinical care (reproductive health, care of sick newborn and children and obstetric care); outreach or outpatient care (antenatal care, postnatal care, child health care services) and community based care (improved behavioural health, empowering community to generate demand for health care and empowering community health workers to address basic health care needs of the community). The model propose to achieve this through; making health care accessible, culturally acceptable to the beneficiaries, delivery of health care through trained health personnel, provisioning of

improved quality care round the clock, providing transport services during emergency care requirement and mitigating financial hurdles to access the care. This model also include follow up visits after discharge of a beneficiary from facility based care (p. 1364) in order to identify health risks and promote health behaviour. This post discharge follow up has a context specific (geographical, economic, social, transport and communication) design for the beneficiary that includes postnatal visit (i) pre-discharge, (ii) follow-up visit post discharge and (iii) scheduled visits of the beneficiary to the health facility. This approach places an emphasis on providing health services as community based care along with a strengthened health system to facilitate demand generation for care services by beneficiaries and better health outcomes. The model focuses on bringing care close to home, improving access to health care services and utilization of services across the eight pre-defined stages (Kerber et al., 2007).

The approach presented by Kerber et al. (2007) resonates to the household to hospital continuum of care (HHCC) framework of Save the Children. This model conceptualise bringing maternal and child health care services closer to the communities. The model focuses on improving access to appropriate care by addressing the dimension of time and place; through strengthening health services at the first level of care and on the other hand strengthening the linkages between these units and the hospitals. This model aim to facilitate health care providers to provide preventive and curative services to mothers and new born at households level, peripheral health units and at hospitals; thereby also covering maternal and child care for cases of home births. In this model home serve as the primary unit of care where along with health care interventions other services such as behaviour change and communication, along with essential maternal and new born care is delivered. It also focuses on capacity building of the beneficiary (women), family and community for improved health behaviour, self care, identification of risk/complications and timely health seeking behaviour.

In RMNCH a community health provider play significant role in; making health care services reach to the community, equipping community with skills to identify risk signs, providing basic aid, facilitate access to preliminary care at the household level (bringing health care closer to home) and making timely referrals. Through Behaviour Change and Communication (BCC), this model capacitates community to identify heath issues, plan and act, supervise and evaluate to improve health care, thereby fostering a link between

household and the health care system. Through BCC this model intent to strengthen households and community to prevent illness, manage home based care, self care and access timely referrals (for cases that require additional or emergency care services) to the facility at next level, where more trained or equipped staff is available to provide emergency care. Beyond strengthening care at the community or peripheral level, practice of continuum of care across different level of care is dependent on a multidisciplinary team from all the three levels of care, involved in planning, implementation, monitoring and evaluation of care plans. Here the hospital/health unit/dispensary at periphery links households to the district hospital. A district hospital stand last at the referral chain, well equipped to provide basic as well as comprehensive essential obstructive and newborn care and management of sick new born. This model thus focuses on identifying major window period and meets the gap; there by establishing a continuum of care services i.e. before, during and after childbirth (p. 6). In the HHCC model, strengthening primary health care centre serves as the prime link in continuum, which connects community to other health care facilities within the existing health care system. These peripheral units not only serve as the first point of contact but with quality care, improve chances of survival, beside promoting and managing health. The model emphasise on availability and accessibility to quality services; strengthening of linkages between periphery and district hospitals; and capacitating care givers at community and along the line of referrals (periphery and district level care facilities). The linkages along levels of care are envisioned to be established through improved communication, referrals and access (Otchere & Ransom, 2006).

Time of care, place and approach of care are the prime pillars of continuum of care in RMNCH. As far as approach of care is concerned delivery of both community and facility based clinical care is important. While services delivered through skilled health care providers are necessary, community and home based care is also important for improved health behaviours and putting up demand for care services. Johnson et al, (2011) in their model for maternal, newborn and child health continuum argue that the outreach services facilitate access and utilization of health services by the beneficiaries. These outpatient services are provided through trained health staff within community including Ante Natal Care (ANC), child health, immunization and growth monitoring. This model focuses on capacitating health workers for case management. It also advocates integration of various child health services within a health facility along with health management of sick new

born. The model proposed by Johnson et al, emphasise on; (a) interpersonal linkages between the community and the service provider(s) through individual counselling, dialogue, education and mobilization (b) intervention for behavioural change (at household and health facility level) (c) information dissemination and improved access to care services. (d) improving the coverage of immunization providing protection from many preventable diseases and (e) community based interventions implemented by community health workers through regular home visit, follow up and assistance during emergency (Johnson et al., 2011, p.29-31).

Here the *CHWs* (ASHA, AWW and ANM) play a dominant role in executing community based intervention. The *CHWs* deliver various services such as; managing health problems at the household and community level, facilitating health services at the peripheral health centres, tracking utilization of essential maternal and child services such as immunization, ANC, PNC, supplementary nutrition etc. (Rai, 2014).

The continuum of care approach in RMNCH denotes case management. A community based strategy of RMNCH, facilitate optimum care at the households level preventing illnesses and promoting healthy growth among children, provision of care on time, availability of care services close to the house and improved linkages between house and other health care facilities, thereby facilitating access to preventive and curative services through active case management. Follow up visits to the household not only facilitates identification of special care needs but also counsel women on danger signs and prompt action (p. 480).

Integrated Management of Neonatal and Childhood Illness (IMNCI) is an important package of service within RMNCH+A. Continuum of care for childhood illnesses (such as malaria, diarrhoea) include management of illness at the household level, care seeking and management of illness at the community level, treatment at the health facility and management of serious illness at the hospital as a part of Integrated Management of Childhood Illnesses (IMNCI) (p. 483). However children with severe conditions get the preliminary treatment and are directly subjected to referrals. The Community Health Workers (*CHWs*) are bestowed with the responsibility to manage illness, strengthen the peripheral facilities to address severe illness and improve delivery of regular care and emergency care services (Bahl, Qazi & Darmstadt 2010, p.483-483). The RMNCH+A document have placed Integrated Management of Neonatal and Childhood Illness

(IMNCI) as a core service for newborn and child care. The document acknowledges significance of IMNCI and VHND as platforms for interventions that cater prevention of malnutrition among children and services for health promotion. The document forward prevention of malnutrition among children through home visits and anganwadi centres where AWW and ASHA can work in cooperate to each other. It places emphasis on providing care across all levels; at community level through ASHA, first level of care (IMNCI) and at referral level of care (Facility based integrated management of neonatal and childhood illness or F-IMNCI). The IMNCI incorporate aspects of health promotion, child nutrition, disease prevention and immunization (Ministry of Health and Family Welfare, 2013).

This brings the discourse of continuum of care in RMNCH to a significant level of care that manages health and illness among children (0-5 years of age) i.e. home. Home visits formed an integral part of IMNCI program that was launched in 2004 in India with an objective link community based care and clinical care. This program provided case management of new born and children (prevention and early management) through home visits. The services under IMNCI were delivered through AWW, ASHA and ANM. In 2011, the Home Based Neonatal Care was initiated country wide to improve newborn care by; improving new born care practices, early detection of illness and prompt referral. The primary HBNC services to be delivered by ASHA through home visit comprise of; supporting mothers for exclusive breastfeeding through counselling/education and supervised feeding, counselling mothers and family on newborn care practices, identification of illness and prompt referral, additional care and home visit for babies with low birth weight (Ministry of Health and Family Welfare, 2014a). However service delivery under HBNC have not been very effective due to; lack of clarity among ASHAs regarding their job responsibilities (Bajpai, Jeffrey & Ravindra , 2009), lack of adequate training for competency building, greater focus of on maternal health and institutional deliveries, services delivered at community by AHSAs were largely related to health education and referral services, poor service delivery of newborn care (Agnani, n.d.), lack of supportive supervision for home based care (Ministry of Health and Family Welfare, 2017), late or irregular supply of essential HBNC and drug kit etc to name a few (Neogi, et al., 2017).

The 12th Common Review Mission report show a poor state of community based care for 0-5 children. The report reveals that while delivery of ANC services is weak in most states, the VHND sessions are limited to immunization services. The report state a weak HBNC component, such as; gap in knowledge and practice of breastfeeding by mothers and poor awareness among mothers and family on signs and symptoms of childhood illness (diarrhoea, pneumonia). The report also highlighted lack of skill development training of FHWs especially on Early Essential Newborn Care and IYCF (Agnani, n.d.). The primary care providers of children at this level of care comprise of family, kin, peers and community. The approach of Family Centred Care (FCC) acknowledges the role of family along with the community care providers in providing care to the beneficiary. This approach focuses on organizing care to meet the health need, value, belief and context of the beneficiary and family. The FCC approach is not a onetime event but involves a continuous process to plan and deliver care to the beneficiary through a joint effort of the health care providers and the family. Such partnering with the family can take place in continuum varying across; primary health care, acute care, rehabilitative care services, long term care, home based care etc. At either level the family may or may not choose to take part in decision making regarding the care regimen (Bay Of Plenty District Health Board, 2012). The FCC approach focuses on ‘providing care with the family and not merely for the family’. The FCC is based on the concept of (a) Acknowledging the value, beliefs, customs and preferences of the family in developing care or treatment plan (b) Information sharing with the family that facilitate decision making or choosing a care/treatment plan and participate in the treatment provides, (c) facilitating participation of the family in the care and treatment planning and delivery to the extent possible (d) collaboration between the family and care team in planning and delivery of care to the extent possible. This model resonate the core of the model proposed by Johnson et al in 2008, (CMNRP’s Family Advisory Committee, 2015). The FCC facilitates better care transition and improved preparedness of mothers and family to provide care post discharge from a facility based care (Verma et al., 2017). The FCC model advocates an active involvement of family to care for their children along with care provider(s) till discharge from the facility and then manage care at the household level. This approach contributes to preserve the continuum that links pregnancy, child birth, newborn phase, and care from home to hospitalization and back at home. This approach facilitates in individualization of care and continuity of care to the child even post discharge (Maria & Dasgupta, 2016).

2.1.1 CONTINUUM OF CARE WITHIN THE REALM OF PUBLIC HEALTH

The Public health model of care includes preventive services, treatment care and ongoing care. The health care services are implemented within three major levels, namely; population wide, community activities and health services. The continuum of care and prevention play an important part in the model of public health. The CoC model not only focuses on the risk factors for disease but on the social, cultural and economic factors that interfere with the care provided in terms of quality as well as quantity. Hence it facilitates intervention through targeted prevention, medical intervention, treatment and rehabilitation.

Continuum of Care in Public health follows care need starting from the general population, reaching out to people/groups who respond to the risk factors and develop specific care need due to adverse health events. It tracks people through these adverse health events till their recovery and after. The CoC approach suggests a continuum of prevention, treatment and rehabilitation at each stage of care pathway. It becomes important to view integration of services within and across these three levels of action. Beneficiaries are classified based on their health need. Care services are coordinated accordingly along the care pathway, providing a more intense management to those who are at higher risk. The CoC approach also incorporates case management where, patient/recipient is followed along the care pathway. This facilitate to maintain health (prevent adverse health events), screen changes; prevent unnecessary care (through appropriate referral), early health recovery (by providing need based care) and discharge from care (if admissions to another care facility is required). CoC links the health interventions to the desired health outcome through seamless care (Singh & Ham, 2006).

Within a health system the provider perspective for continuum is to maximise the use of resources, enhance quality of service and provide need based care (not only according to the eligibility to a certain program). However from a receiver's perspective the goal of continuum is to provide access to health services when it is needed. The framework of CoC focus to integrate services provided to a beneficiary. Integration of services facilitates to provide cost effective quality care to people with complex health need. The concept of integration in services entails delivery of multiple services, together or in a chronological fashion, coordinated in a way that the services are neither duplicated nor omitted. The CoC approach focuses on mechanisms so that health care services are coordinated and

delivered to the beneficiary within and across formal health care organizations and service providers (Evashwick & Aaronson 2006, p.47).

Fragmentation of care within a decentralised care system acts as a barrier to continuum of care. In providing long term care for complicated illnesses decentralisation of services leads to fragmentation of care services if not coordinated in an appropriate manner. Factors like poor accessibility to treatment, lack of integrated services, lack of progress in care pathway and lack of adequate coordination lead to fragmented care pathway. Accessibility to care is an important dimension of continuum of care. . Delay in decision making to access care, time gap between emergence in health need and actual care provided; long waiting hours and difficulty in accessing wide range of services can potentially hinder continuum of care.

Individuals with complex health condition access care through different care providers. If need arise, they are also transferred to different care providers sometime across different care setting or different level of care. Such people are vulnerable to fragmented or discontinued care during transition. On the other hand beneficiaries with long term care needs and complications are also often shuffled between care providers. During care transition, lack of integration of services or lack of coordination between service providers create gaps in seamless care, since the complications are not seen in a holistic manner. This means care services are provided by different providers across different settings in silos. Integration of services provided by different providers pushes for treating complex health conditions simultaneously.

Adding to this positioning of a beneficiary at the ‘wrong service level’ acts as a significant hindrance to continuum of care. Being at wrong service level, simply mean placing the beneficiary at a care setting where the services provided are not in accordance to their health care need. The beneficiaries treated at the wrong service level indicate that their progression in the care pathway is stagnant. Meaning the beneficiaries ought to move along different levels of care according to their health need, treatment output in the previous level of care and the suitable care services provided at that specific level (the beneficiary can move from primary to secondary level of care and vice-versa depending on the treatment outcome). Service provided against the health care need of an individual at the wrong service level is merely ‘cementation’ of care services. Decentralization of services without proper integration adds on to the barriers of continuum of care, where

different administrations work as separate departments. Coordination of care across various specialist services strengthens the patient-provider relationship, significant to the positive coordination and integration between various care services. On the other hand a beneficiary's expectation with the care provided and their actual experience with the care received play a significant role in their compliance with the care pathway (Adnanes & Steihaug, 2013, p.6-7).

In due course; inaccurate or incomplete information, sharing of information between care providers in a contradictory order, unawareness of the primary care providers on admission or discharge of the patient from a higher facility, non compliance by the patient, delay in transportation of patient across care facilities, coordination of care transitions and/or information through non clinicians and unavailability of care staff at the time of need act as the main challenges in ensuring continuum during transition across care services. Hence widening of the role and accountability of care providers involved in transition (as per their organization) and the communication gap between the sender and receiver (care providers) needs to be bridged. An effective cooperation and collaboration between the care providers is essential right from the time a sender commence the transition process, till the beneficiary is received by the receiving care provider.

Improvement in care transition leads to decline in unnecessary readmissions (p. 6). The most identified factors associated to readmission include; diagnosed risks factors, co-morbidities and multiple medications, background of readmissions and absence of a care giver, financial insecurity and poor living environment. However factors such as leadership support to care providers for and during transition, positive relationship between providers, interdisciplinary care team, interpersonal communication, patient/family health education on their role in managing care and educating the care providers on understanding non-clinical factors affecting the given health condition, on the other hand detailed health records and assigned accountability act crucial to seamless care to the patient during transition between different providers or organizations (Joint Commission Resources, 2013, p.4-5).

The existing literature brings out three main components of CoC, namely; people, time and place. The CoC intends to provide promotional, preventive and curative care by establishing a link from home to hospital at each transition (within life cycle and within care services). Each encounter with the health system augments the effect

(positive/negative) of the following contact. All health care programs, imbibed in a health system require a linkage between the care provider, programs and level of care in transitions within and across care stages. This linkage within a system of delivery and integration across cross cutting programs are significant in providing a strong continuum to avoid slipping of any beneficiary out of the care program. CoC is not merely an assortment of fragmented services but it is also an integrated system of care delivery. There is a possibility to have multiple continuums within a single care organization. Each of these continuums would have a set of core services organized by its own continuum along a distinct care pathway. These multiple continuums might overlap in the use of selected care services (Evashwick, 2005, p.5, p.9).

Integration functions as major component of CoC, where the services and integration mechanism together guide the beneficiary through a range of health and social services at all levels of care. Continuum of care incorporate wellness, outreach care, home based care, ambulatory care, acute care and extended care. However these care services differ in their operation, work force and beneficiaries. In such a scenario the services need to be integrated and coordinated in order to bear maximum health outcome to the beneficiary. Such as, by means of an; (a) *inter entity management*. Where, the existing management structure, process of care and relationships (within and across) facilitate in coordination of care across available services. Here merely geographical expansion of care services is insufficient to ensure continuum of care if it is delivered through multiple providers in a fragmented fashion. A coordinated management system can facilitate easy access to services, save resources, prevent over burdening of health staff and prevent duplication of services. However care provided under fragmented administration pose challenge to integrated service delivery i.e. the services that reach a recipient are likely to be fragmented; (b) *case Management* within a fragmented structure for care delivery as a mechanism of care coordination often by some designated health personnel. The case managers are responsible for functions such as patient assessment, monitoring and assisting the beneficiary to navigate through different services or service providers; and (c) *integrated information*, is a comprehensive information base that records care over time and across care settings. This form of integration is critical to seamless care. Information base like this, facilitates in avoiding duplication or omission of services, provides data on health status of the beneficiary and facilitate their smooth transition across services (Evashwick & Aaronson, 2006). Integration of behavioural health and health care services

facilitate in seamless delivery of care that the beneficiaries need, as they need and wherever they need. This approach addresses behavioural health with clinical care to improve treatment outcome. This highlights three stages of integration, namely: coordinated²⁴, co-located²⁵ and integrated care²⁶ through which the providers of behavioural health and health care work together. The ultimate focus of this approach is to improve health at the population level than merely addressing on an individual case (American Hospital Association, 2014).

2.2 SIGNIFICANCE OF CONTINUUM OF CARE IN MANAGEMENT OF MALNUTRITION

World's poorest countries and poorest population bear the burden of maternal, new born and child mortality, where the poorest 20 percent has the highest mortality rates with lowest access to care and skilled attendance. Besides limited resources, lack of interventions that are cost effective and poor output have led to split of focus into two separate areas, namely, maternal care and child care. A cost effective, integrated and continuum of care based approach promote intensive care to mother and child right from pregnancy, delivery, post natal till child care; through a continuum which links home based care, hospitalization, mobilising health seeking behaviour, improved access and quality of care at the facility level (Tinker, Hoop-Bender, Azfar, Bustreo & Bell, 2005).

In 2007 the global plan for 4th and 5th goals of Millennium development Goal laid an emphasis on continuum of care. Continuum of care in RMNCH has been incorporated as a significant component in programs for maternal, newborn and child health and controlling Infant Mortality Rate (IMR) as well as Maternal Mortality Ratio (MMR). This approach aims to avoid any dichotomies between; the two entities (mother and child), care needs or the place of care service delivery (Kerber et al., 2007).

The concept of continuum of care in mother, infant and child health has identified two major dimensions; (a) Maternal Newborn Child Health and (b) Household to Hospital

²⁴ Coordinated care is when different care providers provide care in their own separate setting or their respective system. Information regarding the beneficiary may be exchanged whenever it is required. This coordination of care exists even beyond mere referrals.

²⁵ Co-located care is when different care providers deliver care services to the beneficiary under a common setting. However separate services are delivered individually by each provider.

²⁶ Integrated care is when the different care service providers' work together to develop a care plan and deliver it to the beneficiary.

based Continuum of Care. While the HHCC focus on facilitating access and utilization of quality care across home, community, community care centre and hospital; MNCH acknowledges the link between mother, newborn and child health and focus on essential health care and reproductive health services for (i) women from adolescence to post delivery and (ii) children from newborn to adulthood.

Full immunization, water and sanitation, management of diarrhoea, pneumonia and malaria, feeding practices and access to care are certain measures through which newborn, children and mothers are reached out for home, community and facility based care in India. An integrated continuum was proposed by the World Health Report in 2005, which highlighted the maternal and newborn health initiatives. In the same year the United Nation's Millennium project emphasised on right based approach to maternal and child health (Sines, Tinker & Ruben, 2006).

Among the developing nations most of the women and children are deprived of most life care. Despite of health care being available at peripheral and district hospitals, these facilities are usually inadequate in resources, staff, equipments and facilities. While timing of care is essential in continuum of care services, strengthening caregivers at the community level, namely; family members, Community Health Workers (CHW), Traditional Birth Attendants (TBA) and the trained health care providers are crucial in improving access to skilled and timely care to secure health, prevent morbidity and mortality and ensure timely referrals (Otchere & Ransom, 2006).

Appropriate care along the continuum is essential to achieve decline in maternal and child mortality, however gaps persist in care services delivered during and after child birth and case management for childhood illnesses. For example, missing out routine immunization makes children more susceptible to morbidity and mortality risks. Maintenance of maternal home based records; improved maternal health knowledge, improved communication between household and health service providers, improved knowledge on services and assisted deliveries bear a positive impact on utilization of maternal and newborn health services (Osaki, Hattori & Kosen, 2013).

Poor nutritional status, low immunization coverage, maternal mortality and childhood illness have a significant contribution to India's disease burden. India has the highest number of reported maternal and child deaths in the world. National Population Policy,

2000 (NPP) and the National Health Policy, 2002 (NHP) were formulated with a vision to improve maternal and child health through institutional deliveries conducted by medical professionals, addressing unmet needs and delaying age of marriage thereby delaying child bearing among women. However when this approach failed to achieve desired results National Rural Health Mission (NRHM), 2005 and National Urban Health Mission (NUHM), 2008 were launched to slow down maternal and child mortality rate and improve child health and nutrition indicators in India.

The continuum in RMNCH has incorporated two main dimensions, namely *time* and *place*. The *coverage gap* within RMNCH, project a holistic picture of differences between demand and supply of care services further worsen by socio-economic determinants for uptake of these services. Regarding maternal, newborn and maternal health services, India exhibit a low coverage of 45 per cent, whereas 210 districts show a coverage gap of 50 percent. Hence high coverage gap leaves little possibility for mother and child to avail a complete set of essential services at the stipulated time span. However the NRHM and NUHM lack effective tracking strategy of the services delivered to the beneficiary to facilitate prompt service delivery (Rai, 2004).

The WHO, UNICEF and World Bank report (2010) on continuum in maternal and new born care proposed to identify the gaps, accessing needs, pooling of resources, scaling of existing services, capacitating health providers, removing financial barriers, mapping of service availability, commodity security and strong monitoring and evaluation of health services. India does not have a national plan for maternal and new born health but is imbued within the existing MNH/reproductive health plan (p. 12).

The MNCH model have laid focus on scaling of maternal and newborn care, universal access, targeted action for service delivery (advocacy on misconceptions; information/education and communication; and behaviour change communication), community based intervention (IMNCI, home based new born care, exclusive breast feeding through trained community health workers/ volunteers), support to health providers (training on skill enhancement, essential services, best practices), management of preventable diseases and improving access through improved coverage of services. However the same report highlights limitation of interventions to expand coverage of health services in India, which at present is limited to improved access to health services

mostly provided through private health providers (World Health Organization, 2010, p. 13).

The WHO document provides for nutrition within the arena of reducing risks of pregnancy and child birth. The continuum of health and nutrition care is one of the other interventions to reduce risk of maternal and child mortality. This approach aims to improve women health through improved nutrition status, preventing and treating anemia, malaria and other chronic diseases; education on health and nutrition under preconception and intra-conception care. While the maternal, newborn and child health (MNCH) services focus on improving access to reproductive health; lack of focus on health and nutrition of women and adolescent girls act as a weak link in the continuum of MNCH care.

Many studies present evidence on the significance of pre-pregnancy health care and its effect on maternal and neonatal health outcome, especially in reducing birth defects, fetal loss and babies born with a low birth weight. Care at the early stages of pregnancy alone does not serve the purpose of averting adverse birth outcome but demand strengthening of preconception services also. While poor nutrition, exposure to infectious diseases and poor living environment are rooted within structural conditions, the clinical approach to care intends to upgrade the underlying structural gaps to a certain extent. Educating the beneficiaries on; making informed choices, accessing health care services for diagnosis and treatment and improving nutrition status would contribute to amending some of the structural factors that contribute to poor maternal and child health outcome. These measures have been brought to implementation through community based interventions including, screening and treatment of infectious diseases, balanced diet, supplementary diet when required, vitamin and mineral supplements, de-worming and health education (Reeve, 2009).

Gap in care services are most seen between home and community where care services are most required. This demands integration of services within *primary health care system* linking the HHCC. Nutritional status of mother and child is framed by underlying structural causes, such as food insecurity, early pregnancy, low birth weights, inadequate and improper feeding, exposure to infectious diseases, lack of water and hygiene, poor access to health care and nutrition services, resource poor status, marginalization and culturally unacceptable services. The design and delivery of essential care services at the crucial juncture of continuum not only has an improved health outcome but also serve to

be efficient and cost effective with an increased coverage, improved access and utilization (UNICEF, n.d.).

Initiation of exclusive breastfeeding is one of the most basic interventions to secure a child of under nutrition. However implication of this feeding practice depends greatly on support interventions for behavioural change at household and health facility level, information dissemination and also on access to the Post Natal Services. Moreover Expanded Program on immunization (EPI) covers infant and older children thereby protecting them from many preventable diseases thereby reducing chances of malnutrition among children due to repeated sickness episodes. In linking care from household to hospital, community based interventions can be supported and enhanced through active involvement of the community based health workers. Studies show that capacity building training of Community Health Workers (CHWs) has a positive outcome in early detection and management of childhood illnesses.

Continuum of care has been adopted as a core principle for reproductive, maternal and child health programs. The concept of continuum refers to continuity of care that is essential to an individual throughout their lifecycle irrespective of their location. An effective continuum requires linking of maternal, newborn, child health services and beyond. So as to build on the lifecycle approach where the interaction among different life stages give way to reduction in health risk and deaths through skilled attendance. However the outcome at each life stage depends on appropriateness of care interventions at the preceding level, thereby ensuring an improved and comprehensive health care to women and children. Initiation of exclusive breastfeeding is one of the most basic interventions to secure a child of under nutrition. However implication of this feeding practice depends greatly on support interventions for behavioural change at household and health facility level, information dissemination and also on access to the Post Natal Services. Moreover Expanded Program on immunization (EPI) covers infant and older children thereby protecting them from many preventable diseases thereby reducing chances of malnutrition among children due to repeated sickness episodes.

Strengthening of care at the household level is dependent on empowerment and capability of the family to make choices as well as their socio-economic position. Poor communication and underdeveloped referral link adds to the limitations of the most vulnerable to access care services, whereas distance to be covered, delays in accessing

care, financial constraints and poor quality care are other limiting factors that contribute to poor continuum. Thereby place and appropriateness of care comes into play within the arena of continuum and health care is made reachable to household through skill building of care providers, improving health system support services, improved health practices, mobilizing community for action, improved outreach services and improved access to quality services at the peripheral and district hospitals.

However a good continuum does not limit itself to the household and first level of care but involves ensuring appropriate care at all levels of care. The understanding of Continuum of care is not limited to time, quality and place of services delivered but also concerned of issues restraining access and utilization of services such as; distance covered and time invested on moving between the services, poor financial status, lack of communication and transportation facility, poor referral and poor quality of care available at the health facility. Continuum of care requires being context specific, which ensures availability of care irrespective of the time and location and well connected at all levels of care through a good referral system. However in India the operation of CoC is hindered by the ground realities such as; poor human resources, financial constraint, poor health system infrastructure and lack of coordination and integration of care. In linking care from household to hospital, community based interventions can be supported and enhanced through active involvement of the community based health workers. Studies show that capacity building training of Community Health Workers (CHWs) has a positive outcome in early detection and management of childhood illnesses (Johnson et al., 2011, p. 29, 31).

Under nutrition is rooted in food insecurity, however simply providing food to hungry is unlikely to reduce malnutrition. A child's nutritional status is not determined by the adequate feeding alone but often lack of proper care is responsible for malnutrition among children rather than food insecurity; factors such as lack of proper breast feeding, care during illnesses, chronic diseases, and inadequate care contribute to the severe malnutrition. Sub-optimal delivery of preventive services such as; antenatal visits; improving mothers nutritional status, health workers counselling to mothers on child care, feeding and sanitation; poor health care uptake, inappropriate, inadequate or delayed infant and young child feeding practices and poor case management of childhood illness are risk factors for stunting. On the other hand factors such as poor economic status of the

household, access to public services such as clean drinking water and sanitation play a significant role in pushing a child towards malnutrition (Mukherjee, 2015).

Integrated Management of Childhood Illnesses (IMNCI), communication, referral system, uninterrupted care, case management and strengthening of health system are essential to improve sick child care and neonatal-child health management (p. 1363). Location of care at a long distance, poor financial condition, poor transport and communication, poor referral links and poor care quality restrain access to the available care services especially to the most vulnerable. Geographical location alone is not responsible for access to care but, cultural beliefs and poor service quality reduces acceptability of facility based care (Kerber et al., 2007). However poor compliance with referral or counselling have also been experienced thereby creating a gap in the continuum where high transport cost, expenditure on treatment and care, perceived quality of care, (individual care satisfaction), burden of family errands, socio-cultural factors and poor referral advise factor in as primary drivers (Bahl et al., 2010).

Since non abidance by patients to the treatment regimen can take place for various other reasons such as, (a) cost, (b) complex treatment procedure, (c) poor comprehension of the benefits and (d) safety concerns, hence care programs need to adopt measures for keeping beneficiaries abided with the treatment protocol (Tokin & Chen, 2009). Lack of quality infrastructure, skilled staff, equipments, education programs, interpersonal communication, referral services, accountability of the service providers serve as weak links that pose barriers to effective delivery of health care (Johnson, Daly, Otchere, Russell & Bell, 2005). Wang and Hong (2013) hold similar opinion, that the access to CoC is greatly associated to affordability and spatial location of care. Their study on access to CoC by pregnant women, state that household wealth and location of health care services determined participation of beneficiary to full CoC or their dropping out from the continuum. Beside this, another determining factor to continue with the stages of care was the beneficiary's experience at each level of care. Beneficiaries, with positive experience tend to continue accessing care services delivered by trained personnel (doctor, nurse) as compared to women with poor experiences care who chose to drop out of the CoC. Beneficiary compliance with the planned continuum of care was found higher in regions where all the three services were universally available and beneficiaries had easy access to

multiple service providers as compared to areas with limited access to health resources and services providers (Wang & Hong, 2013).

2.3 UNDERSTANDING MALNUTRITION AND MODELS OF MALNUTRITION MANAGEMENT IN INDIA

Black RE et al (2008) in their work defines, under nutrition as a condition when, “*the body contains lower than normal amounts of one or more nutrients i.e. deficiencies in macronutrients and/or micronutrients. ‘Undernutrition’ encompasses stunting, wasting and deficiencies of essential vitamins and minerals (collectively referred to as micronutrients)*”. The main indices of under nutrition among children are; low birth weight, stunting, wasting, underweight and low mid circumference, however a child can have stunting without wasting and vice versa (Black et al., 2008).

Under nutrition have both direct as well indirect causes. Inadequate intake of food and disease are two prime immediate causes of under nutrition; whereas sanitation and hygiene, food insecurity, care and feeding practices, health care services are the indirect causes. While all the factors are directly related to poverty, these factors are also embedded within a larger gamut of ‘environment’ where a child is placed (social, economic, political and cultural factors). Despite of being related, the driving forces of acute and chronic under nutrition can have different causality. For example food insecurity plays a significant role in determining the food intake, yet a care giver’s behaviour such as breastfeeding, complimentary feeding and food preparation are important when it comes to actual intake of food by a child. Poverty on the other hand is a significant driver and has a strong relation to under nutrition.

Regions with chronic poverty and chronic hunger show a co-existence of severe acute malnutrition (SAM) and severe chronic malnutrition (SCM), i.e. severe wasting and severe stunting. In developing countries proportion of children with stunting is higher as compared to other indices of malnutrition. UNICEF (2013) in its report state that 52 million Under5 children are severely or moderately wasted, its prevalence being highest in South Asia where one out of six children is wasted. In developing countries growth faltering among children begins from 3-6 months of age irrespective of their spatial location. This is when stunting among children might set in (p. 1, p. 858). The authors argue that weight faltering among children begins since birth (low birth weight), which

continues for the next three months and then rate of faltering slows down. Moreover most of faltering takes place within first three years of a child's life and this growth faltering among children can be ascribed to stunting (pg 857-859). The authors argue wasting on the other hand seem to be stable for first three years, probably because protein energy intake remains sufficient for maintaining the weight but not enough to promote growth (p. 858). Much of growth faltering among children in India can be attributed to stunting. This nature of malnutrition among children in India is largely due to poor complementary feeding especially during first year of their life (Mamidi, Shidhaye, Radhakrishna, Babu & Reddy, 2011).

There is a strong association between maternal and child nutrition status. Role of women in food, health and child care not only interact with their socially constructed roles and affect nutritional status of children but also their own health. Poor nutritional status of women has two major implications on child health, resulting in their limited growth potential and anaemia. Poor maternal nutrition has a direct effect on children during pregnancy and sustain even after birth, manifested through low birth weight infants and infant death (Blossner & Onis, 2005, p. 1-3). Children of anaemic mothers have higher vulnerability to stunting. There exists a strong link between anaemia, stunting and severe stunting where anaemic children are more likely to be stunted or severely stunted (Brennan, McDonald & Shlomowitz, 2004).

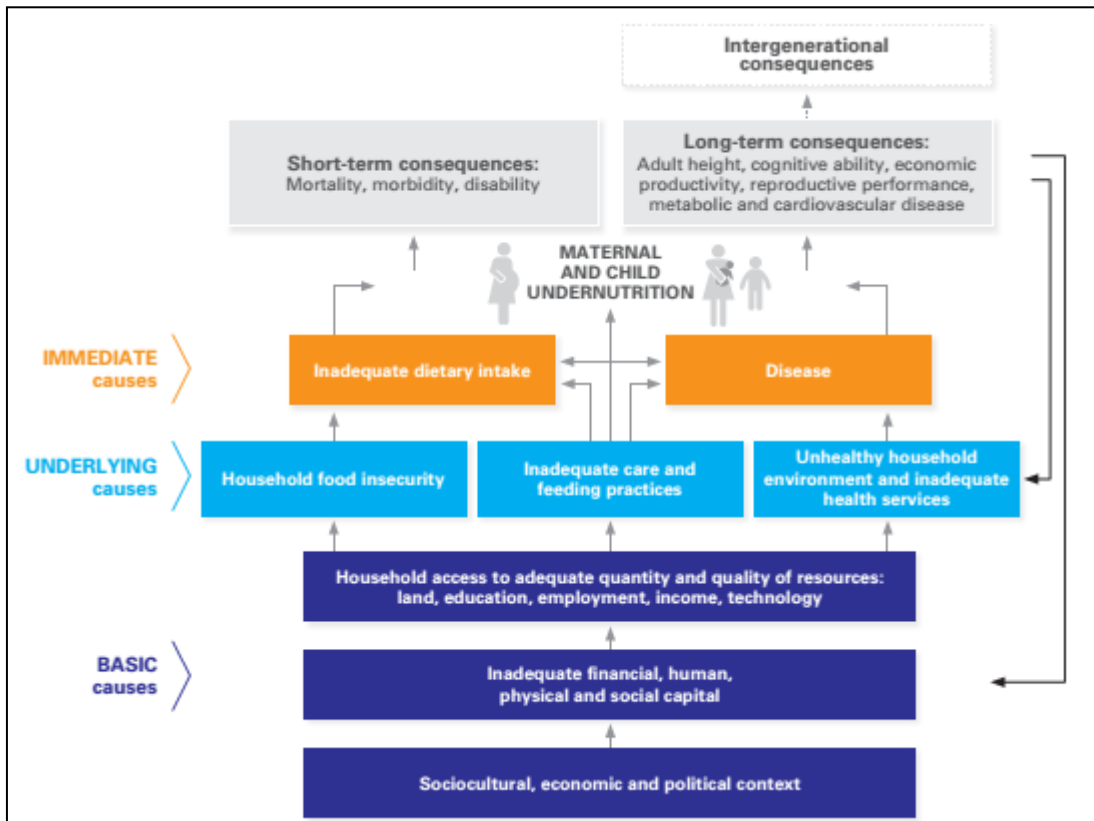
Thereby, poor fetal growth and under nutrition, subjects children to stunting, which gets irreversible after attainment of two year of age. This indicates that nutritional status of women, pregnant and lactating mothers and among children up to first two years is very critical. The DFID (2009) paper, cite Smith's (2003) argument that women's status, poor sanitation and urbanization are the factors responsible for higher under nutrition among children in South Asia as compared to South Africa. The same paper cites Bhutta et al. 2008, who opine that it is rather the availability and access to services that is crucial. Poor access to nutrition services and care due to social exclusion is one significant factor leading to poor nutritional status among the marginalised population. On one hand discrimination during house visit, bias and prejudice by health workers on the other hand location of services discourage the marginalised groups to access these services. Self exclusion from services is seen among certain social groups (SC, ST and OBC in India) in case of irregular provisioning of services or biasness shown by health workers toward their

children. These social groups are often powerless and doubly disadvantaged when it comes to demanding of nutrition services or accessing them.

The paper states that, universal coverage of interventions at observed levels of program can prevent one fourth of child deaths due to under nutrition and reduce prevalence of stunting among one third. The undernutrition management programs include, community based nutrition and health services, breastfeeding counselling, treatment of SAM in hospital and community based setting, micronutrient supplementation and fortification, maternal nutrition intervention, behaviour change programs, de-worming and school feeding. However evidences show that extensive coverage of nutritional intervention combined with micronutrient, breastfeeding and vitamin A coverage gives the maximum output when it comes to reducing child mortality (DFID, 2009).

In 1998, UNICEF presented a framework for maternal and child undernutrition. This framework conceptualized, inadequate nutritious food intake, lack of adequate care, frequent illness, access to health services and other social welfare services as the drivers of undernutrition among children. The 2013, UNICEF report states that recent evidences confirm on potential of undernutrition to lead an intergenerational cycle of poor nutrition, illness and poverty, entrapping not only children but also engulfing families, communities and countries. More comprehensive evidences also indicate links between nutritional deficiencies and inadequate growth between the first 24 months and the need for optimal growth during this period. Informed by these findings the focus at Global level witnessed a shift from wasting/underweight (inadequate weight for age as the key indicator in decline in undernutrition as per Millennium Development Goal 1) to stunting (inadequate length or height for age) as an indicator to reducing undernutrition. In 2012, the World Health Assembly agreed on reducing the number of stunted children by year 2025 (p. 1). This approach emphasizes on undernutrition among 0-5 years of children with a greater focus on children between 0-2 years of age.

FIGURE NO. 2.2 Framework for determinants of child undernutrition



(Source: The black arrows indicate that the outcome of undernutrition can fuel the underlying and basic causes of malnutrition creating a perpetual cycle of undernutrition, poverty and inequity. UNICEF 2013)

The new UNICEF framework is based on these new evidences and Global shift in the understanding of cause and consequence of undernutrition. This framework suggest that undernutrition among children can be mitigated through accessibility to diverse and nutrition rich adequate food intake, appropriate maternal and child care, appropriate and adequate health care services and a healthy living environment including access to safe water, sanitation and hygiene. These factors bear an influence of nutritional intake and diseases. The interplay between inadequate nutrition and disease creates a cyclical trap of further illness and undernutrition. Restating the fact that growth faltering commence during pregnancy (impair in fetal development and low birth weight) continuing to first 24 months of a child’s life (different forms of undernutrition); this framework acknowledges the life cycle perspective and emphasize on the need to have optimal nutrition during first 1000 days from pregnancy to first 2 years of a child. This encompasses services directed to maternal and child health asserting on the understanding that loss of linear growth

during first 1000 days of life is irreversible and the catch up growth during consecutive years is minimal. Therefore the framework places the emphasis on policies and programs targeting maternal and child health and nutrition, through adequate and proper feeding and care services (UNICEF, 2013, p. 3-6).

Blössner and Onis (2005), argue that malnutrition and infectious diseases are interlinked. Communities living in extreme poverty bear the dual burden of poor diet and exposure to infectious disease thereby making malnutrition an intergenerational cycle. There have been constant regulation in the treatment regimen but at the ground level either these services are missing, services are of poor quality or inaccessible by the rural community. The developing nations are inflicted with two types of malnutrition, namely protein energy malnutrition and micronutrient deficiency (Kouam et al., 2014).

Golden (2010) opine that lack of a wholesome nutrition rich diet is the core driver of malnutrition. The author argues that the physiological requirements for SAM and SCM are different and therefore separate therapeutic diets for SAM and SCM is required. He further adds that appropriate therapeutic diets should be provided only after a proper diagnosis of SAM/SCM for recovery of children from malnutrition and to avoid mortality or mistreatment (Golden, 2010).

The context of nutrition management among developing countries, especially in India is unique, where energy dense therapeutic food is used to catch up (moderate) growth unlike those of the western countries where milk based food led to an increase in growth among the undernourished children. Despite of inpatient nutrition rehabilitation care many children, especially from poor socio-economic strata fail to show improvement in growth despite their treatment under nutrition rehabilitation; probably due to severe wasting. Some of the factors contributing to restricted weight gain as well as poor catch-up growth among children were (as per the WHO guidelines); irregular provision of adequate nutrient within hospital based setting, regular incidences of morbidity, severity of under nutrition and incomplete course of stay (Mamidi, Kulkarni, Radhakrishna & Shatrugana, 2010).

2.3.1 FORMS OF MALNUTRITION

Malnutrition is a broad term that encompass under nutrition and over nutrition. This study refers malnutrition to denote under nutrition. The term undernutrition encompass two kinds

of malnutrition, namely protein energy malnutrition and micronutrient deficiency. Undernutrition globally claims 3.1 million child lives each year. Protein energy malnutrition is further classified into marasmus, kwashiorkor and marasmic kwashiorkor. The nutritional status of a child is assessed through indices of; weight-for-height, height-for-age and weight-for-age and classified as wasting, stunting and underweight respectively.

Malnutrition exhibit in two forms namely, acute malnutrition and chronic malnutrition. Acute malnutrition is an outcome of acute decline in dietary intake accompanied with illness, poor/loss of appetite, anorexia and medical complications. This either leads to weight loss or serves resistance to weight gain. Appropriate medical and nutritional care bears the potential to reverse this situation within a stipulated time period. However acute malnutrition can be further classified as Severe Acute Malnutrition (SAM) and Moderate Acute Malnutrition (MAM). Chronic Malnutrition on the other hand is an outcome of prolonged insufficient nutrition, inappropriate care and poor health resulting in growth failure and poor development (Kouam et al., 2014).

According to the Millennium Development Goals Report 2014, despite of a decline in under nutrition, one out of four children suffers from chronic under nutrition. Globally 168 million children are chronically undernourished. While around 99 million children are underweight, there are countries where underweight and stunting persists despite of the population having access to adequate food (United Nations, 2014). Interplay of inadequate diet and diseases are linked with the subsequent underlying causes of malnutrition. Malnutrition thus becomes a link in the chain of health outcome, risk factor for disease or escalates malnutrition increasing the risk of mortality and morbidity (Blossner & Onis, 2005). Malnutrition may bears several forms namely, hunger, undernutrition, over nutrition or micronutrient deficiency. Understanding of malnutrition directly attributes poverty to intake of inadequate diet thereby casting nutrition insecurity (hunger and/or hidden hunger). However nutrition security is an outcome of physical, social, economic and physiological access to intake of nutrient rich diet, sanitary environment, health service, safe drinking water, capability to prepare food and knowledge to bestow care. While nutrition security is accredited to food security (at household and individual level), its determinants lie far beyond the arena of a household such as health, education,

agriculture, livelihood etc. Hence it is unlikely that focusing on any one sector would solve the problem of malnutrition.

Since conception, during lactation and till two years of age, nutrition requirement is highest. During the first 1000 days poor caring behaviour, inadequate access to health services and improper feeding compromises make children vulnerable to malnutrition. Growth among children in early stages of life is episodic rather than continuous; therefore any deviation in growth hold potential to growth alteration in later stage thereby increasing disease risk (Franzo, 2012, p. 23, 25).

SEVERE ACUTE MALNUTRITION AND SEVERE CHRONIC MALNUTRITION

SAM affects 20 million Under5 children whereas claim 1 million child death annually (Franzo, 2012). However, risk of child mortality is inversely related to weight for age i.e. moderate or severe malnutrition. While malnutrition induced mortality is higher among children with moderate malnutrition is it lower among children with severe malnutrition, pertaining to the fact that more children are affected with mild to moderate malnutrition. However though malnutrition does not directly lead to mortality, it causes more than half of child deaths in developing countries (Blossner & Onis, 2005, p.7).

While severe malnutrition bears risk of mortality among children when it is acute, it does not negate the chances that malnutrition can also be chronic in nature. While SAM is measured in terms of weight for height, SCM is measured in terms of weight for age as per the WHO growth standards. SAM if remains untreated holds a high case fatality which range between 10 to 30 percent. It demands for an early diagnosis of SAM and appropriate nutritional and medical care. Children with MAM and medical complications get a priority for nutritional rehabilitation whereas uncomplicated cases are managed at the community level. Hence community and facility based health services are vested with the task for identification and treating SAM and complicated MAM cases.

Persistent poor diet and exposure to infectious disease is likely to push SAM into SCM especially if wasting slither within the first 18 month of a child's life. SCM among children has a lesser potential to impose any life threatening effect unless aggravated with infectious disease. The co-morbidity of SAM and SCM might require specific intervention where an estimate of prevalence of SAM, SCM and co-morbidity of SAM/SCM is significant (Shams et al., 2012). Wasting denotes acute hunger whereas stunting is a

marker of chronic distress. Both stunting and wasting bear common drivers such as, low weight at birth, absence of exclusive breast feeding, inadequate sanitation and hygiene and disease. Co-existence of stunting and wasting and underweight is a global phenomena and it often exists within the same geographical area. It can also occur concurrently among children (Webb et al., 2018). Poor screening malnutrition (stunting, wasting and underweight) among children and lack of apt management only increases missed opportunities to prevent child mortality and morbidity.

SCM is an outcome of prolonged inadequate diet, low birth weight, nutritional deficiency, exposure to illness and lack of awareness on malnutrition. Hence SCM management require addressing of medical as well as food requirements among children, failure to which would mean lack of improvement in nutritional status and the child is more likely to relapse. A large section of SAM children are in need of additional management of SCM. Similarly sick children are in need of optimal nutritional care, where as the nutrition rehabilitation program focuses on nutrition management exclusively for SAM children. The result of facility based care for SAM show a low cure rate, poor follow up, high defaulting, relapse and high secondary failure (Dasgupta, Sinha & Yumnam, 2014).

Bergeraon and Castlemen argue that most of the Sub Saharan African countries bear the burden of moderate stunting and wasting whereas very few countries such as Guinea, Mali, DRC, Ethiopia, Niger and Nigeria exhibit coexistence of high stunting and high wasting like India. Thus while acute malnutrition SAM and MAM are result of an immediate crisis, chronic malnutrition (CM) are a result of persistent food insecurity, poor feeding and prolong health problems. SAM claims more life than CM. Given that the primary aim of malnutrition aversion program is to reduce child mortality, most of the existing interventions are based on clinical management regimen.

Chronic malnutrition is managed through vertical and horizontal programmatic approach, however malnutrition once set in cannot be reversed. Thus while wasting can be treated stunting cannot. RUTF was developed by the World Food Program to prevent CM and treat MAM among children. Use of RUTF made expansion of SAM management programs especially in emergency settings through Community based Management of Acute Malnutrition (CMAM). An effective CMAM incorporates community outreach programs namely; outpatient care, inpatient care and SAM/MAM screening services.

Services to control chronic malnutrition focus on maternal nutrition during pregnancy, breastfeeding and health and nutrition of child and mother for first two years. The programs for managing SAM are more into treating SAM rather than preventing it from occurring or relapsing (Bergeron & Castleman, 2012). The NRC model designed to address severe malnutrition management in Africa, focuses only on treatment of SAM i.e. clinical management of malnutrition. In India malnutrition management includes both CMAM and NRC. However the later have emerged as a more dominant model focusing on clinical management of SAM like the Sub Saharan African nations (Dasgupta, Ahuja & Yumnam, 2014).

Protein energy malnutrition (PEM) among children is directly related to early weaning, delayed complementary food, poor feeding and care, poor diet and infections both severe and chronic, thus manifests mostly among children between 6-18 months of age. High immunization coverage, effective treatment of infectious disease and a good diet serve as potential preventive measures against malnutrition. PEM and infectious diseases restrain improvement of nutritional status among children. Therefore education and awareness on breastfeeding, care and complementary feeding, water, sanitation and hygiene are crucial along with clinical intervention. Preventive and curative interventions are significant for communities devoid of access to nutrient rich food intake. Micronutrient interventions are principally administered through existing health services, prioritising children and pregnant women as beneficiaries (Muller & Krawinkel, 2005). Child stunting and wasting have been identified as unique manifestations of malnutrition and the focus of programs has been on stunting and wasting as separate entities. The studies have brought out that occurrence of wasting and stunting occur at different time periods of life cycle, drawing attention on incidences of early wasting followed by stunting at an older age (Menon & Stoltzfus, 2012). This understanding on malnutrition drove different interventions, designed for SAM and SCM including intervening through curative approach, behavioural change with or without supplementary nutrition to prevent stunting, screening and special therapeutic food for SAM. SAM (wasting) gets severe through illness and infections, on the contrary SCM (stunting) can only be tracked through growth faltering. The fact cannot be neglected that SAM and SCM are two different epidemiological entities and cannot be resolved through a common programmatic intervention (Collins et al., 2006).

2.3.2 THE AFRICAN STORY

Micronutrient deficiency among children is widespread in Africa resulting in low resistance to infectious disease, diarrhoea and respiratory problems being common among malnourished children. The Sub Saharan African region demonstrates poor development, poverty, food insecurity and subsequent malnutrition (Ejide, 2012, p. 35, 37). However, over past decades the region has experienced increased economic growth, but this has not translated into change in nutrition status of children. While there has been a decrease in undernutrition and stunting, wasting among children has increased. With consecutive droughts and food insecurity this region is home to severely malnourished children in the world. RUTF was introduced in these regions to meet the need of a therapeutic food that could be easy to use and store at home under emergency situations (Collins & Sadler, 2002). Globally Sub Saharan Africa has the highest prevalence of anaemia among children, pregnant and non pregnant women; zinc deficiency among children and high vitamin A deficiency (Franzo, 2012).

The health care packages in South Africa's health policy, aims to provide essential health interventions to mother, infant and child at different levels of care such as pregnancy, child birth and child care. The model not just focus on linking community and facility based care but also on integrating services such as housing, water, sanitation, nutrition, education and empowerment. The package includes antenatal care, nutrition support for mother, intrapartum care, IMNI, immunization, exclusive breastfeeding, community based growth monitoring and counselling on child nutrition. The model also proposes for a good referral and equipped facility to cater mother, infant and child emergency cases (Bradshaw et al., 2008).

Collins (2011) classifies the African nutritional emergencies as chronic and cyclical and hence argues that a centralised resource intensive therapeutic feeding centre would be counterproductive. The nutritional intervention thus cover universal ration distribution, blanket distribution of supplementary nutrition to the identified risk group, a targeted dry supplementary feeding unit for moderately malnourished and therapeutic feeding centre for the severely malnourished.

Collins argue that a child is often accompanied by mother as a care giver for facility based care, thereby having a repercussion on the nutritional status of younger siblings who are

then bound to stay away from their mother. Possibly these younger siblings also have moderate malnourishment only to worsen by the absence of prime care giver. Thus the community based care model ideally includes for a community based therapeutic care centre to function along with a community based therapeutic feeding centre so that any complicated malnutrition case can be referred and treated at these care centres. However for most cases people in need of therapeutic feeding care alone go to the community therapeutic care units, resulting in poor compliance with the feeding program and high number of defaulters (Collins, 2001).

In South Africa CMAM has been integrated with primary health care services where the management of SAM is integrated to Ante Natal Care (ANC), Infant and Young Child Feeding (IYCF), immunization, IMNCI and growth monitoring. Some of the countries have; integrated CMAM into RMCH, health promotion and community involvement; community based outpatient services for SAM along with mother and child health clinics (Kouam et al., 2014).

The Infant and Young Child Nutrition Project (IYCN) target on first 1000 days of a child from pregnancy to two years life to prevent malnutrition. This model provides a protective and supportive environment for maternal, infant and young child nutritional program. This project has an integrated approach which acknowledges and establishes a linkage between nutrition and agriculture, food security, maternal nutrition and health services in 13 countries African countries. Under this model children are provided with support environment; through counselling elders on feeding and child care, social and behavioural change at the community level. Beside this, the model focuses on strengthening of complementary feeding programs. The linkages between community and health facilities was reinforced by two way referral system, establishing collaboration between facility based and community based workers. Trained volunteers support community health workers in their activities such as nutrition assessment, home visit, counselling and referrals. The project model has a two way referral system, while volunteers refer children with poor growth to a facility based care (CHC and hospitals), the care facility refer children back to these volunteers for follow-up post discharge. This approach also loops in the caregiver (not just the mother but family as a whole) and keeps them engagement through counselling, behaviour change communication and follow-up at each level of continuum (USAID, 2012).

Moderate Acute Malnutrition (MAM) is attributable to co-existence of under nutrition and growth faltering. Since early identification and treatment of MAM can prevent a child from slipping into SAM, the current intervention for addressing MAM among children includes targeted supplementation, RUTF and energy drinks. However this intervention is made when the other approaches such as, counselling, feeding and care practices, deworming, vitamin supplementation and diarrhoea management does not lead to improvement in growth among children.

This model of under nutrition management relies on support of a good health system and trained cadre of health personal especially in nutrition. The existing SAM management protocol by WHO prescribe for an intense supplementation program along with a rehabilitation of 14 to 40 days, or stay within a facility and follow up at second, fourth and sixth week. The study by Steenkamp, Lategan and Raubenheimer (2015) explored into the effectiveness of Ready to Use Supplementary Food (RUSF) and found that the screening mechanism misidentified the clinically stable SAM children for MAM. This indicates toward a possibility of mistreating SAM case for MAM. Moreover despite completion of the treatment regimen nutritional status of most children remained unchanged, very few children showed improvement, whereas some children even showed a decline in their condition and slipped into SAM. While the study show no significant difference in improved growth rate between the SAM, MAM and underweight children, as their records remained above -2WHZ, however low growth rate, low catch up growth and even deterioration was observed.

Moreover children with SAM and MAM showed better response to the RUSF as compared to the underweight and stunted non complicated cases. A food secure environment (through blanket food distribution program) played a significant role in growth improvement as a response to RUSF. This model does not provide any intervention for children discharge from the program to be supported at community level (Steenkamp, Lategan & Raubenheimer, 2015).

2.3.3 THE INDIAN EXPERIENCE

Indian experience of malnutrition is different from those of the African nations. In India 20 percent of child deaths are claimed by malnutrition. SAM children have a high mortality rate which ranges between 20-30 percent. In India around 56 percent of all child

deaths can be attributed to malnutrition. Severe malnutrition is not only intergenerational but also multidimensional. Malnutrition in India, unlike Africa is not induced by a sudden event. There exist a viscous cycle of PEM (from mother to child) further complimented by poor socio-economic status of women, faulty feeding and caring practices, exposure to illness, lack of awareness on access to health services, large family size and food insecurity (Choudhary et al., 2015). Malnutrition shows a sharp increase among children between 0-6 months of age as high as 40 percent mainly due to faulty child feeding and care practices. Merely provisioning food or supplementary nutrition is insufficient to prevent undernutrition among children of 0-2 years.

There persists a high incidence of chronic malnutrition as well as acute malnutrition among children in India. The NFHS-1 (1992-93) data reflected a higher incidence of chronic malnutrition among children from 0-5 years of age (52 percent stunted and 54 percent underweight) as compared to acute malnutrition (17 percent wasted). Moreover among severely malnourished children, a higher percentage of children were having chronic malnourishment i.e. 29 percent were severely stunted, 22 percent were severely underweight and 3 percent were severely wasted. This indicates towards the fact that chronic malnutrition has a higher prevalence in India as compared to acute malnutrition (Mishra, Lahiri, & Luther, 1999).

FIGURE NO.2.3 Interstate distribution of undernutrition among children 0-5 years of age

<i>Stunting (-2HAZ) [Tercile]</i>	<i>Wasting (-2WHZ)[Tercile]</i>		
	<i>Low</i>	<i>Medium</i>	<i>High</i>
Low	Goa, Jammu & Kashmir,	Kerala, Tamil Nadu, Tripura	–
Med	Andhra Pradesh, AP Manipur, Nagaland, Punjab, Sikkim	HP, Orissa, Rajasthan	–
High	Assam, Delhi, Mizoram, UP, West Bengal	Chhattisgarh, Gujarat, Haryana, Karnataka, Maharashtra, Uttaranchal	Bihar, Jharkhand, MP, Meghalaya

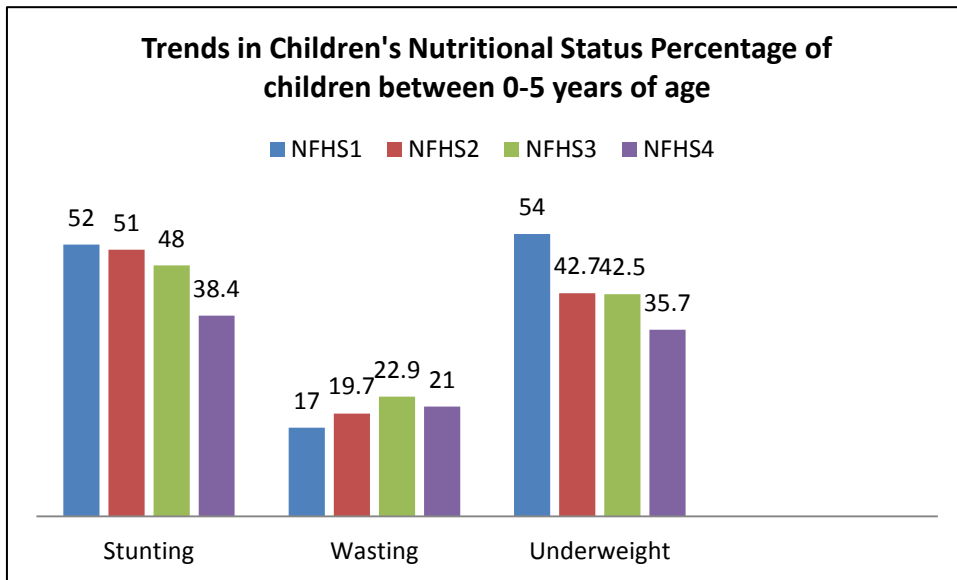
Data source: [1]; MP: Madhya Pradesh; UP: Uttar Pradesh; HP: Himachal Pradesh; AP: Arunachal Pradesh.

(Source: Dasgupta, R., Sinha, D., & Yumnam, V. 2014)

Child malnutrition in India shows an uneven distribution across states. States with higher level of chronic poverty also show higher level of stunting and wasting; such as, Jharkhand, Madhya Pradesh and Bihar. States with high level of stunting also show prevalence of wasting, though in varying degrees. There are no states with wasting that do

not show stunting. Moreover states with high wasting also have high stunting. This put forward the understanding that severe chronic malnutrition is dominant in Indian Context. This clears the picture that not only there is a prevalence of high chronic malnutrition but also a fairly high incidence of co-existence of chronic and acute malnutrition.

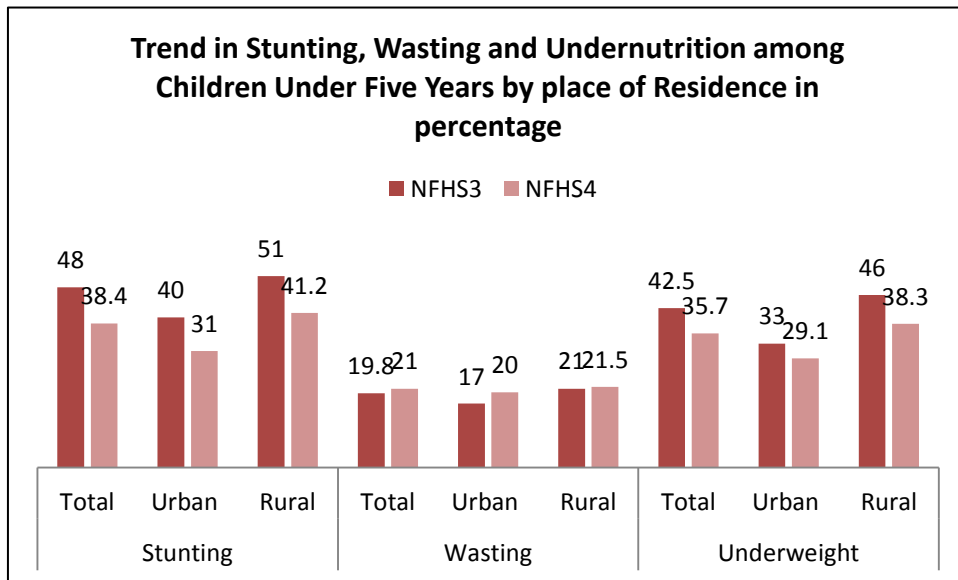
GRAPH NO. 2.1 Trend in nutritional status of 0-5 years of children in India.



(Source: NFHS1, NFHS 2, NFHS 3, NFHS 4 report)

There was a decline in stunting (from 51 percent to 49 percent) and underweight (42.7 percent to 40.4 percent) among children between 0-3 years of age during NFHS 2 and NFHS 3 but it was observed that percentage of children with wasting had increased (from 19.7 percent to 22.9 percent). The decline in stunting and underweight was very low and the report indicated that approximately half of the countries children are chronically malnourished. The 2011 Census indicates that while 40 percent of children in India are undernourished. However the severity of malnutrition among children of 0-5 years of age varied across states in India (Ministry of statistics and Programme Implementation, 2012). The period between NFHS 3 to NFHS 4 show decline in stunting and underweight among children from 48 percent to 38.4 percent and 42.5 percent to 35.7 percent respectively (International Institute for Population Sciences (IIPS), 1995; International Institute for, & Population Sciences (IIPS) and ORC Macro, 2000; International Institute for Population Sciences (IIPS) and Macro International, 2009; International Institute for Population Sciences (IIPS) and ICF, 2017b)

GRAPH NO. 2.2. Trend in Malnutrition among children Under Five by place of residence



(Source: NFHS 3 and NFHS 4 report)

The problem of undernutrition in India appears to be grave particularly in the rural areas however even in urban areas prevalence of undernutrition is widespread with 31 percent of children being stunted, 20 percent being wasted and 29.1 percent being underweight. Between NFHS3 and NFHS4 decline in undernutrition among Under5 children show stark difference according to the place of residence. Between NFHS 3 and NFHS 4 stunting declined by 9.6 percent in India, its decline was by 9 percent in urban area and 9.8 percent in rural area. Underweight showed a declined by 6.8 percent, wherein the urban area experienced a decline by 3.9 percent whereas in rural areas the decline was by 7.7 percent. Wasting on the other hand show an increase by 1.2 percent at the national level, however while urban areas show an increase in percentage of children with wasting by 3 percent, the rural areas registered an increase by 0.5 percent. Over the years undernutrition among 0-5 years of children have declined yet higher percentage of children suffer from nutritional deficiencies in rural areas than their urban counterpart (International Institute for Population Sciences (IIPS) and Macro International, 2009; International Institute for Population Sciences (IIPS) and ICF, 2017a).

Timely diagnosis of under nutrition (stunting, wasting or underweight) can facilitate prompt action to avert under nutrition and prevent severe malnutrition due to disease and infections. In a community with more undernourished children, manifestations of

malnutrition among children are often perceived as normal. These children are not assessed regularly by the frontline health workers. Under such circumstance mothers assess growth in children on the basis of their physical appearance and activities; while healthy children can be wrongly classified as malnourished and whereas under nourished children can be missed out if they 'look healthy'. Often due to lack of discussion between the ICDS workers and care givers (mothers, family members) on issues such as growth monitoring of children or identification of undernutrition; the family is unable to identify malnutrition among their children. Signs of mild and moderate undernutrition among children are missed out by the family and gain attention only once they become severely malnourished with medical complications. Even if the child is diagnosed with undernutrition by frontline health workers, care is sought by the family once their health start to deteriorate or medical complications appear. This delay in access to care by the family is governed by their inability to recognise signs of malnutrition or understand severity of malnutrition among their child i.e. differentiates between moderate and severe malnutrition (Arora et al., n.d.).

2.4 ADDRESSING MALNUTRITION IN INDIA

For the first time in a Global forum, child mortality gained recognition in year 1978, at the International Conference on Primary Health Care held in Alma Ata. The focus of this conference was to reduce child mortality through a system of providing primary health care (Sharma 2008). In 1985, an approach to improve the prospect of child health and survival among the developing nations was globally accepted. This approach known as the Child Survival and Development Revolution (CSDR) was based on simple primary health care interventions to prevent mortality and improve child survival through preventing and treating childhood infections (UNICEF, 2012). The strategy engaged simple mechanisms such as universal immunization, improvement in water and sanitation, treatment of diarrhoea through oral rehydration salts therapy, appropriate infant and child feeding through breastfeeding and local food and growth monitoring. In order to implement CSDR, UNICEF resorted to social mobilization through mass communication and health education for recognising, preventing and controlling health problems, accepting role of community in primary health care, appointment of community health workers and collective participation of government and non-government organizations (UNICEF 2010; World Health Organization & UNICEF, 1985).

In 1994, at the International Conference on Population and Development (ICPD) integrated the issues of maternal and child mortality as a primary concern. Since then the Government of India had a vision to achieve an Infant Mortality Rate of 60 by year 2000. Under this vision, child survival programs have been financially supported for the last 25 years. Right from the sixth and seventh programs the goal was expanded as a nationwide program, the Twenty point program incorporated maternal and child health a key component, the Expanded Program of Immunization of 1979, The Universal Immunization Program (UIP), the Oral Rehydration therapy (ORT) of 1985 and Safe Motherhood Program during the Eighth Plan were, preliminary steps to address child and maternal mortality in India. However these programs were included as major components of the Family Welfare Programme.

During 1990s these components were integrated into a single programmatic approach namely, the Child Survival and Safe Motherhood (CSSM) Programme. During 1994 the program was extended as Reproductive and Child Health (RCH) services. This initiative was followed by the National Population policy of 2000 and the National Health Policy of 2002, to address child survival and maternal health with an increased coverage through government and non-government intervention. The Under Five Mortality Rate (U5MR) had declined up to 109.3 per thousand to 74.4 per thousand during 2005-06. However this decline was more for male than female child more so in rural area as compared to urban area. The IMR had gone down from 114 (in 1980) to 58 in 2005, but this decline was observed to be more rapid in the urban areas as compared to rural areas, probably due to better health care facilities.

Immunization coverage was considerably low in India. Though there had been an increase in the proportion of children getting full immunization, vaccination coverage for each vaccine was higher during NFHS-1 and NFHS-2 as compared to NFHS-2 and NFHS-3. However, the coverage varied differently across states for full immunization and more so for different vaccines. States like Assam, Uttar Pradesh, Bihar, Jharkhand, Madhya Pradesh and Rajasthan had a much lower coverage for full immunization (Sharma 2008). More so the coverage was lower for urban areas in comparison to the rural areas. Poverty and lack of access to health care in public sector can be attributed to poor coverage of routine immunization. However states under the Empowered Action Group showed increase in coverage due to higher emphasis on routine immunization, especially in

Chhattisgarh, Bihar, Jharkhand and Uttar Pradesh (Dasgupta & Dasgupta, 2015). Immunization coverage has improved from 43.5 percent during NFHS 3 to 62 percent by NFHS 4, however the increase is much slow (International Institute for Population Sciences (IIPS) and ICF, 2017b). During the Fifth Five Year Plan, Integrated Child Development Services (ICDS) Program was initiated (1975), with an objective to improve coverage of child health services and improvise the fragmented approach to child care programs in India. During Eight, Ninth and Tenth five year plans, the program was expanded towards universalization of ICDS in India.

At present the scheme intend to provide services for; improving health and nutrition among children between 6 months to 6 years of age; physiological and psychological development of children; reduction in morbidity, mortality, malnutrition and capacitating community towards improved child care, nutrition and survival through counselling, health and nutrition education. This scheme provides an ambit of health, nutrition and education services close to community, where the centre of all activities is an anganwadi (Gupta, Gupta & Baridalyne, 2013). However decline (43 percent to 40 percent) in the proportion of underweight children has been slow (Ministry of statistics and Programme Implementation, 2012).

The Anganwadi centres are vested with the responsibility of periodic growth monitoring of children (through monthly weight monitoring for 0-2 year of children and quarterly monitoring for 3-6 years of children) and management of growth faltering at the community level. The anganwadi workers measure weight or children and compare it against the reference weight-for-age chart. Undernourished children are managed by the anganwadi centres through health and nutrition counselling for children at grade I and II and supplementary nutrition for children in grade III and IV, referral to a health facility and follow up of such children. However delivery of these services to the community is sub-optimal. The services such as supplementary nutrition and counselling on health and hygiene received much focus as compared to periodic growth monitoring, counselling on health and nutrition and sharing the information on growth monitoring to concern mothers (Dasgupta et al., 2012).

Present SAM treatment model recommends a pure facility based clinical care of children. The WHO SAM management protocol focus on stabilisation and rehabilitation of children. This approach had brought positive output among the well equipped facilities.

However the developing countries have not experienced a widespread decline in case fatality rates. The shortage of skilled staff is a barrier in effective SAM management. Since 1970 treatment of SAM shifted its focus from facility based management to community based management through; nutrition rehabilitation, primary health care centres and even home based care for children. However, post discharge mortality, relapse during treatment and at discharge remained high. At the same time children response to regaining of weight was low. This approach required regular feeding at the community centres, which become impractical to ensure by the overburdened mother, further contributing to high default rate (Gragnolati, Shekar, Gupta, Bredenkamp & Lee, 2005).

Overburdened mother, chronic poverty, food insecurity and male migration have its consequence on infant and child feeding (adequate, appropriate and timely). Delay in initiation of breastfeeding, customary practices of pre-lacteal feed, suboptimal breastfeeding, early initiation of complementary feeding, age appropriate food preparation for children and inadequate feeding to children of 0-6 years of age can be attributed to cultural practices and beliefs, social position and autonomy of the mother, misconception among the mothers regarding sufficiency of breast milk/weaning and convenience food, time constrained mother, food insecurity and poor child care and feeding support from public health care providers (Arora et al., n.d.).

The recent data on IYCF show decline in the complementary feeding from 52.6 percent (NFHS 3) to 42.7 percent (NFHS4). The report state that only 9.6 percent children of 6months-2 years of age receive adequate diet. This is equally true for rural and urban areas. This decline is higher than the national average among 12 Indian states. The frontline health workers (Anganwadi workers and Accredited Social Health Activist) are trained and assigned the role for providing care and feeding support for newborn, infant and children. The focus of FHWs is have greater inclination towards breastfeeding as compared to age appropriate weaning and complementary feeding; nutritional counselling provided to primary caregivers at home is suboptimal; knowledge and clarity among frontline health workers regarding IYCF is inadequate and poor monitoring of household visit (to follow up, counsel on appropriate care and feeding to newborn, neonate and infants) by the frontline health workers show that the interventions directed towards addressing IYCF need strengthening (Dasgupta, Chaand and Barla, 2018).

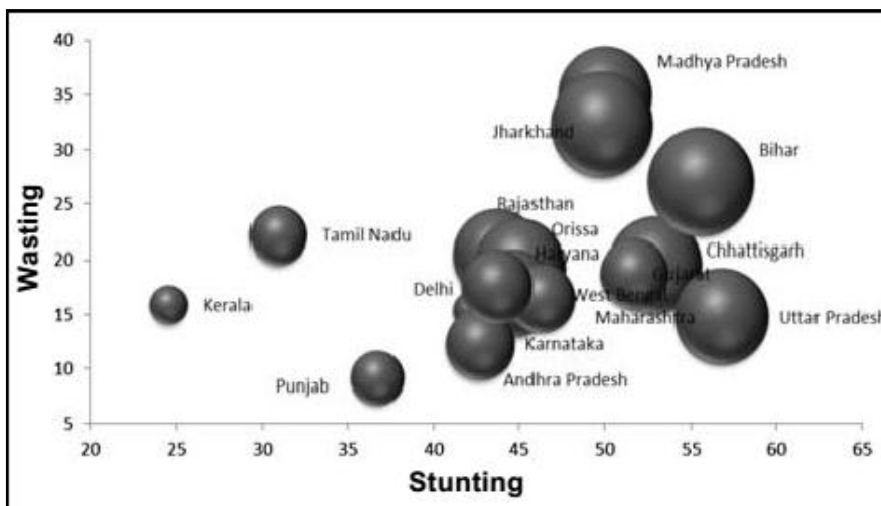
2.4.1 MALNUTRITION MANAGEMENT INTERVENTIONS

2.4.1.1 COMMUNITY BASED CARE

(a) Integrated Child Development Services (ICDS)

Chronic food insecure region worsen during the lean season when hungry households start to live off at the barest minimum. These periods are marked with higher growth faltering, increased referrals to NRC, illness episodes and higher child mortality (Chaand & Dasgupta, 2014).

FIGURE NO.2.4 Multidimensional poverty and anthropometric index for major states in India.



(Source: Dasgupta et al., 2014)

Figure state the multidimensional poverty index against the anthropometric scores for major states in India. The figure represents the inter-relationship between poverty and undernutrition. States with higher poverty also tend to have poorer anthropometric indicators. Hungry children who otherwise suffer from chronic malnourishment get worsen with wasting. Dasgupta et al. 2014 identifies this as acute-on-chronic malnourishment which not only need nutrition rehabilitation (NRC or CMAM) but also continued pediatric care in a community based setting (Dasgupta et al., 2014).

Under such circumstances ICDS serve for prevention, management and screening of malnutrition at the village level through maintaining growth charts (weight for age),

identifying undernourished children, management of undernourished children and referring the identified cases for a facility based care. In ICDS, supplementary feeding, immunization and treating minor ailments comprise the preventive measures. Nutrition counselling for parents of children with grade I and grade II malnutrition and additional supplementary feeding for children with grade III and grade IV malnutrition is provided. Improper functioning of the AWC, difficulty in distribution of Supplementary Nutrition (SN), poor infrastructure, inadequate space, lack of pure drinking water and sanitation facility further worsen the condition of children in chronically food insecure region (Dasgupta et al., 2012).

While interventions for management of malnutrition are centered to rural India, ICDS is the biggest mediation in this regard. According to the Program Evaluation Organization Report (2011), ICDS has an inadequate outreach; especially it is still out of reach of vulnerable children, poor household and people living in remote areas. The report state the ICDS coverage for children to be poor; where 64 percent received supplementary nutrition, immunization and other services but not necessary for entitled 300 days, 12 percent children received all services except supplementary nutrition and 24 percent did not receive any benefit. The total coverage of children between 6 months to 6 years for supplementary nutrition program was only 31 percent. The study further highlighted that among pregnant and lactating women, 78 percent were covered under the benefit of supplementary nutrition program but not necessarily for the stipulated 300 days. Coverage of beneficiaries as per 300 days of their entitlement, stand at 41 percent for children, 38 percent for pregnant and lactating women and 10 percent of adolescent girls. The worst performing states were Bihar, Madhya Pradesh, Rajasthan, Uttarakhand, Uttar Pradesh and Assam with less than 64 percent of beneficiary coverage. ICDS has limited its operation to food preparation and distribution. Distribution of nutritious intake under the supplementary nutrition program (SNP) also show to have a poor performance. The food either remains unattractive to the beneficiaries, the ration is pocketed, the ICDS centres are non functional or the distribution does not reach to the people. At the national level the beneficiaries received supplementary nutrition for 16 days a month whereas they are entitled for 25 days a month.

The AWWs spend most of their time in preparation of supplementary nutrition, preschool education and reporting leaving them with much less time to fulfil other objectives of

ICDS such as growth monitoring, communication and counselling for behavioural change, nutrition education, home visit, community meeting and referral services. The report state that on an average 80 percent of anganwadi workers were also involved in different other schemes, this engaged their time as much as 6 hours a day. Dysfunctional or poor quality equipment like weighing machine hampers in growth monitoring. The report found scarcity of equipment for growth monitoring was being faced by 82 percent of AWC. Hence, behaviour change pertaining to infant and child feeding receives little or no emphasis with poor monitoring by the ICDS (Planning Commission, 2011).

The program leaves out children of 0-3 years of age, which is the most crucial window period for malnutrition to set in, after which it cannot be reversed. The ICDS lack programmatic provision for focus and intervention for children of 0-2 years of age, during early rehabilitation and over longer term. While there is lack of intervention preventing exposure of children to infections, inappropriate feeding practices and inadequate child care, children with severe malnutrition require more attention to prevent recurrence as well as to overcome chronic malnutrition. However there are no schemes, apart from those funded by UNICEF for rehabilitation of severely malnourished children under medical supervision.

Adding to this failure of AWWs to translate the outcome of growth monitoring into behavioural change among care givers does not bring any improvement among malnourished children. The ICDS centres provide regular reports, however the information is not used for corrective measures. Moreover malnutrition cases reported by the AWW is neither verified nor assessed to measure output of the program. The poorest states with highest malnutrition are also struggling with lowest funding, manpower, fund utilization and poor monitoring of the program. Moreover the component of strengthening home based care and capacitating primary care givers in child caring, feeding and screening for malnutrition requires attention which lacks in the services offered by the ICDS (Gupta et al., 2013).

(b) Sneha Shivir

Report of the Working Group on Nutrition For the 12th Five Year Plan (2011), recommended several measures for strengthening and restructuring of ICDS with an objective to improve nutrition and child development outcome. This approach put a

special focus on pregnant and lactating mothers and children between 0-3 years of age. The report suggested reforms at strengthening AWC as the first centre for health and nutrition for the community. Sneha Shivir at the community level (providing early identification, care, support and referral of undernourished children) was pushed as one of the measures to attain nutritional improvement and adequate care for malnourished children (Ministry of Women and Child Development, 2011).

This is a community based care scheme to be implemented in 200 identified high burden districts. This is an added component to the existing functional components of ICDS, to reduce moderate and severe malnutrition among children. The approach encourages sharing of positive health behaviour during Nutrition Counselling and Child Care Session (NCCS) that helps in preventing child malnutrition which is to be (Ministry of Women and Child development, 2013b). The primary focus is on; community based rehabilitation of malnourished children, ensure completion of rehabilitation and prevention of malnutrition. The scheme targets children with growth faltering and severe or moderate malnutrition, however the primary basis for targeting children is their being severely underweight ($-3SD$). Sneha shivirs are to be established in clusters with maximum children having moderate and high malnutrition. The intervention targets quick rehabilitation of malnourished children by participation of the community, sustain rehabilitation of children and bring positive change in community behaviour towards child care, feeding and health seeking. This involves a 12 day long monthly session and 18 day of home based practise. This is followed by the FHWs.

Children who are moderately underweight are counselled at the AWC and followed through home visits. Children at the margin of being underweight are linked to Sneha Shivir. Such children and those with growth faltering but without any medical complication would be linked to other existing services such as NRHM, ICDS and other malnutrition management models by AWW. The continuum quotient includes counselling of adolescent girls, pregnant mothers, supporting early breast feeding, proper and timely complementary feeding through NCCS, education on nutrition and care practices (Ministry of Women and Child Development, 2012). The child is to be screened by ASHA/ANM/MO during VHND, monthly growth monitoring session or other health camps. For treating severe growth faltering medical care is provided along with feeding, care and counselling. Underweight children with medical complications are then screened

for moderate and severe acute malnutrition. Children with early growth faltering and medical complications are assisted with immediate medical referrals to the NRC accompanied by ASHA. Underweight children without medical complications are treated at the Sub Centre itself with nutrition and medical care. These children are then followed up by AWWs through home visits and regular growth monitoring. Children who are severely underweight but not SAM are to be linked to NCCS. Children with severe growth faltering/prolonged growth faltering are linked for additional supplementary feeding; if the condition persists they are referred to medical care and from there on to nutrition counselling, feeding and care centre (NRC). Once children are discharged from NRC they are enrolled in the Sub Centre nutrition and medical therapeutic care. If further rehabilitation is required the child would again be enrolled in the Sneha Shivir (Ministry of Women and Child Development, 2012; National Institute of Public Cooperation and Child Development, n.d.).

(c) Rajiv Gandhi National Crèche Scheme (RGNCS)

The first crèche model was piloted in India in year 1969, at a construction site in Delhi. This day care centre was initiated for children of working mothers, to serve the need of children and their mothers. Child care has been identified as a need under National Policy for education, 1986, National Policy for Children, 1994, National Policy for Empowerment of Women, 2001 and National Plan for Action, 2005. Besides the National Common Minimum Program also emphasised on augmentation of child care and child development services. In this regard, the Rajiv Gandhi National Crèche Scheme (RGNCS) for working mothers was initiated in year 2006 by Government of India. These crèches provided supplementary nutrition, care and emergency health care (if needed). The steering committee on Women's Agency and Child Rights for the Twelfth Five Year Plan (2012-2017) report stated that the expansion of this intervention remained stagnant and the existing centres were either non-functioning or were being poorly managed. Service gaps such as poor delivery of supplementary nutrition program, poor infrastructure and poor financial support were identified as main shortfall in this intervention. The committee recommended restructuring the RGNCS along with upgrading AWC, expanding its services to children below 3 years of age through AWC-cum crèche centres (Planning Commission, 2011).

The revised guideline for RGNCS intends to provide day care and nutrition to 6 months to 6 years of working mothers. The crèche RGNCS guideline recommend a day care centre for about 25-30 children. This day care is to be located at a distance of not more than 0.5 to 1 kilometre from the mothers' work area. This intervention intended to improve health and nutrition of children (6-36 months of age). The services included care and nutrition services to children of working mothers, capacity building of parents/caregivers for improved child care, routine growth monitoring and health care including check up and immunization. The scheme is planned to be a pan India intervention in rural and urban areas. These services are to be provided by the crèche worker and crèche helper. The services such as growth monitoring, health care and immunization were recommended to be provided through a tie-up with an AWC and public health centre (Ministry of Women and Child Development, 2015b).

The scheme provides day care centres for children run by the Government in association with the private sector organization/NGOs. At present the scheme is providing assistance to the NGOs for running crèches for children of 0-6 years of age. The central government provide assistance for 90 percent rest 10 percent is supported by the NGO. The main components of this model is limited to providing day care facility to children of working mothers, as well as non working mothers from poor household who are unable to care for their children under high work burden. These crèches provide with day care, supplementary nutrition and medicines for common ailment, serving 25-30 children in a centre for 8 hours a day. The scheme makes a provision for establishing linkages with the Anganwadi centres for immunization and health monitoring and other health care support (Ministry Of Women and Child Development, 2015a).

However the functioning of RGNCS crèches are constrained by poor infrastructural, such as; electricity, toilet and sanitation, clean and safe drinking water, ventilation, play ground, play materials/equipments, facilities for sleeping and cooking. Most of the crèches were reported to function lesser (4-8 hours) than their scheduled timing. While these centres were being monitored quarterly and annually, the staffs involved was reported to be inadequately trained. Lack of timely fund disbursement, inadequacy of the fund, lack of honorarium to the supervisory staff and lack of provision for house rent constrain its function. The 11th Five Year Plan appraisal envisaged relevance of this model in universalization of ICDS and also towards a possibility to convert Crèches as centrally

sponsored scheme using anganwadis as crèche centres (Supath Gramyodyog Sansthan, 2013). Irregularities and mismanagement led to shutting down of many crèche centres with 21363 crèches in year 2015-16 from 26785 crèches in year 2008-09. Its beneficiaries reduced from 643 in 2014 to 543 in year 2015-16 (Centre for Budget and Policy Studies, n.d.).

(d) Phulwari (Chhattisgarh)

The Chhattisgarh state government implemented the Phulwari scheme to cater undernutrition and malnutrition among 0-6 years of children. The scheme is being implemented by Jan Swasthya Sahyog (JSS) along with Panchayat Raj Institutions and ICDS. The Phulwari scheme of Chhattisgarh, provide day care, based on the model of centre/crèche, run and managed at the community level by Jan Swasthya Sahyog (JSS), Chhattisgarh. This model, focus on prevention and management of malnutrition among children of 6 months to 3 years of age. This day care centre provides a wholesome meal, supplementary nutrition, vaccination, iron folic and treatment for minor ailments. A network of health workers monitor health of children on a weekly basis and manage serious illnesses (CIPS, n.d.; The Phulwari program, n.d.). Phulwari is run by a female volunteer from the village. There is one female volunteer for every 10 children in one crèche. These women are trained in health, hygiene and treating of common illnesses. Children stay in these crèches for 5-6 hours a day, wherein nursing mothers visit these day care centres twice a day to nurse their baby (Phulwari: Rural Crèches, n.d.).

These centres provide a secure environment, counsel mothers on child feeding practices, promote complementary feed, sustained weight gain of malnourished children and prevent children from becoming malnourished (Promoting child nutrition: the village level crèches, n.d.). Beside children, these centres extend their services to pregnant and lactating women. The Community Health Worker (Mitanin) imparts nutrition and health education to mothers. CHW also conducts monitoring, advice and appropriate treatment for childhood illnesses such as pneumonia, diarrhoea and malaria. For any serious illness the CHW refers children to a higher treatment facility. Routine growth monitoring and counselling of mothers is an important component of Phulwari scheme. This model provides a community based care centre for prolong management of severe malnourishment (Garg, 2014).

(e) Action Against Malnutrition

Similar model has been adopted by Bihar, Jharkhand, Chhattisgarh and Orissa for addressing child care and nutrition among 0-3 years of children through Action Against Malnutrition (AAM). AAM is a project that aims to address malnutrition at the remotest pockets in India through clubbing existing community based strategies. It is a model devised on the experiences of community based interventions for malnutrition management through Public Health resource Society, Ekjut and Jan Swasthya Sahyog. It is being implemented by Public Health resource Society, Ekjut, Child In Need Institute, Chaupal and IDEA in seven blocks of Bihar, Chhattisgarh, Jharkhand and Odisha.

This model focuses to improve delivery of government programs. It is an umbrella approach which includes ICDS, health services (immunization, treatment of childhood illnesses, referral to Nutrition Rehabilitation Centres, water and sanitation), PDS and MNREGA. Community mobilizing meetings are organized on malnutrition, child health and care. Day care with special focus on growth monitoring, managing risk and malnutrition and early stimulation are provided for children between 6 months to three years of age through crèches. Here children are fed three times a day with special focus on feeding of children with malnutrition or growth faltering. Regular health check up is organized and children are facilitated to access ICDS and other health services (Public Health Resource Society, 2014).

While Crèche model provides a child care and feeding component close to the community, this model aim to prevent SAM and SCM through timely initiation of complementary feeding, providing adequate care and feeding to children in absence of a caretaker, timely management of illnesses and addressing the issue of hunger especially for children from food insecure households. While the anganwadi centres provide more or less same services, it caters to children of 3-6 years of age. Whereas children of 0-3 years of age are either looked after by the elders, siblings or are on their own resulting in highly compromised feeding and care (Jan Swasthya Sahyog, n.d.b).

The Crèche model provides a secure place for children along with imparting appropriate feeding and adequate nutrition. Phuwari (Chhattisgarh), on the other hand has an added component to the Crèche model i.e. flexibility in operation suitable to the community need. The Phulwaris are located close to community and not at the worksite unlike

Crèches under the NRGCS, thereby overcoming issues of safety and care to young children. The AAM model intent to link services between crèche, anganwadi and the NRC/MTCs. However the component of home based care, prevention and management of undernutrition remains unaddressed by this model. All these interventions so far has strengthened their root primarily in child feeding, treatment of minor ailments and capacitating community on improved child feeding. None of the interventions have Early Childhood Care and Development as their targeted component. Besides, the linkages between home based and community based care is absent. Thus the gap between services for child care and malnutrition management remains untouched.

2.4.1.2 COMMUNITY BASED MANAGEMENT OF MALNUTRITION

So far undernutrition management in India has been through Nutrition Rehabilitation Centres (NRC) and Malnutrition Treatment Centres (MTC). However the lately consensus for community based approach for under nutrition management is growing in India. This approach focus on community based management of acute malnutrition (CMAM) to increase coverage of the intervention and to reach out to children with SAM. The CMAM model intended to provide early identification of malnutrition among children, management through supplementary nutrition at the community level. The SAM children with associated complications are referral to the nutrition rehabilitation centres for inpatient therapeutic care. Children are discharged from inpatient care back to the community based care till they are treated of SAM. Different states adopted this model, providing community based management of malnutrition through FHWs involving ICDS and primary health centres (National Health Mission, n.d.). At present there are no large scale CMAM pan India programs. However there are CMAM interventions tested and implemented as pilot projects by different states. CMAM other states have also piloted models where services are streamlined for management of malnourished children closer to the community. The *Mission Bal Sukham* in Gujarat and *POSHAN* in Rajasthan are example of this approach. Both interventions are based on already existing health care structure.

(a) THE MEDECINS SANS FRONTIERES, Bihar

In 2009 MSF with the support of Bihar government started a community based management model as an emergency response to the Kosi flood. This intervention

provided therapeutic feeding and medical care to uncomplicated SAM through ambulatory therapeutic feeding centres. This model involved the already existing health infrastructure and engaged the ASHA, ANM and GNMs for screening and referral of children to the program. This model did not engage the ICDS services i.e. anganwadi centres or AWW. The MSF handed over the CMAM, Bihar project to Darbhanga Medical College in 2015. It was the first conventional CMAM intervention in India. Later the CMAM approach was initiated in state of Chattisgarh, Madhya Pradesh, Maharashtra, Odisha and Rajasthan. Rajasthan is an exception, which has a state led CMAM program named, POSHAN. However this intervention focused on treatment aspect alone. The other interventions were led by different developmental organizations and supported by the state government whereas some were taken up independently by these organizations. Some of these CMAM interventions incorporated preventive/promotive approach whereas some adopted both preventive and promotive approach (Action Against Hunger, 2017).

The CMAM, Darbhanga model focused on interventions at the community level to detect and follow-up malnourished children. This approach was guided towards prevention of MAM from becoming SAM and reducing incidence of relapse post discharge from the program (Save The Children, 2014). The CMAM model provided curative care to SAM children through a collaborative effort of State Health Society and medical health providers of 11 primary health centres (Doctors Without Borders. Médecins Sans Frontières, 2016). This model had two components, community based care through therapeutic feeding and inpatient care for SAM with medical complication. The model was being supported by well trained cadre of health workers, namely, the ANM, GNM and ASHA to screen and refer children to CMAM for further diagnosis. The CMAM Bihar model treated children screened within the community by CMAM workers and those referred by the ASHA. Under CMAM, all the referred children were screened and classified as complicated or uncomplicated SAM, depending on the existence of associated medical complications. While children with moderate wasting/SAM or uncomplicated SAM cases were treated and followed every week at the community level; complicated cases were provided with an inpatient care. Children with uncomplicated SAM who failed to gain weight without any identified medical complications were referred to the Sub Centre for further treatment.

The mothers/primary caregivers in the family were supported for appropriate management of SAM children through counselling and educating on child care and feeding. The anthropometric measurement of children were taken every week and updated along with other medical information. Children with associated medical complications were attended by the clinical care providers or referred to sub centre for medical care along with nutritional treatment. Their stay at the inpatient care facility (MSF) included phases of; stabilization, restoring metabolism, weight gain and integration to their social environment followed by discharge from inpatient facility. On recovering of medical complications, the children were transferred back to community based care. However, children were discharge from the CMAM program only if they met discharge criteria over two follow-up visits. Community mobilization, their involvement in SAM management and health and nutrition education formed a crucial component of CMAM (Burza et al., 2015). The Outpatient care was provided through mobile ambulatory feeding units, where one ambulatory unit catered to a population of twenty five villages (Dasgupta, Yumnam & Ahuja, 2015).

(b) POSHAN (Rajasthan State Intervention)

POSHAN (Proactive and Optimum care of children through Social-Household Approach for Nutrition) is a project of Rajasthan State Government (Department of health and family welfare, Rajasthan) in collaboration with development partners; UNICEF, GAIN and Action Against Hunger. The model is based on active support for house hold care of malnourished children. This model focuses on management of uncomplicated SAM through intense follow up by the FHWs and counseling of parents on child care practices. The program was piloted in 13 high focused districts²⁷ in Rajasthan (2015-16) now it has upscale from 41 blocks to 53 blocks. This program includes extensive 8 week *rehabilitation* with nutrition supplement (*POSHAN Amrit*). Daily follow-up by the FHW, primarily ASHA and a weekly follow up at POSHAN sub-centers. Once discharged from the program the beneficiaries are followed up monthly for a period of four consecutive months (Mathur, Halim, Gupta, Panda & Syed, 2018; Fight Hunger Foundation, n.d.).

The intervention includes active screening of all children of age group 6-59 months at the community level by the FHWs using MUAC. The ASHA needs to identify SAM children

²⁷ 10 High Priority Districts and 3 Tribal Districts, namely Jalor, Rajsamand, Jaisalmer, Dungarpur, Dholpur, Baran, Karuli, Udaipur, Sirohi, Pratapgarh, Banswada, Barmer and Bundi

through house visits, whereas self referrals by sensitized families are also taken into account for screening children ²⁸. All screened children are referred to respective Health Sub-Centers for further anthropological assessment by the ANM. All identified SAM children are further diagnosed for associated complication and distinguished as complicated and uncomplicated SAM children. However this screening is to be done only on fixed POSHAN days at the respective Sub-centre/PHC/CHC. This is followed by referral of children with complicated SAM to NRC.

All uncomplicated SAM cases are enlisted and the information is shared with the ICDS. The ICDS thereby enroll these children for Supplementary Nutrition Program²⁹ (Ministry of Women and Child Development, 2014). At NRC children are diagnosed for associated complications by the respective facility in charge to decide if a SAM case is to be treated at the in-patient facility or to be sent back for community based management. Children sent back to CMAM are again assessed on POSHAN Days and appropriate treatment is provided. The ANM is also responsible to update the beneficiary enrollment/treatment card and counsel mothers on breastfeeding, hygiene and cleanliness, safe drinking water and prevention of illness/sickness. The CMAM for uncomplicated SAM are operated through the Sub-Centers. These children are followed by ASHA daily for 8 weeks. All identified SAM without medical complication and good appetites are enrolled for home based treatment through nutrition supplements. Weekly medical supervision, growth monitoring and weekly supply of Energy Dense Nutrition Supplement is provided at the Sub-Centre (Mathur et al., 2018). Complicated SAM cases are treated at NRC and on improvement the beneficiaries are send back to be managed under CMAM.

After completing 2 months into CMAM the beneficiaries are linked to the ICDS for supplementary nutrition program. During this period the number of home visits by the ASHA/POSHAN prahari gradually reduces, from weekly visits in the third month to, fortnightly visit and monthly visit by the 6th month. This CMAM model provides extended

²⁸ This include children identified through the following criteria: MUAC of <115mm, bilateral pitting Oedema and SAM children whose parents refused referral to Facility based care for further screening.

²⁹ Supplementary Nutrition Program provides the Take Home Ration (THR) to all children of 6 months to 36 months enrolled under ICDS and hot cooked meal for all children from 36-59 months for 300 days a year. Since 2009 SAM children of 6 to 59 months are to be provided additional quantity of THR

stay and a long rehabilitation phase to the beneficiaries³⁰. Children failing to meet the discharge criteria after 12 weeks in the CMAM program are referred to the MTC for a diagnosis of underlying medical reasons for poor response to treatment. All discharged beneficiaries from the CMAM program are linked to the ICDS centre to be benefitted through *Supplementary Nutrition Program* and regular growth monitoring (Government of Rajasthan. n.d.a; Government of Rajasthan. n.d.b; National Health Mission. n.d.).

(c) MISSION BALAM SUKHAM (Gujarat State Nutrition Mission)

The Gujarat CMAM encompasses intervention for prevention, treatment and rehabilitation of malnourished children. Mission Balam Sukham was launched in 2012 to provide services for children with severe acute malnutrition (SAM) severely underweight (SUW) and/or show severe growth faltering. This is a mixed model providing treatment and care to the malnourished children; through (a) Community based care (b) Facility Based. Children are screened at AWC and Primary health centers by the FHWs (ASHA and ANM). Beside this all children coming to the OPD at PHC/CHC and District are to undergo compulsory assessment for malnutrition³¹. If detected as malnourished³² with medical complication³³ these children are enrolled for facility based treatment. The preliminary stage of identification takes place at the Village Child Nutrition Centre (VCNC) known as the Bal Shaktim Kendra, located at AWC. Uncomplicated SAM children are enrolled for treatment at the Bal Shaktim Kendra. Children having any medical complication or failed/poor appetite are sent to the Child Malnutrition Treatment Centre (CMTC) known as Bal Seva Kendra, located at the PHC/CHC/Sub-District Hospital. SAM children with specific medical need are sent to the Nutrition Rehabilitation Centre (NRC), known as Bal Sanjeevani Kendra, located at the District Hospital or Medical College.

This model encompassing the service delivery points of ICDS and NRHM (Pandya, Joshi, Seth & Kadri, 2015). Children assessed and identified with malnutrition without oedema are enrolled into the program. The VCNC is dedicated for management of Severe

³⁰ Assessment on follow-up days include; assessment of MUAC and updating the beneficiary report card, weight monitoring and confirming W/H Z-score, check for oedema, check for signs of medical complication, test the appetite, assess on illness/sickness episode of previous week..

³¹ MUAC, Weight, Height, examined for infection, Oedema, anemia and Vitamin A deficiency.

³² SUW (at red category as per WHO growth chart), SAM (<-3SD and MUAC <115mm) and Underweight child showing growth faltering (in two consecutive visits).

³³ Having either or all symptoms, such as; infection, Oedema and failed appetite.

Underweight (SUW), moderate underweight (MUW), SAM and MAM (Government of Gujarat, 2012). Therapeutic treatment is provided for a period of 30 working days. The beneficiaries are provided with supervised 5 diets a day and two home diets along with micronutrient supplementation and medicines. The VCNC is daily visited by the ANM.

All children with complicated severe malnutrition are sent to CMTCs for facility based treatment. Children with SUW, MUW and SAM, with any medical complication and/or growth faltering are eligible to be treated at the inpatient care facility. Treatment is to be provided by doctors, nutritionist and nurse. Malnourished children need to stay with their mother/caregiver for a period of up-to 21 days (Commissionerate of Health, 2012). Children with specific medical need are sent to the NRC for a facility based treatment. These children are enrolled for an inpatient care at the NRC for a period of about 21-25 days (Department of Health and Family Welfare and Women and Child Department, n.d.).

Children discharged from the NRC are to be followed at the community along with visits to NRC. At NRC and CMTC beneficiaries are to attend scheduled follow up³⁴ at facility before they are discharged from the program. The ANM and ICDS supervisors are to be informed with the list of children discharged from NRC and CMTC. All the discharged beneficiaries are to be enrolled in their respective AWC for further prescribed treatment. The AWW is responsible for following these children through home visits till their discharge from the program (Government of Gujarat, 2018; Commissionerate of Health, 2012).

While all further treatment to these beneficiaries are to be provided at the VCNC they need to attend their follow up visit³⁵ at the NRC. ASHA is vested with the responsibility to ensure that beneficiaries are followed at the AWC and VCNC whereas both ASHA and AWW are responsible for ensuring that beneficiaries attend their follow up session at the CMTC and NRC. The ANM follows all discharged beneficiaries from the NRC during VHND till they exit from the program (Department of Health and Family Welfare and Women and Child Department, n.d.).

³⁴ The beneficiaries are to attend follow up visits in two weeks for first month and then monthly till attainment of weight for height score of -1SD.

³⁵ Follow up visits at the NRC are to be conducted in two weeks for first month and thereafter monthly till beneficiary attain a weight for height score of -1SD. In case of any discrepancy in health condition these visits can be frequent.

(d) Rajmata Jijau Mother Child Health and Nutrition Management; the VCDC model, Maharashtra

The Village Child Development Centre (CDC) focus on first 1000 days of a child's life through a community based care model, based at the AWC in each village. The AWW carry out screening through measuring height/length and weight for age to identify moderate and chronic underweight cases (acute and chronic malnutrition). These children are then tested by medical officer and ANM for wasting through MUAC and bilateral pitting odema, to identify MAM and SAM. The VCDC serves as a day care centre where the uncomplicated SAM and MAM children are fed for 6-7 times a day and are sent home at night. This nutrient rich diet at the AWC is supplemented with eggs and home food (Result For Development & AMALTAS, 2016).

The medical officers from Primary Health Centre (PHC) visit the VCDC on VHND to check and monitor children. Children with medical complications or non responders at the VCDC are referred to Child Treatment Centre (CTC)/Child Development Centre based at PHC. The child stays at CTC/ CDC for 4 weeks. Children with complicated SAM and MAM who do not recover at CTC or those who require pediatric care are then referred to NRC (Comprehensive Child Health Care Initiatives. National Rural Health Mission Maharashtra, 2013).

Hence treatment regimen is done in two phase; (a) the stabilization phase for 7 days at the Child Development Centre (CDC), (b) Growth phase for 6 weeks. Within 1-3 weeks if condition stabilizes the child is transferred for outpatient care based at home. Home based care is ensured to child through continual of the same feed. The child is followed for next 26 week along with weight monitoring in every two weeks to prevent any relapse. Children who have gained a normal weight or have been provided with follow up care for 26 weeks are discharge from the program. All infants less than 6 of age months are admitted for an inpatient care (Wadhvani, 2008). Since the VCDC attend to SAM and MAM children only, severely underweight (SUW) and moderately underweight (MUW) children are provided with home based care. Mothers are trained to feed and care for these children as per the protocol for management of MAM children i.e. feeding at every two hour. The AWW visit children on a daily basis for daily supervision and support (Rajmata Jijau Mother - Child Health and Nutrition Mission, n.d.).

The CMAM models do not include the component of IMNCI children more susceptible to undernutrition. These models provide either of preventive or curative services or both. Services directed towards health promotion and long term rehabilitation care is not the highlight of these interventions. Since the interventions focus much on curative and rehabilitative care preventive measures face a setback. The family and primary care givers are not capacitated for early identification, prevention and timely health care seeking for malnutrition.

2.4.1.3 FACILITY BASED MANAGEMENT

(a) Nutrition Rehabilitation Centre (NRC) for facility based management of severe acute malnutrition

Nutrition rehabilitation centres (NRC) also known as Malnutrition Treatment centres (MTC) were launched under the joint effort of UNICEF and Government of India. This intervention was designed for clinical management of malnutrition to reduce SAM induced mortality. The NRCs are dedicated for providing medical care and therapeutic feeding along with capacitating mothers and caregivers for improved child care and feeding. Beside this mothers and caregivers are also capacitated through counselling and education on identification of nutrition and other health problems among children; trained for management of illness at home and informed on danger signs for which medical care should be sought.

The NRCs are health units located in a district hospital (with a capacity of 20 beds) and/or in Community health centre (CHC), First Referral Units or sub divisional hospitals (with a capacity of 10 beds) that are equipped to manage paediatric complications or other health complications among SAM children. At NRC treatment for SAM children is provided by a care team comprising of; Medical officer, nursing staff, nutrition counsellor, cook, attendants or cleaners and medical social worker.

Children of 6-59 months with SAM are identified at the community level by FHWs (ASHA, AWW and ANM) through a mid upper arm circumference (MUAC) of <115 mm and presence of Oedema. These children are referred to NRC for further care. At the NRC children are once again screened for deciding if they are to sent back for community based management or admit for inpatient care. Children (6to 59 month) with MUAC <115mm, weight-for-age <-3SD, and or severe wasting visible/ oedema, poor appetite or any other

medical complication are admitted for an inpatient care at the NRC. Whereas infants (0-6 months) too weak to suckle milk, poor weight-for-length (<-3SD), severe wasting and oedema are taken for an inpatient care. Once the children are discharged from the NRC they are to be referred to CMAM program. . Children with MUAC <115mm, weight-for-age <-3SD, and or severe wasting visible/ oedema but no medical complication are referred to their respective health centres for further assessment and counselling from the ANM. From here the children are to be referred to a CMAM program. Children with MUAC >115 mm and no oedema are sent back after providing nutrition counselling to mothers and caregivers.

SAM management through NRC have 3 phases; stabilization, transition and rehabilitation. In the stabilization phase children are provided with starter diet to start a normal metabolic function under close supervision. Children are moved for treatment under transition phase where child is provided with catch up diet. On recovery of normal appetite and medical complications children enter the rehabilitation phase. This phase intend to provide rapid catch up growth among children and to prepare them for normal feeding at home. The treatment regimen extends for 14-21 days, till children have a good appetite, no oedema or medical complication. If there is a provision for CMAM, children (of 6-58 months) is discharged from facility at gaining 15 percent weight of the initial weight at admission, are free of bilateral oedema and medical complications. On the other hand if there is no CMAM provision children are discharged from NRC only once they gain 15 percent weight of the initial weight at admission, are free of bilateral oedema and medical complications. On the other hand infants are provided medical treatment but no therapeutic feed is provided. The weight gain is based on breastfeeding no medical complications an. Once they gain weight, are free of bilateral oedema and medical complication they are discharged from facility. Another important criteria before discharge is that mothers/caregivers care been capacitated on age appropriate care and feeding to their children; they are skilled in identification of nutrition of health related issues among children; trained to provide treatment at home and well informed on signs for which they should seek medical care.

The child continues to remain in the program for another 4-6 months based on their progress. Post discharge children are to be enrolled in the ICDS for additional supplementary nutrition and child information is to be shared to the nearest Sub

Centre/PHC and concerned ANM. AWW and ASHA are responsible for providing follow up to all SAM children through home visits and counselling of care givers till children attain a weight-for-height of $<-1SD$. For next 4-6 months the SAM children are followed by the facility care team through routine visits to the NRC; in every two week for first month and then every month till children attain weight-for-height $<-1SD$. Children who fail recover after four months they are discharged from the program as ‘Non responder’ (Ministry of Health and Family Welfare, 2011).

The NRC model is designed for management of SAM at the facility level, but it does not mention on care services for children post discharge from the NRC program. The model lacks linkages between community, facility based and back to community based care. The post discharge care is limited to follow up visits to NRC. Children are discharged within 21 days of admission based on the 15 percent weight gain criteria, this might even result in discharging children without attaining a WHZ $<-1SD$. The model does not provision for a post discharge care component i.e. adequate nutrition, counselling, feeding and health care to children at home and community level leaving enough scope for the child getting susceptible to relapse.

2.5 REVIEW OF FUNCTIONING OF THE ABOVE MENTIONED MALNUTRITION INTERVENTION MODELS

At the community level, AWW is responsible to monitor growth faltering and screen children for malnutrition, based on weight for age and refer identified underweight children for a facility based treatment (Dasgupta et al., 2014). There are adequate evidence pointing towards inadequacy of the ICDS in growth monitoring, and early identification of malnutrition among children. Inadequacy of appropriate infrastructure and necessary equipments among the AWC post a challenge in regular weight monitoring (Planning Commission, 2011). Intervention for malnourished children at the community level is provided through the anganwadi workers (AWW) and anganwadi helpers who are monitored by supervisors, Child Development Project Officer (CDPO) and a District Project Officer; and ASHA and ANM. Services from ICDS and National Health Mission (NHM) are provided through AWC and VHND used as a platform for delivering for promotive, prevention, curative and rehabilitative care to malnourished children. As far as preventive and promotive care is concerned, inadequate provision of supplementary nutrition, poor quality of hot cooked food, irregular distribution of supplementary nutrition

and allocation without regular growth monitoring have hindered the core purpose of its distribution according to the growth need of children. On the other hand a large section of children are yet partially immunized or never immunized, owing to lack of awareness, lack of cooperation by the health staff, attitude and disbelief by parents. Health check-up and referrals are two important components of the ICDS yet these two services are most poorly implemented. However low educational qualification, absence of in-service training, poor work performance, shortage of CDPOs and Supervisors not only hampers implementation of activities within AWC and at the community level but also show a gap in monitoring i.e. screening children for SAM and follow up at the community level (Planning Commission, 2011; Gupta et al., 2014).

At the ICDS centre, in case of growth faltering and co-morbidities, grade III and grade IV children are referred to a higher facility and followed up post discharge. While measuring and maintain growth records are important, understanding and interpreting growth chart is equally important. Poor skilled AWWs face barrier in screening the underweight children thereby affecting prompt action (Dasgupta et al., 2012). There is a lack of coordinated, integrated or budgeted inter-departmental/sectoral approach to combat malnutrition. Besides prime focus of the program is on universalisation of services than quality, sole focus on supplementary feeding rather than behaviour change, focus group being children of 3-6 years when malnutrition already sets in between 6-18 months of age, inadequate targeting with most malnourished and poor states still left out of universal coverage (Mohmand, 2012). Due to inadequate community mobilization day care centres are perceived as a babysitting facility and not feeding caring centres hence children are not sent on day's parents stay back at home (Jan Saasthya Sahyog, n.d.).

CMAM program in India is still at a nascent stage and there is no Pan-India model for management of malnutrition at the community level. MSF model of CMAM provided treatment through inpatient and outpatient care but only to children with uncomplicated SAM. Children with moderate wasting or at risk of becoming malnourished were left out of the CMAM to be managed at the ICDS level. The MSF intervention (Bihar) did not comply with the very basic requirement of maximum coverage and providing care close to home. The coverage of CMAM services were highly inadequate with services provided through mobile ambulatory feeding units, where one ambulatory unit catered to a population of twenty five villages (Dasgupta et al., 2015). This design of care delivery

required commuting of children for long distances besides this model did not incorporate ICDS for management of SAM children discharged from the CMAM program. The Rajasthan and Gujarat CMAM model links care from community to facility based care. The Rajasthan CMAM and Gujarat CMAM design reflects same issues as with the MSF CMAM model of penetration, coverage and distance. Placing services outside community rather than bringing it close to the community (Prasad, 2017). Community participation in treatment, community capacity building for self management of malnourished children and behavioral change has been inadequately addressed by these CMAM models. Moreover none of the CMAM intervention linked IMNCI in their model.

The NRC provides curative care for complicated SAM; children with uncomplicated SAM, MAM (at risk of SAM) and SCM are sent back to the community. These children remain devoid of any corrective/preventive intervention at the community level. The paediatricians perceive NRC as a feeding program whereas sick malnourished children are referred to a higher level health facility (Dasgupta et al., 2014). However studies show that the NRCs fail to distinguish between sick and hungry children, as a result underweight children (even without complications) with or without failed appetite are also admitted for a facility based malnutrition management (Prasad, Sinha, & Sridhar, 2012; Aguayo, 2012). Discharges from the program are made on 15 percent gain of the initial weight by admitted SAM children, despite of their W/H not reaching the -1 SD norms. Post discharge, absence of a CMAM program and inadequate follow up programs only adds to the risk of relapse among children (Dasgupta et al., 2014; Prakash, n.d.).

The NRC intervention has shown experience of cure rate, high default and poor recovery (Aguayo et al., 2012; Singh et al., 2014). Post discharge children were free of medical complications but still had acute malnutrition. The studies have pointed out that Lack of CoC makes weight gain at NRC/MTC unsustainable when a child move back to community based care interventions (Dasgupta et al., 2014; Aguayo et al., 2013). Treatment of SAM children at NRC and Community level (post discharge) is limited to curative aspect alone but focus on behaviour change, counselling and stimulation pertaining to child feeding and care are also essential (Elizabeth, 2014). Poor socio-economic condition, morbidity and poor child care contribute to poor weight gain or failure in gaining weight post discharge from the MTC/NRCs (Kumar et al., 2013). Chronically food insecure regions exhibit co-existence of SCM and SAM. The chronically

hungry households are burdened with periods of acute hunger during lean seasons. These seasons are marked with highest child growth faltering, referrals for NRC and illness and mortality (Dasgupta et al., 2014). Children discharged from NRC come back to their household setting exposed to acute food shortage. These acute hunger episodes complimented with lack of community based therapeutic facility and follow up, overburdened mother engaged in chores/livelihood generation/agriculture leave less time for appropriate care and feeding and lack of support for child care/feeding put children at higher risk of falling to malnourished or even die (Prakash, n.d.).

CHAPTER 3

RESEARCH METHODOLOGY

3.1 CONCEPTUALIZATION

Co-existence of wasting and stunting in children is associated with higher mortality; children having wasting are susceptible to slipping into stunting and vice-versa. Children with wasting (moderate or severe) have a higher risk of mortality (Briend, Khara, & Dolan, 2015; Emergency Nutrition Network, 2018; Olofin et al., 2013; McDonald et al., 2013). In 2005-06 India was home to 48 percent of stunted, 20 percent of moderate wasted and 6 percent of severely wasted under five children (UNICEF, 2013). In 2013-14 the Rapid Survey Of Children (RSOC) report showed a decline in stunting to 39 percent, wasting to 15 percent and underweight to 29 percent (Ministry of Women and Child Development, Government of India & UNICEF, 2014). This means India continues to be a country with highest child under nutrition. The decline in stunting and under nutrition was not uniform across states. The states like Bihar, Jharkhand and Uttar Pradesh had lowest decline in stunting among children (International Food Policy Research Institute, 2015).

The National Family Health Survey 2014-15 (NFHS-4) shows some improvement in the nutritional status of children in comparison to NFHS-3; children with anaemia (58.6 percent), stunting (38 percent) and underweight (36 percent). While there has been a decline in prevalence of stunting and underweight since NFHS-3, large numbers of children are still affected by chronic and acute under nutrition. Wasting among under-five children on the other hand shows a percentage rise since NFHS-3 survey (standing at 21 percent). NFHS-4 states, that there has been a decline in anaemia among children yet, 59 percent of children have some degree of anaemia. The ones most affected are; children below 23 months of age, small for gestational age³⁶, having a Low Birth Weight (LBW), children of mothers with low Body Mass Index (BMI), children from rural areas and children from Bihar, Meghalaya, Uttar Pradesh and Jharkhand (with highest underweight 48 percent and wasting 29 percent) (International Institute for Population Sciences and ICF, 2017a).

³⁶ Babies small for gestational age.

The RSOC report show a proportional decline in undernourished children along lower to upper wealth quintiles. Despite this decrease, stunting, wasting and underweight were high even in the wealthiest groups (Ministry of Women and Child Development, Government of India, & UNICEF, 2014) and 22 percent of stunted children belonged to the upper wealth quintile (International Institute for Population Sciences (IIPS) and ICF, 2017a). The economic and agricultural improvements have not translated into improvement in child nutritional status in India, as it has in other countries (Raykar et al., 2015). The economic growth and agricultural improvements does not impact under nutrition in silos but bring results with more investment on food availability, women status and health environment. On the other hand nutrition sensitive interventions such as micronutrient supplementation, diet supplementation for pregnant women and improved care provisioning through behaviour change are critical to reduce under nutrition among children (Smith & Haddad, 2002).

India has much lower child mortality and much higher child stunting than Saharan Africa (Raykar, 2015). These facts bring the discourse of ‘South Asian Enigma’³⁷ back into light, stating inappropriate feeding and care of children as one of the probable cause of higher number of undernourished children in India. Birth weight, appropriate nutrition in early months of life, adequate feeding and caring practices, preventing illness, health services, investment of time and energy by caregivers, status of women, cultural belief/perception/understanding and practices, (Ramalingaswami, Jonsson, & Rodhe, 1996) pure drinking water, sanitation and hygiene (Chambers & Medeazza, 2013) impact child nutrition. This emphasizes on the discourse that malnutrition is not only a medical also a social problem.

The current scenario in India reflects that malnutrition is pervasive in India with higher prevalence among marginalised sections (slum dwellers, tribals and communities living in remote rural areas) making it a significant Public Health concern (Kanjilal, B., Mazumdar, Mukherjee, & Rahman, 2010). The India Health Report (2015) indicates that the decline in child stunting had not been at par with other child health indicators such as infant and child mortality. Nutrition services in India are provided jointly through Integrate Child Development Services (ICDS) and National Health Mission (NHM). The NFHS-4 report

³⁷ South Asia has a higher prevalence of child malnutrition than Sub-Saharan Africa despite of better productivity and developmental condition. This anomaly was coined as The South Asian Enigma and explained by Professor Ramalingaswamy and his colleagues in 1996.

reflects poor status of the nutrition services. Service delivery for women during pregnancy, breastfeeding and care of children under six was lower and so was its utilization. However women were found to be more likely to receive supplementary nutrition in comparison to health check up or health and nutrition education during pregnancy. The practice of appropriate child care and feeding during sickness, especially during diarrhoea showed that only 31 percent of children were fed according to the recommendation. Moreover 56 percent of children were given lesser food intake than usual times (Kerber et al., 2007).

Continuum of care (CoC) has been acknowledged as one of the core principles of maternal, new born and child health program to reduce the burden of under5 mortality. The term 'continuum of care' was used for the first time in 1970s for care of elderly. Subsequently, its application was broadened to individual care or case management through appropriate care plan, linking of care services across care providers so that no beneficiary fall out of the care plan or lost to follow up. Studies on CoC approach has mostly focused on the domains of nursing, mental health, palliative care, health service administration; whereas very few studies on CoC have focused on public health perspective. However CoC in all the above mentioned discourses emphasised on three broad dimension of continuum of care, namely; people, place and time. In 2007 the Lancet series defined a framework for continuum of care through a life cycle approach connecting care services, across all levels of care, for maternal, new born and child health. Malnutrition management was suggested as an integral component of newborn and child clinical care package (Kerber et al., 2007).

In 2013 India adopted the continuum of care approach for RMNCH+A, to deliver services throughout life cycle, across levels of care. The RMNCH+A framework, encompasses prevention and management of malnutrition among children as an integral component to child health. This approach was adopted under NHM on the premise that India had a three tier health system with an already established community based program (for RCH). This set up supported through a platform for effective service delivery linking primary, secondary and tertiary level of care, thereby encasing a cycle of continuum of care (Ministry of Health and Family Welfare, 2013).

The concept of continuum of care refers to a system of comprehensive care that is coordinated across time and levels of care to meet the health need of people. This

approach of Continuum of care is not limited to time, quality and place of services delivered but also concerned of issues restraining access and utilization of services such as; distance covered and time invested on moving between the services, poor financial status, lack of communication and transportation facility, poor referral and poor quality of care available at the health facility. The approach takes context of a beneficiary into consideration, ensures availability of care irrespective of the time and location and care connected across all levels through a good referral system.

According to the life cycle approach, an effective continuum requires linking of maternal, newborn, child health services and beyond. Hence, the interface across different life stages gives way to reduction in health risk and deaths through skilled attendance. However the outcome at each life stage depends on appropriateness of care interventions at the preceding level, thereby ensuring an improved and comprehensive health care. However a good continuum does not limit itself to the household, primary, secondary or tertiary level of care but involves appropriate care at all three levels of health care.

The concept of continuum of care has been understood and studied differently by different health care domains. These health domains in their understanding or adaptation of the concept of continuum of care resonates some common themes that have been adopted to adopt a framework for this study.

Continuum of care can be understood through three major type of continuity, namely:

- (a) *Informational continuity*- Informational continuity refers to availability and use of information on prior and current health events and condition of the beneficiary. It links care across providers and services; and connect one health care event to another event. The sharing of information can be disease or person centred. Information transfer takes place across providers and facilitates the coordination of care. It ensures recognition of care need and delivery of consistent care. Information transfer may also take place from care service provider to the receiver. Informational continuity links the past care events to the present and facilitate the providers in meeting health need of the beneficiary. Communication is a key driver of informational continuity.
- (b) *Relational continuity*- A sustained contact between client and a provider enables linking of care across time. It also facilitates informational continuity. It connects

care provided in the past to the current care need and smoothen progress to future care. Ongoing relationship is based on trust, mutual understanding, communication and sense of responsibility (depends on duration and kind of care involved). This facilitates providers in monitoring progress of their patients and preventing their falling out of care. Consistency of health personnel (seeing the same provider) facilitates consistency of care. Relational continuity can be a short term encounter (in case of hospitalization) or long term (such as primary care).

- (c) *Management continuity*- Management continuity refers to provisioning healthcare over time in a way that none of the services are missed duplicated or delayed. The services are delivered in a complementary and timely way. One of the key requirements in management continuity is consistency of care. Management continuity focus on care management plans, connecting care in a coherent way, discharge planning and transition across services and tracking client over time. The care plan can be formulated to manage one aspect of the health problem or cover different time span, including the care service, time and chronology of the services to be delivered. Care plan is significant in management continuity, especially when care is provided through multiple care providers. At each step, care need of beneficiary changes along time depending on the care outcome or circumstances around beneficiaries. Ongoing monitoring and continuity in contact with the care providers is important to adapt the care services provided according to the changing need of the beneficiary. Flexibility in care plan according to the changing need of the client and adaptation of care protocol as per the precise need, context and value of an individual (e.g. change in life cycle or health status of a patient) is another significant component of management continuity.

These different forms of continuity functions through certain core components of CoC which are as follows:

- *People* – This include the health care providers, beneficiaries and payer³⁸. This incorporate care experienced by an individual (beneficiary), their uninterrupted progression between coordinated care and interaction between the beneficiary and care provider(s). This component of continuity refers to provisioning of

³⁸ An entity that pays for health care service or services; including government and non-government organizations

appropriate care and linked across; home, first level facility and hospital. This approach emphasise on availability of care, access to care and quality of care across different levels. These different levels of care include care provided at household, peripheral facilities and/or hospitals. This also emphasise on strengthening linkages between these different levels of care.

- *Environment-* Care environment is crucial to continuum of care. Continuum imbibed in any program delivery requires an enabling environment, shaped by political commitment and a strong health system across all the levels of care.
- *Time-* Time of care is crucial to continuum and emphasise on linking care throughout different stages of a life cycle in a seamless manner from home, community, health centre and hospital. The health care intervention at each time period lays foundation for the health outcome in proceeding time period. This time frame might vary as, short term or long term care. The component of time in continuum of care embraces a continuity of essential interventions, accessible across levels of care at all stage of life. The RMNCH+A approach encompasses interventions for mother, new born and children within household, community and hospital in the course of maternal, new born and child health care. Hence the events preceding beneficiary's encounter with health care services; events during beneficiaries experience with health care services; and events following beneficiaries experience with care services become crucial.

The concept of CoC emphasize on: Effectiveness of all the linked services by providing best possible care to the beneficiary at each level through;

- *People*
 - *Patient*
 - *Payer*
 - *Provider*
- *Care Environment*
 - *Location of care*
 - *Service/organization of care*
 - *Resources/commodities in a setting*
- *Events (preceding, during and after care services)*
 - *Events preceding to experience with CoC*

- *Events during experience of care*
 - *Screening*
 - *Diagnosis*
 - *Plan*
 - *Implementation*
 - *Evaluation/monitoring*
- *Events as outcome of care*
 - *Discharge from a health care service*
 - *Transition of care*
- *Time*
 - *Across (life stages, across levels of care)*
 - *Through (life stages, through different levels of care)*

In India different models are operational that address malnutrition³⁹ among children of 0-5 years of age. Among these intervention models, the anganwadi centres, Crèche/day care centres, CMAM and NRCs have been acknowledged as effective strategies in malnutrition management.

These interventions provide nutrition care at different levels; such as⁴⁰:

1. Community based care

a. Child care, prevention of malnutrition and early correction

- i. ICDS through anganwadi centre (AWC) - the ICDS is a flagship program for early childhood care and development. The program covers 0-6 years of children, pregnant and lactating women through services to break the cycle of intergenerational malnutrition and reduce incident of morbidity and mortality. These packages of services are an outcome of a convergence between Ministry/department of health and family welfare and Ministry of women and child development; delivered to the community through anganwadi centres.

ii. Day care through

- Action Against Malnutrition (Crèche model of Public Health Resource Society) - Action against malnutrition is a flagship program of Public Health

³⁹ Malnutrition refers to under nutrition caused by inadequate consumption, poor absorption, loss of nutrients. This term also include over nutrition due to excessive intake of nutrients. In this study term malnutrition would be used to denote under nutrition only and not over nutrition.

⁴⁰ These interventions have been described in detail in Chapter 2 Literature review section.

Resource Society (PHRS). It is being implemented in Bihar, Jharkhand, Chhattisgarh and Odisha. This program targets children between 0-3 years of age for community based management of malnutrition through day care centres.

- Phulwari- This program provides nutrition and early child care through crèche (day care centres) to children of 6 months-3 years of age.
- b. Community based Management of Acute Malnutrition (CMAM)
- i. Community Based Management of Malnutrition (CMAM), MSF (Non-Government Organization) - Medecins Sans Frontieres (MSF) – MSF started a CMAM project for SAM management in Chakradharpur Block in Jharkhand, based on previous experience with CMAM intervention in Darbhanga district, Bihar. The intervention demonstrate a community based approach by providing therapeutic care for uncomplicated SAM to children up to 6 years of age; through ambulatory therapeutic feeding centres (ATFC).
 - ii. CMAM (Government intervention) - Rajasthan POSHAN strategy is a state led intervention for community based management of acute malnutrition. This CMAM intervention was designed for 13 high priority districts in Rajasthan. This model categories malnourished children as complicated and uncomplicated SAM and manage through facility based care and community based care respectively.
2. Facility based care for malnutrition
- a. Nutrition Rehabilitation Program- This program aim to manage SAM through inpatient care within health centres. Nutrition Rehabilitation Centre known as Malnutrition Treatment Centre in Jharkhand is a care unit located within a health facility for management of complicated SAM. Malnourished children are admitted in the unit according to pre-defined criteria and provided with nutritional therapeutic care. Children are discharged from these nutrition care unit on meeting the defined criteria; however they remain in the program till they attain discharge criteria from the program.

India shows a coexistence of SCM and SAM with incidence of severe acute-on-chronic malnutrition especially in states suffering from chronic poverty. While SAM with medical complications requires a clinical/facility based approach, SAM and MAM without medical complications require appropriate feeding and protection against morbidities. Chronically malnourished children having severe acute malnutrition due to multiple episodes of

sickness or co-morbidities require medical attention, prolonged care and adequate feeding. There is little recognition of acute-on-chronic under nutrition and inadequate addressing of this form of malnutrition by the existing nutrition management interventions. The needs of children with SAM/MAM, SCM and sick children are different; however the nutrition care interventions do not provide for distinguished needs of SAM, MAM and SCM. In other words malnutrition management is skewed towards treatment of SAM.

The concept of facility based care and management of malnutrition has been directly adopted from African experience of managing SAM, however the context, need and issues of malnutrition is quite different in India. While the African experience of Malnutrition is largely acute, India experiences a co-existence of acute and chronic malnutrition. The nutrition care and management models adopted from the African experience of SAM, was largely designed to address acute malnutrition whereas the need of SAM and SCM are different. From the existing literature critical issues pertaining nutrition management appears to be; (i) the inability of households to secure nutritious food; (ii) mother's workload; (iii) improper feeding and care; (iv) exposure to morbidities; (v) poor functioning of AWCs; poor growth monitoring; poor screening; work burden of VHND; (vi) poor care and treatment of morbidities at the community level; faulty referral; (vii) hardships faced by mother/caregiver in accompanying children to MTCs; problems of stay at MTC (faced by caregiver/mother and AWW/SAHIYA); (viii) non responders; (ix) high defaults; (x) poor follow-up; (xi) growth faltering post discharge from inpatient facility, (xii) inadequate care of children at facility and post discharge; relapse; (xiii) shortage of staff; poor satisfaction of family/mothers in their experiences with health personnel; (xiv) lack of intervention on behaviour change/behaviour health; poor capacity or ignorance of the family/parents as prime caregivers; lack of training of the parents/care givers who are responsible for home based care; low involvement of parents/family in care of malnourished children during their stay at the health facility and low involvement of family in deciding a treatment/care plan for malnourished children.

The Public Health Approach to nutrition was defined by World Congress of Public Health Nutrition, Barcelona (2006) as, '*the promotion and maintenance of nutrition related health and wellbeing of populations through the organised efforts and informed choices of society*'. The public health approach to nutrition, amass political, economical, cultural and social and focus on nutritional health of population (Uauy, 2007). The comprehensive

public health approach emphasize on addressing immediate, underlying as well as the basic causes of malnutrition through strategies for *promotive, preventive, therapeutic and rehabilitative care*. This include: (a) Promotive care services, such as household food security, growth monitoring, breastfeeding, livelihood, safe drinking water and sanitation (Swart, Sanders & McLachlan, 2008); (b) Preventive care services, such as breastfeeding, nutrition education, food provisioning, micronutrient supplement (children, women, adolescent), growth monitoring, detecting growth faltering, immunization, disease control/treatment of childhood illness, management of under nutrition, referrals; (c) Therapeutic care services, such as screening and treating malnourished children (community/ hospital), nutrition counselling, support and continued feeding during illness, micronutrient supplement, dietary modifications during illness, community mobilization and (d) Rehabilitative care services, such as monitoring dietary changes due to illness, managing nutrition while recovering from illness, follow up and continued feeding to catch up growth (Planning Commission, Government of India, 2010).

The nutrition care and rehabilitation intervention/models have so far exhibit; a low cure rate, poor follow up, default, secondary failure, covering children with complicated SAM and leaving behind children with uncomplicated SAM and MAM, children with SAM also require additional management for chronic malnutrition and low participation of family in treatment and care of malnourished children.

The design and implementation of different interventions show; (a) fragmented care services (b) lack of need based services (c) poor coordination of care services (d) lack of coordination and integration among providers of service within and across care organization.

The principal approaches to CoC intend to include provisioning of care services at three levels, namely clinical care, outpatient and outreach services and facility and community based care. While, (a) the first approach: Clinical care - consists of individual oriented case management , provided through facility-based care at primary and referral sites; (b) the second approach: Outpatient and outreach services consists of population-oriented services, delivered on a routine scheduled basis, either through static clinics; (C) the third approach: family and community care consists of home-based care practices. This establishes a continuum of care from household to hospital through; improved home based practices (which focus on capacity building of caregivers to impart care and feeding within

family setting); mobilising families to seek the care they need (improved health seeking behaviour and assistance for timely care seeking) and increasing access to care at health facilities (improved access, referrals, linkages and health behaviour).

These care settings have been studied in isolation, however; (a) the linkages between these different levels of care to form a continuum and coordination of services addressing distinct nutritional care need of individuals have not been studied. (b) On the other hand, assimilation of CoC in nutrition care and rehabilitation, how much of it is understood, implemented and actually practiced is uncertain.

3.2 RESEARCH OBJECTIVES

Different elements of CoC have been adopted in different care models. These care models have imbibed some elements common to CoC where as some that are distinguished suiting to the care model and context (Annexure 1). This study intends to explore, if the principle of CoC is imbibed into nutrition care and rehabilitation interventions within and across levels of care.

- To study the principles of continuum of care within existing models and interventions addressing nutrition care and rehabilitation
- To identify the continuum of care challenges and gaps in these interventions
- To identify the barriers faced by beneficiaries in experiencing continuum of care with nutrition care and rehabilitation interventions

3.3 RESEARCH QUESTIONS

- How the principles of continuum of care are imbibed in nutrition care and rehabilitation interventions/models for children?
- How do caregivers across nutrition interventions perceive continuum in care provided?
- How is continuum of care practiced within these existing interventions/models?
- What is the experienced continuity across care pathways?
- What are the CoC challenges in the existing interventions/models?

3.4 METHODOLOGY

An exploratory study, qualitative in nature was conducted deploying the case study method.

Stake (1994) identifies three types of case studies, namely:

- *Intrinsic* - aimed at understanding a particular case because the case itself is of interest (e.g. how one person managed a stroke). A case may be of interest because it has particular features or because it is ordinary.
- *Instrumental* - aimed at providing insight into an issue or problem or to refine a theory. In this instance, understanding the complexities of the case is secondary to understanding something else (e.g. case study of 'Sally' provides insights into the problems with healthcare in the US).
- *Collective* – According to Stake (1994) a number of cases are studied jointly in order to understand a phenomenon, population or general condition. Often referred to as a multiple-case study (e.g. 15 primary care practices are studied as single but conjoined cases in order to understand how obesity is discussed in this setting).

Stake (2005) in his work states that case study research as an approach offers a more holistic picture of phenomena as a whole, bringing out the relationship between its parts rather than informing on the components of a relationship. Similarly Yin (2009) has emphasised on use of single or multiple case study of holistic and embedded kind to understand the 'how' and 'why' of a contemporary phenomena within its real life context. Yin states that the focus of a case study being, 'decisions', 'individuals', 'organizations', 'processes', 'programs', 'neighbourhood', 'institutions' and events. Case study can explain, describe, illustrate or enlighten on events within an intervention. The method emphasises on reliance of multiple source of evidence (triangulation) especially observation of the events and interview of people involved in the events. The author proposes use of multiple case designs to study different conditions and cases covering each of these kind. Yin further explains (2014) that case study research leads to a systematic inquiry into event or set of events aiming to describe or explain a phenomena within its context (Stake, 2005; Yin, 2009; Yin, 2014).

Case study method was adapted to seek answers for the research questions researcher seek to explore. The researcher studied different model of nutrition care and rehabilitation interventions as different cases. The interventions were classified into three categories of care setting, namely:

- a) Village level- This included:
 - a. Anganwadi model under the Integrated Child Development Services.
 - b. Crèche/ Day Care model run by Public Health Resource Society (PHRS) under the project Action Against Malnutrition (AAM).
- b) Community level- This include study of Community Based Management for Acute Malnutrition (CMAM) model of MSF.
- c) Facility Level- This includes study of the Nutrition Rehabilitation Centres (NRC) also known as Malnutrition Treatment Centres (MTC).

At the beginning research questions were run through each of these models/interventions undertaken as a case to investigate how the continuum of care interplays within these case settings. Multiple institutions were visited to collect data from these three case settings and then the data was analysed to get answers to the research questions fitting to each case settings. The researcher did not go into the case setting with a priori notion but worked through to get an understanding of the context. An inductive approach was adopted:

- (a) *Stage 1*: Review of context from available literature from through which the research questions emerged. A detailed reading of the cases in their setting (Facility, community and village level) was developed. Broad aim and research questions were formed.
- (b) *Stage 2*: Data collection was started with non-participant observation in the case settings followed with in-depth interviews with the respondents. Records, documents and reports of respective case setting were read. This was followed with interview of key informants to answer the new questions and themes that emerged while reviewing documents/ reports/ records, interview recordings and observation. The responses were noted and then once again the noted pointers were observed in the case setting. Later the questions arising from the observation were clarified with the key informants through informal interviews. .
- (c) *Stage 3*: The collected data were analysed. Once this phase was over informal unstructured interviews were conducted with different stakeholders

(mothers/caregivers, care team at MTC, care team at ATFC, Crèche care team, AWW and Sahiya) to triangulate the findings.

(d) *Stage 4*: The data collected in all form was then put to analysis explaining the phenomena under research.

3.4.1 METHOD

The researcher adopted a multiple case study design for study. At each case setting, one primary intervention model i.e. NRC/MTC, Ambulatory Therapeutic Feeding Centres in CMAM, Anganwadi centres and Crèche was taken up as the main unit. The other intervention models working with/supporting these selected primary interventions formed subjects of the primary unit of analysis. Once the main units were characterised, the sub units (intermediary units) were constructed by the levels of care, components of care, stakeholders, means of care giving and care receivers within each of the sub unit of analysis. At each of these sub units of analysis and at each level, the procedure of data collection was in accordance to the design of the intervention i.e. the selected main unit itself.

3.4.1.1 Study setting

The data collection was conducted between years 2015 and 2018. Nutrition care intervention models have been adapted differently by different states. Each state has devised their own intervention model, according to their needs and resources. These tailored interventions centre stage nutrition care at different levels, namely, home based, community based and/or hospital based. Since the study aim to explore CoC within existing nutrition care models, continuum at all three levels, namely; village, community and facility level was explored. So far, none of the state has a nutrition care intervention that links care from home to hospital, but deliver fragmented services, or those that are poorly assembled.

The nutrition care and rehabilitation intervention for children of 0-5 years studied by the researcher were; ICDS, Crèches/ day care centres, CMAM and NRC/MTC. There are no common design/intervention/guidelines for the states to mange services across levels of care, but the states have adopted the NRC intervention and CMAM from the African

experience tailor made according to the local need. Jharkhand has an established NRC model, moving towards adaptation of CMAM and crèche model.

This study intended to understand CoC in existing nutrition interventions addressing malnutrition, therefore each of the mentioned interventions functional in the state of Jharkhand were studied separately. These interventions were treated as separate units and the processes within and across levels of care, namely, home, community and facility, were studied.

3.4.1.2 Unit of study

The state of Jharkhand was selected purposively due to the presence of all the nutrition care and rehabilitation interventions that the researcher intended to study, namely: Malnutrition Treatment Centres (MTC), ATFC (MSF CMAM), AWC and Crèche.

Jharkhand has a well established NRC model with MTC functional since 2009 (Government of Jharkhand, Ministry of Health & Family Welfare, n.d. a). This intervention incorporates the anganwadi centres and MTC in malnutrition management. The state has its crèche (Day Care centres) functional on a pilot phase in few blocks since 2016. The MSF had handed over their CMAM project in Bihar and started a pilot for CMAM intervention in Jharkhand. The state of Jharkhand hence, has different intervention models providing services through anganwadi centres, crèche, MTC and CMAM services. Among these interventions, each care setting was purposively selected as the sampling unit or case setting.

Case setting 1: Malnutrition Treatment Centres (MTC)

Jharkhand has a total of 88 MTCs operating within 24 districts (Government of Jharkhand, Ministry of Health & Family Welfare, n.d. b). Malnutrition Treatment Centres in the state were first initiated through seven units spread over four districts, namely, Ranchi, East Singhbhum, West Singhbhum and Garhwa. The researcher intended to include MTCs attached to a Primary Health Centre (PHC), Community Health Centre (CHC) and District Hospital (DH). MTC at three districts were selected for this case study, namely Ranchi, Khunti and Ramgarh. These are poverty stricken and food insecure districts (SNAP Assessment, 2013; Rural Development Department, Government of Jharkhand, 2016). MTC in Mandar was established in the first phase (2009) whereas Ramgarh and Khunti

were set up in the second phase (2010). The 5 MTC unit in four districts, namely Ranchi (Mandar CHC and Doranda PHC), Khunti (Khunti Sadar and Karra CHC) and Ramgarh (DH) were purposively selected to cover maximum variation. There were no admissions at the time of data collection at MTC Khunti, therefore this unit was dropped from the study.

Geography, distance, poor connectivity and transportation facility affect accessibility and utilization of services at MTC. Nine AWCs from catchment of two MTCs (Mandar and Karra) were purposively selected for data collection.

Selection of Respondents

- i. Mothers/Caregivers accompanying children to the MTC for treatment were selected for the data collection. These participants were finalized based on the following criteria; ‘mothers’ whose children were admitted in the NRC and had completed a minimum of 7 days of stay and ‘mothers’ who agreed to participate in this study. Mothers accompanying their children for follow up visit.
- ii. Nurses and doctors at the MTC were selected for the data collection. The participants were finalized based on the following criteria; ‘nurses’ and ‘doctors’ on duty in the MTC, available for data collection, and nurses and doctors who agree to participate in the study.

Tools for data collection

i. Designing the tools

The tools were prepared after a comprehensive review of available literature on the case setting i.e., NRC/MTC. Two groups of tool were prepared, which are as follows: (i) interview guide and (ii) observation guide. The interview guides were used for conducting in-depth interview with the respondents. Three different set of tools were devised for this study:

- a) Interview guide for mothers/caregivers.
- b) Interview guide for nurses and doctors
- c) Observation guide to note the proceedings in an MTC.

All the interview guides were open ended semi-structural guides. During data collection these semi structured open ended questions were sufficed with probes to elaborate/clarify responses from the participants. The tools were revised and

questions were added as the data collection began and the researcher got new insights in the facts. All the above mentioned tools were prepared, pilot tested and then a tool was prepared with the necessary changes. These tools were then translated from English to Hindi observing the quality check through reverse translations. Based on the data collected through in-depth interviews in this case setting guiding questions for the interview of *Sahiya* was prepared, which was used in the third case setting.

ii. **Process of data collection**

a. *Primary data:* Data collection for the study was conducted in two stages

i. *Facility Observation:* Observation of the care/treatment process was carried out at 5 MTCs that were visited. Observation was made based on pre-enlisted themes and notes were prepared. These notes were made by the researcher over multiple visits to these 5 MTC during the period of data collection. Beside this interactions between the mothers/caregivers and nurses at MTC regarding feeding, care or treatment during the period of data collection were also noted down.

ii. *In-depth interview:* In-depth interview of the; mothers/caregivers accompanying children for treatment; and nurse staff was conducted.

- Mothers/caregivers accompanying children to the MTC for treatment-A total of 23 mothers were interviewed from 5 MTCs.
- Mothers accompanying children for follow up- Only 4 mothers/caregivers accompanying children for follow up could be interviewed due to their poor turnout.
- Nurses and doctors- A total of 10 nurses were interviewed from the selected 5 MTCs. The doctors at selected MTCs could not be interviewed due to their unavailability (paucity of time).

b. *Secondary data:* Program document, Operational guideline for facility based management of SAM, facility register, case files and follow up cards were accessed for secondary data.

c. *Triangulation of data:*

i. Naturally occurring conversation (Gillham, 2000) - was used as a mean to triangulate, data gathered from response of mothers/caregivers and nurses. During this phase questions were asked to the mothers/caregivers and nurses without setting up a formal interview once initial data collection were over.

Few questions were asked in one meeting, mostly limiting to 2-3 questions at a time as the opportunity arise naturally. These responses were not tape recorded but noted down.

- ii. Informal interview - Informal interview was conducted with 10 mothers/caregivers for data triangulation. Beside this 5 nurses were interviewed to triangulate the accumulated data. Responses were noted down.
- iii. Observation - Observation of care process and interactions between mothers/caregivers and nurses at the selected MTCs were noted down to corroborate the previous responses and its actual practice within the selected MTCs. The discrepancies in response and actual practice by the respondents (mothers/caregivers, nurses) were further explored through informal interviews to arrive at possible explanations.

Case setting 2: Ambulatory Treatment Feeding Centres (ATFC), Medico Sans Frontieres (MSF)

The CMAM Darbhanga model (initiated as an emergency response) was handed to the Darbhanga medical college hospital in 2015. This was the first CMAM intervention program in India (Burza et al., 2015; Mathur et al., 2018). In 2017 MSF initiated a CMAM model based on the Darbhanga experience, in Chakradharpur, West Singhbhum through ambulatory treatment feeding centres (Médecins Sans Frontières India, n.d.). This model was purposively chosen as the second case setting. Given the fact that the CMAM model was functional in Chakradharpur block in West Singhbhum district, this place was purposively chosen for the study. West Singhbhum has four MTCs. Two MTCs were chosen; one located at the First Referral Unit (FRU) Chakradharpur and another located at the Chaibasa District Hospital to map the beneficiary care pathway.

The CMAM model operates through one ambulatory centre serving a cluster of villages (usually covering 4-5 villages). To keep maximum variation 9 ATFC⁴¹ (7 visited for data collection and 2 ATFC were visited for triangulation) clusters were selected across Chakradharpur block for data collection.

⁴¹ Selected ATFCs- (a) For the purpose of data collection - Toklo, Bindasarjom, Darkada, Unchbita, Toklo, Tonka tola, Ichindasai. (b) ATFC visited for data triangulation: Kamegara and Baipei.

Selection of respondents

- i. Three group of mothers/caregiver with children of 0-5 year of age were selected for data collection:
 - a. Mothers/caregivers accompanying their children to the ATFC for treatment or follow up.
 - b. Mothers/Caregivers accompanying children to the MTC for treatment. These participants were finalized based on the following criteria; mothers whose children were referred to the facility through their respective ATFC and had completed a minimum of 7 days of stay and mothers who agreed to participate in the study.
 - c. Mothers/caregivers whose children have been beneficiary of the CMAM program from the selected villages and those were willing to participate for data collection. These mothers were interviewed at their respective villages.
- ii. The ATFCs in CMAM intervention refer SAM children to the MTC located at FRU, Chakradharpur for further management. Beside this serious cases are referred to MTC at Chaibasa district hospital. Therefore the nurses and doctors from MTC Chakradharpur and MTC Chaibasa were purposively selected to explore the continuum process and challenges faced. The participants were finalized based on the following criteria; nurses and doctors on duty, available for data collection and willing to participate in the study.
- iii. Staffs (the CMAM staff such as; Health educators, Nutritional Link workers, nurses, doctors and administrative staff) from the CMAM program were selected for informal (unstructured)⁴² interview (Gary, 2004).

Tools for data collection

- i. Designing the tools

⁴² Unstructured interviews are suitable for long term field work where the respondents response in their own ways. This technique is suited when data collection through observation, field notes and involvement with the participants goes hand in hand. These interviews are more like a conversation directed towards gathering of in-depth information and do not have a pre-defined set of questions but questions generate during the interview.

The tools were prepared after a comprehensive review of available literature on the case setting i.e. MSF CMAM (Bihar and Jharkhand). Three groups of tool were prepared, which are as follows: (i) Semi structured open ended interview guide (ii) guide for Natural group discussion and (iii) observation guide. The natural group discussion guide was used for conducting in-group discussion with the mothers/caregivers at the MTC. Five set of tools were devised for this study:

- a. Semi structured interview guide for mothers/caregivers accompanying children to the MTC.
- b. Semi structured interview guide for mothers/caregivers accompanying children to the ATFC.
- c. Semi structured interview guide for mothers/caregivers whose children were treated under CMAM.
- d. Observation guide to note the proceedings in an ATFC and MTC.
- e. Guide for natural group discussion with mothers.

Semi structured open ended interview guides were used for this case setting. The tools were revised and guiding questions were added as the data collection proceeded and the researcher got new insights that required further probing. All the above mentioned tools were prepared, tested before preparing interview guides prepared. These tools were then translated from English to Hindi observing the quality check through reverse translations.

ii. Process of data collection

- a. *Primary data:* Data collection for the study was conducted in five stages:
 - i. Facility Observation- Observation of the care/treatment process was carried out 10 ATFC at 2 MTCs. Observation was guided by, but not restricted to the pre-enlisted themes. Proceedings at the selected ATFC and MTC were noted. These notes were made by the researcher over multiple visits to the selected ATFCs and MTC, Chakradharpur. Beside this interaction between the mothers/caregivers and nurses at the selected ATFC and MTC regarding feeding, care, treatment or referral during the period of data collection were also noted down. Observation notes were also made of care practices of mothers/caregivers at home, which the researcher witnessed during conducting interview with the participants in their community setting.

- ii. In-depth interview: In-depth interview of the; mothers/caregivers accompanying children for treatment at MTC and ATFC were conducted.
- Mothers/caregivers accompanying children to the MTC, referred from an ATFC for treatment-A total of 6 mothers were interviewed from the selected MTCs. In-depth interview was conducted with these mothers using a semi-structured interview guide.
 - Mothers accompanying children for treatment/follow up at ATFC – An in-depth interview of 10 mothers/caregivers accompanying their children for treatment/ follow up to the selected ATFCs were conducted using an interview guide.
 - A total of 5 Mothers of children treated under CMAM were interviewed at their village.
- b. *Informal interviews:* Informal interviews were conducted with 4 nurses from the selected MTCs and 2 doctors engaged in CMAM. Beside this informal interview was also conducted with 9 MSF CMAM workers. The researcher could not interview the doctor-in-charge of MTC Chaibasa, due to their unavailability.
- c. *Secondary data:* Program document on CMAM, operational guideline, case files and follow up cards were accessed for secondary data.
- d. *Triangulation of data:*
- i. Natural group discussion: Two natural group discussions were conducted with the mothers/caregivers at MTC.
 - ii. Naturally occurring conversation (Gillham, 2002) - Naturally occurring conversations at selected ATFC and MTC were noted over multiple visits to the selected ATFC and MTC. During this phase questions were asked to the mothers/caregivers and nurses (ATFC and MTC) without setting up a formal interview. Mostly 2-3 questions were asked at a time, as the opportunity naturally arouse. These responses were noted down. In data was triangulated during naturally occurring conversation with 2 nurses at MTC and 8 MSF staff. The response was noted down by the researcher.
 - iii. Informal interview - Informal interview was conducted with 3 mothers/caregivers at MTC for data triangulation. Four mothers/caregivers from 2 ATFC centres were informally interviewed to triangulate the emergent data.

- iv. Observation - Observation of care process and interactions between mothers/caregivers and nurses at the selected ATFC and MTCs were noted down to corroborate responses and its practice within the selected facilities. The divergence in response and practices by the respondents (mothers/caregivers, nurses) were further explored through informal interviews to arrive at possible explanations.

Case setting 3: Community based preventive, promotive and therapeutic care

Integrated Child Development Services is the largest government program that addresses child malnutrition by providing health and nutrition services delivered through anganwadi centres. The Anganwadi centres under ICDS (for children 3-6 years of age) were purposively chosen as a case setting. Anganwadi centres largely cater to children between 3-6 years of age were as children from 0-3 years of age are not within its purview. The Crèche (day care centre, PHRS) under the project Action against Malnutrition (AAM) provide day care to children of 0-3 years of age, community based management of malnutrition and referral, if required. Therefore this intervention was also purposively chosen as the third case setting.

Selection of respondents

Primary respondents for this care setting were the FHWs and mothers/caregivers/beneficiaries of ICDS and Crèche as well as the crèche workers.

- i. Mandar and Karra do not have a CMAM program. The children screened and identified by the FHWs are referred to MTC for management of malnutrition through MTC. Anganwadi workers, Sahiya and Auxiliary Nurse Midwife (ANM) from anganwadi centers in the catchment area of two MTCs (Mandar and Karra) were purposively selected for this study.

The CMAM intervention in Chakradharpur works along with the existing government health structures. The FHWs (AWW and Sahiya) screen children for malnutrition and refer them to the ATFC for further treatment. The AWWs from the previously selected 7 ATFC (Chakradharpur) catchment were purposively selected as participants in this study. The FHWs were selected as participants in the study based on the criteria that they were present and willing to participate in the study.

- ii. Mothers/caregivers with children between 0-6 years of age were chosen for interview. These mothers were selected from villages in catchment of MTC Mandar and Karra; and the selected 7 ATFCs clusters in Chakradharpur.
- iii. Mothers with children 0-3 years of age and enrolled in crèche (Nagri village, Ratu block, Jharkhand) were selected for in-depth interviews.
- iv. Crèche workers of the selected crèche were chosen as respondents in this study.

Tools for data collection:

- i. *Designing the tools:* The tools were prepared after a comprehensive review of available literature on the case setting i.e. AWC under ICDS and Crèche under the AAM project. Three groups of tool were prepared, which are as follows: (i) interview guides and (ii) observation guide (iii) Guide for natural group discussion. A detailed observation guide was prepared on the care process at each of these service points; AWC/VHND and Crèche.

The interview guides were used for conducting in-depth interview with the respondents:

- a. Semi-structured interview guide for FHWs; AWWs, Sahiya and ANM.
 - b. Semi-structured interview guide for crèche workers
 - c. Semi-structured interview guide for mothers/caregivers
 - d. Observation guide for AWC/VHND and Crèche
 - e. Guide for natural group discussion.
 - f. Guide for focused group discussion with FHWs
- ii. *Process of data collection-*
 - a. Primary data
 - In-depth interview- In-depth interviews were conducted using semi-structured interview guides.
 - In-depth interview of 16 AWW from villages of the catchment of selected MTC and ATFC were conducted. A total of 7 sahiya were interviewed
 - In-depth interview was conducted with 12 mothers in their village setting.
 - In-depth interview of 2 crèche workers was conducted.

- Observation-
 - Three VHNDs were attended by the researcher. The proceedings during VHND were noted down. The interactions between mothers/caregivers and FHWs were noted down in verbatim.
 - Beside this, proceedings of the selected crèche were noted down by the researcher. The selected crèche was visited three times by the researcher during with observational notes were made.
 - Informal interview was conducted with 5 mothers during their visit to VHND.
- b. *Secondary data:* Program document on ICDS, operational guideline for AWC and VHND and operational guidelines for Crèche were reviewed for collection of additional data. Beside this documents pertaining to the role of AWW, SAHIYA and ANM in management of malnutrition were also reviewed.
- c. *Data triangulation*
- Natural group discussion- A total of 6 NGD was conducted with the mothers in their village setting. These NGDs were conducted on pre-defined themes such as; support for child care, health and nutrition service delivery at community level, organization of care functioning of AWC and VHND etc. that emerged during analysis of the accumulated data. These NGDs lasted for 30-45 minutes. These NGDs were not tape recorded but notes were made.
 - Focused Group Discussion- One FGD was conducted with the Sahiyas in Mandar Block.

Data collection for the study was conducted in three stages: (i) Observation of the care process at selected AWC/VHND and one Crèche was conducted and notes were made. (ii) In-depth interview of FHWs and crèche workers was conducted. (iii) Then informal interview with the mothers/caregivers accompanying children for VHND/AWC and crèche was conducted. Only one mother could be interviewed having child as a beneficiary of crèche. (iv) One focused group discussion was conducted with Sahiya and (iv) Lastly, Natural group discussion was conducted with the mothers of children 0-5 years of age.

The data collection was initiated during agriculture season and mothers were engaged in cultivation. These mothers leave for work early in the morning and return in the evening. Despite of multiple visits to the villages, the mothers could not be contacted for interview.

Similarly ANMs could not be interviewed due to their unavailability for this study.

3.4.1.3 Method of Data collection:

A pilot was conducted at two study points; Mandar and Chakradharpur block; to test if research tools address the research questions; i.e. if the questions were comprehensible and had a consistent flow. The major outcome observed from the pilot included; time taken for the interviews, understanding and comprehensibility of the terms used in interview guides, flow of the questions facilitating the respondent for better involvement and the additional themes that required being included in the interview and observation guides. The final board themes forming interview and observation guides are enlisted below and its details are attached as tools in the annexure:

- Location of care
- Organization of nutrition care and rehabilitation services
 - Prevention
 - Treatment
 - Rehabilitation
- Health care services
- Treatment/care management
- Services provided at different care setting
 - Distinct services
 - Follow up
- Resource and infrastructure
- Knowledge and perception
 - of providers
 - of beneficiaries
- Role and involvement in treatment/care
 - Of health care providers
 - Beneficiaries' carers
- Issues of child care

- Normal children
- Sick children
- Children beneficiary of malnutrition treatment intervention
- Children discharged from malnutrition treatment intervention
- Child care support services
- Transport services
- Experience of caregivers of beneficiaries with the nutrition care and rehabilitation interventions
- Barriers faced by the health care providers and beneficiaries' carer's in experience of continuum of care

A qualitative study was conducted with the providers and caregiver of beneficiaries at four different care points, MTC, ATFC, AWC and Crèche. The researcher employed primary and secondary sources for data collection.

1) NRC/MTC

Data collection was conducted in between March 2016 to March 2017. The interviews were conducted at the chosen facility and each interview lasted for about 30-45 minutes. Multiple visits were made to the respondents accompanying beneficiaries (mothers/caregivers during their stay at MTC) and the health care providers (nurses working in the MTC) till all aspect of guiding schedule was covered.

Daily observation of care processes at the facility were noted and later probed along with newly emerging questions or data gap that were not covered in the previous interview guides. These themes were explored with the mothers/caregivers and nurses (in-charge or on duty) to gain deeper understanding of the care processes and the rationale behind these processes.

Program reports were searched through the internet and accessed to note down the components of continuum of care in the intervention.

2) CMAM

Data collection was conducted in between June 2017 to October 2017 and then in April 2018. ATFC facility observation was conducted. In this course, full day care

processes at ATFC were documented. The observations at each ATFC were noted and later reviewed along with data collected through interview of mothers and ATFC staff. The new questions emerging post review were included during further observations of care process at ATFC or MTCs. These questions were then asked with the mothers/caregivers with children being treated through CMAM intervention; and nurses at ATFC and MTC to gain deeper understanding of the processes and the rationale behind these processes.

Mothers/caregivers coming to the ATFC were interviewed using a semi-structured open ended interview guide. These interviews were conducted at the chosen ATFCs and each interview lasted for about 40-50 minutes. Mothers/caregivers of children discharged from the CMAM program were interviewed to understand the continuum of care post discharge from the intervention. These interviews were conducted at home and each interview lasted for about 20-30 minutes. Multiple visits were made to these mothers at their respective villages till all aspect of guiding schedule was covered. The informal (unstructured) interview was conducted with care providers at ATFC and MTC to address questions arising from previous facility observation and interview of mothers/caregivers.

The published and unpublished program documents were reviewed to gain clarity about the intervention model. Care process at MTC facility (Chakradharpur and Chaibasa) were also observed and noted. Mothers/caregivers accompanying their children for therapeutic care at the MTC were engaged in a in-depth interview to understand; their experience of continuum; challenges faced throughout the care pathway; and to note their experience with phenomena of care at the MTC during their stay. Beside this, interview was also conducted with mothers and nurses at MTC located at District Hospital, Chaibasa to understand their experience and challenges of continuum linking CMAM to facility based care.

3) AWC AND CRÈCHE

Data collection was conducted in between March 2016 to March 2018. In-depth interview using semi-structured open ended interview guide was conducted with the AWWs, Sahiya and Crèche workers to understand; their role and responsibilities in community based prevention and management of malnutrition among children, their

understanding of the program and challenges faced in community based management of malnutrition. The ANMs could not be interviewed by the researcher. In-depth interview and natural group discussion were conducted with mothers of 0-6 years of children to capture their experience with preventive care services and nutrition care and rehabilitation services at the community level. Published and unpublished reports, documents, guideline and research studies on anganwadi centres, FHWs and AAM project were reviewed and used as secondary data.

3.4.1.4 Data recording and data analysis

A Multi method approach was adopted for data collection. Different tools were adopted for data collection to overrule the possibility of depending on partial analysis or partial understanding of the process and components of continuum of care in nutrition care and rehabilitation interventions.

Observation of care facilities and care process at a particular care setting was documented and notes were made. Role and involvement of different stakeholders were recorded; mothers, caregivers, nurses, doctors, ANM, AWW, ASHA and CMAM care providers.

The interviews were conducted with stakeholders using interview guides on question arising from the review of program documents and observation notes. The responses and observational notes were re-visited and the discrepancies and similarities were noted down. Meanwhile the new themes emerging with progression of data collection were noted separately. Questions to explore these themes were prepared and included in the existing interview guide and observation guides. These tools were then used in the subsequent interviews.

The in-depth interviews were tape recorded and noted whereas the informal interviews were noted down. In both cases the interviews were documented with prior permission of the participants. The interview guide used open questions and the responses were extended using probes to clarify or obtain a more detailed description from the respondents. Informal interviews were conducted with the respondents across care settings; for clarifying and obtaining detail on data that showed deviation from responses and practises. These responses were not tape recorded but noted as accurately as possible. In such case the themes were raised instead of asking structured questions to look for answers. Data collected through in-depth interviews, informal interviews, natural group discussion and

document review was therefore combined with observational data for each category of stakeholder in a particular case setting.

The interviews, observation notes and documents were reviewed and themes emerging next were also explored, hence arriving at possible explanations for the phenomena. The understanding and practice of the process of continuum of care among care providers was noted and triangulated at each level of care and across immediate levels of care⁴³. Similarly, challenges pertaining to continuum faced by the stakeholders was explored and observed, corroborating the continuum of care challenges/gaps identified by the researcher. Documents comprising of; Government letters/Department letters, policy statement, guidelines and protocols along with facility records were reviewed to construct a frame to relate it to the experiences of continuum of care at different care setting brought out by the observation and in-depth interviews and informal interviews.

Data was reviewed frequently to ensure the quality of data and necessary corrections were made. Periodic triangulation of data (observational data and interview responses) was carried out throughout the process of data collection. The data analysis and collection was carried out simultaneously to facilitate corrections (whenever required). Multiple visits were made to the facilities and respondents for clarifying discrepancy or missing data.

Data collection was stopped once data become repetitive that is no new data were added.

Data collected through interviews was translated from Hindi into English for analysis. This data was analysed through listing of responses, categorising these responses into separate domains, coding the domains and data summation. The observational notes were reviewed and categorised into themes. Data from interview and observational notes were compiled and coded.

A sequential approach was adopted for data analysis. Initially the concept of continuum of care was detailed; the domains, the principals, classifications and drivers. This theoretical approach was explored within the different selected nutrition care and rehabilitation interventions. As the evidences were collected, clarity developed regarding the phenomena and its essence within the nutrition care and rehabilitation interventions. As the data

⁴³ i. Crèche to AWC/VHND

ii. Crèche or AWC to MTC and MTC to AWC or Crèche

iii. AWC to ATFC, ATFC to MTC, MTC to District Hospital, District hospital to -MTC or ATFC and ATFC to AWC

collection proceeded new themes emerged and the themes were explored to see if they qualify or contradict the initial understanding of the phenomena. These themes were included in the further interviews, observations and document review.

Analysis of data progressed towards identifying the overarching themes that captured the phenomena undertaken in this research. The major themes were arranged in sequence and the compiled data was thus analysed. The data was analysed separately for each case setting and then re-analysed for differences and similarities in knowledge, practice and understanding of continuum of care among the care providers and beneficiaries within and across different level of care. The empirical result of the study was then compared to the initial understanding of the phenomena and the evidence challenging this understating were revisited to gain clarity and arrive at possible explanations; eventually adding to the theory. The final conceptualization of the phenomena was presented through an analytic explanation grounded in the evidence. The report has been substantiated with narratives and relevant quotes across case setting.

3.5 ETHICAL CONSIDERATIONS

The researcher obtained an approval from the Institutional Ethical Review Board (Jawaharlal Nehru University) before initiating the study. The study involved collection of primary data hence approvals for data collection was obtained from the concerned authorities for each of the units; in-charge of the MTC, AWCs, Crèche and CMAM.

Informed consent was obtained from the participants. For personal interviews, prior consent was sought from the respondents either written/oral as per the convenience of the respondent. Before than the participants were explained the objective and implications of this study in detail and their questions or doubts regarding the study or the process were addressed. The consent form, translated in Hindi language was read and explained to the respondents. The participants were more comfortable with providing oral consent. Only after the respondents give their approval, interviews were conducted. The respondents were free to stop and choose not to answer the questions as per their comfort. The interviews were tape recorded with prior permission of the participants. Some interviews were noted down instead of being tape recorded as the respondents were not comfortable with recording of the conversation. The information was collected maintaining privacy; anonymity of the respondents was maintained to the extent possible.

However, direct observation was conducted uninformed. Confidentiality of the respondent was maintained in analysis of the data and final reporting.

3.6 LIMITATIONS OF THE STUDY

The study includes data collection from purposively selected CMAM models, Crèche, AWC and NRC/MTCs hence might not be a true representation of continuum in nutrition care and rehabilitation interventions at the national level. The study holds a possibility of bias, as the interviewees might have given the socially desirable answers. Since most portion of data collection was based on self reported data the responses cannot be free of selective memory. However the data obtained through interviews were triangulated at each step to overrule such form of biases.

The data collection for CMAM started early when the program has just started to roll out. The data collected largely bring out the nuances of continuum of care within CMAM intervention; perception of the CMAM care providers, experience of mothers/caregivers of beneficiaries under CMAM and continuum of care challenges/gaps. Despite the fact that data collection took place in three phases i.e. early 2017 and late 2017 and early 2018 to gather a comprehensive picture of the program, the fact that the program was undergoing course correction can't be ignored. Scenario post course correction has not been captured by the researcher in this study.

The study could not include enough of three significant stakeholders in the care process ANM, doctors and mothers of children enrolled under crèche. Thereby the study does not depict their challenges and contribution in the continuum of nutrition and rehabilitation care. The ANM at the community level and doctors in charge at the facility level have an important role to play in term of collaboration and integration of care facilitating the continuum aspect. These missed aspects of the study can be taken up for further research.

3.7 OPERATIONAL DEFINITIONS

Nutrition care and rehabilitation- A comprehensive approach that address nutrition health, management of malnutrition, acute care, recuperation and recovery of the beneficiary from malnutrition towards improved health. The process entail provisioning of; preventive and promotive health care services, nutritional assessment, nutrition diagnosis, nutritional counselling, nutritional management, nutritional support, referral and

continual of nutrition care. Focal point in rehabilitation care is a holistic approach towards treating the beneficiary and not disease alone. Rehabilitation care aim to restore health status as close to normal as possible over a long period of time. Rehabilitation services can be delivered through different settings such as; facility (hospital; residential nutrition rehabilitation centres; transitional care units; day nutrition rehabilitation); or community (ambulatory units; home based care etc.). The process of follow up, monitoring and evaluation continues through each of the above mentioned steps and based on the outcome either; (a) the provision of services are continued; (b) the provision of services are refined based on reassessment outcome at each step; or (c) referral to an appropriate provider(s). These steps are connected and inter-related. These care processes may take place at different settings and involving multiple providers. (Adopted from WHO 2013; Sylvia & Tavares 2016; Mirapeix et al; Ball, Desbrow & Leveritt, 2014; Hammond, Myres & Trostler, 2014).

Experienced Continuum of care- The experience of a coordinated and seamless care is consistent to the changing health care need of a beneficiary, with a smooth progression during transition across different care services, different care providers and different levels of care. Autonomy of the beneficiary is central in choosing a care provider and care/treatment plan (Adopted from Wolf, Niederhauser, Mashburn & LaVella, 2014).

Care coordination- The delivery of services by different care providers in a timely and complementary manner in order to achieve connected and cohesive patient care through effective communication between care providers across different care setting and different levels of care. (Adapted from Uijen et al., 2011; Evashvick, 2005)

Transition of care- Transition of care is the movement of a beneficiary from one care setting to another or from one service to another within the same care setting through referrals. Transition of the beneficiary from one level of care to another or one provider to another is based on the changing health care need of the beneficiary and output of the previous treatment regimen. Transitional care encompass a diverse range of services and care environments, to facilitate safe and timely transition of patients across different levels of care or care across settings, bridging the gap between providers, services and settings. The process is not restricted to the beginning and end of services in a setting. It includes activities prior to discharge from a care setting or a level of care and immediate post discharge follow up at the next care setting or next level of care. Communication and

information exchange between care providers regarding; pre-discharge assessment of beneficiary, care plan, preparing beneficiary and carers for transition of care, follow up plan, identification /involvement of support services, and capacity building of beneficiary for self management is essentials of transitional care (Adapted from: White & Birmingham, 2015; Naylor, 2006; Penny, 2015; Allen et al., 2014).

Case management- Case management is a process that encompasses communication and facilitates care along a continuum through effective resource coordination. The focus of case management is on; optimal access to health care; appropriate utilization of resources; and coordination of care provided to beneficiary by case managers. The process encompass goal, intervention services and output pertaining to prevention of illness, promotion of health, care and recovery for the targeted beneficiaries. This include assessing the health care need of a beneficiary and their care givers, development of appropriate care plan, aligning care processes/services, continuous monitoring and follow up through constant contact with the beneficiary and caregiver. Case management ensures that appropriate care is provided; at the right place, at the right time by the right health care providers. Case management is based on care plan developed by providers of each care setting addressing to the health care need of the beneficiary. Standardization facilitates the care providers to monitor clinical activities throughout the continuum; and the beneficiaries to actively participate in the process of achieving anticipated care outcomes. Case management can be limited to one care setting or across different care settings. (Adapted from WHO, 2016; Uijen et al., 2011)

Care plan- Care plans are tool to link past and current care to address the future care need. An appropriate care plan facilitates linking of beneficiaries to care services for an optimal health care. Flexibility is a significant element of care plan to address the changing health need and changing circumstances of beneficiary. Ongoing monitoring and follow up is significant to adjust the care plan according to the changing health need of beneficiary. The process include development of a care regimen defining the treatment/care in terms of its scope, type and frequency of services to be provided based on clinical assessment, medical and social history of the beneficiary. The process involves beneficiaries and families in designing of a care plan; redesigning care/treatment plan based on the treatment outcome and /or change in health care need of beneficiary. Individual care plans based on beneficiary's health care need, values, preferences, context and support system

impact its effectiveness. (Haggerty et al., 2003; Reid et al., 2002; Gardner, Banfield, McRae, Gillespie & Yen, 2014).

CHAPTER 4

FACILITY BASED CLINICAL MANAGEMENT OF SEVERE ACUTE MALNUTRITION (SAM)

Case fatality in SAM children can be reduced if they are provided appropriate treatment and prevention services on time. The national health program identifies children with severe acute malnutrition according to two categories; SAM children with medical complications that need facility based care and SAM children without complication who can be managed at the community level. Nutrition Rehabilitation program provide facility based care to SAM children with complication, through; specialized treatment at nutrition rehabilitation center (NRC) and follow up till their recovery. The Nutrition Rehabilitation Center is a separate unit within a health facility dedicated for management of SAM children. These centers focus on improving the care provided to SAM children thereby reducing SAM related mortality. These centers are located in FRU/ CHC\and district hospitals. The NRC at FRU/CHC is 6-10 bedded units whereas the NRC at district hospital has a unit with 10-12 beds. Children are admitted in these facilities under defined admission criteria and discharged from the facility on attainment of pre-defined discharge criteria. The treatment regime requires a SAM child to stay at the facility for a specific period of time varying between 14-21 days. To prevent relapse, children discharged from NRCs require follow up at the community level. There are three primary components of the treatment regime; (a) therapeutic food (b) medicines and (c) counseling-cum-nutrition education for caregivers. Children continue to be in the Nutrition Rehabilitation program till they meet criteria for final discharge from the program.

4.1 MALNUTRITION TREATMENT CENTRE IN JHARKHAND

Nutrition Rehabilitation Centers are known as Malnutrition Treatment Centre (MTC) in Jharkhand. This intervention provides facility based ‘treatment’ for SAM with ‘medical complications’. In order to combat malnutrition among children, the National Rural Health Mission (NRHM) based on the standards of WHO, envisioned management of children with severe acute malnutrition (SAM), through facility based therapeutic care. In this regard, Jharkhand initiated 7 MTC units in 2009 among four districts, namely; Ranchi, Garhwa, East Singhbhum and West Singhbhum. These MTCs provided medical care,

therapeutic feeding, micronutrient supplement and counseling to mothers/caregivers accompanying children to these centers (*SNAP Assessment*, 2013). Since 2010, the Health and Family Welfare, Government of Jharkhand with technical support from UNICEF, has replicated MTC in other districts of Jharkhand, The number of beds in each of these units are decided upon the case load in that area (Government of Jharkhand, Ministry of Health & Family Welfare, n.d.; Aguayo et al., 2012).

4.2 AN OVERVIEW OF SERVICES PROVIDED AT NUTRITION REHABILITATION CENTRE

Nutrition Rehabilitation centers provides facility based care to SAM children with medical complications. This facility based care model intend to; (a) provide clinical management for severe acute malnutrition and reduce SAM induced mortality among children; (b) promote physical and psychosocial growth among SAM children; (c) improve capacity of mothers and other caregivers to provide appropriate care and feeding to their children and (d) identify the social factors responsible for a child slipping into SAM.

At community level FHWs (ANM, AWW and ASHA) identify SAM children based on a MUAC of <115 mm, bilateral pitting oedema or medical complication and refer them to the NRC. At NRC all referred children are assessed for MUAC <115mm and/or weight for height i.e. WHZ score <-3SD and/or presence of oedema and/or signs of visible wasting. Children having presence of either one or more than one condition mentioned above are screened for medical complications. Children with any medical complication are enrolled in the program and send for further diagnosis.

Treatment is provided to SAM children in three phases; stabilization, transition and rehabilitation. The NRC care team comprise of Medical Officer in charge, nurses, nutrition counselor, medical social worker, cook and cleaner. NRC provides care and monitoring to SAM children that continue throughout 24 hours. The core services provided in NRC include; therapeutic feeding, sensory stimulation, emotional care, assessment of social factors for SAM in admitted child, counseling mothers/caregivers on appropriate care, feeding and hygiene, demonstration to mothers and practice by mothers on preparation of locally available and acceptable energy dense food. The care regimen includes a stay at the facility for 14-21 days depending on recovery of SAM children. Weight monitoring and MUAC measures are recorded and measured against the set target on a daily basis. The

nutrition rehabilitation program provide for a bed for all admitted children. Usually mothers or caregivers from the child's family stay with them at NRC. The program provides incentive to the mothers and caregivers for encouraging them for completion of the treatment regimen and avoids default. The mothers and caregivers accompanying children are prepared by the NRC care team on; cause of malnutrition, its prevention to avoid reoccurrence, appropriate child care, age appropriate feeding and hygiene practices to improve their capacity for home based care once the child is discharged from facility (NRC).

If a child attain 15% of weight gain, consistent weight gain for 3 consecutive days, regained appetite and is free of medical complications they are discharged from nutrition rehabilitation centre. Before discharge the NRC care team needs to inform the respective FHWs for follow up at the community level. Children discharged from NRC; need to come back for follow up in every 15 days for a month and then once a month till they attain a WHZ -1SD. These children are then discharged from the nutritional rehabilitation program as cured cases.

If a child do not respond to the treatment provided at NRC i.e. show no recovery from poor appetite, oedema or gain weight for at least 5gm per day for 3 consecutive days they are discharged from NRC as non-responders (after no medical reason is found and the condition does not improve by the care provided at NRC) . These children are referred to a higher level facility. Children discharged from the program if is again eligible for treatment within two months is admitted into the program as relapse case.

4.3 CARE PROCESSES IN MTC

4.3.1 Arrival

Though admission at MTC is seen as stepping into nutritional care regimen, this study takes into account arrival of child at MTC as first step into the program.

As the treatment centers are primarily located at administrative block, children from all over the block come for treatment. These children are mostly brought to MTC by their mothers. In some cases mothers are accompanied by the frontline health workers; anganwadi workers (AWW) and Accredited Social Health Activist (known as Sahiya in Jharkhand), whereas mostly mothers come either with their mother-in-law, sister-in-law or

husbands. There are three clearly distinguishable groups of arrivers (Department of Health and Family Welfare, 2013; Ministry of Health and Family Welfare, 2011) those who are referred to the MTC by frontline health workers (ANM, Sahiya and AWW⁴⁴); those referred from another health unit or facility, such as; child OPD, FRU, PHC, CHC) and the self referrals (children who are not referred are brought to the MTC by their parents for check-up and treatment).

“The child was not gaining weight. She was weak. Sahiya brought me here”
(Mother of MTC beneficiary)

The scenario of arrival varies for mothers who have been previously counseled for the treatment and those who are not. Women who are counseled to get their children treated at the MTC or referred by frontline workers are mostly accompanied by the community care providers, i.e. anganwadi worker or Sahiya. These women come prepared for their stay in the Facility. Whereas, women who come for the treatment of their children on their own, are mostly those who were suggested/counseled by their kin or peer and hence come

⁴⁴ The Integrated Child Development Services (ICDS) scheme allots one trained person per 1000 population to cater health and educational need of children 0-6 years of age. AWW is a trained worker allotted under ICDS scheme for bridging the gap between the community and health care. The AWW is stationed at an anganwadi centre. This centre serves as the platform for delivery of health, nutrition and education services to children and women. The anganwadi centre is run by AWW. The primary role of AWW encompass providing nutrition counselling, health education and support to mothers/ primary care givers in appropriate child care and nutrition and distribution of supplementary nutrition to pregnant and lactating women and children 3-6 years of age. The AWW is responsible for weight monitoring of children and report any growth faltering to the health personnel for further action.

In this chapter and the following ASHA will be referred as Sahiya. The Accredited Social Health Worker (ASHA) is known as Sahiya in Jharkhand. Under NRHM an ASHA is a trained female from within the community who links community to the public health system. She is the first point of contact for any health need of the community. ASHA is responsible for promoting awareness on health and its social determinants; bring behavior change; delivery of certain curative care services and makes referrals. She also provides counseling for improved maternal, child care and child feeding. She is also responsible for mobilizing communities for accessing and utilizing health care services delivered through anganwadi centre, sub centre or primary health centre; including health check up, immunization, antenatal and post natal check up, supplementary nutrition etc. The ASHA is responsible to provide home based newborn care and infant and young child feeding services in the community. Their role involve in providing promotive, preventive and curative care complementary to the health care providers. Educating and mobilizing community for: improvement in health behavior, improvement in access and utilization of health care services and increase in community participation are important role of a Sahiya.

Auxiliary Nurse Midwife is a health worker posted at the health Sub Centre. These workers are responsible for providing primary health care to the community. Their primary responsibilities include immunization, delivery of basic health services and treatment of minor illness among children, provide antenatal care and post natal care services to women, counseling and health education to mothers on nutrition, health and management of illness, referral for illness and malnutrition to a higher facility.

The AWW, Sahiya and ANM are responsible for screening children, early identification of SAM and referral to MTC for further diagnosis.

unprepared for their stay at the MTC/NRC. These women primarily come to the MTC out of their own concern for inactiveness, lethargy, sickness or visible signs of weaknesses in their children. Sharing of experiences and treatment stories at MTC by women back in their respective villages also stimulate other mothers to bring their children for treatment of weakness.

This mechanism of arrival was however seen in only one of the MTC (Mandar). Rest of the MTC visited (in Ramgarh, Karra and Ranchi) practiced a somewhat different procedure. Since all these MTCs are located within the premise of RCH unit, most of the children coming here are referred by the pediatric ward. Bed occupancy in these MTCs remains high. This by no means imply that referral of children by the frontline workers is poor. One of the above listed MTCs (Ranchi) has made it mandatory for all children coming to OPD, to also be screened for SAM at the MTC. Rest of the two MTCs i.e. Ramgarh and Karra also have children referred from the OPD but low in numbers when compared to the Ranchi MTC. In these MTCs, children coming for OPD are referred for screening if the pediatrician perceives the child in needs of further assessment. It is upon the judgment of the concerned pediatrician on duty at OPD to refer a child to the MTC for screening. As a result all sick children who come to the OPD for treatment are screened for malnutrition. If the child is identified as a SAM, immediate proceedings are made for their admission. If the child comes clean in the SAM screening, they are treated for their sickness and send back home.

4.3.2 Admissions

Admission at MTC is a multi step procedure. Every child that arrives at MTC is first screened for SAM. The screening procedure includes testing children for SAM, such as measuring Mid Upper Arm Circumference (MUAC), height and weight of the child. If a child is less than 6 month old then length of child is measured. The admission is done by the nurse staff of at MTC and the doctor (often Medical Officer in charge) is responsible for daily check-up and prescribing the treatment to the nurses. MTC Karra and Ramgarh had a pediatrician whereas MTC at Doranda and Mandar were managed by the Medical

Officer in charge. These facilities did not have a pediatrician⁴⁵ (Government of India, 2017).

On arrival the children are taken to the MTC office. This office is usually a 1-2 room small space, which is used for multiple purposes. It serves as an area for screening, counseling, and storage and at some units even as a kitchen. It was observed that measurement of MUAC was the first step practiced in all the centers visited. MUAC measurements of each child were recorded. All the MTCs visited were equipped with the electronic weighing machine however scale for measuring height was available in only one of the MTC. All the other MTCs visited were doing it without the height measuring scale. In order to facilitate screening, the nurses had made a rough outline of height measuring scale on the wall. If any child of more than two years of age came for admission, he/she was made to stand against this handmade scale and the readings were recorded. In absence of an authentic scale the reliability of height measured for each child raise doubts about the validity of these measurements. Each MTCs visited had a folding scale to measure height/length of children less than two years of age. . In order to measure the length of these children, folding height/length scale was unfolded by the nurse staff and then children were laid down on it. The nurses took care that back of the child laid flat on this scale, after which measurements were noted down.

Weight of children was measured by a digital weighing scale. One MTC had separate weighing machine for children of infants and children of 2-5 years of age. Other three MTCs recorded weight of children using same weighing machine. The nurses could easily record weight of children 3-5 years of age, however for 0-2 years of children, the weight measurement were recorded in a two steps. First the mothers were asked to carry their babies and step on the weighing scale. The weight was recorded. In second step, once again the mothers were asked to step on the weighing scale but this time without their babies and the measurement were recorded. Thereafter recorded weights were compared and hence the actual weight of the child was calculated and registered. At the MTC having separate weighing machine for infants, nurses faced difficulty in keeping the infant still at the weighing machine to record the exact weight. The infants cried on separation from their mother/caregiver and hardly lay still. The readings on the digital weighing machine

⁴⁵ According to Rural health Statistics 2016-17; Jharkhand has a total of 13 pediatricians whereas 199 positions are vacant. There is a shortfall of 175 pediatricians in the state.

kept on flickering with the infant's movement. Under such circumstances the other weighing machine was used; measuring weight of mother with the child and then without the child. Then the actual weight was calculated to make an assessment.

This process was followed by comparing the recorded MUAC, height and weight of children against Weight-for-Height reference chart⁴⁶ and assessment for presence of oedema. If assessments indicate the child to be a case of SAM, then proceedings were made to admit them for facility based care. If the measurements were not in accordance to the operational guidelines, children were sent back. This however was a rare practice. Majority of the cases were admitted at MTC for further treatment irrespective of their not having a medical complication.

The nurse staff counseled mother/parents/caregivers of SAM children on the need of admission at MTC, significance of a facility based care and the basic facilities that they would get during their stay.

“Your daughter has become very weak. We are admitting her here. Here she will get medicine... she will get food. You will get a bed, pillow and blanket” (Nurse, MTC)

These services included bed and bedding, cupboard to store their belongings and incentive⁴⁷ for the number of days they spend at MTC. The nurses however did not explain mothers on the care services that their children are entitled to receive at MTC. Nurses do tell mothers that their malnourished children shall receive treatment and care at MTC but barely explained the treatment in detail.

“Your child will recover but you will have to stay here. You will have to stay here and feed whatever we give for feeding them. Then they will become healthy” (Nurse, MTC)

The nurses informed mothers that they could need to stay at the MTC for 14-15 days. As and when the mothers/caregivers decide to stay back at the facility, admission process begins. Sometime mothers/caregivers come prepared to the facility and as soon as children are detected with SAM they agree for their child's admission into the treatment program.

⁴⁶ Every MTC had a weight-for-height or weight-for-length reference chart, starter diet reference chart; catch up diet reference chart and antibiotic reference chart pasted in the office. These charts guide the nurse staff to provide treatment and care with precision.

⁴⁷ All mother accompanying SAM children to MTC are supported with a daily incentive of Rs.100 to compensate their wage loss. This incentive is handed over to them before their child is discharged from MTC.

In contrast some caregivers/parents choose to go back home to make arrangements, come back in a few days and get their child admitted for the treatment program. Most of the mothers had brought their other children also to MTC for reasons such as; either these children were too young to be left behind, there were no one to take care of them back at home or if the child was big enough mothers used to bring them along to take their help in care of admitted child.

“My husband leaves for work early morning, who will take care of her (elder daughter)? At least here she plays with my child. She keeps him busy” (Mother of MTC beneficiary)

The admission process is not as simple as it sound. Identification as a SAM does not translate into an immediate admission of children. To a great deal it depends on the bed occupancy rather ‘bed vacancy’. If the bed is vacant, details of the child, its anthropometric measurements and information on sickness is documented and stored. Pictures of the child are taken for the record and same is done on discharge. Once child information is put in the records register, bed is assigned to the child. For times when there is no bed vacancy (which occurs quite frequently), screening is done and if the child is found to be a SAM case, the mothers/caregivers are asked to come back in a few days.

“The nurse asked me if I will wait for some time. She told me a bed will be vacant by 5 days.” (Mother of MTC)

Often the nurses give their phone numbers and the parents are required to contact them for information on bed vacancy. If there is a bed vacancy and parents call up to check, the nurses tell them to bring their children for admission. It is not easy for parents to get their children admitted into the treatment program specially who do not have a phone or are unable to contact the MTC nurse staff in every 2-3 days. Usually the time they call up to inquire on bed vacancy; some other child gets the vacant bed. Often parents/caregivers visit to these facilities a few times before they get can get their child admitted.

4.3.3 Appetite test

According to the operational guidelines appetite test a pre-requisite for admission into facility based care for SAM children. The whole objective of having a facility based care is to provide medical attention to the undernourished children with medical complications in order to reduce risk of mortality. Simply put the program intents to reduce fatality due

to treatable illness such as diarrhea or pneumonia ⁴⁸ (Ministry of Health and Family Welfare, 2011).

The program guideline propose for a community based nutritional rehabilitation for SAM children with a good appetite; and facility based management for complicated SAM; the reason being, complicated SAM cases are at immediate risk of death in absence of adequate nutritional and medical care, which they are less likely to receive if treated at home/community level. The appetite test facilitates in identifying children with complicated and uncomplicated SAM and thereby to distinguish care need of children i.e. a facility based inpatient care or community based care. The rationale behind appetite test is to avert missing out on the cases i.e. children with complicated SAM who are in urgent need of medical and nutritional care. SAM with medical complication lead to a loss in appetite, such cases are in need of urgent medical attention, whereas children with a good appetite can be managed with an extra care at the community level.

“...we admit the child...we give them therapeutic feed, whatever is the schedule. If milk is distributed we tell mothers to feed them milk. If halwa (dry therapeutic feed) is distributed we tell mothers to dilute it and feed it to their children. If the child is able to finish it, it means they can eat and we increase the portion...if the child is not able to eat we ask mothers to make effort to feed their children. This continues till the child is able to finish the given food completely. Then slowly the portion of food given is increased” (Nurse, MTC)

Ideally an appetite test is to be done before admissions. However at MTC, appetite test were treated by the nurse staff as first meal of the child at MTC i.e. there is no appetite test⁴⁹ during screening but the child is admitted first and then when it is time for

⁴⁸ The program ‘regards’ wasting as an *independent* phenomenon of ‘weight loss or failure to gain weight’ where acute malnutrition occurs due to *recent* failure of acquiring adequate nutrition and/or *recent* episodes of illness. The operational guidelines thus acknowledge inadequate food intake, sickness and improper caring as the primary cause which indeed is reflected in design of the facility based care for SAM children. The facility based care intends to address the *current causes of wasting* and treat the associated medical complications.

⁴⁹ The operational guideline instructs the MTC care team to conduct appetite test to assess if a child needs hospitalization. Infants are provided with a prescribed amount of milk based catch up diet, whereas children aged more than 12 months are given a certain amount of dry therapeutic feed. The nurse staff needs to monitor the ability of a child to finish the given amount of feed. If a child is unable to consume the therapeutic feed required to pass the test they are enrolled at MTC for further treatment. However at all the MTCs visited appetite tests were not being conducted by the nurse staff. For any new case, the admission was done based on anthropometric measurements and/or visible sign of wasting and/or oedema. The children were enrolled and then it is time for distribution of therapeutic feed, mothers of newly admitted children were asked to collect the feed. The mothers/caregivers were instructed to make sure that child eats the given feed. The mothers were not explained the technique of feeding or the significance of feeding.

distribution of therapeutic feeding, new admissions were provided with dry therapeutic food or milk based. This starter diet⁵⁰ is handed over to mothers to feed their children and usually nurses watch or monitor the process. If the child respond positive to the starter diet i.e. finish off the quantity given, the child is put to catch up diet within three days. The objective of giving a catch-up diet or therapeutic feed at the MTC is focused on providing a healthy diet to malnourished children. The workforce involved in care and treatment of children (primarily nurses) perceive this first doze of therapeutic food (appetite test) as a tool to determine the portion of feed and next feed is provided accordingly.

Thus in facility based care the significance of appetite test gets narrowed down as a tool for planning diet and not as a mechanism to determine complicated and non-complicated SAM cases. Thereby even SAM cases with good appetite which can be managed through community based care are admitted at MTC. Though this practice leads to high bed occupancy in these centers, neglecting appetite test has its ramification on the treatment;

- (a) Delay in providing medical attention- Once the child has been screened for SAM the second step is to determine any associated medical compilation and its severity. At MTC the admitted children straight away begin with the starter diet. The whole purpose of appetite test is to identify if the child needs medical attention. The other clinical tests are usually conducted on the next day of admission. Till then SAM children are fed on the therapeutic feed. It's only after the doctor (which might be a pediatrician or general physician available with MTC) checks SAM children for associated medical complications⁵¹, that specific medication, treatment or clinical tests are prescribed. This not only burdens MTC with cases that can be managed at

⁵⁰ Starter diet- is a feeding formula given to SAM children during their stabilization phase to promote normal metabolic function and main nutrition-electrolytic balance.

⁵¹ The MTCs managed by MO did not have any pediatrician. At these MTC, MO use to decide and prescribe tests that the admitted child need. MOs often stayed at their respective health facility for a short period, generally from late morning to afternoon. If a child with complicated SAM arrives in between this schedule, they were taken by nurse staff to the MO for further diagnosis after preliminary assessments have been made. Accordingly MO suggested the nurse staff on medicine or clinical tests required. The nurses then inform mothers/caregivers regarding the clinical tests their child need to undergo. Mothers/caregivers were instructed to get the test report for further consultation with the MO. However if a child arrive at MTC after the MO has left, then these children were admitted by nurses if they met the admission criteria. These children were taken to the MO for diagnosis whenever they come back to their office. This waiting time could vary from few hours to days.

Children without medical complication were not even sent to the MO for consultation. Nurse staffs use to share the case files with MO and based on these case files, MO suggested the care plan to be followed for each of these children.

community level but also overlook the immediate medical care requirement of SAM children.

“...we admit children and we go to the doctor, they say this child is from MTC we will not check them. The in-charge is supposed to check them but they are not around” (Nurse, MTC)

- (b) Denial of timely facility based care – higher bed occupancy lead to delay in providing facility based care to children with complicated SAM. Once screening is over, the details of child is recorded and the mothers, parents or caregivers are asked to come and check after a few days if the beds are vacant. This denies the child of timely facility based care. The child might come back after a couple of days but the objective of a facility based care is lost i.e. to provide care when the child needs it the most.

“We screen them and if there is a bed we admit them...when the MTC is crowded we ask them to come in a few days, by that time someone will get discharged” (Nurse, MTC)

It is easier for parents having some contact number to stay in touch with the MTC staff and gain information on availability of vacant bed at MTC. Those who do not have means for telephonic communication have to come and check in every two-three days if there is a bed vacancy so that the child can be admitted. Some parents had to come twice and thrice with their belongings, thinking their child would get admission and they might need to stay back, before the child actually got admission at MTC. It is burdensome especially for those who come from remote areas. In absence of public transportation the parents have no other choice but to hire a vehicle in order to reach MTCs, which is an additional burden on their pocket.

- (c) Treating of false positive cases- facility based care is for treating, rather stabilizing the health of a SAM child. MTC provide treatment to SAM children for associated medical complications along with therapeutic food to restore their normal weight within a period of 15-21 days. Not conducting an appetite test might lead to missing out on SAM children with underlying complications that need medical attention. Rather it leads to admission of SAM children with minor illnesses but a good appetite that can be treated through OPD and managed by nutritional rehabilitation through the existing community based services.

4.3.4 Screening for medical complications:

Ideally a SAM child is to be immediately screened for medical complications and its severity. However in practice screening for medical complications come as the last step. Once the child has been admitted and assigned a bed, clinical tests are conducted as suggested by the doctor in charge, to screen for any associated medical complications. The tests for blood glucose, anemia, respiratory illness, urine, chest X-ray and tuberculosis are conducted free of cost at the MTC. However running these tests and getting the reports may take as long as day or two.

“...nurse asked me to take my child for test on second day... here in this hospital... I took my child for test. For one test I had to go out. There is one shop in the market. I went there. They told me to come next morning and collect report. His father also went back, I had to carry him and go to the market. It is so hot outside”
(Mother of MTC beneficiary)

Two of the three MTCs visited had test laboratories within their premise. One of the MTC did not have functional X-ray facility within its premise. Children were mostly screened by doctor on the second day of their admission and tests were recommended. Since the husband or any male member accompanying mothers leave by then, the responsibility falls on these women to go and get the X-ray done from the private providers located outside the hospital premise. The mothers reported to have to wait for a day to get the test reports. On the following day once again doctor is consulted with these reports and then it is confirmed if the child has any medical complicated along with SAM.

“Doctors advice for test...we take the report to the doctor.”(Nurse, MTC)

Triage is an important part in the screening process. While the process of triage was absent from the screening procedure it might create an interest as to why? The nurses followed were very significant steps during admissions such as; anthropometric tests and checking for visible signs of SAM i.e. oedema and kwashiorkor.

“We conduct tests. Before that we take height-weight measurement. We give sugar water to all malnourished children who come to MTC. Sugar in malnourished children is generally low. So we give sugar water first. If the child is able to drink it we give them to drink otherwise we use IV (intravenous fluid)” (Nurse, MTC)

There can be several possible reasons for not observing triage, such as; (a) the nurses have not been trained for these processes, (b) the nurses screen children by visible signs of

SAM and (c) not all cases that come to MTC or are enrolled for treatment are cases of complicated SAM.

4.3.5 Feeding

Therapeutic feeding is an important component of a facility based care model. The mothers are supported by nurse during feeding process. Two types of feed are given in a day; (a) milk based and (b) a dry therapeutic feed. These two types of feed are given alternately in every two hours to all admitted children. When SAM children are admitted for treatment program they are fed with the starter diet for two to three days or as long as the child is able to easily eat and digest food. This course begins with the starter formula (F-75) for 2-3 days and then catch up diet (F-100) is continued for the rest of the treatment regimen. Occasionally *khichdi* or *dalia* (porridge) was provided at MTC.

“We give them milk in the morning then at 8 we give them dry feed. At 10 we give them milk again, at 12 we give them dry feed. Like this we give mothers to feed their children till 8 in evening” (Nurse, MTC)

Many children do not like the monotonous food given in the MTC. They show a liking for therapeutic food for a few days they have a tendency to finish off their share of food for the first few days. However within 3-4 days they get reluctant to eat the same food again and again. When they were provided with *kichdi* or *dalia*, they ate it well. Each child gets 8 feed a day. Therapeutic feed for child is distributed by the nurse staff and each child receives these feed in accordance to their weight⁵². The nurses are to observe daily intake by each child and maintain records for the same. The nurses are to monitor appetite of SAM children and encourage mothers/caregivers to feed their children well. The purpose is to facilitate weight gain. According to the guidelines, a child who finishes stipulated feed must be offered more and measure of feeds must be increased. However in practice it is hardly followed. Every child is given a fixed measure of daily feed based on their daily weight gain. Despite of finishing the prescribed quota of therapeutic feed and having a good appetite SAM children get the set amount of feed. The mothers perceived that the

⁵² At each the treatment phase (stabilization, transition or rehabilitation) a child is provided with a certain quota of therapeutic feed depending on their weight; at admission and weight gain during their stay at MTC. Each day weight of all admitted children is measured. The nurse staff checks the reference chart for starter diet and catch up diet, accordingly, therapeutic feed is distributed. At admission a treatment goal is set for each child, i.e. certain weight and MUAC the child should attain by the end of 14-15 days. The quantity of therapeutic feed is adjusted according to the child's daily anthropometric measurements to attain the set treatment goals.

measured amount of feed was not sufficient to satiate hunger among their children (children with good appetite) and they cry for more food. It was observed that some children after eating their own share of feed ate the off leftovers of other children. If not they could be seen munching on outside food (homemade and/or purchased from market). Mothers/caregivers fed their children from their own meal or purchase edibles such as biscuits, sweets and other convenience food to eat between the scheduled therapeutic feed.

“He is hungry even after eating. He cries for food. I asked the nurse for a little more milk or more halwa (therapeutic feed) but she refused” (Mother of MTC beneficiary)

“How will this amount of food fill my child’s stomach? If the child is hungry we feed them when we eat our meal” (Mother of MTC beneficiary)

It is the duty of nurse staff at MTC to facilitate, support and demonstrate mothers while feeding their children. It was observed that none of the MTC had a dedicated separate space for feeding and demonstration. The mothers did not have a proper space to sit and feed their children. The mothers use to sit on the floor to feed their children. Occasionally these mothers were supervised by the nurse staff for washing hands and utensils before therapeutic feed for their children. The guideline suggests that SAM children are to sit in lap of their mothers; instead they sit on the floor, play around or lie on their beds (if too weak to sit). The floors at MTC are cleaned only twice a day and for rest of the time it was managed by the mothers. Despite of mopping twice a day the floor got dirty and dusty all the time. It got dirty of the dust carried by mothers, nurses and visitors; also the children pass urine, drop and spill food on the floor making it messier. Some mothers let the children eat by themselves; in due process they spill the milk and drop the dry therapeutic food on floor, pick it up from the ground or bed and eat it again. This not only compromises on the amount of food they should be eating but also make them vulnerable to infections.

While nurses are suppose to supervise the feeding process, structural arrangements and shortage of trained nurse staff⁵³ at MTC make it difficult (Government of India, 2017). When it’s time for meal mothers come to the kitchen and line up with their utensils, the nurse on duty measure feed and distribute it according to the child’s requirement. After receiving share of therapeutic feeding for their children mothers come back to their ward

⁵³ According to Rural health Statistics Jharkhand have a total of 1136 nurses at the PHC and CHC. There is a shortfall of 477 nurses in the state.

to feed children. If children do not finish their share of feed mothers make no effort to make them finish their portion. They either keep the leftover to be fed later, eat it or give it away to the child's sibling or to other children at MTC. Eating less than their stipulated diet soon make children hungry and then the mothers fed them with food from their own meal or procured from the market. In absence of supervised feeding and care, the admitted children are breastfed before the scheduled therapeutic feed; they eat rice with their mothers and eat food that their relatives bring for them⁵⁴. While nurses do not monitor these practices, the mothers keep on feeding their children with outside food despite of counseling on appropriate child feeding.

Out of four MTCs visited only one had an appropriate space for office, ward, kitchen and bathroom connected in a way that supported nurses for supervising and facilitating mothers in feeding and child care. The other three MTCs have two to three rooms placed across the corridor. These rooms were used as kitchen, office, ward and a common bathroom shared by other women (from the maternity and their visitors). This arrangement not only created barriers in supervision and monitoring but hamper counseling and stimulating sessions.

On schedule the mother's line up at the kitchen where therapeutic feed is distributed, after which the mothers retire to their wards. The nurses were unable to follow each time mothers to their ward and sit there till all children finish therapeutic feed. All they do is take a round of the ward to see if the mothers are feeding their children. Since they do not monitor the diet and leftovers, in practice they never actually track appetite of admitted children. Tracking the leftovers is a significant practice to ensure targeted intake and weight gain by the admitted children. Counseling mothers for appropriate feeding and feeding practices is dependent on observing difficulties faced by mothers in feeding their children. Though whenever nurses get to sit with mothers they instruct them on refraining to give outside food, hygiene, correct postures for feeding etc. but for most of the time they are not around and mothers do best in their understanding.

“It's always crowded here. We have to see out own children, we also have to attend those who come to MTC. We also have to attend children who come for follow up” (Nurse, MTC)

⁵⁴ The food brought by the relatives varies from home made food to packed food from the market, chips, biscuits, fruits, packed juice, puffed rice etc.

The arrangement of MTC and shortage of human resource makes it difficult to arrange for counseling sessions. None of the MTC had a nutrition counselor, cook or a medical social worker. The roles assigned to these personnel were being delivered by the nurse staff. It is impractical to hold common session for mothers as their children had been admitted at different times, they had completed different days of stay, their children had completed different phase of treatment and health need for each child is different. Counseling mothers/caregivers keeping these diversities in mind shall take 20-30 minutes each. It means to provide individual counseling the nurses had to invest at least 5 hours on counseling alone. Absence of counselors in all the four MTCs visited adds up to the difficulty where nurses are responsible for all the work in an MTC.

“There should be a separate counselor and cook. We only do everything. We provide medicine, we take the report to doctors, we do counseling, cooking, everything” (Nurse, MTC)

4.3.6 Daily recording of weight and health

Weight of SAM children are measured and recorded on a daily basis. Every morning the children are given their first two therapeutic feed and then brought in for weight measurements. Mothers line up in the office where children are placed on the weighing machine. The weights are measured, recorded and plotted in child records. Nurses share daily weight of children with their mothers. Mothers were aware of their child’s weight at admission, daily weight gain and the target weight required for discharge from MTC. Though they could not figure out significance of these weights yet they understood that in order to be healthy their children must have a certain weight. Or to put it this way, they were aware that if their children gain a certain weight it mean they were healthy again and could go back home.

“They tell us weight of my child... they said if my child will keep on gaining weight like this, then soon she will get discharged” (Mother of MTC beneficiary)

There have been certain incidences where the MTCs have discharged children before they could reach their targeted weight⁵⁵. All mothers are informed that their children shall

⁵⁵ There were certain incidences when the nurse staffs had discharged children even before they could attain their target weight. The vacant bed was then allotted to another child who was waiting for admission. The latter had come from a distant village and had fever along with SAM. The nurses speculated that if not admitted the family might not come back again.

attain certain improvement in weight before they can go back home. During daily weight monitoring, nurses inform mothers on daily measurements and tell them how much their children shall weight by the time they would be discharged. When children were discharged before they could attain their target weight, the mothers were not explained by the nurse staff on reason behind their discharge. The mothers perceived this as an early discharge. The mothers were not aware why their children were discharged when they had not attained the promised weight. In such cases mothers had raised their concern regarding early discharge of their children before acquiring the targeted weight.

“They told me my child will not be discharged, her weight is not increasing...my child has not gained weight what the nurse earlier told me. Why is she getting discharge?” (Mother of MTC beneficiary)

Beside daily weigh records, health of SAM children was monitored regularly by the nurses. On a daily basis mothers were inquired by the MTC care team about health condition of their children and medical care and counseling was provided accordingly. Though it is the pediatrician/doctor who is to do the health check up, but in practice the nurses perform this work. Doctors use to come for routine check up and ask mothers about any illness in their children. If the mothers reported any discomfort or illness, doctors checked their children, otherwise they did not.

“The doctor comes and asks us is the weight increasing? Is there any illness? We tell him yes weight is increasing... no he does not check them” (Mother of MTC beneficiary)

The nurse staff prepared daily child reports and give to the doctor for consultation. If needed, the doctor/pediatrician suggested medical care required by the children. Nurses then provided medical care to children as suggested.

4.3.7 Counseling and Education:

Counseling and education is an important service provided as a part of inpatient management of SAM. The mothers/caregivers are to be counseled on appropriate feeding,

There had also been discharges made by the nurse if a child had not attained the target weight but had a completed 10-12 days, had a steady weight gain, good appetite and no medical complication or oedema. The vacant bed is allotted to children waiting for admission to MTC.

Children who had completed 14-21 days but failed to reach the target weight were discharged from the program as non-responders. The mothers were not informed or explained the reason for discharge from MTC while their children had not gained the target weight.

care and hygiene. Imparting health education to mothers/caregivers is significant in order to capacitate them for providing home based care to children post discharge.

While the guidelines clearly state for the need of a social assessment⁵⁶ of family as a precursor to counseling, this first step was mostly omitted by the nurse staff. Identification of such factors facilitate in formulating suitable intervention to address each of these factors. The purpose of counseling mothers and caregivers is to bring behavior change and improve their perception and attitude on malnutrition and to address the factors identified through social assessment.

The effort from the part of MTC care team (nurses) to capacitate mothers/care givers in addressing the underlying factors was suboptimal, primarily, because at MTC nurses do not conduct social assessment in the first place. Hence the counseling provided to mothers/caregivers is generic i.e. similar advises are given to all. These counseling sessions end up with a list of do's and don'ts pertaining to child feeding and care. The actual issues such as lack of time, mother's involvement in child care, care of sick children, hygiene and sanitation do not get addressed nor by the end of their stay are mothers capacitated to deal with such barriers. While nurses are unaware of the specific barriers and hindering factors, they are unable to develop individual plans for SAM children to achieve treatment goals given time frame usually 4-6 months in the nutrition rehabilitation program.

The significance of counseling manifolds post discharge i.e. in between follow up visits. While discharge the mothers are handed a discharge card with the anthropometric measurement of admitted child and few suggestions on feeding. Despite differences in anthropometric measurements, health status at admission and status of recovery discharge card of children have similar suggestions for mothers/caregivers.

⁵⁶ The objective behind social assessment of family is to identify the factors responsible/contributing to poor nutrition in the SAM case and to address these factors to improve the living situation of the family and prevent further malnutrition or impoverishment. The guideline state the role of medical social worker in addressing factors that come out during social assistance; through counseling, supporting and linking family to the entitled services at community level. In absence of a medical social worker at MTC, the nurse staff does not carry this activity.

No individual care plans were developed for discharged cases (Ministry of Health and Family Welfare, 2011)⁵⁷, no target weight goals were set to be achieved during follow-up visits. Primary focus of nurses is on a target weight i.e. 15% of weight gain before they are discharged from MTC. At follow up visits the nurse check on weight improvements and ask about /illness, if the child shows a notable loss in weight. Counseling during follow-up visit is mostly around set of questions and suggestions. The component of supporting mothers/caregivers with an action plan for home based care does not come into play. Such an approach is passable for treating the medical condition but serves inadequate for health improvement among SAM children.

Nutrition education pertaining to child feeding i.e. adequate and age appropriate feeding practices and food choices is provided by nurse staff but in a random fashion. There are no IEC materials, fixed themes or activities to impart nutrition education to the mothers/caregivers. The nurses provide knowledge on child care, feeding and dietary practices based on the mothers/caregivers health behavior or their practices of child care observed during their stay at MTC. For instance technique of feeding or correct posture of feeding a child is explained to a mother/caregiver if the nurse observes a child has been wrongly positioned or wrongly fed by their mother. Similarly, mothers are educated on ways of improving food intake (vegetables, milk, nutritional food, and short meals) without assessing if the mother is already aware of these facts or there are barriers that prevent translation of knowledge into practice by these caregivers. There are no provisions of demonstration or practice for mothers/caregivers on preparation of low cost nutritious food. The mothers have to depend on their memory to learn whatever the nurses teach them on nutrition rich diet, till they go home and practice the same.

4.3.8 Discharge

SAM children are discharged from facility based care when they attain weight gain of 15% ; get free of illnesses and oedema. Based on the daily weight monitoring, nurses consult doctors-in-charge regarding discharge of SAM children. If doctor suggest discharge, the nurse staff inform mothers regarding discharge of their children from MTC. Thus the children neither undergo check up by the doctors during admission nor before discharge. Since the treated children are discharged on the criteria of 15% weight gain,

⁵⁷ At the MTC, children discharged at WHZ <-3SD and children discharged at <-1SD were given same instruction for child care and feeding on their discharge card.

children with WHZ of -3SD to -2SD are also discharged from the facility. The child reports are updated by the nurse with daily weight and health records. The mothers are called and made to sign multiple registers such as; the admission-discharge register and cash incentive register. Mothers are given incentive that they are entitled to for their stay at NRC. The discharge card is prepared with instructions of child nutrition and health care along with due date for all the follow up visits. All the mothers were instructed on common points such as; (a) child feeding, (b) care during sickness and (c) attending the follow-up meetings. During discharge none of the mothers were instructed to visit their respective AWC nor were they asked to share the discharge card with their respective AWW.

4.3.9 Follow up

Follow up is an important component of the program to track discharged SAM children so that they do not default, relapse or die. This component of strengthens the design of the program by supporting smooth transition of care from community to hospital and back. Children discharged from MTC are to be followed at the community level and during schedule visits at MTC. The prime purpose of follow up visits at the NRC is to monitor nutritional improvements, timely identification of relapse and non responders and referral to a higher facility if required⁵⁸. For this the MTCs must have a list of the primary health centre (PHC), sub centre and AWC for referral closest to their habitat. The discharge card given to mothers record anthropological measurements of children, present health condition and suggestion for mothers on feeding and child care. The mothers need to bring this card for all scheduled follow up visits.

Follow-up at NRC is done by the nurses. If there is a case of default or relapse, then the child is screened by the doctor for re-admission or further referral. These follow-up visits are practiced more like a weight and height monitoring session, where anthropological measurements are recorded and updated on the discharge card. Little inquiry is made if the child had been sick or healthy in between follow up visits. In case there is weight gain or weight stagnation, then mothers are instructed to focus on the diet of their children. However if there is a negative growth in child's weight then mothers are counsel on child

⁵⁸ SAM Children with illness that could not be managed at the facility were referred to district hospital in Ranchi. There MTCs did not have a system to track such children.

feeding and care practices. The mothers are never asked on the impediment they face in providing home based care for SAM children.

Not many children turn up for follow-up. Of all the MTC visited none had a list of PHC, sub centre or AWC in the catchment area nor did they have a contact with the frontline health workers (FHW). There was no mechanism in practice to ensure follow-up of discharged SAM children at the community level or for the scheduled visits to MTC. Children who came for follow-up were usually brought by their mothers and sometimes accompanied by their father. Angnwadi workers or ASHA rarely accompany these women to MTC for follow up. Most of the children came for first follow up but very few complete all the four follow ups.

4.4 ISSUES OF OPERATION

4.4.1 Access: Traveling to the MTC and back emerge as the primary concern for mothers. The mothers/caregivers have to travel multiple times to MTCs not only for follow-up but even for admission. As stated before travelling for admissions is determined by the *bed occupancy* and bed '*vacancy*'. In absence of a community based program, SAM children are directly referred to MTC. These treatment facilities bear heavy case load, however all referred children are not necessarily SAM with medical complication.

As soon as the FHWs screen children with MUAC tape and find children with a MUAC below a cut off 115 mm, the parents are suggested to go MTC. Mostly it is the mother who brings children to MTC. These women were accompanied with AWW or Sahiya from their respective villages⁵⁹. However in some cases fathers too accompanied their children to MTC for screening and treatment. Parents/caregivers come from far off villages to get their children treated in MTC but as stated before, the admissions are largely guided by bed vacancy. Thus timely access of facility based care by SAM children is obstructed.

Access of follow up services is compromised on account of long distance to be covered to reach MTC. Very few children are brought back for follow up. The numbers of children coming for follow up go on decreasing along the four follow up visits. Children mostly come for the first two follow up and not for the other schedule visits. The incentive that mothers are entitled to receive during discharge is withheld by the MTC nurse staff and

⁵⁹ The MTC provided incentive to ASHA and AWW for bringing SAM children to the MTC and ensuring that they complete their follow up.

only distributed when they come back for follow up. The providers explained this as a mechanism to ensure that mothers come for at least first two follow up visits.

“We don’t give the full amount at once. We give some of the amount on discharge and ask them to collect rest in their next visit. The mothers would at least come for one follow up” (Nurse, MTC)

Thus mothers come back for follow up visits till they get their share of money. Once their pending bills are cleared they do not come for rest of the scheduled visits. However this is true mostly for mothers living in the nearby areas. Mothers coming from far off villages often do not come back to collect their money or attend follow up visits.

4.4.2 Out-of-pocket expenses: Services provided at MTC are for free but it encloses hidden expenditures as well. While bed occupancy plays a major role in admission and treatment of SAM children, it also determines the travel cost for the family. In absence of vacant bed, some families make multiple visits to the MTC, till their child gets an admission. Commuting from remote rural areas, located 10-12 kilometers cost these families a good amount of money leave alone loss of wages. Poor transportation in these areas leaves the family with no choice but to reserve an auto rickshaw to reach to the MTC. Mothers who are not informed well by the FHWs on MTC and the treatment program, often return back to consult their families before admitting children at MTC. The families need to arrange money to support the mother in travelling and meeting expenditures during their stay at MTC. Multiple travels cause unnecessary expenditure to the family. Some families delay at MTC still they are able to arrange enough money.

“Sahiya didi told me to take her to hospital 2-3 months ago. We did not have money to come here. I came here after saving money” (Mother of MTC beneficiary)

Bed, medicine and food are free for children but mother/caregivers accompanying children have to make arrangement for their stay. There is a provision of incentive (Rs.100 per day) for mothers/care givers accompanying children for their entire duration of stay at the MTC. Mother/caregivers get this money only at discharge. Mothers mostly arrange for their food from a nearby hotel or the hospital canteen. Mothers who come from the neighboring villages have an advantage to get home cooked food. These mothers manage to save the entire amount provisioned for food. Mothers who do not have this option bear expenses from their own pocket.

“Earlier mothers were given incentive for follow up also, now they do not get money for follow up. Even money that mothers get after discharge, they should get it daily but here it is given on discharge. The money goes to their account. These mothers do not have an account number or adhaar number. This has increased their problem” (Nurse, MTC)

Moreover as per the new provision this money is to be deposited in the mother’s saving account post discharge. Thus while earlier mothers could pay back their food expenses from the money they got at discharge, now need to bear their food expenses on their own.

Maximum admissions at MTC are during summer. This period mark lack of livelihood opportunity, food insecurity and higher resource poverty; adding to this expenditure incurred on transportation to the MTC for admission, follow up and food expenditure is an additional burden on the existing household expenditure.

4.4.3 Staying back at the facility: Several arrangements are made in between screening/identification and actual accessing of servicing at MTC.

The first thing mothers do, as and when informed by FHWs (AWW, ANM, ASHA) about condition of their children, is to discuss about it at home.

“Sahiya didi told me to take my children to hospital. She said both of my children were weak. I told my husband. He discussed this at home. They said if children become healthy by going to hospital I should come here. My husband came with me” (Mother of MTC beneficiary)

Since it requires a fifteen day stay at the facility a joint decision is made by the husband and family member weather and when child should be admitted. The mothers need to make necessary arrangements before coming to the MTC, such as; adjusting livelihood/work and appointing someone for care of younger siblings. It is easier for women having older children, to come and stay at MTC as compared to those mothers who have younger children. These women either bring their other children to MTC or delay seeking treatment till a proper care arrangement is made for them. It is only after making arrangement for their daily chores, care of children and finances that the mothers are able to accompany the SAM child to the MTC.

“Anganwadi didi told me my child was weak. She told me to come here...it was sowing time, how I could have come here? Now the sowing is complete so I brought my child here” (Mother of MTC beneficiary)

Apart from care arrangement, managing expenditure for travel and food are major concern for the family. Treatment at MTC is free of cost and provide incentive that help mothers/caregivers in meeting transport and food expenditure. The family needs to make financial arrangements for this additional burden of expenditure. It is not an easy for mothers to manage their stay at MTC taking care of SAM child along with their other children. The mothers shared therapeutic feed provided for SAM children also with the non SAM children. As SAM children stay with their siblings, the mothers struggle to manage feeding their SAM children, attend counseling and provide adequate care to SAM child along with their other children.

4.4.4 The failed MUAC test: At community level, AWW are responsible for weight monitoring and helping in screening for SAM. On Village Health and Nutrition Day (VHND) children are screened for SAM through MUAC and weight measurements. If a child is found to be of MUAC <115mm or W/A <-3SD the FHW (ANM, ASHA and/ or AWW) refer such case to the MTC for treatment. Mothers are suggested by the ANM to take their children to MTC for treatment. Mothers are informed that their child is ‘*weak*’ and needs immediate medical care. While ANM suggest mothers to take their children to MTC, it is responsibility of the AWW to counsel, prepare and support for smooth transition of children from community to facility based care.

“I took my child for immunization. There sister told me my child was very weak. She asked me to take her to the hospital...she said here my child will get good treatment...no I did not know what treatment will be given” (Mother of MTC)

On reaching MTC some of these children are found not fit to be admitted for facility based care and are sent back home. Thus while children are identified as SAM through MUAC and Growth Monitoring Chart (GMC) they are denied as SAM by the MTC care staff. These children do not meet the anthropometric requirement for admission. Both community care providers and parents find this confusing.

“Didi what is the measure at which we should send children to MTC? I had sent children to MTC. They were at red in chart but they were not admitted in MTC” (Anganwadi worker)

Since the parents make arrangements and adjustments before bringing children to MTC, denial of admission cost them loss of money, time and livelihood. This generates mistrust among community on efficiency of community care providers. These children are sent back to community without suggestions, counseling or care support to parents. The AWW

are not aware of care needs of such children and thus these children end up with same services as the other children.

4.4.5 Location of care: The objective of facility based treatment of SAM is to provide a care environment where therapeutic care, counseling and capacity building of mothers can be conducted simultaneously.

Out of four MTCs visited only one had, MTC as a separate unit with 10+6 bedded wards, kitchen, bathroom, and toilet. The other MTCs were operating as a 2-3 room unit within the Reproductive and Child Health (RCH) building. All of these units had a 10 bedded ward. One room used as the office-cum-record room and another often used as the kitchen. Toilet and bathroom were common; used by women and children of other wards as well.

These units seem to have been fitted in the buildings designed for RCH services and thus did not support requirements specific to an MTC. The design of these MTC created a barrier in implantation of care and counseling services;

- (a) The rooms were separate and scattered along the corridor. This can be visualized as a floor with multiple rooms. The office was located at one end of the corridor whereas the ward was located at the other end of the corridor. Kitchen was usually located next to the office while toilet and bathroom were close to the ward and sometimes even in front of it.

“It is so dirty that we feel we will vomit. We do not use the bathroom”
(Mother of MTC beneficiary)

Such an arrangement did not provide space an adequate and hygienic space for washing clothes, hands and utensils for mothers of SAM children. Toilet and bathroom being common were used by women from RCH ward and their visitors. The toilets were cleaned only twice a day, for rest of the time it remains dirty. The mothers found it unhygienic and were reluctant to use it for toilet, bathing or washing purposes. To avoid stepping in these toilets mothers often skipped hand washing and rinsing utensil before collecting therapeutic feed for their children.

- (b) Such an arrangement made monitoring difficult for the nurses. Office and ward were located far, thus nurses could either stay back at the office or monitor feeding and child care. One of the MTC had its kitchen located next to the ward; another MTC had its office and kitchen within a shared space. Supervising mothers for

observing cleanliness (washing of hand and utensil) before collecting and feeding therapeutic feed to children could not be regularly monitored by the nurse staff.

The other MTC with proper arrangement (separate kitchen, ward and office located close to each other; own bathroom and wash basin; and adequate nurse staff, found it is easier to observe care and feeding practices by mothers and caregivers. Mothers were instructed to wash hands and the nurses checked if they had cleaned their hands and utensils before collecting therapeutic feed for children. The nurses sat with mothers and counseled them on feeding posture and technique. Such arrangement facilitated nurses to check and counsel mothers to take up the practice of washing hands with soap before feeding their children.

- (c) One of the MTC located in CHC, was screening all children who came to OPD for treatment. Throughout the day parents keep on coming to this MTC with their children. This engaged nurses in screening children besides performing other functions of MTC. While nurses should be supervising and counseling on methods of child feeding, they spend their time either guarding office or screening children for SAM. If children despise therapeutic feed, mothers did not try feeding them. Nurses were unaware, even if these children did not finish the given feed. The leftovers were kept by mothers to feed later or were given to other children or finished by their siblings or by the mothers themselves. The infrastructure of MTC, limited number of nurses on duty, and work burden hindered regulating or monitoring of the feeding practices of mother by the nurses.

During admission, mothers are instructed to feed their children on therapeutic food only. For children of 0-12 months of age, mothers were instructed to breastfeed, apart from giving them therapeutic food. However, were also instructed not to breastfeed their child prior to the schedule feed. However mothers' breastfed their children between the scheduled feeds and these children were usually full, unable to finish their share of therapeutic food.

Visitors (family and relatives) often use to bring food items for children. These vary from ready to eat food, chips, cold drink, fruits or even homemade food. Mothers hardly followed the instruction given by nurses of not giving anything beside therapeutic feed to their children. All children admitted in MTC use to eat meal with their mothers. Eating rice, pulses and vegetable leave them full for long. As a result though the therapeutic feed is stored by mothers to feed their children later, it is either consumed by mothers or given to other children.

In a space where the office, ward and kitchen are connected or at least placed nearby, regulating such habit of mothers, explaining them the consequence and promoting feeding in every two hours a day was found easier to practice as compared to a setting where the office and ward were located far from each other.

- (d) One of the prime activities at the MTC is counseling and capacitating mothers on child care and nutrition. An MTC jostled along with other services without adequate spacing led to a setback to other activities such as counseling, feeding demonstration practice and play. None of the MTC visited had a separate counseling area, nursing/feeding station or play area. Though all MTC had a spacious ward, there was no space for conducting above mentioned activities.

In absence of nursing station mothers feed their children on their respective beds. If not on the bed, mothers often sat with their children on floor. While the floors were cleaned once or twice a day, it was regularly soiled of; food spilled by children, passing of urine by children and dust carried by visitors, mothers and nurses footwear. Children when fed by sitting on floor exhibit picked everything they could find on floor (from food to other objects) and put it in mouth. Two of the MTC had a nursing station; however it was a common space. Both of these facilities were located along with RCH unit. These nursing stations were an open space and a small wall separated it from the corridor. None of the mothers from MTC used this space; instead often visitors to MTC and maternity wards were found resting, sleeping in this area.

No demonstrations were made for the mothers to feed or prepare food for children. Though mothers helped nurses in preparing the therapeutic feed (peeling of peanuts) but they did were not trained, demonstrated or made to prepare nutrition rich food that they could feed their children post discharge. However mothers were counseled by nurse staff on making of low cost nutritious food acceptable to children. Most of the mothers were suggested on preparation of a mixture of flour, sugar and oil roasted and stored in a jar, to be given to children with water/milk or just like that. No sessions were organized for these mothers to learn on preparation of low cost energy dense food.

“We tell them to measure two cups of rice, one cup of pulse or one cup of wheat. Like mix one kilogram of rice, half kilogram of pulse, 250gm of sugar and 100 gm of oil. We ask them to make this mixture at home and store in container for their children” (Nurse, MTC)

Mothers were counseled on child care and feeding as and when the nurses came to supervise the ward. The nurses counseled mothers on correct posture of feeding and significance of therapeutic feed only when they came in the ward for rounds and saw mothers not doing it correctly. Absence of IEC material have limited these sessions to imparting information rather than being an interactive or participatory session. MTC with overlooking rooms facilitated in round the clock counseling to mothers as and when nurses found any mother in need of support/suggestions.

- (e) The objective of a 14 day stay regime is not merely to provide therapeutic food but also health education and behavioral change to capacitate mothers for child care post discharge from facility based care. Lack of structural support hinders sanitation and hygiene practices by mothers during their stay in these centers.

One of the MTC faced frequent water scarcity. There was a hand pump outside t premises of CHC; mothers used this hand pump for bathing, washing clothes and utensils⁶⁰. Three of the MTC visited, had a common toilet and bathroom shared by women of delivery ward and MTC. Mothers use to avoid using these toilets and prefer to use tap/hand pump within the hospital premise for washing, bathing and cleaning. They not only bathe at these hand pumps but also wash their utensils after each scheduled feed. The mothers did not practice hand washing and cleaning of utensils before feeding their children. They were unwilling to walk up and down two floors of the building each time they had to access water from the hand pump.

4.4.6 Knowledge and Confusion over Screening: The AWCs screen children for weight/age (W/A) and MUAC. Weight for age simply represents a child being underweight. W/A indicates toward wasting (low weight for height), stunting (low height for age) or both. This designates a child as either suffering from an acute loss of weight, poor growth/growth faltering or both. Being a composite indicator W/A is difficult to interpret by the AWWs and Sahiya.

At the field level frontline health workers are to using MUAC to screen children for malnutrition. The Growth Monitoring Charts (GMC) was being used by the AWW as a tool of screening rather than being used as a significant tool for prompt action on growth faltering. While the GMC indicate towards child's dietary intake and illness episodes, a

⁶⁰ Open defecation was common among mothers of this MTC and their children. They find open defecation and later cleaning themselves at the hand pump tolerable than using toilets.

continuous fall in the graph demands attention on these factors. A poor MUAC indicate towards acute wasting and requires immediate attention. These tools are to be used for monitoring malnutrition among children. On the contrary, fall in the growth curve did not translate into any action or corrective measures by the AWWs to address growth faltering and/or wasting. Growth faltering i.e. growth curve falling till orange band or fall in the MUAC remains unaddressed till the growth curve reach at red band or child reaches an MUAC of <115mm or severe grade of under nutrition i.e. eligible for being referred to a facility based care.

Though mortality risk increases for children who are mildly underweight, it becomes higher for those who are severely underweight. When the growth curve of a child becomes flat it simply means that the child is having growth stagnation, meaning the child is neither gaining weight nor growing. This is when the child needs immediate attention on diet along with medical care. In absence of guidance, adequate training or facilities for managing mild underweight cases, the frontline workers, especially AWW and Sahiya play a very limited or no role till the GMC and MUAC indicate the child at the 'red zone'. This is when the AWW, ANM, Sahiya refer a child to the MTC for *medical treatment* (these frontline workers perceive MTC as a place where a child can be treated for malnutrition) instead of referring to a health provider. However not all children screened and qualified on the parameters of frontline workers make it to the MTC. The FHWs refer children for facility based care but MTCs only admit children who qualify for low weight-for-height and MUAC. Other children are sent back home if they do not meet the W/H criteria, leaving the frontline workers as well as the parents in confusion and surprise.

4.4.7 Nutrition Counselling and nutrition education: Counselling and health education are significant component in nutrition rehabilitation program. The nutrition care literature acknowledges *nutrition education* as a means to capacitate beneficiary/ care giver(s) through appropriate knowledge for improved food choices and eating behaviour. *Nutrition counselling* is equally important, where the caregiver/mother need is supported through persistent communication and collaboration with the care providers to set individual care plans and goals to promote improved nutrition. The MTC care team, skip the latter. The MTCs did not have a nutrition counsellor or medical social worker for conducting these services. The nurses often burdened with other work, conducted counselling sessions for namesake.

“Whatever food you are giving is not enough that is why children become ill. If food is not sufficient for children they will get ill and become short tempered. This is malnutrition” (Nurse, MTC)

The design of facility based care emphasise on nutrition education for mothers/caregivers to equip them on child nutrition care. The mothers/caregivers are to be able to:

- Prepare age appropriate nutritious food
 - Give prescribed amount of medications
 - Provide basic treatment for diarrhoea/fever/ acute respiratory infections
 - Understand well the significance and dates of attending follow-ups at MTC.
- According to the guideline, improving mother’s/caregiver’s competency is one of the prime requirements for discharge of a SAM child from facility based care. Nutrition education and sensitization on home based care is a pre-requisite for discharge irrespective of presence or absence of a community based management program.

In practice, by the time mothers leave facility based care with their child, they are still not equipped to provide home based nutrition and health care to their children. The guideline has a provision for capacity building of mothers, on timely identification and addressing of nutrition and health problems. By the time SAM children were ready to be discharged, the mothers were at least able to explain the condition of their children as ‘*kamzor*’ (weak) resulting from inappropriate feeding and care.

“The anganwadi didi told me his weight was not increasing. His weight started to decrease so the anganwadi didi told me to come here. He was having signs of puni. Puni is a kind of illness” (Mother of MTC beneficiary)

“The child was frequently getting ill. She used to have fever and cough. On giving medicine she used to get well but then again she would get some other illness... vomiting, diarrhoea. That is why she became so weak” (Mother of MTC beneficiary)

“My children were not eating properly, that is why they became weak” (Mother of MTC beneficiary)

Still many of the mothers were unable to comprehend that the reason for weakness in their children can be factors such as poor intake, improper child care and poor caring practice of sick children. The highlight of counselling provided to mothers/caregivers is on appropriate food intake; where as other components were not explained to the mothers.

Counselling mothers without supporting them in actual practise or providing them opportunity to share difficulties experienced in due process has reduced the counselling sessions to merely a routine exercise. Many a time mothers are aware of things they ought to do but are unable to bring knowledge into practice.

Nutrition counselling following nutrition education is significant but was found to be absent from all the MTCs visited. Moreover mothers were not counselled on the care pathway that they can adopt if a child falls sick again or loose appetite.

4.4.8 Timely Referral and arrival: The link between MTC and community health care is underdeveloped. Most of the mothers coming to MTC for treatment became aware about the service through AWW. The AWWs informed these women on their child's health status and suggested to go to the MTC.

“Sahiya didi saw my child and said he is very weak. She told me to take him to the hospital; here he would get good treatment, good medicine” (Mother of MTC beneficiary)

Not all mothers knew about the treatment duration, terms of treatment and preparation they need to make before coming to MTC. These women come to MTC unprepared. However the FHWs did not inform the mothers on of detail of services these children get at MTC and the arrangements they need to make before going to the facility; possibly because the FHWs themselves are unaware of the treatment given to children at the MTC. None of the FHWs interviewed were aware of the services provided for treatment of SAM children. Since the mothers came unprepared, when their child was diagnosed as SAM the treatment could not be initiated. These mothers had to go back to their villages for consulting their families; arranging for money etc. Some of them came back in a day or two. Some mothers do not come back at all.

“Some children came back even from other districts. Some children, if they go home, they do not come back. We see, if we feel the mother would not come back, we admit them and ask their relatives accompanying them to bring their luggage in one or two days” (Nurse, MTC)

4.4.9 Stabilization and rehabilitation: treatment at MTC/NRC is divided into two sections; stabilization and rehabilitation. The design of NRC provides for an inpatient care, i.e. caters care need during stabilization phase alone. The rehabilitation phase starts with catch-up growth and continues till the child is discharged from the

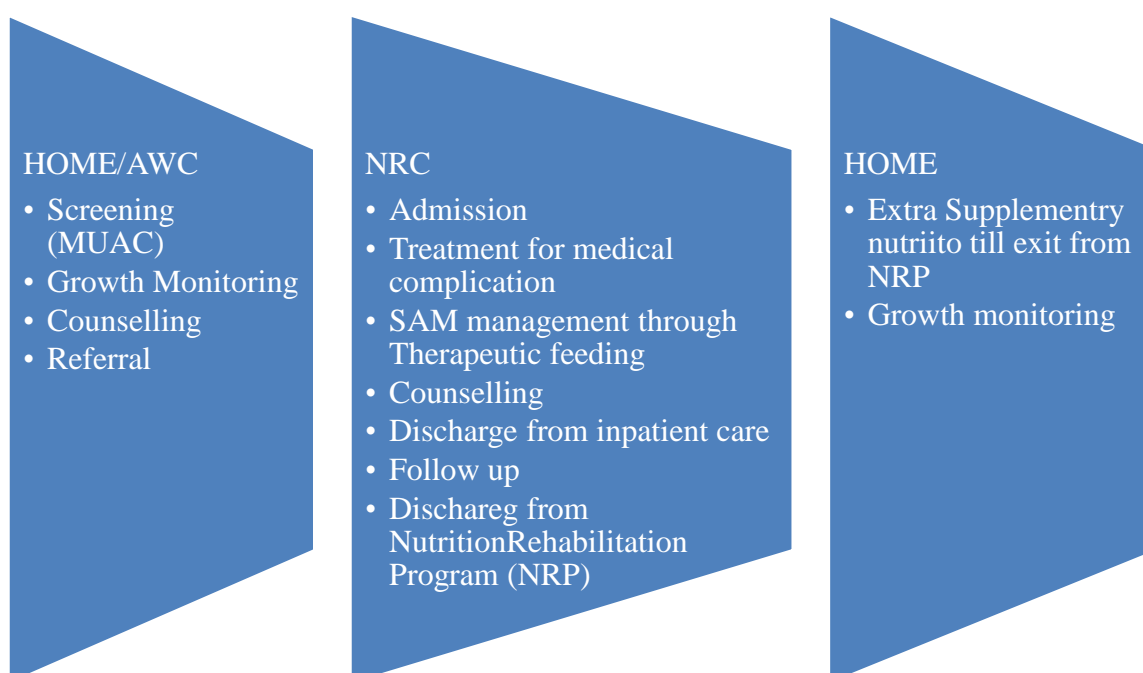
program. Hence the child spent most of its nutrition rehabilitation phase at community level and return to MTC only for follow up.

An MTC plays no role in providing care or support to children once discharged from the facility. As per design of the program, a child must be linked to a community based care for rehabilitation once discharged from MTC. However the linkages connecting facility based care to community were weak. The MTC care team does not inform respective AWWs or Sahiya on discharge of a SAM child from their facility. Children enrolled in anganwadi centers go back to day care and supplementary nutrition. It is different for children out of the purview of anganwadi centers. They are cared at home by their mothers or caregivers (grandparents, elder siblings).

At AWC weight of children is recorded and monitored per month. The ICDS have a provision for an additional 300 calories for discharged SAM cases, along with the regular diet of supplementary nutrition and follow up. Though none of the AWWs visited were aware of this provision. Probably while it is not same for children not enrolled in AWCs, their weight monitoring takes place only if they return to the MTC for follow up.

4.5 CONTINUUM OF CARE IN NUTRITION REHABILITATION CENTERS, IN DESIGN AND IN PRACTICE

FIGURE NO. 4.1 Continuum of care in NRC



4.5.1 Management continuity

Case management contributes to better care, care outcome and improved health of the beneficiary. Management continuity calls for a consistency in care provided. The care providers at MTC are responsible for ensuring seamless and timely care to SAM children during treatment and after discharge despite of transitions between different care settings.

Each MTC keeps a separate ‘SAM chart’ for all the SAM children admitted for treatment. This chart is used as a tool to monitor daily weight gain, response to treatment and develop diet plan and portion size accordingly.

Usually care plans are developed by nurses in consultation with the doctors. This plan includes the portion for schedule feed, planning of routine treatment and vitamins to be administered. While the care plan is designed according to beneficiaries’ nutritional status at admission, it is kept flexible and adjusted according to the changing health need of the beneficiaries depending on their daily health status.

However the assessment of a beneficiary’s health status is limited to physical and clinical examinations. The other significant grounds such as beneficiaries’ history, socio-economic and cultural context are left out. The current procedures of designing care plan treat SAM as a medical condition. The care plan includes diagnosis of medical complications among SAM children and its treatment along with therapeutic feeding and counseling for behavior change. All these activities are performed in a routine. However this process of care and treatment omits the very basic thumb rule of continuum of care, i.e. consistent and uninterrupted care:

- a) Child assessment: The admission process begins with filling up of the ‘SAM chart’. This SAM chart has a column for certain specific information, such as; presence of sickness, economic background and food pattern. What it does not contain is column for food history or diagnosis of nutrition problem. While the objective of recording beneficiary information is to plan for a consistent care and treatment, selective assessment of beneficiary indicate that the design of facility based care is pure clinical and it does not support care beyond this specific care setting.
- b) Nutrition intervention: The design of care at the MTC facilitates for treatment but overlook a holistic nutrition intervention. The nurses and doctors plan for specific treatment strategies for each SAM child, however it is limited to medical intervention

for addressing malnutrition. Such a treatment regimen cures sickness or medical complications and facilitates weight gain among children. But in absence of provisions to capacitate the caregivers for home based care these improvements may only last till the child stays in MTC. Counseling mothers; on child care, age appropriate feeding, health and nutrition education is the only support that facility based care model provisions for improved child care post discharge.

As stated above the MTC does not conduct a diagnosis for holistic management of SAM. Since the design of MTC focus on clinical management of SAM the diagnosis is limited to physical and clinical tests. However Assessment of non-medical nutrition problems such as; intake, behavior and environment is not conducted by the MTC care team. Nor mothers/caregivers are educated on these issues to ensure seamless care even after discharge from MTC or from the care program.

The MTCs do not assess mothers/caregiver's values associated with food, knowledge on malnutrition, accessibility to food, nutrition related behavior, capability of caregivers to learn, their knowledge on health and readiness of care givers to change. The care team start providing routine health/nutrition education and counseling for behavior change on a wide range of themes, such as; hygiene and sanitation, immunization, child feeding, causes of malnutrition, care of sick child, correct way of cooking, breastfeeding, weaning, sensory stimulation, maternal health and family planning, importance of growth monitoring, follow-up and care post discharge. A common structured counseling is provided to all mothers/caregivers without assessing their health and psychosocial need, learning capacity, constrains and willingness to adapt for behavioral change. Besides, oral counseling without support for practice has constrained behavioral change among mothers/caregivers. Faulty care practices, improper and inadequate feeding, poor sanitation and hygiene practices are common among caregivers accompanying SAM children even during their stay at MTC. In absence of community based care it becomes all the more important to not only treat the medical complications but also equip caregivers for a long term care.

- c) Care planning and coherent care- continuum of care identify designing of care plans as a joint effort of care providers (medical and paramedical team). At MTC while nurses are responsible for assessments (pre admission, during treatment and pre discharge), the doctors provide support through time to time consultation and suggestions. There are instances where children get discharged without being screened by the doctors. Though doctors come for daily rounds in the ward but consultation and counseling to

mothers/caregivers is provided by the nurse in charge. The nurse staffs are responsible for recording daily progress, reporting it to the doctor and providing care/treatment as suggested by the doctor.

All MTC visited provides the therapeutic feed as per the guidelines. This diet plan does not consider local food practices or food preferences. The guidelines prescribe for a therapeutic feed for 15-21 days of stay. The feed is prepared by the nurses. The children get to eat this feed eight times a day till they achieve the target weight. It is noticeable that rice and pulses are preferred food in this region and children are in habit of consuming it as their daily meal. This preference of food is reflected in reluctance of SAM children to eat therapeutic food. When children refuse to eat therapeutic feed, despite of instruction from nurses, mothers/caregivers feed their children with rice and pulses fearing that they might remain hungry.

During stabilization phase, while mothers/caregivers act as the primary care giver, the clinical care team performs the supervisory role. However the mothers/caregivers need to act as per the instructions of MTC care team. The mothers/caregivers do not have a say or participation in care planning for their children. The care activities such as feeding and cleaning are performed by the mothers/caregivers. In certain MTC mothers/caregivers were also responsible for timely administering of prescribed medicines. This is the only participation of caregivers in facility based treatment. Otherwise caregivers are neither consulted, nor informed on the care plans.

- d) Discharge planning – Discharge plans are made by MTC care team. While most work is done by nurses, it is the doctor who gives final approval to discharge plan. This discharge plan is limited to preparation of discharge card and counseling mothers on:
- i. cleanliness
 - ii. number of feeds
 - iii. dietary intake (supplementary nutrition from AWC and home cooked food)
 - iv. Date for follow up at MTC

These are certain common points written in *discharge card* of each child. Besides this the card contains prescription of certain dose of iron syrup and vitamins for children who are yet to achieve a weight of -2SD and/or are sick. There is no mechanism in practice;

- To link the child to a community health care provider

- To track progress/regress of child and provide support between follow up visits
- To mobilize mothers/caregivers for follow up visit

e) Transition of care across providers, across setting and tracking beneficiary-

As stated above, there is no mechanism in place to ensure seamless care during transition of care and transition between care settings.

At the MTC, SAM children are treated with appropriate clinical management along with therapeutic food. During the first phase of treatment i.e. during stabilization phase all the care (medical and dietary) is provided by the MTC care team. Though nurses support mothers/caregivers on appropriate feeding, caring practices these activities are often performed as a routine work and not as an activity for behavior change. This lays a weak base for phase II i.e. rehabilitation phase.

The involvement of nurses and doctors gets lesser during transition phase; to administering medicines, anthropometric measurements and health and nutrition education. It is the mothers/caregivers who are expected to feed children, provide appropriate care, maintain hygiene and cleanliness, monitor health of their children and report to the nurses in case of any illness or discomfort. In this phase, while mothers/caregivers should play an active role, they are not equipped, capacitated or supported for the same.

The MTC does not entail mechanism for smooth transition of care post discharge from a facility based care or after discharge from the program. There is no system at MTC to capacitate mothers/caregivers for self care at home. The mothers were educated on preparation of low cost nutritious food, hygiene and child care. However they were not capacitated on understanding of the disease and significance of behavior change. None of the mothers could tell why their child is admitted in MTC or how this health condition happens). These mothers/caregivers were neither capacitated on nutrition nor informed on support for child care could they could receive from FHWs. In this way, child nutrition becomes sole responsibility of the mothers/caregivers between follow-up visits and after discharge from the program. If a beneficiary fails to turn up for follow up visits, there is no system to be tracked such child, if this persist these children are discharged from the program as defaulters. .

Flexibility and consistency in care

The most important aspect of flexibility in continuum of care is to adapt care as per the changing health need of beneficiary and keeping up with their changing circumstances.

The design of MTC support for flexibility in care, however in practice, the care provided is often inconsistent to the care need of beneficiary. When a child comes for treatment at MTC, recording of case history by the care team is limited to gathering information on dietary practice and sickness episodes. It does provide space to register information on care sought for previous ailments or any ongoing treatment. A care plan is developed for each child without consulting mothers/caregivers and delivered for the next 15-21 days of their stay in an inpatient care facility. As a result the mothers/caregivers do not give up the parallel health care that they have been giving to their children before coming to MTC (often care is sought from traditional healers, faith healers, rural medical practitioners or private doctors before coming to the facility). Nor the mothers/caregivers are consulted on the child's food preference or allergies, if any. Under such circumstances if children show poor response to therapeutic feed (detest or vomit) mothers put less effort in making children finish the therapeutic feed.

Adapting to changing needs of beneficiary can be achieved through ongoing monitoring and outreach services. Nutrition rehabilitation program provide treatment to SAM children in two phases and in two different settings, i.e. stabilization as inpatient care and rehabilitation as outpatient care with regular follow up. During treatment at MTC, the care provided was based on daily weight monitoring and MUAC measurements. However this adaptation was limited to medical care such as amount of feeding, medicines and counselling to be provided as per progress or regress of beneficiary. Care plan for each SAM case is revised as per their progress at MTC.

Since there is no direct interaction between the care team and caregivers/mothers, seamless care is maintained but often delayed. This redesigning of care plan depends on the interaction between mother/caregiver and nurses, observation of the care and feeding behaviour of mothers/caregivers and daily growth monitoring. While growth monitoring is a regular practice, there isn't a set routine for caregiver-care provider interaction or observing the care practice of mothers/caregivers. If SAM children suffer from illness the mother inform MTC nurses about it. The nurses have a limited autonomy in providing

clinical care to SAM children. The condition of such a beneficiary is first discussed among the care team (doctor and nurse), and then appropriate care is provided.

There is also no regular interaction among providers of different care settings i.e. mothers/caregivers-facility based care providers (doctors)-community based care providers (FHWs). The monitoring activity gets limited to a schedule follow up on every 15th day for a first month and then through monthly visits. No support is provided to the caregivers for meeting care need of beneficiaries beyond MTC. The care provided at MTC focus on clinical management of SAM but it overlooks care need of discharged SAM children. The nutrition rehabilitation program provides care support to discharged SAM children only during follow up visits. It is important to acknowledge that recovery of a SAM child case takes place in their actual socio-cultural environment. There is no mechanism; to monitor progress among beneficiaries' condition and provide adequate care between two follow up visits or post discharge.

Outreach services are underdeveloped and inadequate to support full recovery of SAM children. When the SAM children are discharged from MTC they come back to community/home based care. Here the only care provider they have is their mother or family. On coming back from MTC, mothers get back to their regular routine of livelihood and household chores. Child care and feeding thus comes back to its initial form i.e. old practices of child care and feeding. This is the phase when children need improved dietary intake, better feeding practice and more care, all of which is already compromised. As mothers/caregivers take up the role of primary care provider are not fully equipped on; knowledge, skill and support for self managed care of SAM children. Even during follow up visits, the nutrition rehabilitation model does not have provision to meet changing care needs of the beneficiary. Counselling is the only form of care provided. Post discharge a beneficiary's care need is at the community level, whereas the MTC care team is unable to extend care beyond the facility.

4.5.2 Relational continuity

At MTC a team of nurse and doctor provide treatment to SAM children. While doctors come daily, the nurses work in shifts. Treatment, counselling and discharge activities are performed by different nurses on duty. For discharged children, there is also a probability of not meeting same nurses over the scheduled follow-up visits. Mothers/caregivers rarely get to consult doctors and it is mostly the nurse who performs all the activities. In absence

of a case manager interpersonal relationship between mothers/caregiver and MTC care team is limited. While the nurses are engaged in preparation of reports, screening, admissions, preparation of food, giving out feeds and medicines, they get little time for assessing beneficiary, counselling and capacitating mothers/caregivers for self care during follow up visits.

An interpersonal relationship of mutual trust and care between caregivers and care providers was difficult to trace. Mothers/caregivers were neither consulted for formulation of care plan nor informed on treatment procedures, they:

- Lacked understanding of care procedure
- Did not adhere to care/feeding instructions
- Did not observe necessary precautions
- Did not report discomfort experienced by children
- Lacked trust on care providers
- Felt differentiated (the mothers were confused on different kind of care services provided to children admitted in the same ward)

With limited inter-personal linkage, informational continuity faces a setback. Firstly, there is no system of recording beneficiary's socio-economic and environmental background, this leave the nurses without any support information on the barriers/challenges faced by the mothers/caregivers on child feeding and care. Secondly, while suggestions/counselling sessions shall be suitable to beneficiary's need, in absence of beneficiary information most of the suggestions made, are generic. This is not enough to bring behavioural change or to capacitate caregivers for home based care of SAM children.

There is lack of inter-linkage between the beneficiary/care givers, MTC care team and other stakeholders (FHWs). Once a SAM child is discharged from the facility based care, it is on mothers/caregivers/ relatives to ensure adequate dietary intake and care during sickness and otherwise. At MTC mothers/caregivers are not informed on care providers to approach for sickness or nutrition care for their children. Since the follow-up provision for a provider-beneficiary contact in every 15 days, it becomes important to equip caregivers with necessary information on appropriate services and personnel for nutrition and health care, especially in absence of a community based program. In between the follow-up schedules, there is practically no arrangement to support mothers/caregivers for

appropriate care. If the child do not show improvement four schedule follow-up the child is discharged as non-responder. If the child shows progress, the mother is encouraged to sustain positive behaviour and adequate care/feeding practice. Since there is a gap in information sharing between the providers (MTC)-beneficiary-stakeholders (frontline health workers), provision of care does not remain coherent. This transition in care setting, from facility based care to home based care devoid the SAM children of close monitoring, therapeutic feed and prompt care for sickness in pre and post MTC phase.

4.5.3 Informational continuity

Information sharing among the providers and beneficiary was found weak at MTCs. Flow of information from mothers/caregivers to care providers i.e. facility based and community based was mostly be unidirectional. As stated before, frontline health workers (ANM, ASHA, and AWW) refer children to MTC, mothers and caregivers are informed that their child need medical attention; however neither the urgency not significance of facility based care is explained to them. None of the mothers/caregivers interviewed were aware of the services provided in NRC. None of them were counseled/ prepared by the frontline health workers to access facility based care for their children.

The MTC care team shared anthropometric measurements during admission of SAM children, but they did not explain presence or absence of associated illness among their children, treatment procedure or treatment outcome. The mothers/caregivers were not informed on the need for different clinical tests, nor were test results discussed with them. For mothers it was difficult to comprehend the reason behind difference in treatment for children, though each child was admitted for 'weakness'. The nurses shared child's progress reports with mothers and advise them accordingly. After discharge from MTC, information on beneficiaries' health status, specific needs, care support required and progress during facility based care was not shared with the frontline health workers or community health care providers at respective PHC. While discharged SAM children need to be supported through community based care, in-between follow-ups and after discharge from program; the mothers were not informed by MTC care team to meet the community care providers. The mothers were not aware that they shall meet the FHWs specially AWWs once they are back home. Even the nurses at the MTC could not state properly the role and linkage that the community care providers play in care of SAM children.

Inter-linkage: The inter-linkage of services under facility based care and community based care is patchy. Though maximum referral cases come through the AWW or Sahiya, nature of referrals vary. Some of these cases were detected during screening at VHND while others were self referrals but mothers/caregivers were accompanied by frontline health workers.

Two of the MTC visited had a link-up with FHW. At times of low bed occupancy, the MTC care team, send message to the Supervisors (ICDS) for referring SAM cases from their area. The FHWs are constantly pressurized for active screening and referrals by their supervisors. This contributes in higher referrals to MTC than their actual bed strength. The referred cases include both complicated and uncomplicated SAM.

This linkage between facility based and community based care is not actively practiced for discharged cases. Since the MTC care team and FHWs are not directly linked, following a case post discharge gets hampered. It is only at follow up visits that the progress of a discharged SAM case can be assessed. Besides, there is no mechanism for mobilizing mothers/caregivers to attend all the scheduled follow up.

Coordination: The design of nutrition rehabilitation program calls for a close collaboration between the available facility and community based care. However in practice, the scenario is absolutely different.

There are two primary platforms for interface between departments of Ministry of health and Family Welfare (MoHFW) and Ministry of Women and Child Development (MWCD), namely; AWC/VHND and the health centre. The FHWs (ASHA, AWW and ANM) were not aware of their role in management of uncomplicated MAM and SAM. The management of malnutrition is dependent entirely on MTC. Though the nutrition rehabilitation program rely on FHWs for screening and referral of complicated SAM cases, they are not involved for community based follow up or facility based follow up of discharged cases (mobilizing mothers/caregivers to attend follow up). Non functional Sub centers and distant PHC/CHCs have added to the plight of community in accessing care. There is no system to streamline care services for; children denied admission to MTC or discharge from facility based care.

While all children discharged from the facility based care are followed through follow up visits; monitoring child health and nutrition take a halt right after discharge from MTC.

The MTC does not have a tracking system to ensure regular follow up and/or to bring defaulters back to nutrition care. Tracking a case is also significant for smooth transition from community to facility and back to community based care.

There is no mechanism to monitor or counsel mothers/caregivers on adequate child feeding, food choices, adequate and age appropriate feeding and care need of a non-responder. The MTC are suppose to have a list of PHC, sub centre and AWCs in its catchment to refer the discharged cases for appropriate care, but none of the facility had this in practice. All discharged children are to be enrolled in AWCs to provide them with supplementary nutrition, growth monitoring, day care and treating for childhood illnesses. It is the duty of AWW to make home visits to follow these children; provide appropriate counseling and support to mothers/care providers and conduct weight monitoring at the AWC. It is the shared responsibility of ASHA and AWC to ensure that children do not miss their schedule follow-up visits. The ANM is to follow progress of discharged cases in each VHND till the child exit nutrition rehabilitation program.

In practice none of it is being followed. There is confusion among community care providers regarding their role in nutrition care of SAM children. While there is limited linkage between community and facility based care; the care providers in these two settings are unaware of their own role and other providers' role in the care process. There is no effort from either of the care providers in facilitating transition of care, i.e. from home to facility and then back home. This scenario might be different for children regular to AWC and those outside its purview. Viewing MTC alone as *the answer* to malnutrition is not enough.

4.6 BARRIERS TO MALNUTRITION MANAGEMENT THROUGH MTC

4.6.1 Providers

- (a) *Infrastructure*- Not all MTC are located in a facility that have separate paediatric ward. Children from OPD are sent to MTC to be screened for SAM and even if found with low W/H or low MUAC but good appetite they are admitted for further management. Similarly cases referred by FHWs (including sick, wasted and underweight children) are screened for SAM. Ideally MTC admits children with complicated SAM, however depending on the bed availability even children with uncomplicated SAM are admitted. On arrival of a complicated SAM child, if

children admitted for sickness show some improvement, they are discharged to make bed for new admissions. There are also instances when the beds are not vacant and the SAM children in need of medical care are sent back.

(b) *Referrals*- The program depends completely on FHWs to refer children for facility based treatment. Platforms such as VHND and home visit are significant to this process. However, low participation of mothers in VHND and lack of frequent home visits by FHWs add to the chances of omitting undernourished children from being identified and hence referred.

(c) *Supply issues*- The facilities lack adequate space and equipment to facilitate capacity building of mothers and care providers for appropriate care during and after discharge from MTC. The MTCs faced several challenges in terms of other supplies ranging from timely supply of milk to the raw materials to prepare therapeutic feed for admitted children. The facilities managed feeding therapeutic feed prepared with whatever material were available (powered milk instead of fresh milk, feeding therapeutic food alone and not khichdi⁶¹/daliya⁶² etc.).

Lack of separate space for preparing therapeutic feed act as a hindrance for the staff to take sessions for training mothers on preparation of nutrition rich feed. The facilities did not have a separate area for feeding which increased the difficulty of MTC nurses to monitor feeding practice and consumption of feed by the admitted children especially if a facility had more than one ward for malnourished children. The MTC care team were are unable to monitor feeding practices of mothers/caregivers, address feeding related problem and provide appropriate counselling.

Lack of dedicated space for counselling hurdle the MTC nurse staff on capacitating mothers on themes such as nutrition and health education, feeding, hygiene and sanitation, child care practices, health seeking behaviour and stimulation activities. The mothers were provided small individual counselling sessions which last for 5-10 minutes.

(d) *Programmatic Knowledge and role clarity*- The MTC nurse staffs are responsible to maintain bed occupancy at facility. They contact FHWs for referral of malnourished children FHWs to the best of their judgement refer cases that can even be managed at the community level. Many times sick or MAM children are

⁶¹ Khichdi is type of meal prepared with rice and dal cooked together

⁶² Daliya is a type of porridge. It is made by cooking cereal in water or milk

also admitted within the facility. As the beds are full all the time, children with SAM either have to wait for a vacant bed or are asked to come back within a few days.

Lack of clarity adds to this confusion. Many FHW remain in contact with the facility based care providers. If they have a case for referral, instead of referring such cases for further diagnosis to MTC they first contact the MTC care team and enquire about bed vacancy. Only if there is a vacant bed these FHWs send children to the facility, otherwise they confirm from facility nurses as when the beds will be available and accordingly they send the parents to MTC with their children. The Nurse at MTC themselves do not have clarity on the system of referral, purpose of inpatient care facility and their own role in the whole process. Though cases referred by the FHWs could be managed at community, the Nurses at MTC were not confident if these children can be denied admission. Therefore referred cases usually were admitted for treatment.

The NRC/MTC staff are not trained to identify and provide need based counselling to mothers, therefore instead of providing separate counselling to mothers of sick, MAM and SAM children they provide same theme based counselling to each of the mothers that revolve around feeding. Any play or stimulation activities are rarely conducted by MTC staff. They distribute toys to children and let them play on their own.

- (e) *Infrequent training and monitoring/support*- The Nurses at MTC reported to have received training for facility based management of malnourished children. Most of the nurses informed that they started their work at MTC without appropriate hands on training or supervision and thus have gained experience on management of malnourished children on their own after their appointment at the respective facility. None of the nurses reported to have received any refresher training or workshop in the last 2-3 years. Similarly none of the nurses were trained on soft skills such as problem identification and counselling of mothers of admitted children. This is also evident through the fact that same health and nutrition messages are delivered to all mothers of admitted children irrespective of their different health need, challenges and concern. Lack of standardised counselling tool or context specific IEC material for nutrition and health education serves as a

barrier to MTC care team, in capacitating mothers for appropriate care, feeding and precautionary care for malnourished children and behaviour change.

The nurses at MTC are responsible for diagnosis, admission and discharge of SAM children in consultation with the doctor-in-charge. In actual practice most of the above mentioned activities are performed by the nurses. Only serious cases or cases that require urgent medical attention are attended by the doctors-in-charge during admission and discharge. During admission the nurses conduct the diagnosis (physical) and admit or deny admission to children. Cases that require further diagnosis are brought to the doctor for consultation and admission. In none of the other activities nurses receive any form of supervision.

- (f) *Cultural and language barrier*- Nurses at the facility were unfamiliar to the culture and language of mothers/caregivers accompanying children to the MTC. Nurses serving at the MTC were trained neither in the cultural context nor with the language of the community. Due to lack of familiarity with culture and language of beneficiary the nurses were unable to establish strong interpersonal relationship with mothers/caregivers.

“They have different practices. Even if their child is getting treated here, still they practice their traditional medicine. We ask them not to give any other medicine but they do not listen” (Nurse, MTC)

In absence of training on cultural, social and geographical context the nurses'-in-charge of counselling were unable to provide need based and appropriate care advice to mothers/caregivers. Their biggest challenge was to educate mothers for appropriate feeding, child care and behaviour change. Under such circumstances capacitating mothers/caregivers on nutrition and health education and making it culturally appropriate was a challenge for the MTC nurse staff.

“Mothers have their local practice. They have their belief. We tell them do whatever treatment you want to do for your children but also feed the medicine and food we give you here” (Nurse, MTC)

On the other hand inability to communicate to mothers/caregivers in their dialect made it difficult to support or instruct mothers for appropriate care and feeding at the facility. This low sensitization of MTC care team regarding perception, context

and cultural practice of the community make it hard for them to establish a strong interpersonal relationship with the family.

(g) *Defaulters*- Mothers/caregivers were unwilling to stay at the facility for 14-21 days despite of counselling. Burdened by responsibility of other children, house hold chores, loss of wages etc. mothers/caregivers were reluctant to spend such long duration at the facility. Instances of requesting the care providers for early discharge, absconding from the facility (leave against medical advice) and skipping the follow up visit were very common in the MTC visited. To prevent children from defaulting or leaving the treatment midway, the nurse staff allowed mothers to leave MTC for a few days (2-3 days in case of emergency, during cultivation season or personal reasons) to attend their personal engagements. The nurses reported that usually mothers come back in 2-3 days and continue with the treatment; however some mothers do not return at all.

(h) *Community perception*- Community perception on malnutrition is one of the biggest challenges for MTC care team. The mothers/ caregivers have low awareness on malnutrition and they do not perceive it as a concern. In most cases mothers/caregivers do not recognise it as a health concern till their children become extremely sick otherwise they perceive that weakness in their children can be corrected at home. As a result they refuse referral to MTC.

Similarly because of communities' perception on 'treatment'⁶³, mothers were unsatisfied with treatment of children only through Therapeutic feeding. As a result they quest for early discharge or abscond from the facility. Moreover due to improvement in health of their children (through therapeutic feeding) they perceive that their children are recovered and that they can be managed at home. In such scenario the mothers/caregivers lose interest and involvement in feeding of therapeutic feed to children as instructed by the nurses. If the child fails to gain weight or have slower weight gain the mothers/caregivers doubt on the credibility of MTC care team and the treatment provided; and get restless to go home. Similarly, through mothers/caregivers follow all care advice at the facility they

⁶³ The mothers are informed by FHWs that their children are 'weak' and this weakness can be treated at the MTC by the medicine that is provided there. The mothers come to MTC with a perception that their children will get 'good medicine' and care at the 'hospital'. At MTC when their children are given therapeutic feed as medicine, it does not resonate their idea of 'medicine' which is either a 'syrup', a 'tablet' or 'saline'.

perceive⁶⁴ that children discharged from facility are completely healthy and they do not come back for follow up. Poor sensitization of mothers, inadequate counselling and inadequate pre-discharge preparation of mothers/caregivers can be attributed to this confusion.

- (i) *Human resource*- Shortage of trained staff was a common scenario within MTCs. The 10-20 bedded facility was being managed by four or sometimes three nurses. At a time usually two or even one nurse is present at the facility managing all the work. In other MTCs, where children were being referred from paediatric or general OPD was under greater work stress i.e. to deliver care services at the MTC along with screening of all children referred from other OPDs. Higher work burden divide their time and lessen their ability to deliver responsibilities at the MTC.

On the other hand absence of trained nutrition counsellor and social worker add on to the work of nurses at the facility. As the nurses are engaged in providing nutritional and medical care to admitted children, delivery of nutrition and health education and counselling to support mothers/caregivers in appropriate care and feeding suffers in quality. In absence of dedicated cook the nurses take turn to prepare the feed. All of these challenge the care staff to manage services at the facility.

4.6.2 Beneficiaries

- (a) *Timely referral and adequate pre-referral counseling*- Early identification and referral of cases for facility based care are not adequately practiced at the community level. The mothers/caregivers are neither adequately informed on the purpose to visit a facility based care nor the significance of seeking care from

⁶⁴ The FHWs inform mothers that their children will recover from their illness (weakness, lethargy, poor appetite, thinness etc) if they get them treated at MTC. The MTC staff informs mothers/caregivers that if they complete treatment of two weeks or their children attain a certain weight they will be discharged from the facility. At none of the care points, mothers/caregivers are explained that the child discharged from MTC still need appropriate care for recovery. The discharges are made at MTC based on weight gain of 15% by the end of two weeks of treatment. By this criteria, children are discharged at different WHZ score ranging from, -1SD, -2SD, -3SD and some at -4SD. The mothers are not informed during discharge that though their children have met discharge criteria they have not been cured complement. Mothers do not understand the significance of follow up visit or the importance of continuing the feeding practice (frequent meal, age appropriate feeding and good care).

MTC. Most families delay in accessing treatment from MTC and reach out to such facility after seeking treatment from different other care providers. When mothers/caregivers of SAM children arrive at the facility either children are admitted or refused admission (on account of insufficient vacant bed). On the other hand, if mothers/caregivers are not prepared well by FHWs for inpatient treatment they refuse immediate admission. They either come back later or do not come at all. Parents need to make a lot of arrangement before coming to a facility such as, management of time, income loss, care of other siblings, travel expenses, distance etc. Even parents who are sent back because of lack of vacant bed are unable to come back for treatment.

(b) *Access*- Timely access of care (seeking care from MTC as soon as the referrals are made) is very rare, especially among communities residing far from the facility. Mothers living at the periphery need to overcome several issues such as transportation, time, opportunity cost and arrange for a company (husband, family member or ASHA) to travel to the MTC. If they come unprepared to stay at the facility it becomes challenging to return home and come back immediately for admission. At such time, the families delay admission till necessary arrangements are made. When they come back admission of these children again depend on availability of bed.

Same challenges are faced by the mothers/caregivers to come for follow up visits post discharge from MTC. Mothers coming from nearby villages still managed to attend follow up visits, however mothers from distant villages are unable to travel to the MTC so often. Due to unavailability of similar care service or follow up care at community level, discharged children are solely dependent on home based care.

(c) *Burden of income generation and other responsibilities*- Facility based care require prolonged stay for a minimum of 14-21 days. The mothers/caregivers (participating in livelihood generation) are hesitant to spend such long duration at the facility. The program provides for an incentive of Rs. 100 for a day which is far less than what these women earn as daily wages⁶⁵. This meager token money is insufficient to motivate mothers/caregivers to continue treatment at the facility.

⁶⁵ The mothers reported that they could earn Rs. 300-350 in a day. This income is a huge support for the families, especially during the lean season.

On one hand mothers/caregivers delay admission of children at the facility till they find an alternative or support for taking care of their other children, livestock, household chores etc. Admissions to MTC are often delayed during agricultural season; however post harvest the family tends to seek treatment from facility at the earliest. Resourceful families are capable to afford traveling and stay at the facility even during agricultural season, resource poor families⁶⁶ on the other hand wait till they are capable to arrange enough resource. Male members and sometime entire family migrate during agricultural season. During this time women are left behind to take care of cultivation, children and household. Therefore they wait till the harvest is over and then seek treatment for their malnourished children. Even if mothers/caregivers come with their children to MTC as referred by the FHWs, they refuse for immediate admission, abscond or default midway during treatment. Similarly long travel distance, loss of wage, care of children and burden of household chores constrain family (mothers/caregivers) to attend all follow up visits at the MTC.

(d) *Poor knowledge on malnutrition*- The community lack adequate knowledge on malnutrition. They were not well informed on causes and outcome of malnutrition. The participants in the study were mostly poor, illiterate or had a primary level of education. Contribution of FHWs in sensitizing and capacitating community for prevention, care, accessing service for malnourished children was found not sufficient to support mothers and care givers for appropriate care of children during illness, early identification of danger signs and prompt access to a health care provider. The mothers did not seek care for their children; (i) as they perceived them to be healthy (ii) even if they felt there is something not right about the health of their child, they were not aware of what they should do about it⁶⁷. Even if they seek care for their children from MTC it is for symptoms such; weakness, lethargy, poor appetite, extreme thinness etc. Once the symptoms are treated at the facility (extreme thinness, weakness or sickness) the

⁶⁶ Families that depend on daily wage (agriculture or non agriculture labor) for livelihood and live in remote rural areas.

⁶⁷ For illness such as fever, cough and cold, diarrhoea etc. the family know that they can seek treatment from a doctor, or rural medical care provider or chemist. They did not know weakness in children need medical care. They perceive that weakness can be treated if they feed their children well. Mothers were also confused that their children became weak or were not gaining weight despite of the food and care they provide.

mothers/caregivers ask the MTC care team for early discharge. On the other hand if the mothers/caregivers are unable to see quick visible changes in the health of their children after admission to the facility they suspect credibility of the care providers and drop out from the program. Leave against medical advice is not new to the MTC.

- (e) *Poor sensitization and awareness on available services*- poor knowledge on malnutrition and available care services effect the utilization of services by community. Awareness generation and promotion of services for malnutrition among mothers and caregivers were found to be inadequate at the community level. Due to limited exposure to FHWs and health services the mothers and caregivers lack knowledge on special care services available for SAM children at the facility and at community level. On one hand the mothers/caregivers were not sensitized on care services available at the MTC for SAM children on the other hand they were not aware on specific services provided at the facility. This is one of the reasons for dissatisfaction among mothers and caregivers with services provided at MTC and default cases or cases of leave against medical advice. The mothers/caregivers showed low cooperation in feeding therapeutic feed to children at MTC and poor adherence to care regimen. The MTC care team does not sensitize mothers and caregivers on; specific health need of the discharged children, services available for discharged SAM children and the need of availing these specific services⁶⁸. Mothers/caregivers also do not perceive continued care of malnourished children after discharge from the facility or attending follow up visit as necessary. The families neither bring children for follow up care at MTC nor attend growth monitoring at the community or collect additional supplementary nutrition for their children. Even if mothers collect additional supplementary nutrition they are not supported with adequate advice from the AWWs on balancing home cooked food along with supplementary nutrition.
- (f) *Sensitiveness⁶⁹ of care providers*- The mother/caregiver often bears the blame for poor health of their children. The care providers (at community and facility) hold

⁶⁸ Feeding additional supplementary nutrition available at AWC; follow-up and growth monitoring at MTC

⁶⁹ The extent to which a health provider is sensitive, towards needs, ideas, doubts, concern and problems of the mothers/carers; and to the, extend a health care provider intends or actually take measures to address these issues.

mothers accountable for malnutrition among their children. The experience of mothers/caregivers with services for malnourished children is often as a receiver.

Mothers are unable to provide appropriate care to their children at home for several reasons⁷⁰. These very same reasons also cause delay in seeking care for malnourished children, accepting referrals and attending follow up visits at the facility. While mothers are blamed by FHWs for inadequate care and feeding of their children they are subjected to the same guilt by facility based care providers.

Neither VHNDs nor MTCs provide for an interactive space to mothers. The FHWs and MTC care team often assume that the mothers are ignorant on appropriate care and feeding need of their children. Most of the time, counseling and education is around the need of appropriate care and feeding practices and but none of the providers inquire on barriers faced by mothers/caregivers in practicing it. There is very little attempt by their respective FHWs or facility based care providers to provide solution and support for barriers faced by mothers (poor autonomy, work burden, time constrain etc) in providing adequate care, age appropriate feeding or prompt access for medical care.

Conclusion

The field data reflect that MTC provide specialized care for malnourished children. The MTC unit is located within a Community Health Centre (CHC), First Referral Unit (FRU) or district hospital. The CHC, FRU and even district hospitals do not have a dedicated pediatric unit. At these health facilities, sick children are also managed at MTC unit, where they are treated for medical complication and provided with nutritional support and clinical and nutrition monitoring. At community level there is no established model for community based management for acute malnutrition. The MTC units in the study area provided facility based treatment of SAM children through therapeutic feeding, management of medical complication and clinical and nutrition monitoring. This makes MTC an important link that connects care for management of malnutrition and secondary prevention for sick children from becoming severely malnourished. The MTC is a significant intervention in this regard for prevention of malnutrition induced mortality.

⁷⁰ Barriers such as; livelihood generation, care of other children, household chores, migration, poverty, low autonomy etc.

The Nutrition Rehabilitation program faces certain operational challenges pertaining to human resource, supply and infrastructure. The program exhibit continuum gaps, as it do not connect care from home to hospital (MTC) and hospital (MTC) to home. The MTC units grapple with issues of high case load during lean season and very low case load during cultivation season. The MTCs struggle with managing high turnout of children at the facility that can be managed at community level and low turnout of children for follow up care. The MTC units do not treat such cases and send them for community based management. In absence of a structure for community based management of SAM, seamless care for children as they progress from being at risk to moderate and moderate to acute malnutrition gets compromised. On the other hand continued care between the period of discharge from MTC and discharge from Nutrition Rehabilitation program gets fractured. This model of care provide excellent support for treatment of children with SAM however the service gap between discharge from MTC and discharge from Nutrition Rehabilitation program need to be addressed.

CHAPTER 5

COMMUNITY BASED MANAGEMENT OF ACUTE MALNUTRITION (CMAM)

Community based interventions can be best understood as interventions delivered through two means; a community health worker or through outreach session. The community based interventions primarily comprise of two approaches; services delivered through home visits and community mobilization (Neogi et al., 2016). The model for Community Based Management of Acute Malnutrition popularly known as CMAM deals with the treatment of SAM cases through a community based approach. This model has emerged as a link connecting community based care for prevention and management of malnourished children and facility based approach of treating malnutrition. This intermittent model has brought care and treatment of SAM children closer to the community. The model of CMAM is still acquiring shape; the Government and Non-government organizations are trying this intervention as a pilot project.

5.1 CMAM Chakradharpur, West Singhbhum

This section is based on one such model designed and currently under pilot phase by MSF in Chakradharpur block. This is a two tier approach for management of SAM that provides care services at different levels of care. The treatment model requires a beneficiary to stay at the facility for a specific period of time varying between 12-16 weeks. There are three primary component of the treatment regime; (a) Ready to eat therapeutic food known as RUTF; (b) medical counseling; (c) Nutrition and Health counseling and education for caregivers. There are three building blocks of this model: (a) Inpatient care at stabilization unit (b) Outpatient care through ambulatory outreach and (c) Supplementary nutrition.

This model therefore addresses different stages of SAM through inpatient and outpatient care along with reaching out for integration with the present health system through ICDS (AWC) and health sub centers. Chakradharpur block in West Singhbhum has a mixed topography with a relatively plain area in the centre and surrounded by hills and forest from all the other sides. The population living in this plain region is dependent on agriculture for their livelihood; whereas livelihoods of people living at periphery are dependent on various activities such as, cultivation, non timber forest produce (NTFP),

wage labor etc. Migration of men and families is common in peripheral villages in comparison to those residing in central Chakradharpur. Facilities such as road, transportation facility, health care, connectivity, education, public distribution system (PDS) and livelihood is better in the plains in comparison to villages at the fringes where electricity, clean drinking water, accessible roads, health care, functional PDS services are difficult to access.

5.2 AN OVERVIEW OF SERVICES AT OUTPATIENT TREATMENT UNIT AND INPATIENT TREATMENT UNIT

The CMAM program is a therapeutic feeding program (TFC) which includes two components; (a) ambulatory therapeutic feeding center (ATFC) and inpatient therapeutic feeding centre (ITFC).

The ATFC is mobile health camp site catering 5-6 surrounding villages. The CMAM model functions through 30-31 such clusters in the block; where such ambulatory units operate every week. These ambulatory units provide services in areas well connected with roads and also in far off villages devoid of accessible roads, transport facilities and health care facilities.

Off all the ATFCs (mobile health care units) visited, none had a dedicated building or a permanent setting. These ATFCs operate weekly in a rented public building such as a sub centre, school building or an anganwadi centre. These centers start in morning and operate for about 6-7 hours, till late afternoon. Mothers came and attend ATFC at any time, as per their convenience. The mothers did not receive any incentive or reimbursement for travelling. These centers had access to water for hand washing and cleaning but they did not have toilet facility. Each centre had a separate area assigned for waiting, screening, feeding, health education and medical counseling. Some of the facilities had better spaces where as some small, comprising of just a room where mothers were cramped with their little children. For such ATFC, the same room was being used for waiting and appetite test whereas. Most of the ATFC had a minimum of two room establishment, where room was used for waiting and appetite test whereas other room was used for screening and medical counseling. ITFC was located at the MTC at First Referral Unit (FRU, block hospital), Chakradharpur. This unit had ventilated two separate wards for children. These wards were assigned according to their medical condition. Both the wards were well ventilated.

Children with complicated SAM (communicable disease and infections) were admitted in one ward and non-complicated SAM was admitted in another. The unit had toilet and bathroom facility with 24 hours water supply. Each ward had beds (with pillow, sheets, blanket and mosquito net), a small locker (for mothers to keep their belongings) and well ventilated with windows, fan and lights. There was no separate area assigned for psycho-social stimulation of children, demonstration, feeding or counseling. Activities such as counseling and health education, feeding, stimulation and feeding demonstration were conducted in these two wards (mostly on the beds where mothers were gathered for counseling and health and nutrition education). The unit had an assigned area for daily weight monitoring and preparation of F75 and F100. Since the admitted cases were fed packed RUTF the unit did not have an assigned kitchen space for preparation of therapeutic feed for children.

Children with a MUAC of $<125\text{mm}$ were admitted in the therapeutic program. Children with MUAC $<125\text{mm}$ ⁷¹ or oedema or WHZ $<-3\text{SD}$ were admitted in the program. The uncomplicated SAM children are treated at ATFC whereas children with any of the above mention criteria and illness were treated at ITFC. Children were discharged from the program on a MUAC $\geq 125\text{mm}$ on two consecutive visits, WHZ -2SD for two consecutive weeks, no clinical complication and oedema for a week.

5.3 CARE PROCESS IN CMAM

5.3.1 Beneficiary

This design has two components for therapeutic feeding that can be classified as: (a) Inpatient Therapeutic Feeding Centre (ITFC) and (b) Ambulatory Therapeutic Feeding Centre (ATFC) for malnourished children below 5 years of age, with a special focus on children between 6 months to 2 years old.

- (a) ATFC- ATFC caters the treatment need of uncomplicated SAM children at community level. The SAM cases are mostly managed through home based care; RUTF and weekly medical care provided at ATFC and follow up at home.

⁷¹ The CMAM model, Chakradharpur admitted children at MUAC $<125\text{mm}$ unlike the Bihar CMAM model where children were admitted at MUAC $<115\text{mm}$. Based on past learning; that admitting children at MUAC $<115\text{mm}$ and discharging at 120mm , included more children (at lower risk of mortality) with smaller WHZ deficit to manage as compared to children identified at MUAC $<115\text{mm}$ and discharged at MUAC $\geq 115\text{mm}$. The CMAM, Chakradharpur model is piloting the treatment output for at admission MUAC $<125\text{mm}$.

Nutritional and medical follow up is provided weakly at the ATFC and home visits by the community health worker appointed by MSF. This community health worker is known as Nutritional Link Worker (NLW).

Internal movements i.e. from ATFC to ITFC to ATFC or ITFC to ATFC take place under two circumstances, namely (i) if a child show no response to the treatment provided in the outpatient facility. Under such circumstances the beneficiary is referred to the inpatient facility i.e. from ATFC to ITFC) and (ii) once the health of the beneficiary at inpatient facility is stabilize enough to be managed at the community level, they are referred from ITFC to ATFC.

- (b) ITFC- the ITFC is designed for care management (stabilizing medical complications) of SAM children; children with complicated MAM⁷², complicated SAM⁷³ were referred from the ATFC to ITFC. Also children who do not respond to treatment provided at ATFC are referred to ITFC for further medical investigation.

5.3.2 Case Finding

Screening for SAM cases takes place at two levels; at the community level and at the facility level. The Nutritional Link Worker (NLW) is to screen children through house visits. Any child found with MUAC of <125 mm are referred to the ATFC for further screening.

This model has adopted active screening for identification of children with uncomplicated SAM and their referral to the ATCF. Children with MUAC<125 mm and low W/H score were admitted in the program to be managed through ATFC. Children with WHZ <-3SD with or without medical complication were identified as SAM and they were admitted into the program.

Oedema was an important marker to determine child's admission and discharge in CMAM. However at all the ATFCs visited; children were being admitted and discharged children with MUAC <125mm being the primary criteria. Children with MUAC of <125 mm are admitted in the program and discharged once they attain a MUAC of ≥ 125 mm.

5.3.3 Screening and referral to ATFC

⁷² Children with MUAC ≥ 115 to <125mm and/or oedema and/or poor appetite and/or illness

⁷³ Children with MUAC <115mm and/or oedema, poor appetite and/or illness/medical complication

The CMAM model has a two tier approach for SAM management and delivers services systematically at ATFC and ITFC. ATFC is the first tier which also serves as the entry point into the Therapeutic Feeding Program (TFP).

NLWs are responsible for referral of SAM children to the CMAM program. All NLWs were assigned a cluster of villages. They used MUAC for active screening of children, and referred all children with a MUAC of <125mm and sickness or weakness to the ATFC. It is responsibility of NLWs to inform mothers and family about the nutritional status of these children and counsel them for taking children to ATFC⁷⁴ for further treatment.

“NLW didi (sister) told me about this. She checked my child at home...while measuring my child's weight, she told that child is ill and weak, and they need treatment” (Mother, ATFC beneficiary)

All the ATFCs had separate areas dedicated for waiting, screening counseling, feeding and medical care. As mothers came to the ATFC; mothers with children referred by NLW for screening as well as mothers of children already enrolled in CMAM waited for their turn in the waiting area. All mothers are given a glass of water mixed with sugar to feed to their children. As mothers fed this water to their children the time was utilized by ATFC staff (Nutrition Link worker and Health Educator⁷⁵) to establish a rapport with mothers/caregivers coming to ATFC for first time, develop an understanding of their socio-cultural context and inform them about the program.

5.3.4 Screening at ATFC

In CMAM, MUAC and oedema are the prime criteria for admission into the TFP whereas; appetite test is an important qualifier for admission at the inpatient or out-patient care facility. At ATFC, the NLW and Health Educator were responsible of screening all referred cases for SAM. The NLWs and HE recorded anthropometric measures and oedema for these children. NLW and HE then send mothers/caregivers with their children to the nurse for examination. The ATFC nurse then screens children for W/H and record Z

⁷⁴ An ATFC is a temporary facility that mostly operates at public buildings, such as sub centre or anganwadi centers. However some ATFCs were also functioning at private buildings, such as a rented space in the village.

⁷⁵ Health Educators are responsible of providing nutrition and health education to mothers, counsel mothers on appropriate care and feeding practices, counsel them on problems faced in practicing improved child feeding and care.

score, register MUAC and oedema. SAM children with common childhood illness are treated at the ATFC whereas children with medical complications are sent to the ITFC.

Appetite of these children is tested through RUTF⁷⁶. The mothers are handed one sachet of RUTF. They are made to wash hands with soap and water. The NLW and HE provide instruction to the mothers on feeding RUTF to their children. The appetite of these children is monitored by the NLW and HE. The mother/caregivers are guided by NLW and HE to feed their children slowly and give them water in between feeding RUTF. If children are able to finish most of it they are enrolled in the program as uncomplicated SAM, whereas children with very poor appetite are referred to the ITFC. This program addresses both SAM and MAM children (with medical complication). All children with uncomplicated SAM are enrolled in CMAM program to be treated under the outpatient TFP through ATFC. All complicated SAM and MAM children are referred to be treated under the inpatient TFP through ITFC).

After clinical examination the nurse is to register case history (medical history) for all enrolled SAM children. Medical consultation⁷⁷ with mothers/caregivers intends to bring out history of present 'illness', medical history and treatment received in the past. Waiting time for sick or weak children is cut short and the NLWs and HE send them directly to the nurse for medical screening thereby to avoid delay in receiving medical assistance. The arrangements are made in such an order that children and caregivers do not have to spend more than 2 hours at ATFC⁷⁸.

⁷⁶ Ready to eat therapeutic food or RUTF are packed energy dense food that is used in CMAM program for treatment of SAM. RUTF used in all ATFCs visited were thick paste of therapeutic feed. This paste is hard to swallow and mothers/caregivers are constantly instructed by NLWs and HE to feed water to their children in between feeding RUTF.

⁷⁷ This medical consultation is to be utilized by the nurse to understand mothers/caregivers understating of the illness (malnutrition), its cause, its history i.e. since when the illness has been experienced by the child, its signs and symptoms, any other illness, the child's dietary intake and appetite, treatment child had received before coming to ATFC and the treatment providers etc.

⁷⁸ However at implementation level, covering up all the activities within a time span of 2 hours was challenge for the ATFC care team. The first medical consultation which aims to develop a treatment/care plan actually focused on very basic questions such as current illness and dietary pattern not much effort were made by the nurse to understand the perception of caregivers, dietary practice, history of illness/malnutrition and treatment availed in the past; in-order to develop a suitable and context specific care plan. The nurses at ATFC visited were not familiar with the local language (tribal language and oriya). The medical consultations were mediated by NLWs. The NLWs translated questions asked by nurse in local language for the mother/caregivers to understand and then translated their response for the nurse. The treatment plan was mostly based on anthropometric measurements, appetite test and illness.

All MAM children with a good appetite and without any medical complication are sent back to the community. The CMAM program does not provide any support for home based care, supervision or capacity building of mothers/caregivers of the children who are at risk of becoming MAM/SAM but not a complicated MAM case yet. Neither the program has an arrangement of linking these children with the nutrition and care services provided through the AWCs.

5.3.5 Treatment at ATFC

Treatment at ATFC is primarily focused on two measures; therapeutic feeding and home based care. RUTF (a calorie rich paste) is the most significant component of nutritional treatment provided under the program. RUTF is distributed weekly on a fixed at the ATFC. Each enrolled SAM child is provided with a weekly quota of RUTF packets according to their weight. However infants with SAM (especially those less than 28 days) are not provided with therapeutic feeding (F-75 or F-100) but emphasis is made on encouraging mothers for exclusive breastfeeding.

(a) *Nutritional care for Uncomplicated SAM:* Treatment package for uncomplicated SAM consist of two intervention components; therapeutic food for admitted children and health education to mothers/caregivers. All SAM children without any medical complication and good appetite are treated at the outpatient facility with weekly distribution of RUTF. The primary qualifier for admission at ATFC is a MUAC score of <125 mm.

The ATFC care team encourages mothers/caregivers on appropriate feeding of their SAM children with RUTF and home cooked food as small feeds throughout the day.

“...take this 11 packets. Feed it properly, 3 times a day. If it ends early then come and collect it on the same day....” (Nurse, CMAM)

In this phase, mothers/caregivers play the central role in treatment of SAM children. Feeding RUTF to children is challenging for mothers/caregivers. The mothers/caregivers need to feed quota RUTF packets per day and finish the weekly stock prior to their next ATFC visit. Feeding one packet of RUTF takes approximately half an hour to an hour besides it keep children full for long.

Practically children are able to consume one packet as two feeds at an interval of 1-2 hours. When mothers are away at work they leave their SAM child under the care of elder siblings, elders or neighbors. Women having elders in their family child find it easier to practice feeding RUTF to their SAM child, as the family take care of feeding while the mother is away. Mother having a nuclear family struggles to manage feeding RUTF, household chores, livelihood and taking care of their other children.

“Her mother leaves for work early in the morning. I leave from home for work by 9:00. I come back at noon to feed the packet and then come back in late evening. Her mother comes back in evening and feed her the packet. For whole day this girl (an 8-9 year old child that happens to be the neighbor) takes care of my child and feeds her” (Father of an ATFC beneficiary)

“We work in the field. So at home, what they eat and what they don’t, who is there to watch them?” (Mother of an ATFC beneficiary)

Mothers who leave their children under care of elder siblings reported consumption of RUTF by the siblings instead of SAM children. As feeding RUTF is a time consuming task mothers do not depend on their neighbors for this. Since children consuming RUTF need to be kept hydrated, it becomes difficult for mothers to feed and hydrate children at regular interval along with managing their chores or to manage their work (for income generation) if they carry the SAM child to their work place. Therefore planning and feeding adequate diet (2-3 RUTF packets and home cooked food as small feeds throughout the day) is a challenge for mothers/caregivers with triple burden of chores, children and livelihood; difficulties are higher for mothers who are ‘left behinds’⁷⁹ in nuclear families.

“I feed her some rice before leaving home and then leave her (daughter) with my neighbor. In afternoon she feeds rice to my daughter. When I come back in evening I feed her the packet (RUTF).” (Mother of ATFC beneficiary)

The NLW and HE are responsible for providing health education to mothers/caregivers on appropriate child feeding, cleanliness, hygiene, home based care for sickness and timely health care seeking. The NLWs provide basic health and nutrition education during home visit and Health Educators provide health and

⁷⁹ Women whose husband migrate out for livelihood

nutritional education and counseling to mothers/caregivers during their visit to ATFC. The NLW are bestowed with responsibility of visiting each beneficiary on a daily basis to monitor consumption of RUTF and support mothers with basic counseling on child feeding and care.

“NLWs counsel about the procedure of feeding RUTF and ask about any problem related to feeding and taking medicine.” (Doctor, CMAM)

“She (NLW) tells me to feed well, wash hands properly, boil water properly” (Mother of ATFC beneficiary)

Progress of each child is assessed weekly at the ATFC and mothers are provided health education by the help of a flip chart. The NLWs are responsible to monitor and support mothers in practicing health education received at ATFC. Health education and counseling at ATFC is provided by means of Information Communication Education (IEC) material in Hindi. However the problem with health education provided is that; the IEC material is not available in their local language nor is health education provided in a language familiar to the mothers/caregivers⁸⁰. None of the HEs were familiar with local language. The NLWs mediated this activity. Health and nutrition education provided by HE was translated by the NLW to the mothers. This process was unidirectional as most of sharing was done by HE and NLWs. Moreover the health and nutrition education provided do not resonate with their geographical, social or cultural setting.

“.....you should give your child some green vegetables to eat. If green vegetable is not available at your agriculture field then buy leafy vegetable from market. You can give some local fruits to your child such as guava and some local fruits.....” (Health Educator, CMAM)

Under such circumstances it was challenging for the mothers/caregivers to abide by the health education and counseling provided during their visit to ATFC or during community outreach. Practice of washing hands before feeding food, RUTF, cleaning utensil before feeding etc. is manageable for mothers who stay at home but not for mothers who go to forest or go out for livelihood carrying their children along. A closer look at the living condition and livelihood practices reflect hurdles in the way of behavioral change.

⁸⁰ Chakradharpur block is habited predominantly by the tribal population with some non tribal communities (mostly schedule caste). Santhali, Ho and Mundari are the most spoken tribal language; beside this the non-tribal population speaks Hindi, Bengali and Oriya.

Women in these communities (forest as well as agriculture based community) leave home early in the morning and come back in the evening. It is a common practice of women to carry food and water to the forest or to the agricultural field. However it put mothers in dilemma to put aside that one bottle of water for drinking, to wash hands each time they feed their children RUTF/ home cooked food or to use it for cleaning the utensil use to dilute RUTF⁸¹ or mash rice and dal. Meanwhile if the child needed cleaning⁸² leaves were used, leave alone the question of cleaning the child or hands with soap.

“Wash your hands well before feeding packet (RUTF)...” (Health Educator, ATFC)

“.....there is no source of water here, now tell me if I should use this (pointing towards a bottle of water) for washing hands or drinking” (Mother of an ATFC beneficiary)

Similar challenge was faced by women working in the field. Even if these mothers carried their children to the field, feeding and caring was difficult. The ATFC, the care team advice mothers/caregivers to feed their children with RUTF and home cooked food at regular interval. If mothers/caregivers take multiple breaks to feed their child it cost them loss in their daily earning. These women either took their older children to care for the SAM child, i.e. to feed food/RUTF and water and play with them till the mother is engaged in work or they feed their children with home cooked food. Home cooked food is easy to feed and keep them full for long instead of feeding RUTF that demand feeding in small portion multiple times a day.

“If we take break again and again they cut money from our wage” (Mother of ATFC beneficiary)

The mothers reported to feed RUTF twice a day, once in morning before leaving home and then in evening after their return. Though the mothers try that their

⁸¹ RUTF is a thick paste. Children need to drink water in between eating RUTF facilitate swallowing. Mothers/caregivers often dilute the RUTF in a bowl before feeding it to children. As children could swallow it easily it took less time for mothers to feed their children.

⁸² Going to the forest for collecting firewood, edible leaves, NTFP is a common practice among villages in the peripheral area. Women leave early in the morning to go to the forest and return by late afternoon. Women with young children often carry them along. Mothers of SAM children who do not have anyone to look after their children prefer carrying them to the forest. If children discharge urine or feces mothers clean them using leaves.

children finish the packet in one go. If the child is not able to finish the whole packet, they leave it on their other children to feed it to the SAM child. Mothers working out for income generation shared their inability of feeding their children even in evening, as by the time they come back home, children are either already fed by the family or is asleep. Mothers do not wake their children up for feeding RUTF.

“...when I come back in evening, he is already asleep...no they (elder siblings) feed him rice”. (Mother of ATFC beneficiary)

This CMAM model deploys NLWs for tracing beneficiaries, to prevent them from falling out of the treatment program. It is the responsibility of NLWs to trace every case of absenteeism and default; identify its probable cause and address them. The NLWs counsel mothers/caregivers and family members to return to TFP. In case the families deny, then Health Educator counsel them and try to resolve the barriers in order to bring SAM children back to the program.

(b) Nutritional Care for Complicated SAM and MAM: In CMAM complicated SAM and MAM are treated at the inpatient therapeutic feeding centre (ITFC). Nutrition treatment designed for complicated SAM and MAM is provided under three phases, namely; phase one, transition and phase two⁸³. Phase one and transition phase is covered at ITFC and phase two of the treatment is completed at the ATFC. A child admitted to ITFC is fed on F-75 during the stabilization phase and RUTF/F-100 during rehabilitation phase. Here the nurse and mother/caregiver play an important role in child feeding. It is the responsibility of nurse to prepare and distribute F-75/100 or RUTF to children. Though mothers/caregivers feed their children, nurses are accountable to monitor feeding practices, support mothers/caregivers on appropriate child feeding and note the quantity of feed consumed by each child.

⁸³ The three phases: *Phase one* is known as stabilization phase where F-75 is provided mainly to restore metabolic function. This feed is provided 8 times a day in an interval of 3 hours for a minimum of 3 days. During *Transition phase*, the child is fed on F-100 or RUTF to see if the child is able to tolerate high calorie food and is ready for the next phase. This feed is provided 6 times a day for first 5 days or longer if required. During *Phase two* children are fed on RUTF and local food for rapid weight gain and growth. A minimum of 2 and maximum of 4 RUTF packets are to be fed on a daily basis for 4-5 weeks.

In the facility while nurses distribute feed to mothers, they did not stay back to supervise feeding. Thereby they did not supervise difficulties and barriers faced by mothers in feeding children. The nurses did not record the quantity of RUTF consumed by each child. Often the leftovers were either thrown off or consumed by the accompanying siblings or mothers/ caregivers. Therapeutic feed provided in phase one (F-75/100) did not keep children full for long. Mothers reported that the feed was insufficient for their children and they often get hungry between schedule feeds. In absence of supervision and counseling, mothers fed cooked food to satiate their hungry children.

Once children regain appetite and medical complications stabilize, they are referred back to ATFC closest to their village. Phase two is managed through home based care and weekly follow-ups at ATFC. If condition of complicated SAM/MAM children does not improve (in terms of appetite, medical complication or no weight gain) then such children are put back to treatment under phase 1.

5.3.6 Referrals and Transfers

There are 2 types of movements across levels of care i.e. from community to facility based care and then to a higher facility (if needed). All movements between ATFC and ITFC are known as *referrals* and all movements outside the therapeutic feeding program such as hospitals are called *transfers*;

- (a) From A-ATFC to ITFC- Three categories of children are referred from ATFC to ITFC, namely: sick SAM, complicated MAM and children who fail of response⁸⁴. Children admitted in the program were monitored using a patient monitoring card. The ATFC and ITFC maintained separate patient monitoring card⁸⁵. At ITFC the weight was monitored and updated every day and at ATFC the cards were updated weekly.

ATFC provide treatment for uncomplicated SAM and SAM with common childhood illness. SAM beneficiaries with serious medical complications are

⁸⁴ Children who show no weight gain or poor weight gain despite of spending 2-3 week in the program and follow up at ATFC.

⁸⁵ The patient monitoring card entail the anthropometric measurements of a beneficiary, detail of illness, treatment provided and the target weight. This card is handed to the mothers/caregivers of beneficiary on referral from ATFC to ITFC and from ITFC to ATFC.

referred to ITFC for stabilization⁸⁶. The nurse at ATFC is responsible for making all such referrals. The mother/caregivers are informed on the services and treatment their children would get at ITFC.

“You should visit MTC at government hospital..... If you visit MTC your child will get food and bed. You will also get soap for cleaning purpose. Your child will get food on time. There is senior doctor available who will treat your child. You must go there.” (Nurse, ATFC)

SAM beneficiaries who do not respond to treatment at ATFC were referred to the ITFC for screening of any medical complications that might be interfering with their appetite or catch-up growth. The Non-responders (SAM) and sick SAM/MAM is provided medical care and RUTF at the ITFC, till they begin to show improvement. Once health condition of the beneficiary improves (absence of medical complications, improvement in appetite and catch-up growth), they are referred back to the ATFC. If beneficiaries do not show any improvement to treatment at ITFC, they are sent back community classified as Non-responders.

On referring a beneficiary from ITFC to ATFC the beneficiaries are handed patient monitoring card⁸⁷ to hand over to the nurse at their respective ATFC. All cases referred back from ITFC are discharged from the facility a day prior to the ATFC day or provided with a week’s RUTF ration to eliminate any discontinuation of service. The NLW is informed about all cases referred from ITFC to ATFC and they are responsible to follow each referral at the village level.

It is responsibility of NLW to ensure each referred beneficiary attend the following ATFC visit. Similarly, patient cards are made for referrals from ATFC to ITFC. These patient cards inform the ITFC care team about the medical history, illness and treatment provided at ATFC. This facilitates transfer of necessary information between care providers across different levels of care. Such information transfers serve beneficial in sharing treatment history thereby avoiding duplication or omission of any service at ITFC.

⁸⁶ Criteria for referral to the ITFC are as follows; poor appetite, onset of oedema, reduction in MUAC or absence of improvement in MUAC after 3 weeks of treatment or severe medical complication.

⁸⁷ Patient card- This card entails information stating medical history/ episode of malnutrition facilitating development of treatment plan.

The ITFC unit is nested within Chakardharpur FRU⁸⁸. The FRU do not have pediatric ward or a neonatal care unit and often sick children were referred from FRU OPD to the ITFC for further treatment. Hence sick children comprise another group of referrals to the ITFC. The CMAM program does not provide referral transport from ATFC to ITFC and back to ATFC. The referral structure in CMAM provide for prompt management of complicated SAM, however in absence of referral transport accessing care from ITFC is often delayed by the family. The families need to arrange money for transport and someone to accompany mothers to the ITFC.

“Sahiya didi told me to visit here (ITFC) as his weight is very low, also he is very weak. She told me long back but I came here only after I was able to save some money for treatment” (Mother of ITFC beneficiary)

(b) ITFC to a higher facility, which in the study area was district hospital, Chaibasa.

At ITFC if the sick child shows no improvement irrespective of medical care and regular feeding or complications become severe, then they are referred to the District hospital in Chaibasa for further treatment. The MSF CMAM model provides ambulance for transfer from ITFC to district hospital. During such transfers the child is accompanied by an ITFC nurse and NLW/HE to the District hospital. These children are admitted and treated in the MTC unit⁸⁹. Once condition of referred sick child stabilizes (absence of medical complications with good appetite), and targeted weight is achieved, they are discharged from the facility. The district hospital did not transfer the discharged cases to ITFC but send them back to the village. Information of discharged cases was not shared with ITFC care team. At village level these children need to be managed by their respective ATFC units. It is responsibility of NLW to trace children in the village and ensure that they are admitted in ATFC.

“When a child is admitted for getting treatment here (ATFC), the NLW visit their home next day” (Health Educator, CMAM)

⁸⁸ The ITFC unit is located within FRU Chakradharpur. The centre functions in the FRU building. MSF provides support with the infrastructure, RUTF and medical supplies at ITFC. The ITFC was managed by doctors (2 from MSF and one from FRU); nurses (MSF nurse staff and FRU nurses). The MSF supported this unit with an ambulance for referral of complicated cases to higher facility.

⁸⁹ District hospital Chaibasa do not have separate pediatric unit and MTC unit. There is a common 15 bed unit which treats sick and malnourished cases in the same ward.

5.3.7 Medical care

- (a) *Progress monitoring and follow up:* Patient monitoring card is maintained for each of the admitted case at ATFC and ITFC. At ITFC, weight and health of admitted children is monitored and documented on daily basis. However at ATFC, weekly follow-up is practiced.

At ITFC doctors and nurses make daily visit to the beneficiaries. Daily checkup include screening for any sickness and oedema. Weight⁹⁰, height⁹¹, MUAC⁹² and meal intake are closely monitored for each child. Medicines are provided by nurses under close supervision. Though each meal intake need to be monitored and the nurse should inquire about appetite and quantity of food consumed by each child, such vigilance was found to be absent in the ITFC. All mothers were instructed by ITFC care team to wash hands before child feeding. Once meal is distributed to mothers/caregivers (F-75/100 or RUTF), they feed children on their own. Children with good appetite finish the whole packet others did not. In such case the remaining RUTF was fed at an interval of 1-2 hour.

“...if the packet (RUTF) is not finished then I try feeding after some time...I feed him again in one hour...I fold and keep the packet” (Mother of ITFC beneficiary)

The mothers were not informed by ITFC care team that the RUTF is to be consumed once the packet is open. RUTF or F-75/100 is so different from the local food pattern that ITFC beneficiaries showed very low acceptance. They were found to be reluctant for consumption of RUTF or F-75/100 which comprised 3-8 meals a day.

“My daughter does not like to eat it (therapeutic feed). Even if I do not give her rice, she does not eat it” (Mother of ITFC beneficiary)

Mothers being anxious of their children remaining hungry, feed them the local food. This not only interfere with the total calorie intake required and actually consumed but also increase the child's susceptibility to diarrhea/vomiting. Besides, feeding children on cooked meal, keep them full, thereby limiting their capacity to

⁹⁰ Daily weight is recorded for all children under phase I, whereas in phase II weights are measured in every second day.

⁹¹ Height is measured only during admissions.

⁹² MUAC is measured weekly for all admitted SAM children.

finish a whole packet of RUTF when it is distributed. In such a scenario, regular contextual counseling and nutritional and health education play an important role, which was seldom practiced at ITFC.

Unlike ITFC, all ATFC conduct weekly medical and nutritional supervision. The ATFC care team comprise of a doctor, nurse, HE and NLW⁹³. While height of each ATFC beneficiary was recorded once a month, other assessments, such as weight, MUAC and dietary intake were conducted weekly. At ATFC assessment of dietary intake was conducted in three ways: (a) appetite test- on every visit children are given a packet of RUTF to check if he/she is able to finish it. This is to assess their appetite each week. (b) Checking the number of empty packets of RUTF on every visit. The mother/caregiver need to bring the packets consumed over a week and submit the empty packets of RUTF to NLW or HE. They count the number of packets consumed and inform the nurse. RUTF for next week is distributed accordingly. If the child is unable to consume the quota of RUTF, NLW and HE inquire mothers/caregivers on the probable reasons.

The mothers/caregivers are then counseled and advised accordingly (c) The NLW and HE ask mothers/caregivers about daily intake (RUTF and local food) of ATFC beneficiaries, challenges faced by them, and accordingly appropriate advice are given to overcome these challenges. There are instances when mothers face resistance by their family members on feeding RUTF or observing care practices advised by the ATFC care team. In such scenario the NLW and HE counsel family members and caregivers on special care need of SAM/MAM children and to convince them to continue feeding RUTF.

However these supervisory measures are not free of limitations, such as: (a) appetite test on each ATFC visit might not be truly representative of a child's appetite. An ATFC unit starts to operate between 9 to 10 a.m. and each visit takes approx 2-3 hours. Keeping this in mind mothers/caregivers feed their children well before leaving home⁹⁴.

⁹³ However due to shortage of doctors in the program, the ATFC team only have nurse, NLW and HE.

⁹⁴ It's a common practice in villages to feed children early in the morning and then once again after they are bathed. These children are mostly fed rice. It is different for children who are breastfed, as there is no fixed schedule for the same but are fed as and when asked for it.

“In morning I gave cooked rice to my children... yes I fed them with rice and potato before coming here... we will reach home by 2-3 in afternoon”
(Mother of ATFC beneficiary)

When children arrive at ATFC they are given sugar syrup and then distributed packet of RUTF to check their appetite. All of this takes place in less than an hour. Children (already fed well) either refuse to finish the RUTF or eat it slow. If children are unable to finish the packet of RUTF or take longer to finish, NLWs and HE advice mothers to pack the remaining RUTF and feed it later. This makes the process a little confusing to distinguish between children with good or poor appetite.

- (b) Checking on the empty RUTF packets could serve as a false marker in absence of a supervision mechanism at the village level to see if packets are consumed by SAM children. Mothers/caregivers reported sharing of RUTF when it is asked by other siblings. They stated their difficulty in refusing RUTF to their other children.

“...how can I refuse if they ask for it” (Mother of ATFC beneficiary)

“My elder daughter feed the packet (RUTF) to this child. I don't know if she also eats from the packet” (Mother of ATFC beneficiary)

- (c) If mothers/caregivers do not carry the empty packets behind, they are asked to mention the number sealed RUTF packets they still have at home. Based on the response, ATFC care team hand over RUTF quota for next week. Relying on mother/caregivers response to confirm consumption of RUTF might not dependable, especially when mothers are not the primary care givers at home. In households where: women are into livelihood generation; women who are left behind or women from nuclear families face difficulty in observing appropriate child feeding and caring practices. Children are left under care of their siblings, elderly or neighbors (often other children). Under such circumstances, these caregivers are responsible for child care and feeding (RUTF).

At ATFC medical follow-up is conducted once a week where the nurses ask mothers/caregivers about any illness experienced by the child in previous week. Mothers of children who had any illness in the prior week are advised on appropriate care and feeding. Children found ill (with minor ailments) during their

ATFC visit are provided with medicine by the nurse and mothers are instructed to follow appropriate care and feeding practices.

“Here at ATFC, sister gave medicines and told me to take care of them, feed them properly, give them boiled water to drink, wash hand before eating and to massage them with warm oil”. (Mother, ATFC beneficiary)

However this arrangement has ample scope of missing out on care for children experiencing sickness between two scheduled ATFC visits. Seeking immediate medical care is a rare practice in the study area⁹⁵. Public health care were under-utilized/un-utilized by the community for reasons such as, (a) its inaccessibility (irregular functioning and uncertain opening hours) and (b) lack of awareness among community regarding health care services provided by different care providers at the village level (Sahiya and ANM). Such situations unfavorable for catch-up growth and weight gain within the stipulated time frame that children spend in the program.

“If we ask sahiya for medicine, she says that they do not have any medicine”. (Mother, ATFC beneficiary)

5.3.8 Non-medical care: Health promotion is an important component of this TFP. Counseling, Health education and stimulation are integral to health promotion under this model.

The design of this program entail, a short period of stay within inpatient care and rest of the treatment continue from home with weekly visit to ATFC till discharge. This implies that mothers/caregivers play primary significant role in treatment of malnourished children in CMAM. Hence it is important to capacitate them on care of malnourished children. The model has a well delineated structure for health promotion at ITFC and during follow up visits to ATFC; (a) ATFC- Health educators are responsible to provide education and counseling whereas Nurses are responsible to provide medical counseling. (b) ITFC - Nurses provide medical counseling and education (health and nutrition) but stimulating sessions were not conducted for children (c) House visits- NLWs are responsible for supporting mothers on child feeding, care and stimulation.

⁹⁵ The first resort during sickness are home based treatment and traditional healers. Once the sickness becomes untreatable the parents seek medical care from the RMP or private doctors at the nearby local market. Only cases of serious illness reach to the hospital at Chakradharpur (Anumandal Hospital).

The education (nutrition and health), counseling and stimulation provided to the caregivers at ITFC⁹⁶ and ATFC revealed:

- (a) Education session for caregivers accompanying children included, awareness generation on: (a) child's current state of health (b) child feeding and (c) reinforcing importance of TPF. Components such as, nutrition education (locally prepared nutrient rich food, adequate diet, frequency of child feed) and positive health behavior (such as identification of danger signs, care path way, avoiding delays in identification, deciding or seeking care) remain outside the purview of education sessions conducted both at the inpatient and outpatient units.
- (b) Mothers often have to face condemnation for poor child care, inadequate feeding practices, non-adherence to the treatment and their socio-cultural beliefs and practices for child care.

“Look here, initially his weight was increasing. Do you see this? Now it has come down...feed him well...take it seriously. This is an illness or later it will be difficult for you.” (Nurse at ATFC)

“They keep on telling me do this do that, as if I don't know how to care for my child, as if I don't know what is good for him” (Mother of ITFC beneficiary)

- (c) Counseling/education sessions were not followed with any activity to facilitate retention of information by the mothers/caregivers. Mothers were neither educated nor supported to understand the intricacies of themes taken up for counseling. For example, mothers/caregivers were educated on significance of hand washing before ‘every meal⁹⁷’. However no emphasis is made to make them understand that all intake; meal, snacks, fruits etc. must preclude hand washing. Therefore while they practice hand washing before taking meal, it was found that they do not practice same for feeding food other than ‘meals’. This practice was evident among mothers of children admitted at ITFC and also by mothers with children being treated at the ATFC.

⁹⁶ The ITFC did not have a dedicated staff for providing health and nutrition education to mothers/caregivers. During the last phase of data collection, HE was deployed for capacity building of mothers/caregivers on child feeding, care, hygiene, care of sick children etc. The IEC material used by HES for these sessions was same as the ones used at ATFC.

⁹⁷ Meal- comprise of daily food intake comprising rice, pulses and vegetables fed throughout the day.

- (d) Stimulating sessions were not conducted for mothers/caregivers. The ITFC or ATFC did not have a curriculum for play activities or dedicated time and human resource to support this activity.

“...these extended part of counseling is very less or not being done at all. This is due to shortage of health workers; they are not able to give enough time...” (Doctor, CMAM)

5.3.9 Information sharing and caregivers involvement

At ITFC and ATFCs, improvement in weight and health among children is shared with mothers/caregivers on a regular basis. The nurses at these two facilities are responsible to inform mothers on improvement or faltering in MUAC or W/H of their children. The mothers/caregivers are informed about improvement in anthropometric measures of their children as well as notified if the child fail gain the targeted MUAC or W/H. These mothers are inquired by the nurse on feeding and care practices at home or any illness in the past week. The nurse and HE counsel mothers/caregivers accordingly. If children still fail to show improvement, the nurse inform mothers/caregivers on the need of changing the treatment plan, such as, transfer from ATFC to the ITFC for further screening⁹⁸. If children referred from ITFC fail to show improvement despite continuing of treatment at ATFC for four week, they are discharged from the TFP as non-responders.

Another important aspect of the CMAM model comprises, of informing the mothers/caregivers on treatment procedure in detail before admitting children to ATFC or ITFC. The challenges and concern of mothers/caregivers in adhering the treatment protocol is assessed and addressed by the respective care team. However in practice the process of explaining treatment procedure to the caregivers was found to be limited to the technicalities of the program⁹⁹ such as; (a) condition for admission and discharge and (b) instructing mothers/caregivers on feeding packets of RUTF.

However caregivers were not adequately explained on the cause of malnutrition, expected number of days for the entire period of treatment, specific care need of SAM/MAM

⁹⁸ These children are diagnosed for any medical complication that might be responsible for poor treatment outcome. Children are treated for these complications and referred to ATFC for further management.

⁹⁹ During admissions into the TFP (at ATFC and ITFC) mothers/caregivers were explained the reason for admitting their children in a specific care setting by showing the MUAC reading of their children. The mothers were informed that their child needs treatment because of their arm circumference falling into the red or yellow band and that they will be discharged once the arm circumference reach to the green band. Till then children need to be fed certain packets of RUTF and attend weekly follow up visits.

children, importance of feeding therapeutic feed as advised by the care team and positive health practices. None of the mothers interviewed at MTC could explain the above mentioned points. Lack of adequate information sharing and knowledge building during inpatient care and outpatient care restrict mothers/caregivers to understand the actual condition of their children and significance of the treatment provided under TFP. Mothers do not understanding significance of health advice provided by nurse at ITFC and care team at ATFC. The mothers/caregivers followed their own cultural practices of care and feeding during their stay within TFP and after discharge from program. Not being fully informed, the mothers are unable to convince their family if they face any resistance from them for changing care and feeding practices or for feeding RUTF.

“My sister in law is against feeding of packet to my son. She wouldn’t let me feed him. She says it’s not good for his health” (Mother of ATFC beneficiary)

The counseling/education session at ITFC/ATFC is more focused on feeding RUTF packets, hygiene, child care and dietary practices without structuring these sessions around the fact that care need for sick, SAM and complicated SAM are different. Mothers are provided same advice week after week despite of change in condition of their children.

“Now they do not tell anything different. They repeat the same things, feed well, feed well, wash hands properly, heat water properly, your child will become fat and what not” (Mother of ATFC beneficiary)

The counseling session were focused on providing information. Mothers/caregivers were not encouraged to share their: (a) understanding on malnutrition; (b) socio-cultural beliefs; (c) doubts and worries regarding the treatment procedure or (d) challenges faced in adhering to practices of child care/feeding as suggested under the TFP.

“She repeats herself. She does not give any other information that we can do. So we also do the same things” (Mother of ATFC beneficiary)

Instead of addressing beliefs, concern and challenges of caregivers, the provider-caregiver interactions were focused on do’s and don’ts pertaining to child feeding and hygiene. While mothers/caregivers were reminded again and again on care practices in alignment with the treatment regimen, no support (emotional or knowledge) was provided to the mothers on overcoming these challenges. Therefore lack of understanding on importance of program and unaddressed challenges to adhere to the care regimen impede with complete involvement of mothers/caregivers in child care and treatment.

5.3.10 Care Transition

Care transition is a significant phase in the TFP that contribute to the ultimate treatment outcome. This can be understood as, change of care from inpatient facility (ITFC) to the (ATFC) outpatient facility. The beneficiaries arrive at inpatient facility by two procedure; (a) SAM and MAM children directly admitted to ITFC (b) SAM/MAM children referred¹⁰⁰ from the ATFC. Both categories of children are transferred to their respective ambulatory care unit (ATFC) once their condition is stable enough to be managed at the community. The doctor in ITFC decides whether a beneficiary is ready to be referred to the outpatient facility; however it is nurse who conducts the process in consultation with the doctor in-charge.

Complicated SAM/MAM children are referred to community based care once they regain their diet, oedema is reduced and medical complications are cured. From this point onwards SAM and MAM children are treated at the ambulatory care facility (ATFC). Patient card bearing schedule for follow-up visit are made for each SAM and MAM beneficiary and handed to mothers before leaving ITFC.

“We write every instruction on card and give it to mother. We also instruct them to visit right facility” (Doctor, CMAM)

Mothers are explained by the ITFC nurse on the date of follow-up visit that they need to attend at ATFC During this phase the beneficiaries continue with daily consumption of RUTF at their respective home; they are flowed at community level through house visits by the NLWs; and weekly weight and MUAC monitoring, medical care and care counseling is provided at the ATFC.

The NLWs are notified when cases from their area are referred from the ITFC for community based management. It is their responsibility to ensure that mothers/caregivers enroll their children to an ATFC closest to their habitation and attend all scheduled follow up. Each Mother/caregiver is given a card from ITFC, bearing anthropometric measures and medical history of the beneficiary. The mothers need to present this card when they come for follow-up visit to the ATFC. From there on every week, anthropometric measurement for children is updated at the ATFC and RUTF is provided. The treatment of all referred case continues at the ambulatory unit till they meet the exit criteria.

¹⁰⁰ As discussed in section 5.5.6 Referrals and transfer section

Children who do not show improvement to the treatment provided through ATFC to ITFC for further investigation. If the beneficiary fails to register any improvements despite of their stay at the inpatient care facility are sent back to the community as Non-responders. The non-responders then receive no further services under CMAM.

5.3.11 Follow up care

Discharge and follow up set the platform for rehabilitation of SAM and MAM children at community level. All SAM/MAM cases referred back from the ITFC are followed at community level. In this phase focus of the CMAM program is to prevent relapse and default among beneficiaries. The strategy is to provide constant monitoring of care and feeding practices, follow up and weekly medical care and prompt referral to a medical care provider (if needed).

“He asks if child is suffering from any illness or having any problem. He ensures whether parent is feeding that packet to malnourished child or if child is suffering from diarrhea or any other sickness” (Health Educator, CMAM)

SAM children managed at community level (admitted in ATFC or referred from ITFC to ATFC) are followed weekly by the care staff at ATFC and NLW through household visits. Mothers/caregivers were informed every week by the NLW to bring their children for weekly follow up¹⁰¹ at ATFC. Here children are assessed for improvement and receive weekly ration of RUTF. The quantity of RUTF is provided depending on beneficiary’s actual weight gain and MUAC measurement, against target weight gain and MUAC. The health educators and nurses provide care counseling and health education to mothers/caregivers based on improvement or no improvement in anthropometric measurement of their children.

“ANM gives instruction about food packets.....Child’s weight must increase. ANM also inform Mother about target weight of the children.” (Doctor, CMAM)

“This child has only gained 100gm, should have gained 300-350 gm. Feed well and take care” (Nurse, Ambulatory Therapeutic Feeding Centre)

“Please take care of your children, notice the quantity of food and packet (RUTF) consumed by your child. You should feed him with patience and if needed try to feed a little forcibly” (Nutritional Link Worker, CMAM)

¹⁰¹ Each beneficiary is checked for MUAC, presence of oedema, weight gain and illness.

If a beneficiary does not gain weight within two consecutive visits (14 days) or MUAC remain same or reduces, the nurse at ATFC probe mothers/caregivers on probable reasons from for low or no improvement. If the reason cited by mothers/caregivers is illness, nurses provide medical counseling. NLWs make regular home visit to monitor consumption of RUTF and any illness experienced by beneficiaries. The NLW support mothers/caregivers in feeding SAM/MAM children; provide counseling on difficulties expressed by caregivers or connect the mother to the HE for counseling during her next visit. The NLWs also counsel mothers/caregivers on appropriate feeding practices (RUTF and home cooked food) and care seeking for illness.

However the CMAM program does not have provision of any medical care to beneficiaries until their next scheduled visit. Under such circumstances either the NLW advice mothers/caregivers to seek treatment from the sub centre or encourage them to go to the Chakradharpur hospital. The sub-centers in the study area were either non-functional or irregular. These health centers remain close except on ATFC days. During illness, families' community preferred to access medical care through private practitioners (traditional healers, rural medical practitioner, chemist or doctors).

“We do not know when it opens and when it closes (the sub centre). We go to the doctor (quack). That doctor do not check patient but give medicine based on symptoms of pain” (Mother of ATFC beneficiary)

“We ask them (sahiya) for medicine they tell us they do not have medicine” (Mother of ATFC beneficiary)

Overall the follow up component in CMAM focused on SAM and MAM children but excluded a chunk of beneficiaries; (a) SAM children discharged from the higher care facility¹⁰² (MTC at district level hospital) end up directly at the community, with no linkage to the intermediate care facility. (b) Infants (SAM children <6 months¹⁰³) are

¹⁰² Discharge criteria from such higher care facility (MTC, District hospital) are made under criteria specified as per the NRHM guidelines for SAM management i.e. weight gain of >15% and satisfactory weight gain for 3 consecutive days and absence of edema, infections and medical complications. Children referred by ITFC to a higher facility are traced and linked to the ATFC. However children admitted to the higher facility by self referral remain outside the purview of the TFP on their return to their respective villages.

¹⁰³ SAM children <6 months of age are not in the purview of TFP hence malnutrition is managed as per the neonatal guidelines. Such children admitted and treated at ITFC and transferred to ATFC on establishing of exclusive breastfeeding and consistent weight gain.

treated only at ITFC¹⁰⁴. Once the child is stable on exclusive breastfeeding and start to gain weight they are referred to an ATFC. Here they are followed weekly and weight is monitored. Once they attain WHZ of -2SD and stable improvement in weight for two weeks, they are discharged from the program. The growth monitoring is to be conducted through ATFC till the beneficiary attains 6 months of age and mothers are to be supported on child feeding (focusing exclusive breastfeeding). In practice, these children are not followed by the NLWs or by the FHWs. (c) No follow-up or support services are provided to the non-responders.

5.3.12 Discharge from Therapeutic Feeding Program

The CMAM model discharge beneficiaries only at a MUAC of 125mm or ≥ 125 mm; till then beneficiaries are to be treated within this program. Discharge from the TFP takes place under two circumstances: (a) as treated case, when beneficiary meet discharge criteria and (b) as non-responders. In the first scenario, it is the medical staff at ATFC (a trained nurse) responsible for discharge of beneficiary from TFP on meeting the exit criteria¹⁰⁵. At ITFC, the doctor is responsible for deciding¹⁰⁶ discharge of a beneficiary from TFP as; a non-responder. Every discharged beneficiary is provided with discharge ration¹⁰⁷.

The CMAM program does not have any mechanism to extend support to mothers/caregivers on child care and feeding discharged from the TFP as non-responder. Neither ATFC nor the ITFC staffs prepare a discharge plan or a care plan for the mothers/caregivers for home based care. The TFP entail no interface with the Public Health programs for management children post discharge. There is no information exchange between CMAM staff and FHWs about beneficiaries' exiting from the program.

¹⁰⁴ CMAM do not manage children below 6 months of age. If a child is identified with complicated SAM/MAM and need treatment, they are referred to the ITFC.

¹⁰⁵ Discharge criteria/Exit Criteria- For discharge from the TFP, the beneficiary must have anthropometric measurements of W/H Z score of -2SD for two consecutive measurements, MUAC of >125 mm, along with, absence of oedema for one week, absence of medical complications for three weeks in the TFP, adequate appetite and a minimum stay of 3 weeks in the program.

¹⁰⁶ Discharge from the program as a Non-responder- A beneficiary having no weight gain or deterioration of weight over a period of 3 weeks.

¹⁰⁷ All beneficiaries of TFP are provided with 28 packets of RUTF as discharge ration. The mothers/caregivers are to feed one packet of RUTF along with home cooked food for the first 28 days of discharge. This facilitates smooth transition of the food intake of beneficiary from therapeutic food based diet to the local food practices.

There is no mechanism to share case history of beneficiaries discharged from CMAM with the FHWs nor there is provision to link discharged cases with the ICDS program.

The FHWs interviewed had knowledge about malnourished children getting treatment through ATFCs. However none of the FHWs were aware of children discharged from the TFP or their role in providing nutrition care to the discharged cases. Post discharge children already enrolled and regularly attending an AWC continue getting services under ICDS. The FHWs keep a check on their growth and provide supplementary nutrition. However services these children receive are not focused on their specific nutrition needs, they get services same as any other child enrolled in AWC. The FHWs were not aware of any special provision for malnourished children (Additional supplementary nutrition and regular growth monitoring). Children who are irregular or not enrolled in the AWC are not covered by services provided under ICDS. Neither the TFP provide monitoring of discharged children at the community nor do FHWs provide additional focus on care of discharged beneficiaries. Post discharge the mothers/caregivers are sole caregivers to these children. The TFP emphasize on counseling and health education of mothers/caregivers for: (a) capacitating caregivers on causes of malnutrition (b) psychosocial stimulation (c) improved health seeking behavior and (d) capacitating caregivers on socio-economic support services available. The objective of counseling and health education sessions at ATFC and ITFC is to support and prepare caregivers on good child care and feeding practices to avoid relapse among treated beneficiaries due to negligence and poor care practices at home. Mothers/caregivers while accessing treatment for their children in TFP were not clear in their understanding on causes of malnutrition, identification of danger signs and addressing specific care needs of discharged children or aware of socio-economic support/health care services available¹⁰⁸. The mothers/caregivers were not informed by ATFC care team to get in touch with FHWs. Post discharge mothers/caregivers return to their old practices of child care and feeding.

A beneficiary continues within CMAM program for a minimum of 6 weeks and a maximum of 12 weeks but not more. A beneficiary can be discharged from ATFC or ITFC as non responder if they fail to attain any improvement in their anthropometric measurements despite of absence of medical complication and a good appetite.

¹⁰⁸ None of the mothers interviewed could tell about the cause of weakness among children, tell about the danger signs, mention specific care or feeding need children or tell about the services available for malnourished children other than ATFC.

The TFP provides for investigation of social causes¹⁰⁹ and redresses the hindering factors by the NLWs. The NLWs face many challenges in the process such as, (a) they are not equipped to counsel mothers on behavior change, (b) they are not supported with IEC material for counseling mothers, (c) on an average they get to visit beneficiaries once in a week and (d) it is a challenge for them to find mothers at home to counsel them. Though ideally the TFP has a provision address the socio-cultural hindrances through counseling mothers and family, these barriers continue to linger during treatment under TFP and even post discharge.

“NLW’s work is only for giving basic counseling such as keep your children clean, trim nails of the child, to drink boiled water” (Health Educator, CMAM)

In absence of any improvement the beneficiaries are discharged from the TFP as non-responders. These beneficiaries receive discharge ration but no other care service. These cases are not followed post discharge to monitor gain or loss in their weight. Nor are they linked to the ICDS services for nutrition care. The caregivers/mothers receive no counseling or capacity building on care of such children, identification of danger signs or response during illness.

5.3.13 Coordination

There is lack of coordination between MSF CMAM program and nutrition service provided through ICDS. The design of TFP is such that for referrals this program mostly depends on NLWs. They are responsible for active screening and referral of children to the ATFC. They are also responsible for coordinating with the FHWs (ASHA or AWW) for referral of SAM children identified by them.

“We ask sahiya and anganwadi worker that if they find any malnourished children they should send them to ATFC” (Nutritional Link Worker, CMAM)

It was found that NLWs were depending on the FHWs for screening and identification of malnourished children instead for conducting active screening. Moreover instead of involving FHWs in the referral process of children identified by them, NLWs were referring malnourished children on their own. The FHWs were not informed on referral of a malnourished child from their area. It is the responsibility of NLW to facilitate referral of children identified as SAM/MAM during VHND. However coordination NLWs and

¹⁰⁹ Sharing of RUTF among siblings, faulty feeding practice, non-compliance etc.

FHWs had a poor coordination pertaining to timely screening and referral of malnourished children. Most referrals made to ATFC or ITFC were through NLWs or self referrals. The FHWs were found to be unassertive about their role in making referrals under CMAM program. The FHWs lack clarity regarding the process of referral if they come across a malnourished child. They were not sure if the child is to be sent to the ATFC or the NLW is to be informed first.

“In training we were informed that if we find any malnourished children we need to send them to MTC but Sahiya told me if I find any malnourished child I should send them to ATFC” (Anganwadi worker)

Care coordination between NLWs and FHWs was found ambivalent specially pertaining to screening, referral, treatment and post discharge care under CMAM. As stated before the FHWs are unaware of their role in CMAM program or care of CMAM beneficiaries. A beneficiary admitted in CMAM and also enrolled in ICDS services is entitled to care services from both the programs. The role of ICDS is to prevent malnutrition through supplementary nutrition, timely identification and referral of malnourished children and management¹¹⁰ of malnourished children. CMAM has a therapeutic feeding model (therapeutic feed and clinical care to the beneficiary) for management of complicated SAM and MAM. It is important to note that ICDS has an important role to play during a pre and post CMAM phase, but ICDS have a role to play during treatment phase as well. Weekly visits at ATFC are not a supplement for VHND nor are the RUTF, a replacement of supplementary ration provided through the ICDS. The FHWs can not only play a significant role in monitoring in between two ATFC visits but also in early identification of risk among CMAM beneficiaries, care counseling and treatment of minor illnesses. During VHNDs the FHWs can facilitate growth monitoring of CMAM beneficiaries and provide appropriate counseling to mothers/caregivers. During home visits the Sahiya/ASHA can provide timely treatment for minor ailments and care counseling to mothers/caregivers of CMAM beneficiaries. However, as FHWs are not informed by the CMAM care providers on children admitted under CMAM or their special care need the support that could be provided by FHWs remain under utilized. .

“They tell me to feed one packet early in the morning once she is awake, again feed the remaining packet by 10 am in the morning. Then at noon and by evening

¹¹⁰ Such as, additional supplementary nutrition, growth monitoring and health education.

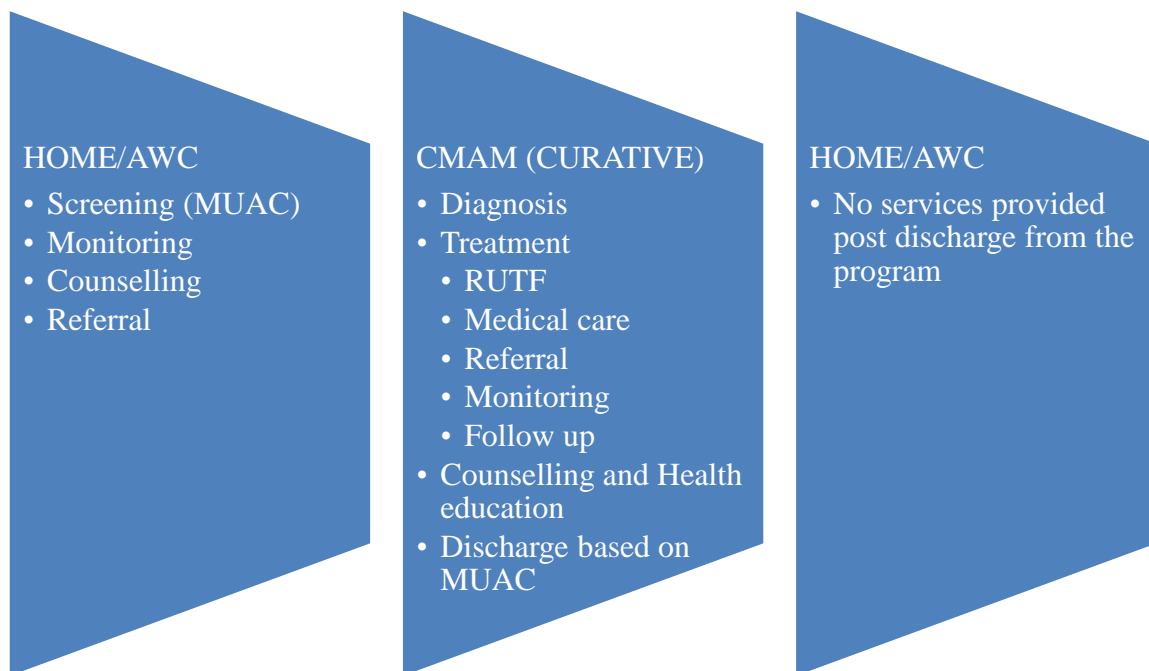
all packets will be finished. Then in the evening I can feed rice. Then they also tell me to feed packet I get from anagwnwadi center” (Mother of ATFC beneficiary)

There was confusion among FHWs and mothers/caregivers regarding the diet plan of beneficiaries. The mothers were not sure about the ways to incorporate RUTF, supplementary nutrition ration from the AWC and home cooked food in the daily diet of beneficiaries. The NLW and HE suggest mothers to feed beneficiaries first with RUTF and if the child is still hungry they can be fed some home cooked food. As stated before the NLWs and HE do not inform FHWs on children being treated under CMAM, these FHWs suggest mothers to feed supplementary nutrition regularly along with the home cooked food. This leaves the overburdened mother confused and worried regarding diet of their children. Neither CMAM care team nor FHWs assist in planning a diet that is suitable for their children as well as conducive to the daily schedule of mothers.

The CMAM care team does not connect beneficiaries to the ICDS post discharge (cured cases and non-respondents). The ATFC do not share information on discharged cases or beneficiaries’ case history with respective FHWs. While FHWs were aware about malnourished children being treated under TFP, they were unaware of their case history and specific care need of malnourished children discharged from the program. This might create a gap in care provided to beneficiaries once they are cured, especially if they are irregular to the AWC or not enrolled under the AWC. Mothers and family are primary caregivers to SAM children in CMAM program. Once a beneficiary exits from the TFP, nutrition care becomes inconsistent, as they are neither covered by FHWs nor by the CMAM care team.

5.4 CONTINUUM OF CARE IN COMMUNITY BASED MANAGEMENT OF ACUTE MALNUTRITION, IN DESIGN AND IN PRACTICE

FIGURE NO. 5.1 Continuum of care in CMAM program



5.4.1 Management Continuity

(a) *Child assessment*- The CMAM model provides for regular child assessment but only to children admitted into the program. The program delivered did not have a strong component for early assessment and management of malnutrition. Though NLWs were supposed to conduct active screening, active screening was not practiced by the workers. The NLWs relied more on passive screening. It was difficult for NLWs to screen all children through house visits along with their other work responsibilities.

The model is dependent more on passive screening during VHND and referrals made by FHWs. This means that probability of a malnourished child being identified and referred depends on their coming for VHND. Absence of regular home visits by the FHWs adds up to delay in identification and appropriate treatment for malnutrition among children. It is noticeable that active screening by FHWs in their respective area is absent and AWC do not screen all children enroll

in ICDS but only those who can reach for VHND or reach out to the FHWs on account of sickness.

During the period of data collection AWCs were not serving hot cooked meal¹¹¹. As a result mothers were not sending their children to the AWC. The AWWs were not conducting growth monitoring not updating the GMC. Therefore identification of malnourished children through growth monitoring was not in place. The screening and identification of malnourished children in the area was entirely dependent on screening during VHND.

“There is provision for giving Khichdi, but we are not giving it now. We are not getting rice since January... see, it is going to be one year, we are not getting rice” (Anganwadi worker)

If mothers/caregivers bring their children to VHND, they are screened for malnutrition and referred for further diagnosis to the ATFC. Parents who have some awareness regarding the care services provided at ATFC bring their ‘very weak’ children for treatment. These factors play together to determine in the time gap between onset of malnutrition, identification, referral and assessing treatment for SAM children.

- (b) *Nutrition intervention-* CMAM model provides RUTF to all children enrolled in the program. The model has laid more emphasis on provisioning of RUTF in comparison to capacitating mothers and caregivers on adequate and age appropriate feeding. Once beneficiary is discharged from the program mothers/caregivers face challenges in feeding nutrition rich diet could match the richness of RUTF. The model did not link discharged beneficiaries to their respective AWC for continuation of nutrition care or inform the FHWs about admitted and discharged children, nor did it provide adequate support to mothers/caregivers for improving nutrition and care practices (through capacity building or counseling of mothers/caregivers).
- (c) *Care planning-* In continuum of care, case history play crucial role in developing a suitable care plan¹¹². Care plan is developed by the CMAM care team after taking a detail case history of each SAM/ MAM beneficiary. Similarly at ITFC care plan is developed based on case history shared by respective ATFCs. However case

¹¹¹ Ration for hot cooked meal had not been supplied to the AWCs since January of 2017.

¹¹² The principle of continuum of care acknowledges the significance of involvement of caregivers in the process of developing a care plan.

history for children coming through self referrals is recorded through interviewing their mother/caregiver. This is the maximum involvement of caregivers/mothers in devising a care plan. Care plans made by the care staff (nurses in consultation with doctor). When a beneficiary is transferred from facility to community based care, a separate care plan is developed by the nurse in their respective ATFC. The mothers/caregivers are handed a discharge slip with clinical history of beneficiary and are instructed by the ITFC care team to carry it for their ATFC visit. This facilitates respective ATFC care staff to develop a suitable care plan for each transferred beneficiary suitable for their health need. A weekly target for weight and MUAC is fixed and on next visit the progress of each beneficiary is examined against the set target. According to the progress of each beneficiary their care plan is modified by the ATFC nurse.

The care plan developed focus mainly on the clinical aspect. Social-cultural context of the beneficiary get attention of the care planner if a beneficiary do not show any improvement in their condition or respond to the treatment provided despite absence of any complication. Under such circumstances the ATFC nurse instructs the NLW and HE for an investigation into social/cultural and family context that might be hindering care outcome.

Based on this assessment, health education and counseling session is woven around identified socio-cultural and economic barriers faced by mothers in adhering to the treatment regimen. The NLW and HE support mothers/caregivers to resolve barriers in appropriate care and feeding of the beneficiary, through educating them on; affordable dietary diversification, inform them on age appropriate feeding and caring practices and even counsel family members for supporting mothers for appropriate care. The CMAM model emphasis on clinical management of SAM through a community based approach. However it does emphasize on socio-cultural factors in management of SAM. Care planning and care provided to the beneficiary reflect this gap. Care advice by CMAM care team mostly focus on appropriate and timely feeding of RUTF in comparison to health & nutrition education and behavior change.

Post discharge from the CMAM program, the mothers/caregivers is sole responsible for care provided to children. MSF CMAM model do cover facilitation of mothers/caregivers/family in developing a care plan post discharge from ATFC more so for cases discharged as non-responders.

(d) *Seamless care*- All beneficiaries are admitted either to an ATFC or ITFC according to their specific health need. The care plan for each beneficiary during their stay in the program is modified according to their changing health need.

However The CMAM model do not have a mechanism to link the care received by a beneficiary during pre-CMAM and post-CMAM phase. Dependence on passive screening brings children into the program only when they become severely malnourished this act as a setback to the main component of a seamless care i.e. timely and adequate care. As mentioned before the program does not link beneficiaries to ICDS or FHWs. Mothers are counseled to feed supplementary nutrition distributed at AWC to their children. However in the study area, especially in the peripheral villages, mothers did not regularly attend VHND, did not collect their monthly supply of ration¹¹³.

Beneficiaries are to be discharged from CMAM program at MUAC ≥ 125 mm on two consecutive visits, whereas, there have been instances where beneficiaries could not keep this consistency, thereby remaining for a longer period into the program¹¹⁴.

“We are keeping him for one more week. If the weight increases by next week we will discharge him” (Nurse ATFC)

“Sometime they lose weight between two weeks, in that case we keep them for another week and if there is improvement in weight we ask mother to bring them for follow up for one more week. If the weight has not declined we discharge them. If child loses weight we ask mother about any illness and counsel them. We keep the child for another week” (Health educator ATFC)

The FHWs are unaware of their role in care and management of beneficiaries discharged from the CMAM program. Given that mothers are not regularly attending services from ICDS; they are not adequately capacitated for home based

¹¹³ The FHWs do not inform all mothers to attend VHND. Mothers who have children with their immunization due are informed by the FHWs to attend VHND. On other months they are not approached by the FHWs. The mothers know VHND as tikarn diwas, and perceive that only children who need to be immunized are to be taken for VHND session. The mothers are not aware of services that are provided on VHND. They collect their share of supplementary ration on any day from the AWC as per their convenience. As the AWCs were not providing hot cooked meal, the mothers were not sending their children to the AWC.

¹¹⁴ If beneficiaries attain weight and MUAC suitable for discharge but are unable to maintain it for two consecutive visits, the ATFC care team encourages mothers for focus on feeding and care of their children. If the weight and MUAC do not improve the ATFC care team advice mothers to continue treatment at ATFC for another week. Mothers are explained that their children are not ready for discharge. Children are discharged from the program if they achieve and sustain the target weight and MUAC for two consecutive weeks.

care of discharged children; and FHWs lack awareness regarding their role in management of SAM and MAM children, all these factors increase vulnerability of discharged children for growth faltering. Absence of a community based care and management program for MAM mean, they are not included in CMAM program till they develop complication or slip into SAM. Discharged cases on the other hand, delay in stepping into a nutritional support program (supplementary nutrition through AWC and growth monitoring by AWW) thereby putting them at risk of growth faltering and re-admission.

- (e) *Discharge Planning*- The CMAM program do not support mothers/caregivers with a care plan for home based management of children post discharge. Nor mothers/caregivers are adequately capacitated for appropriate child care once their children exit from the program. A discharge plan for mothers/caregivers, essential to facilitate appropriate home based care are neither provided to family nor to the FHWs to extend care support to mothers. Prior to discharge the mothers/caregivers are counseled on maintenance of 'good': hygiene, feed and care without delineating components of a good hygiene, good feed and god care. The CMAM model does not have a system: to monitor (active or passive) progress of each discharged beneficiary or provide care support to mothers and families. .
- (f) *Transition of care*- Linkage between community and facility based care enable beneficiaries to smoothly move from one level of care to another. The exchange of patient card with during transition of beneficiaries between ATFC to ITFC and back to ATFC facilitate care teams to develop appropriate care plan without much delay. At village level, while routine care is provided by mothers/caregivers, the ATFC provide weekly anthropological and clinical assessment, thereby maintaining flexibility in care according to the changing health need of each beneficiary. Depending on severity of illness beneficiaries are referred to the FHWs or to the ITFC. Once beneficiary achieve MUAC of ≥ 125 mm, they are discharged from the program. Beyond this point no treatment or care is provided to beneficiaries under CMAM program.

The CMAM model provides all support for smooth transition of care to beneficiaries within therapeutic feeding program but not post discharge. While the program is based on feeding RUTF and management of illness among beneficiaries, lesser emphasis is laid on capacitating mothers/caregivers on appropriate child care and behavior change. Despite of spending a minimum of two

months in the program mothers/caregivers do not develop an understanding on malnutrition, its causes and appropriate child care. The model do not involve FHWs not coordinate with the ICDS services for appropriate management of discharged beneficiaries, nor does it have a mechanism for regular monitoring post discharge and prompt referral if beneficiaries indicating a relapse. Besides there are no provision of care for children discharged from the program as defaulters and non-responders.

Flexibility- The CMAM model provides flexibility in care provided to the beneficiary. As stated before this model functions at two levels; one close to community and another at the FRU, Chakardharpur. This model encompass different treatment plan for children with sickness, complicated MAM, uncomplicated and complicated SAM. The NLWs are trained not to refer sick children from community to the ATFC; however they are to advise mothers/caregivers on home based care for common ailments and to contact the FHWs for treatment if the sickness persists. The NLWs are to advise mothers not to depend on traditional healers or healing practices for childhood illnesses. If a child slips into complicated MAM or SAM they are referred to the ATFC for appropriate treatment.

If a sick child (but not MAM or SAM) arrives to an ATFC through self referral, they are linked to the concerned FHW or are referred to the ITFC (if required). Children with complicated SAM are treated at the ITFC unit located at FRU, Chakardharpur. Sick and SAM children who do not respond to the treatment provided at ITFC are referred to the District hospital, Chaibasa. At every stage treatment is modified according to the changing need of a beneficiary.

At community level, if mothers are unable to bring their children for a scheduled visit¹¹⁵, the ATFC care teams hand over a week quota of RUTF to the NLW to deliver it to the beneficiary during home visit. The NLW deliver RUTF to these beneficiaries, at the same time they check with the mother for reason behind not attending follow up. Since such beneficiaries miss out on weekly growth monitoring, they are not discharged from the program even if they achieve a MUAC of ≥ 125 mm. The mothers are advised to continue follow up visit for another week. Children are not discharged from the program till they complete two consecutive follow-up visits and maintain the required WHZ and MUAC.

¹¹⁵ For reasons such as, work burden, inability to arrange for a caregiver for their other children, livelihood, personal emergencies etc.

However if a beneficiary have completed 6 week in the program they are discharged from the program. .

The CMAM model omits an important phase i.e. transition of care from CMAM program to a purely home based care. During this phase a mother is prime care giver supported by the caregivers (mostly mother-in-law, sister-in-law or neighbors). Beneficiaries are discharged at MUAC and not W/H score, this increases the responsibility of mothers and caregivers to care for children discharged at MAM. Besides no growth monitoring for these children take place post discharge to check if these children ever reach to W/H score of -1SD or beyond. Health care and dietary requirement of these children are different from healthy and SAM children. These children have a high change of either slipping back to being undernourished, especially during the lean season¹¹⁶ or moving forward towards a normal W/H score. The program extends absolutely no outreach services for care of these children.

Mothers/caregivers are supported with health and nutrition education during their stay at the facility. The objective is to enable them to provide appropriate care to their children during and even after discharge from the program. Each ATFC has a health educator to provide health and nutrition education to mothers. The sessions are well designed according to different themes. Health education on these themes is provided to mothers/caregivers at each follow up visit to ATFC. Information on child feeding, care and sick child care is disseminated through a pictorial IEC chart. However the biggest barrier to this practice is incompetence of Health educators to communicate in the local dialect.

Mothers/caregivers coming from the peripheral areas of Chakradharpur block hardly understand or communicate in Hindi. This act as a major hindrance for mothers to understand the information disseminated during health and nutrition education or counseling session or to clarify their doubts. Moreover, HE and nurses were not trained on community food practices, beliefs or socio-cultural context of the area. Care advices such as: hand washing before feeding every meal; keeping children hydrated; feeding nutrition rich diet such as fruits, meat and vegetables etc. did not suit cultural practices, beliefs and

¹¹⁶ The lean season is marked by low income opportunities, no agricultural activity, high migration of men and a lesser time spend by mother in child care due to their higher engagement in chores and income generating activities.

affordability of the community. Messages provided during health & nutrition education and counseling sessions are often difficult for the mothers to practice at home. Week after week mothers are provided with information on child care and feeding however reception, retention and practice of messages and advices are poor. Another problem with the process of health education is that every week health and nutrition education is systematically provided to mothers/caregivers but it is not revised by Health educator in the following visits or by the NLW during home visits. Mothers remember the central idea of taking *good* care and providing *good* food but are unable to remember measures to achieve the same.

In absence of a dedicated counselor/educator at the inpatient care facility (ITFC and MTC, Chaibasa) the mothers do not get equipped with knowledge on appropriate child care, feeding and sick child care or counseled in overcoming barriers in appropriate care and feeding practices, despite of spending weeks under supervised care. Mostly nurses are roster to provide health and nutrition education to mothers. The assigned nurse takes health and nutrition education according to themes assigned for each day. Considering the fact that each beneficiary is referred to the ITFC or MTC for a different health need, different health history and a different sequence of care received (across levels); the health and nutrition education is not tailor-made but mothers of all admitted beneficiaries are provided same health and nutrition education. These sessions are conducted in a group (instead of an inter-personal interaction) where mothers/care givers of all admitted children are capacitated together on same pre-defined themes, irrespective of difference in their prior knowledge/understanding on the subject, their capacity to comprehend and their ability to retain the information received and above all knowledge required by caregiver/mothers according to the case history of each beneficiary. The barriers of language and unfamiliarity with the socio-cultural context of beneficiaries, limit the output of these sessions to routine monologue by care team, instead of a dialogue between mothers/caregivers and the providers.

5.4.2 Relational Continuity

The CMAM design enable for constant contact between care providers and mothers across different level of care for a long period of time. At the village level, NLWs are in constant contact with the mothers/caregivers to monitor health of beneficiaries, supervise care practices, support in appropriate care through advice and counseling and provide referrals

(to FHWs and FRU at Chakradharpur) if needed. At the community level, every week mothers/caregivers get a chance to interact with the care team at ATFC, where mothers get to interact with the same care providers. The model provide a prolong duration (a minimum of three weeks) of interaction between mothers and care providers at ATFC. This period facilitate in development of familiarity among care providers and mothers/beneficiaries. This prolong contact help mothers/caregivers to become comfortable in listening to the advices/counseling, develop an understanding on care procedures and share their concerns and challenges in providing child care and feeding during each follow up visit. This also enable care team to learn about the socio-cultural context of each beneficiary and to the extent possible, develop a care plan, provide care advices, counseling and referrals accordingly¹¹⁷. This procedure provides CMAM care team, familiarity with the care history of each beneficiary them to develop a suitable care plan. Regular interaction between care providers at ATFC and mothers/caregivers/family members provides a platform that enables them to;

- (a) Understand the need of a particular treatment procedure
- (b) Facilitate the family in deciding to access care from the ATFC.
- (c) To the extent possible, report barriers or discomfort faced in following the treatment regimen and practicing care advice received from the CMAM care team.
- (d) Develop trust and dependency on the care team

Mothers/caregivers spend approximately 1-2 hours at the ATFC for each follow up visit. Amidst all the defined activities, the actual time mothers get to spend in interaction with the HE or Nurse is hardly 10-15 minutes. This time is utilized by the care team to explain the mother on appropriate feeding plan for the week and counsel issues highlighted by mothers (if any). During interaction process, care team do not focus to ensure if mothers are able to understand, comprehend and practice these care advices at home.

Moreover, while case history and contextual information of beneficiary is recorded through interaction with mothers/caregivers, their participation and involvement in

¹¹⁷ For e.g. specific, care and feeding advised to provided to mothers living in unit family or living in joint family is given according to the capacity of mother to follow those advices. Similarly mothers engaged in income generating activities and spending most of their time outside home are advised accordingly to practice scheduled feed and care practice appropriate to their child' need. Mothers of beneficiaries suffering from frequent illness episodes are supported with counseling on care and hygiene and emphasis is made on home visit by the NLW. NLWs provide constant support in child care and prompt attention to the changing health need of each beneficiary through regular home visit.

designing care plan is negligible. Mothers/caregivers capacity to follow care regime and potential barriers in adhering to care advice and improved care practices is not taken into account. However as and when these barriers and incompetency come to the knowledge of care team, it is followed with corrective¹¹⁸ measures.

Another significant factor is absence of a devout community worker at close proximity to the mothers/care givers like the ASHA or AWW. For mothers, FHWs are easier to contact than NLWs. Despite of the fact that an NLW is required to build an inter-personal relationship and gain trust of mothers, it is impossible for these workers to invest as much time in one village as compared to the FHWs. The NLWs are in constant contact with the mothers but not on a-day-to-day basis, limiting the objective of providing support for home based care of malnourished children under CMAM. This care gap is evident in the fact beneficiaries, with uncomplicated SAM, despite of receiving treatment (counseling, monitoring through home visits and therapeutic feeding) became a non-responder under ATFC, but began to show improvement under same treatment regimen at the ITFC. Improvements in treatment outcome at the ITFC indicate towards the fact that NLWs are unable to trace and address non-clinical factors (socio-cultural, environmental and economical) contributing as confounders to the treatment outcome.

At the ITFC, mothers/caregivers get a supportive environment (surplus time for child care, clean water and hygiene facility, scheduled and supervised feeding, care support and counseling) which is absent at the village level. Though the presence of NLWs provides great potential to provide social support in care of malnourished children, home visits are limited to monitoring consumption of daily quota of RUTF packets and check if the child had any sickness/illness. The barriers/ challenges/ doubts of mothers/caregivers in following treatment regimen often remain unidentified and are addressed during their ATFC visits once it starts to reflect in the treatment outcome. During counseling these specific issues are addressed to suit the beneficiaries health need, otherwise counseling or

¹¹⁸ These corrective measures involve (a) counseling family members to support mothers/caregivers in availing treatment from ATFCs, extend support to enable mothers to come for follow up visits, support mothers in feeding the daily quota of RUTF, support in availing treatment from ITFC if required, counseling family to support mothers in feeding age appropriate moving beyond the stigma related to certain food items. (b) Counsel mothers on appropriate way of feeding, counseling mothers on food that is age appropriate and affordable (c) Mothers unable to grasp or practice care advice receive regular support and supervision through regular home visit where the NLWs help in resolving the barriers. However these practices were not observed by NLWs in the areas visited, especially villages in peripheral areas, hard to reach areas and in forest areas.

advices provided to mothers/caregivers are generic. Despite of regular interaction between NLWs and mothers; their awareness on components of care counseling, health and nutrition education, behavior change were found to be subdued, whereas, perception on child malnutrition among mothers was found to be ambivalent.

The model provisions for inter-personal linkage between care providers and mothers/caregivers however absence of a case manager limits this potential of linking beneficiaries to different care providers under CMAM. As stated before, this model focus on clinical history of beneficiary whereas do not have provision to document their social history. The care team at ATFC and ITFC are not trained to record social history. NLWs located closest to the community are also not trained in recording and sharing of social history of beneficiaries. Lack of information on socio-economic and environmental context of the beneficiary limit significance of a care plan, health advice and counseling to bring change in home based care practices¹¹⁹. Under CMAM model care/care assistance can neither be provided every day nor can it be provided for an endless time period. . In CMAM continued interaction of provider and beneficiary for social support is absent such as, linking beneficiary to health care (FHWs and Sub centre), nutrition care (AWC) and support services (PDS). Though there are no assigned case managers to link care across time, however the program bears enough scope for the model to use case management as a mechanism in bridging this service gap and connect beneficiaries to an appropriate care service, post discharge from CMAM program.

5.4.3 Informational Continuity

Information exchanges between three parties are important in this CMAM model; (a) between CMAM care providers, (b) mothers/caregivers and CMAM care team and (c) CMAM care providers and FHWs. Information continuity between care providers across levels as well as between providers and beneficiaries was found to be inadequate.

5.4.3.1 Information exchange between CMAM care providers (NLWs, ATFC care team and ITFC care team) - The CMAM model has an intense reporting system where the care team at each ATFC and ITFC submit their daily report to the core medical and Information Education and Communication (IEC) team. This report contains the details of

¹¹⁹ The ATFC care team unaware of; beneficiaries habitat, socio-cultural context, popular perception and beliefs and economic status provide certain care advices or feeding advices that are not possible for the caregivers to provide at home.

all admitted children, their progress and issues^{120 121}.) social In return the Medical and IEC team support ATFC and ITFC teams to devise measures to address these issues such as, prioritizing beneficiaries for home visit, making referrals for cases in need of medical care, if needed sensitizing mothers/caregivers and family, tracing the defaulters and absentees etc. Accordingly these plans executed for each *beneficiary* and CMAM workers (NLW, ATFC care team and ITFC care team) are assigned their roles for the next week. Apart from this exercise, CMAM care team (NLWs, ATFC and ITFC care teams) operate in silos.

(a) *NLWs*

Care plan developed by ATFC care team does not involve NLWs in the process. The Care team at each ATFC is responsible to design an appropriate care plan according to the health need of beneficiary, enabling caregivers/mothers to actively participate in treatment process. The ATFC care team had less familiarity with social, cultural, economic and geographical environment of the beneficiaries in comparison to NLWs. The process of making a care plan for each beneficiary include two participants i.e. the ATFC nurse and concerned mother/caregiver. NLWs (despite of being the link between community and care team) are kept out of care planning. As stated before, the care plans designed and themes taken up for counseling do not reflect the actual need of beneficiary/ caregivers. The NLWs are consulted by the care team to address the cases of non-responders or defaulters. They are instructed to investigate social factors behind a beneficiaries' failure to respond or the mothers/caregivers incapacity to adhere to the treatment. The NLWs support ATFC care team with appropriate information. This is followed by modifications in care plan (to the extent possible) by care team, such as; focus on certain specific components of care (therapeutic feed/counseling/ Health and nutrition education etc.) or referral to a higher facility.

The ATFC care teams do not share with the NLWs information on specific health issues of beneficiaries highlighted by mother/care provider. They are not informed on themes taken up by the HE or Nurse during counseling session. This limits the

¹²⁰ Clinical challenges such as; poor or no weight gain, sickness episodes, poor appetite etc

¹²¹ Social challenges such as; refused to referral advice, not returning to ATFC post discharge from ITFC, absenteeism or default from the program etc.

scope of these community workers to monitor improvement in health status of beneficiary or bring change in health practices of caregivers and mothers. The ATFC care team does not share with NLWs, the specific health need of beneficiaries, nor are they assigned responsibility to check on these specific health issues during their home visits.

(b) Care team at ATFC and ITFC

When referrals are made from ATFC to ITFC, beneficiary information is shared through a document bearing detailed case history. This facilitates care team at ITFC to diagnose and develop care plan, suitable to the health need of each beneficiary. This process assists in diagnosis, omitting duplication of services, unnecessary tests and delay in providing appropriate care at the ITFC. However as stated before the case history shared by ATFC is predominately clinical whereas information on social history is absent. Nor do the ITFC care team seek consultation from ATFC team on perception, knowledge and home based practices by mothers/caregivers for care of malnourished children. The care plan at ITFC therefore focuses on therapeutic feeding, diagnose of associated complications and counseling on pre-defined themes. The information sharing between ATFC and ITFC care team does not include information on mothers/caregivers such as; knowledge gap, capability to comprehend and capacity to retain information provided during counseling sessions. At ITFC health nutrition education and counseling sessions superficially address component of behavior change. As stated before, even during facility based care mothers continue to follow their regular practice of care and feeding¹²². Such practices are not favorable for uncomplicated SAM cases¹²³ referred by the ATFC due to failure to respond.

Similarly, on referring a beneficiary from ITFC to ATFC, information on clinical history is shared with the ATFC. The information shared does not highlight; improvements in knowledge, perception and behavior of mothers/caregivers regarding care and feeding of malnourished children during their stay at ITFC; or

¹²² This include feeding of convenient food, breastfeeding or feeding home cooked food before feeding RUTF, not making efforts to feed the scheduled quota of RUTF, touching other objects while feeding child RUTF with hands etc.

¹²³ These beneficiaries (unlikely to have underlying complications) are affected by faulty home based care and feeding practices which do not get corrected even under facility based care.

their weak points such as, knowledge gap, unchanged care practices etc. Again Health and nutrition education, counseling and support care provided at ATFC are generic (based on pre-defined themes) unless mothers/caregivers highlight their concern regarding or share their barriers in providing child care. This bear implication on capacity building of care givers for home based care during their stay in CMAM and beyond.

5.4.3.2 Information exchange between care providers and mothers/caregivers

In CMAM program the care processes, such as; screening, referral, diagnosis and treatment provide a platform for establishing inter-personal communication between the CMAM care team (NLW, ATFC and ITFC care team) and mothers/caregivers. During the process of screening NLWs are responsible to inform mothers/caregivers on the reason for screening and its purpose. The mothers are provided with an opportunity to understand significance of this process and its outcome. The findings are then shared with concerned mother/caregiver by NLWs and referrals are made for further diagnosis at the ATFC. The NLWs explain mothers and family on reason behind referrals and the services they would receive at ATFC. It is also the responsibility of NLW to address concern and doubts of mothers/caregivers to facilitate them in deciding to avail services from CMAM program. Similarly, when mothers/caregivers come to ATFC, HE and Nurse informs them about the program and services provided under CMAM. The mothers/caregivers are explained on the need of diagnosis and depending on the anthropometric measurement of children, ATFC nurse inform them on the treatment process, expected duration of stay in the program and expected outcome. The mothers/caregivers agree for the treatment after consultation with their family. Once the family agrees to the treatment, children are enrolled into the program. Children not eligible for treatment under CMAM are sent back. Mothers/caregivers of these children are informed that their children do not meet admission criteria, however reason for refusing admission of such cases are not explained to them nor are they capacitated on identification of danger signs, or for seeking appropriate care if the condition of concerned children deteriorate.

“.....those kids who measurement comes under the red sign, we used to give medicine to them. If the child comes under yellow sign then we tell them to eat packet (supplementary nutrition) which is given at Anganwadi. This child is under green sign, it means your child is not malnourished but still you should take concern and feed him properly” (Health Educator, CMAM)

During formulation of care plan (ATFC and ITFC), mother/caregiver's expectations from the treatment program are not registered. The model facilitate encounter of mothers/caregivers with the same care providers at each point of contact (home based, community based and facility based), yet the care team do not register caregivers' expectation in terms of; support needed for home based care, adequate information to make decision, approval regarding treatment procedures and appropriate counseling to overcome barriers in home based care of malnourished children. At every follow up visits to ATFC the care team inquires mothers/caregivers on health experience of beneficiary in the past week but challenges, barriers, doubts or confusion in adhering to treatment plan is neither asked nor addressed. Similarly during house visits NLWs inquire on health status of child and consumption of RUTF but the concern of mothers are not attended. These challenges (e.g. lack of time to spend with child, RUTF shared by siblings, difficulty in feeding RUTF according to the required schedule, child detest RUTF etc.) are normalized by mothers as they face these difficulties even in routine child care. These conditions act as a limiting factor to treatment output under CMAM.

Another limiting factor is the information provided to mothers/caregivers regarding malnutrition, its cause, treatment offered and treatment output. This leads to unrealistic expectation among mothers/caregivers. The messages and information imparted by CMAM care providers were confusing mothers/caregivers rather than facilitating them for active participation in the care process. Beginning with the etiology of malnutrition, the care providers (NLW, HE, nurses) state malnutrition as a disease however the mothers are not informed on cause of malnutrition among children. The CMAM care team emphasize on improper feeding as the prime factor whereas capacity building of mothers for prompt care of sickness and adequate child care is brushed aside. On one the idea is hammered to mothers/caregivers are hammered that malnutrition is a disease like any other, on the other hand mothers/caregivers are counseled that feeding RUTF can cure their children of malnutrition. In the CMAM program, treatment based on feeding RUTF and not on medicine puzzles mothers/caregivers on their understanding of 'disease and treatment'¹²⁴.

¹²⁴ The mothers were confused about the idea of treatment. They are constantly informed that malnutrition is a disease like fever, malaria etc. that need a proper treatment. The mothers are informed that at ATFC their child will receive medicine. When children are admitted at ATFC they are given RUTF and mothers are informed that it is a medicine. The RUTF does not fit to the conventional understand of a medicine, especially allopathic medicine. The mothers expect medicines to be a syrup or tablet. RUTF is like none. The mothers perceive RUTF as food and not medicine. The mothers expressed their doubt of getting their

The message that any child can become malnourished and that malnutrition is preventable through appropriate feeding and child care does not form a part of information disseminated among mothers/caregivers. The counseling sessions are focused on appropriate feeding of RUTF and age appropriate diet however preventive measures such as cleanliness, hygiene and prompt treatment of sickness are not highlighted much. While home based care and treatment of common childhood illness (fever, cough, cold and diarrhea) is promoted, information on; significance of timely management of sickness, danger signs, appropriate clinical treatment and treatment providers are not shared with mothers/caregivers. Sharing of RUTF among siblings (like sharing of supplementary nutrition from AWC) is a common practice in the study area. The CMAM care providers promote RUTF as medicine that should not be shared. However community perceives RUTF as a *food* for malnourished children. The RUTF packets do not fit to their version of medicine.

CMAM care teams unfamiliarity with; socio-cultural, economic and environmental context of the beneficiary; unfamiliarity with local language and lack of adequate training on communication act as hindrance in sharing of information. Lack of sensitivity shown by care team toward barriers faced by mothers/caregivers, indifference to their socio-cultural beliefs/practices and blaming mothers/caregivers for nutritional status of children act as a hindrance in development of trust and dependency of mothers on the care providers.

5.4.3.3 Information exchange between CMAM care providers and FHWs-

Flow of information exchange between CMAM care provider and FHWs is unidirectional i.e. FHW to CMAM care providers, mostly NLWs. The CMAM model at Chakradharpur, was primarily depended on passive screening for case identification. The NLWs were responsible to contact FHWs for referral of children to ATFC. It was found that the FHWs were aware of ATFC but awareness regarding function of these centers was nominal. Similarly FHWs were aware of the significance of ATFC (treatment of malnourished children) but they could not state the components of this program (the FHWs could not state what happened in this ATFC). Under such process of referral the information

child treated on RUTF. They were confused that if RUTF can treat them, then why cooked food home can't cure them of malnutrition?

exchange with mothers/caregivers are minimal¹²⁵. Insufficient exchange of information between FHWs and mothers/caregivers regarding CMAM also lead to refusal of referral. The NLWs were responsible to bring such cases to the ATFC for further diagnosis.

There was no information exchange between FHWs and CMAM care providers regarding a beneficiary's admission or discharge from the program. The FHWs were not informed children attending treatment under CMAM; beneficiaries discharge from the program; their health status; or specific health needs to be met under home based care. The FHWs have a minimal involvement in care under CMAM program.

5.4.4 Collaboration and coordination

The CMAM model bears scope for collaborating with the already existing public health system. However collaboration and coordination between was found to be low in terms of prevention, identification, treatment and rehabilitation of SAM children. The model provides community based services through public health centers but not along with these centre. The paradox personify in the fact that ATFCs operate at the building of Health Sub Centre or AWC but their services are not coordinated with services provided in these facilities. There are two prime reasons for the same; first is that most sub-centers in the study area were non-functional and second reason is their infrequent opening. It was found that though CMAM services were co-located at sub-centre, the services were not co-delivered.

The role of care team at CMAM and care team at Sub-Centre (ANM) do not cross path in delivery of services for malnutrition. Routine examination of children and referral to CMAM through sub-Centre never take place, as these public health centers open only on scheduled ATFC days. Other days these centers open and close for certain as per the availability of ANM. While sub centers could provide essential health care services to CMAM beneficiaries as and when required, engagement of health care providers in care of SAM children was found to be nominal. The community expressed poor knowledge of services provided by these centre and they were unaware about its operating time. For treatment of common childhood illness the community reaches out to private health care

¹²⁵ The mothers/caregivers referred by FHWs are not well informed about the program or services provided under the program till they meet the care providers at ATFC. The FHWs were aware of the benefits provided under CMAM however, they were not completely aware of the services provided.

providers. This further lowers possibility of providing preventive care, referral or appropriate care for at risk children through Sub-centers..

On the other hand ITFC is co-located at the FRU, Chakradharpur but here CMAM services are delivered along services provided in this public health institution. At risk cases are referred from Pediatric OPD to ITFC (operating at the Malnutrition Treatment Centre). Here the public health care team (nurses and doctors) work along the MSF care team (doctors and nurse) for treatment of SAM children. However the care planning and treatment of services were predominantly managed by MSF care team. Since the FRU do not have a separate pediatric unit, the pediatric and SAM management services were being delivered through ITFC.

Coordination between CMAM and public health services for delivery of nutrition care to SAM children was patchy. At the community level, CMAM care team and FHWs work together for screening, case finding and referral to the therapeutic feeding program. The FHWs have no engagement in the CMAM program beyond this point. CMAM care team take over the process of counseling, treatment, monitoring, further referral and rehabilitation. Interface with FHWs in other aspects of the program such as, community sensitization, capacity building of care providers, behavior change, supervised care and care support etc. were not in practice. Coordination between FHWs and CMAM care team in preventing at risk children from becoming malnourished¹²⁶, prevention of sickness among SAM beneficiaries and prevention of relapse¹²⁷ among discharged SAM beneficiaries was found absent.

Rehabilitation (discharged from ITFC) and post discharge from care are two difficult phase for mothers. The care responsibility fall completely on mothers and is not easy to follow routine care for SAM children without care support services. Since FHWs are at close proximity to CMAM beneficiaries they can play a significant role in providing supervised care, counseling and care support to mothers on a daily basis during rehabilitation of CMAM beneficiaries and prevent relapse or reoccurrence of SAM. The AWWs and Sahiya have some clarity on their role and are involved in referral of children

¹²⁶ If NLWs or ATFC team come across a MAM or sick child the concerned FHWs are not notified on these cases to take appropriate measures to prevent from becoming a SAM care.

¹²⁷ FHWs are not informed on beneficiaries discharged from CMAM program to enroll them to already existing nutrition care interventions to prevent relapse.

to the ATFC for treatment. However they are not aware of their role in management of malnourished children under discharged from the CMAM program

5.5 BARRIERS TO COMMUNITY BASED MANAGEMENT OF ACUTE MALNUTRITION

5.5.1 Providers

(a) *Issue of Human resource (insufficiency of numbers, training and competency)-*

Each NLW need to cover a certain number of village for screening, monitoring, care support, home visits, inform mothers for scheduled follow up and tracing defaulters to bring them back to the program. On an average each NLW are to cover 4-5 villages. This is challenging to NLWs in delivering their responsibilities; such as, monitoring of beneficiaries, constant care support, active screening, attending VHNDs for passive screening, and attending ATFCs.

Health Educators are responsible to provide counseling and nurses are responsible to provide medical counseling to mothers/caregivers during their visit to ATFC. While ATFC centers have Health educators, ITFC centers do not have a dedicated staff for counseling and health education. At ITFC, nurses took session on education and counseling for mothers on health and nutrition.

Two important role providers in CMAM care team are NLWs and Health Educators, vested with the task of bringing new cases into CMAM program and ensure their retention through appropriate support. Each ATFC nurse is assisted by NLW and HE for measuring MUAC, weight and height of children. The NLWs and Health educators expressed uncertainty in using MUAC tape. Confusion was also reflected in their method of measuring height using scale. The NLWs were aware of the method of using MUAC tape; they expressed lack of clarity on measuring weight and heights of children and its relevance in identifying SAM cases. The HEs familiar with use of MUAC expressed confusion regarding taking correct measurements of MUAC, weight and height during the follow-up sessions at ATFC.

At the community FHWs and the Sahiya lacked clarity and confidence in usage of MUAC tape. While they understand that children classified as red need to be

referred to the ATFC or Chakradharpur hospital, they could not interpret the measurements taken by MUAC tape. The anganwadi workers monitor growth of children enrolled in their respective AWC. However, they depended on the ANM screening and identification of undernourished children. These workers could not demonstrate correct usage of MUAC for taking measurements. Though anganwadi workers state that they regularly record MUAC measurements its reliability remains doubtful. (The CMAM operations in Chakradharpur depend on passive screening/referrals through these workers). The FHWs were not aware of CMAM program. While some FHWs were aware that they need to refer children to ATFC, the FHWs from peripheral villages refer children directly to the FRU, Chakradharpur. All FHWs reported to have received training on child malnutrition, GMC or usage of MUAC. None of them had received any refresher training on malnutrition management, GMC or usage of MUAC in past two years.

None of the CMAM care staff interviewed had received any training for skill development on communication and counseling. The care team was regularly trained on program model, treatment component and techniques involved. The care team was supported with IEC material but they had not received training on skill development for health communication. Though CMAM care team had received several trainings¹²⁸ on the program¹²⁹ however they had never been trained for skill in counseling and communication¹³⁰.

The NLWs were the only personnel having familiarity to the cultural context of beneficiaries. Health Educators were trained on using IEC material for health and nutrition education and counseling of mothers and caregivers. These HE were not aware of the socio-cultural context, economic condition, beliefs and practices of child care and feeding. Language and lack of familiarity with the socio-cultural background of beneficiaries reflect through counseling and advice provided to mothers/caregivers on behavior change. Similarly nurses are responsible for providing medical counseling to mothers and promote behavior change. However their unfamiliarity with local language constrained communication with mothers

¹²⁸ Training workshops and in-house trainings are organized from time to time for all CMAM care staff.

¹²⁹ Cause and treatment for malnutrition

¹³⁰ Such as disseminating health information, imparting health education and facilitating health choice of community

on appropriate feeding and care of SAM beneficiary. Since nurses are not aware of socio-cultural and economic context of the community, care advices provided during counseling sessions do not align with their understanding of sickness, community beliefs and popular care practices. Due to these socio-cultural and economic constrains, while mothers were unable to abide by care advices; caregivers and family were unwilling to abide by many of the care practices advised by NLW, HE or nurses.

(b) *Lack of clarity/understanding on malnutrition and the CMAM program* - The NLWs having maximum outreach within community as compared to the other care providers in CMAM expressed lack of clarity on their understanding of malnutrition, its cause and the CMAM program. These workers perceive malnutrition is as local disease ‘Dhena/puni’ which is caused due to lack of proper feeding. They perceive RUTF as a medicine and believe that consumption of RUTF according to the prescribed regimen can cure malnourished children. The NLWs were aware about treatment for malnutrition among children but not on measures of preventing malnutrition. The Health educators also expressed same understanding on malnutrition.

The anganwadi worker and Sahiya understand malnutrition as a ‘weakness’ (*Kamzori*) that is caused due to improper or inadequate feeding of children. Their understanding of the problem resonates with the communities understanding of malnutrition. The FHWs perceive malnutrition as a sickness that affects mostly children above six months old. The AWW and Sahiya advice mothers to visit ATFC for further check-up if their child continuously lose weight or become thinner. The AWWs were not aware of their role in follow up or management of these children. The knowledge of these FHWs on nutrition and health was found to be inadequate to guide mothers and caregivers on improved health and nutrition care. There have been instances when FHWs advised mothers to feed market products such as horlicks, cerelac and fortified infant formula improve health of their children. This has added to the confusion among mothers about food that are beneficial and food that are not beneficial for their children. They find duality in messages disseminated by CMAM care team and FHWs. The CMAM care team advice mothers that they should not feed their children on market food (convenient

food), whereas the FHWs suggest mothers to feed packed market food if their children is getting weak, sick or not gaining weight. The mothers in the community fed their children with bread and biscuits, as they perceived these to be better, healthy and easy to feed food for their 'sick' and 'weak' children as compared to home cooked food. The FHWs also perceive cause of extreme thinness and weakness among children to be Dhena/Puni. They were aware that this sickness can be cured at the MTC (FRU, Chakradharpur) and Sub Centres/ATFC however they were not aware of the treatment that is provided in these centres.

- (c) **Coverage** - At community level, screening and identification was solely managed by the NLWs. Every NLW is responsible for 5-6 villages that form catchment of an ATFC. It is responsibility of NLWs to screen using MUAC, attend VHND and assist the FHWs in screening and counseling, inform mothers/caregivers on scheduled visit to ATFC, assist ATFC staff in screening and counseling and monitor beneficiaries through daily house visits. Given the responsibility and geography of area served by each worker it becomes impossible to practice active screening for all children.

At the field, referrals were being made by NLWs in consultation of the AWWs or in consultation with community regarding any sick or week child in the village. The AWCs were found not to be well equipped for growth monitoring (non-functional weighing machine, registers not with updated growth curve) nor were the AWWs capable to use MUAC accurately. It was a common practice that mothers whose children are scheduled for immunization attend VHND, whereas others come on any other day to collect ration (supplementary nutrition). Therefore dependence of NLW on passive screening might lead to omission of children at risk who do not reach VHNDs. Most of the children reaching ATFC for treatment were either screened by the NLWs on VHNDs or were self referrals. This omits potential SAM/MAM cases out of the process of screening and early identification unless the malnutrition becomes too visible to be noticed by the FHWs, mothers/caregivers and NLWS.

- (d) **Time** - The mothers travel up long distance to reach to the ATFC. In lieu of shortage of time they make haste to leave early in order to go back and resume work. The CMAM care team have to wrap up the ATFC procedures within a

stipulated time, so that mother do not lose focus from counseling sessions and also to keep mothers motivated to keep coming for weekly follow-up. They use this time in most suitable manner. They focus on probing mothers on any illness in their children in past week and provide medicines. They counsel on appropriate feeding to sick children and inquire on any problem faced in feeding RUTF, breastfeeding etc. and counseling is provided for the same. The HE and NLW support mothers thorough nutrition and care advice to facilitate home cased care of their children. The CMAM care team were concerned that if mothers are kept back against their will or the sessions take too much time the mothers will stop coming to the ATFC.

- (e) ***Motivating mothers to continue treatment in CMAM-*** The ATFC provide services to a cluster of 4-5 villages. During festivals, agriculture season and lean season mothers are not regular for weekly follow up. It is challenging for NLWs to screen and refer children to CMAM program during agriculture season and lean season, as mothers carry them along to the field, forest or to their work site. Similarly in lieu of work burden the mothers were unable to adjust a day every week for follow up at ATFC or adhere to daily feeding of RUTF quota.

“Those women will not come today. They went into forest and their field for daily agricultural work.” (Health Educator, ATFC)

Migration during lean season is common in the study area. Children accompanying their parents for migration pose challenge to the CMAM team in screening and referring children to the program. It is also tough to prevent default among beneficiaries moving out with their family during lean season. Even if the entire family does not migrate, work burdened mothers are unable to turn up for weekly follow-up. It is also difficult for CMAM care team to convince mothers adhere to referrals to a higher facility during these times.

“I called these women but they denied coming and visiting us.” (Nutrition Link Worker, CMAM)

At the field RUTF packets are referred as ‘Dawai’ (medicine) to explain ‘Kuposhan’ (malnutrition) as a bimari/ (disease) and hence medicine is required for its treatment. The health educators come up with different ideas to keep mothers from sharing RUTF with the other children. As stated before feeding RUTF takes a lot of time and children need to be well hydrated or else it leads to indigestion

(diarrhoea) among children. Seeing children having diarrhoea on consumption of RUTF, the mothers and family become reluctant to continue feeding therapeutic feed.

(f) ***Community Perception of malnutrition and recovery-*** The community had very little or no knowledge on malnutrition among children. They were unaware of cause, care and treatment of malnutrition. Mothers' decision to access care from CMAM program and adhering to the treatment depend on collective decision of the family. As a matter of fact, mothers role in treatment of SAM children were complimented by care provided by other caregivers¹³¹ (while mothers are engaged in household chores, income generation or agricultural activities. Concern for a 'weak' (malnourished) child is dependent on the acknowledgement of '*difference in health of their child as compared to other children in the same village*'. On the other hand utilization of medical care for '*weakness in children*' depends on joint decision of the family (irrespective of being i.e. joint or nuclear). This decision is often made after the family tries out all treatment alternatives, suggested by the relatives/kin/elders from the community. Fearing ramification of refusing to the suggestions made by kin and peers, parents gets compelled to accept such advices. They refuse referrals made by NLWs, even if they want to access treatment from ATFCs, they do not do it under peer pressure. Accessing care for weakness by a medical care provider, such as a doctor, ATFC or MTC comes as the last resort when everything else fails to bring desired result. In some cases a parent reaching out to the CMAM care providers were influenced by women from the family/community having positive experiences at ATFC and Chakradharpur hospital. These women convince mothers/caregivers to utilize care services provided in these facilities. Nonetheless, elders, relatives and peers play a critical role in deciding¹³² if all the services provided by these facilities are to be utilized i.e. feeding therapeutic feed, medicines and following care advice given by the CMAM care team.

¹³¹ Such as elders, older sibling, relatives, neighbours etc.

¹³² It was reported by mothers that family and elders in community did not allow mothers to feed RUTF to SAM beneficiaries. The NLWs and HE shared instances when they had to go and sensitise the family/community on malnutrition, RUTF and the program. In some cases the family allowed mothers to practice advice of CMAM care team however there are also examples when a child became defaulter as the family refused to give therapeutic feed alter their care practices and bring change in the local food practices.

- (g) ***Low familiarity with the context of beneficiaries and less time spend at community-*** NLW has to cover 5 villages in comparison to FHWs (AWW and Sahiya) who are in charge of only one village. FHWs have an advantage of more familiarity with the community than NLWs or HE. As stated before, when there is difference in care advice provided by CMAM care team and FHWs, mothers choose to follow the advice of later. Besides, due to difficult terrain, area, distance to be covered and work engagement, the NLWs are unable to cover all beneficiaries on a regular basis. This hinders prompt attention and care to beneficiaries leading to delay in appropriate care. Since the FHWs live at a close proximity to the community, the mothers/parents depend on them for care advice or care support for any sickness in their children.
- (h) ***Poor connect between services available at different levels of care i.e. home/community, ATFC, ITFC-*** This section can be best understood under three phases (a) pre-CMAM (b) within CMAM and (c) Post-CMAM.

The CMAM model does not facilitate consistency across different levels of care. The ICDS provides a good ground for prevention of malnutrition, early identification and recurrence of malnutrition, whereas CMAM provides medical treatment for SAM/MAM children. This model works in isolation and do not synchronize or build up on the services already available through ICDS. The CMAM undertake screening and referrals during VHND. The FHWs are already entrusted with the responsibility of identifying malnourished children through active screening and growth monitoring. Both models working in parallels have led to duplication of activities at the same time leaving out potential beneficiaries. Lack of role clarity among NLWs and FHWs on screening and referrals have created confusion regarding responsibility of active screening at the field level. Neither FHWs nor NLWs are actively engaged in screening but depend on each other to identify SAM/MAM children. Similarly in absence of complete active screening the NLWs depend on the cases referred by FHWs or through VHND. As stated earlier, growth monitoring at AWC is not a regular phenomena and so is updating the growth register. Referrals are mostly done based on visible signs. As a result even sick children get referred to the ATFCs.

During the treatment phase neither enrollment list nor care plan for beneficiaries is shared between the FHWs and CMAM care providers. The FHWs do not get to play any role in monitoring and care support for beneficiaries under CMAM. Daily monitoring of beneficiaries are conducted by NLWs but monitoring of feeding and care practice is a time consuming task. Monitoring of feeding and care practices and counseling for behavior change gets shadowed by other responsibilities of NLWs.

On the contrary Sahiya, despite of being from the same village do not provide monitoring or counseling to mothers/caregivers of CMAM beneficiaries due to; (a) lack of information on CMAM beneficiaries, (b) lack of information on specific need of the beneficiaries and (c) lack of role clarity regarding care of CMAM beneficiaries. Even when CMAM beneficiaries attend VHND, they receive no special focus, care or provision by the FHWs. Therefore counseling and health education on care need, special care and feeding practice is provided to mothers/caregivers only during ATFC visits. Meanwhile the component of behavior correction and addressing barriers to behavior change is undermined, given the absence of any mechanism that provides for daily monitoring, supervision and behavior correction. Mothers/caregivers despite of spending more than 4-6 weeks in the program show confusion regarding appropriate care and feeding practices, health need of malnourished children or services available for them.

5.5.2 Beneficiaries

(a) Delay in decision to seek Treatment- Diarrhea, fever, cough and cold are common sickness among young children. Mothers/caregivers depend on home based care for these illnesses and medical care is sought once the sickness becomes unmanageable. Second resort for illness is traditional healers. These healers are easily available, accessible and affordable by the family to treatment of common illnesses. The family resort to the private medical care providers such as, RMP, local chemist or doctor (that sit in the local haat) for severe illness. Mothers time, limited resources, issues of transportation, irregularity in opening of the sub centre, confusion regarding role of ASHA /AWW and ANM in treating ailments among children guide a family decision of choosing a care provider.

Community's perception regarding illness and severity of illness guide their decision of choosing an appropriate treatment. Diarrhoea, cough, cold and malaria are some of the common childhood illnesses; however mothers/caregivers do not perceive the above mentioned illness serious enough to raise an alarm since it occurs to all children. Hence mothers adopt home based care for fever, cough and cold. Mothers in the community do not get concerned about diarrhoeal episodes¹³³ till its effect become visible through weakness, lethargy or extreme thinness among children. Community hold a definite belief of illness and its cause and they seek its treatment accordingly¹³⁴. The community believes that children get cured by the treatment offered by traditional healers. If a traditional healer is unable to cure sick child of his/her condition then parents keep on seeking treatment from different traditional healers till the child is completely cured. If illness in children becomes life threatening, then parents seek care from an RMP¹³⁵. If the condition of child becomes very serious, then parents come to FRU, Chakradharpur. These decisions are much guided by relatives and elders in the family. Parents submit to these suggestions or rather decisions under peer pressure. NLWs mostly contact mothers for referral. These mothers have a poor autonomy of making decisions. They are unable to convince their family on accepting the referral. In some cases NLWs and HE counsel families to take their children to ATFC for treatment. However families usually seek care from ATFC when nothing other treatment works. These care pathway cause delay in seeking appropriate care for children at risk and children with severe acute malnutrition. The mothers/caregivers reported that seeking care from CMAM program was their last resort when none of the other care providers could treat their *sick* children.

(b) Time constrain faced by mothers- Mothers' engagement in child care, household chore, agriculture and income generating activities leave them with little time for

¹³³ Mothers consider a child's passing of stool for 3-4 to four times as normal. If frequency of diarrhoea increases to 5-6 times with a foul smell and the child loose appetite and give up playing only then mothers begin to worry about their children.

¹³⁴ The community understand diarrhea as 'chor dant' and under nutrition as 'dhena' and 'puni' caused by evil eye.

¹³⁵ The Rural health practitioners are most easily accessible health care providers to the community. According to the community these RMPs are available on call, affordable and provide quick relief. These RMPs charge Rs. 50-100 depending on the treatment which mostly comprise of intravenous saline and medicines. The community opine that treatment for common illness form these *doctors* immediately bring improvement in health of their children.

child care. Child feeding and care under the CMAM program as is a time consuming affair. The communities depend on forest for fuel, livelihood and food products. Going to the forest is a daily routine for women. Usually mothers carry their children along. These women finish their daily chores and leave early for the forest. They come back in evening with fuel wood, non timber forest products and edibles from the forest. Many villages are dependent on non timber forest products for income generation during the lean season¹³⁶. Agricultural season is the busiest time of the year for women¹³⁷, however lean season are no better. Women make a lot of arrangement to take their children for weekly visit to the ATFC. It is tougher for women who do not have elders, family or kin to watch over their other children. Mothers look forward to wind up their visits as soon as possible so that they can reach back home in time.

The busy schedule of mothers also acts as a barrier in establishing a strong intrapersonal continuum with the NLWs. The biggest challenge is to have a free time when NLWs come for home visits. The mothers are visited amidst their work. This curtail the opportunity for mothers to have a discussion with NLWs on issues regarding their child's health, challenges faced in care and feeding or any other concern, thereby seeking care support in return. Rather, caught up in work, mothers sometime attend to the regular questions regarding illness of the beneficiary with a yes or no and hand over the empty RUTF packets. If they are too busy in work they ask other family members to meet the NLW.

Work burden of mothers interfere with their adhering to regimen of TFP such as RUTF feeding and appropriate child care. As stated before feeding RUTF takes time. Children with poor appetite are to be fed in several installments to help them in finishing daily quota of RUTF. Beneficiaries consuming RUTF need to be well hydrated, otherwise it leads to diarrhea. It is a challenge for women spending major

¹³⁶ For example bamboos are collected to make bamboo items and sold in local market, forest products such as *mahua*, *tendu patta*, fruits such as mango and berry are sold in the local market.

¹³⁷ This time of the year a women's day start in the morning around 3 am. They finish off daily chores by the time sun rises and join their family in the field. Their days are spent in agricultural activity and evenings are spend in cooking, cleaning and caring for their children. This routine follows for around six months till the cleaning and storing of agriculture produce get completed. Women work burden is highest during these phases of year. Lean season are no better for women as most part of the day is spend in house hold chores, forest or other livelihood opportunities (bidi making, labor work, MNREGA).

portion of their day outside home or women carrying their children to work to follow this technique of feeding and ensure that their children finish the daily quota of RUTF. Keeping the beneficiaries well hydrated is equally challenging, leave alone maintenance of hygiene and cleanliness.

While mothers are engaged in work (household chores or income generation), SAM children are looked after by the elders, family members or elder siblings. These caregivers are not involved by the CMAM care team in any of the treatment procedure (counseling, awareness generation, sensitization etc.). The SAM children spend most part of their day with these care providers. Despite of a mother aware of appropriate practice of feeding (RUTF) and care such knowledge do not get translated into appropriate care of CMAM beneficiaries.

- (c) **Accessibility**- As stated before, migration, geography and lack of transportation facility act as a major barrier for the community in accessing services through CMAM program.

“It is very difficult to visit hospital or ATFC or any other places for treatment. We have to skip all house work if we visit any facility for check-up as it is very far from our home. We need to manage as we are wage labourer in our village” (Mother of ATFC beneficiary)

An ATFC serves 4-5 villages. Beneficiary from these villages need to visit the ATFC care site every week for growth monitoring, check up and RUTF weekly quota. The mothers from each cluster travel up-to the ATFC. All villages do not have a good road and transport connectivity. The mothers walk for 4-5 km to reach ATFC. Some areas have road connectivity where shared vehicles operate between villages. These vehicles operate twice or thrice in a day. Mothers need to leave early from home and return early from ATFC to reach home before dark. The TFP do not provide incentive to mothers for transportation. Mothers therefore arrange for weekly travel from their own pockets, while most of them walk to these community centers. Women unable to finish their chores on time or those failing to arrange for a care giver for their other children do not attend follow up visits. Walking far off distances, carrying their ‘sick’ children during summer, monsoon and winter is a concern for mothers fearing that their children will become even more ill.

(d) *Feeding schedule for Therapeutic feed* - The ATFC beneficiaries are to be fed a daily quota of RUTF. This often amount to feeding two to three packets a day besides breastfeeding (exclusive for children 0-6 months of age) and continued breastfeeding and complementary food (children of age 6 months to 5 years). At ITFC, beneficiaries are to be fed therapeutic feeding depending on the phase of treatment (8 meals of F75 per day during stabilization phase and 6 meals of RUTF during transition phase). Therapeutic feed is to be given to the beneficiaries in every three hours. The mothers/caregivers were encouraged by the ITFC care staff to complete feeding the prescribe feed per day; however mothers get reluctant to feed at night. They begin feeding again in the morning. The community has a habit of sleeping early at night. . The mothers were reluctant to feed children at night.

During community based management mothers/caregivers are encouraged to feed therapeutic feed along with local home cooked food. However mothers are instructed to feed RUTF as small meals at an interval of 1-2 hours over a day and also feed locally prepared meal. The RUTF keep beneficiaries full for long. Mothers carrying their children to work feed RUTF before leaving home and then again after coming back home in the evening. As the children are full for long, the gap between two meals is longer than the prescribed feeding practice. Mothers find it challenging to complete feeding daily quota of therapeutic feed to their SAM children.

(e) *Lack of support for child care*- At ATFC the health educators share message on malnutrition, child care and feeding practices, cleanliness and hygiene using IEC material. There is a prescribed outline for content to be shared with mothers and caregivers on their each visit. This arrangement ensures that the each mother/caregiver is capacitated on all aspects of care and feeding without the information becoming repetitive or monotonous. However what the arrangement miss out is ensuring, that what is shared with the mother on each visit is retained and practiced by them. Mothers were aware that they need to take care of their children as advised by Health Educator and NLWs. These CMAM care providers encourage mothers to ‘feed well’ and ‘care well’ but the mothers face difficulty in retaining information on practices of child feeding and child care that is shared with them. The NLWs and HEs do not encourage mothers to share their challenges

or capacitate them to solve these challenges. Mothers/caregivers regularly attend counseling and health education sessions without gaining clarity on how to practice it at home.

At ITFC mothers/caregivers are counseled by nurses. These counseling sessions are focused on feeding, hygiene and management of sickness. There is no dedicated Health Educator at ITFC to capacitate mothers on child feeding and care keeping in minds the context (economical, cultural and social) of each beneficiary. Once these mothers/caregivers come back to their community, practicing what they learned at ITFC becomes a challenge.

- (f) ***Children refuse to eat RUTF-*** RUTF do not match with the local food culture. . Depending on the body weight, a fixed number of RUTF packets are assigned to the beneficiaries. As per the protocol SAM children are to be fed a daily quota of RUTF. The beneficiaries detest consuming RUTF throughout the day, week after week.

“Even if I do not give anything else to eat, yet he will not eat the packet”
(Mother of ATFC beneficiary)

The mothers find it discomfoting to refuse home cooked meal to their children who are reluctant to eat RUTF. Despite of repeated counseling sessions, mothers at community and at ITFC were feeding their children on home cooked food and convenience food. As stated before, since feeding RUTF take time mothers engaged in household chores and livelihood generation feed their children on RUTF before leaving for work, fed them home cooked food during day if they carry children with them) and feed RUTF at evening on their return. Mothers of children who despise RUTF feed them some RUTF and some home cooked food as they fear their children would remain hungry. It compromises the treatment protocol which promotes consumption of RUTF complemented with home cooked food during treatment phase in order to catch up growth and prevent infection among beneficiaries.

Conclusion

The field data exhibit that the MSF model for Community based Management of Acute Malnutrition (CMAM) has brought treatment care services for malnutrition closer to the community. This model provides therapeutic care to SAM children at community level through weekly ambulatory units called ATFC. SAM children with medical complications are treated through inpatient facility based care at ITFC located at the First Referral Unit (FRU). The model has established a connectivity between community and facility based care as, SAM children being treated through ATFC are connected to the ITFC for treatment, if children develop medical complication. Once medical complications have been treated the ITFC refer children back to the ATFC for recovery from SAM. The children continue getting treatment in the program till they recover from SAM. The model connects care of SAM children with severe medical complication to the district hospital for further management. Community mobilization and capacity building of mothers for improved child care and feeding behavior is one of the significant components of the CMAM model.

While the model connects care from community to facility and from facility to community based care, the link between; home based care to community based care is not well established. As the model manage SAM children through weekly ATFCs, care connect during the period between two ATFC schedules do not reflect strong linkages. However the model is still under course correction and the model went through several modifications by the end of data collection period, such as; placing a community based worker (NLW) to bridge the gap between home to ATFC based care of SAM children; monthly follow up of all discharged children for two consecutive months at ATFC, linking the discharged children to community based care services such as AWC and community health care providers.

CHAPTER 6

PREVENTION AND MANAGEMENT OF MALNUTRITION AT THE COMMUNITY: ANGANWADI AND CRÈCHE

This chapter shall look into continuum in nutrition interventions across life cycle approach. The WHO (2011), acknowledge that health care need of a mother, newborn and child are connected. The attention of policy and programs have shifted from providing separate health care to mothers, new born and children to connecting care throughout a life cycle (Johnson et al., 2011). The Maternal Newborn and Child Health (MNCH) approach emphasizes on strategies to combine home based care and health care services throughout the life cycle. The RMNCH+A approach (2013), reckon newborn care, management of common childhood illness, promotion of infant and young child feeding (IYCF), prevention and management of child malnutrition among the thrust areas (Ministry of Health and Family Welfare, 2013). This chapter shall therefore examine preventive, promotive, curative and rehabilitative services delivered at the community level for malnutrition.

This chapter describes two models for community based care of malnourished children. The two models are; Anganwadi centers and Crèche that provide preventive, promotive and rehabilitation care for children 0-6 years of age. The chapter describes the AWC model; it presents the essence of continuum of care in this model and the barriers faced by providers and beneficiaries. The later section of this chapter describes the crèche model.

6.1 ANGANWADI CENTERS

The first 1000 days of life serves as a window of opportunity for preventing malnutrition. ICDS scheme is an important pedestal towards this approach of prevention. Beginning from pregnancy to first two years after birth, the ICDS encompass a range of services to prevent malnutrition and its consequences. The services designed under ICDS intent to prevent intergenerational under nutrition, growth faltering and sickness induced malnutrition. The ICDS is a holistic child care and development program. It intends to

secure health and wellness among children through a life cycle approach and not merely prevention and treatment of ill health.

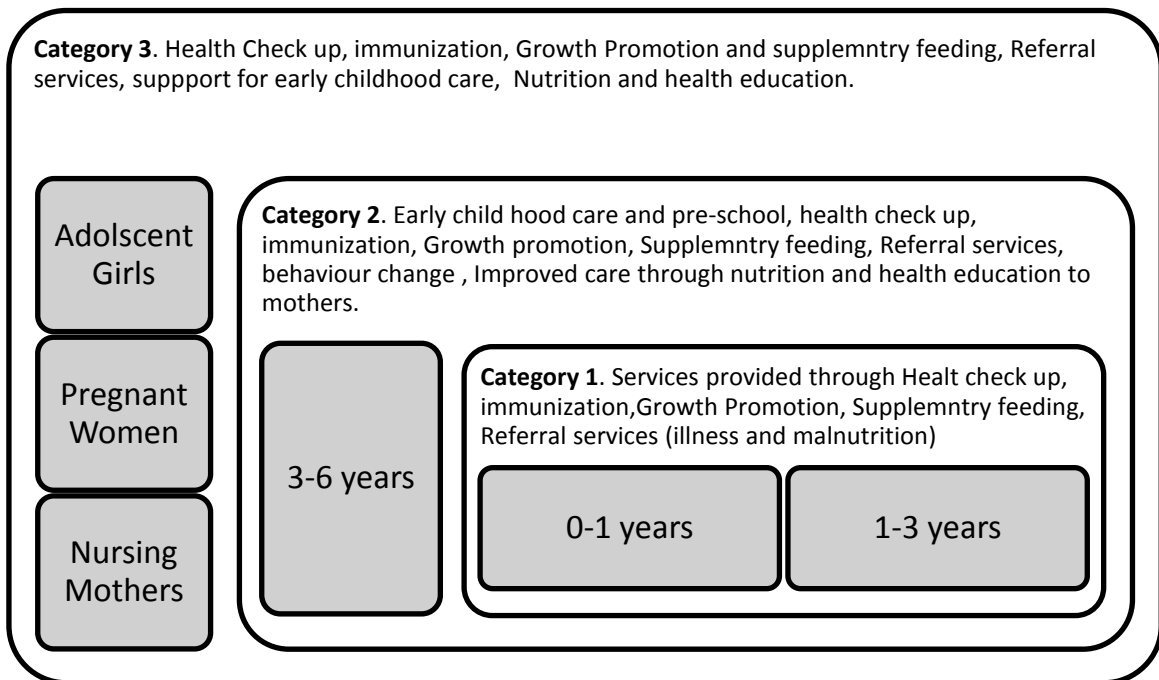
The ICDS program was restructured with introduction of ICDS Project IV (2007). This project emphasized on improving nutritional and health status of children between 0-6 years, psychological development of children, reducing incidence of mortality, morbidity and malnutrition and capacitate mother to address nutritional and care need of children. This program adopts a multi sectoral and holistic approach by addressing; nutrition, immunization, health check up, referral services and nutrition and health education to mothers and community. So far this is the only intervention for malnutrition prevention and management that operates at the community level i.e. closest to the households. ICDS offer services that are flexible and responsive to local child health care need. It also serves as a point of convergence between interventions such as, Reproductive and Child Health (RCH-II, under National Rural Health Mission) and ICDS (under Women and Child Development). Community Health Workers (CHWs)¹³⁸ serve as the interface between community and health services through, home visit for follow up of new born babies, growth monitoring, active screening, health care services through Village Health and Nutrition Day (VHND) and referral services delivered at the community level (Ministry Of Women & Child Development, 2007).

The preventive, promotive, curative and rehabilitative services for malnutrition are holistically provided through anganwadi centers. The major ICDS interventions of supporting continuum in malnutrition care can be viewed in three categories:

- (a) Capacitating the caregiver for home based care.
- (b) Anganwadi Centre based intervention for health and nutrition among children
- (c) Prevention of mortality, morbidity and malnutrition; and improving health and nutrition among children.

¹³⁸ Community Health Workers- Anganwadi worker, Accredited Social Health Activist and Auxiliary Nurse Midwife.

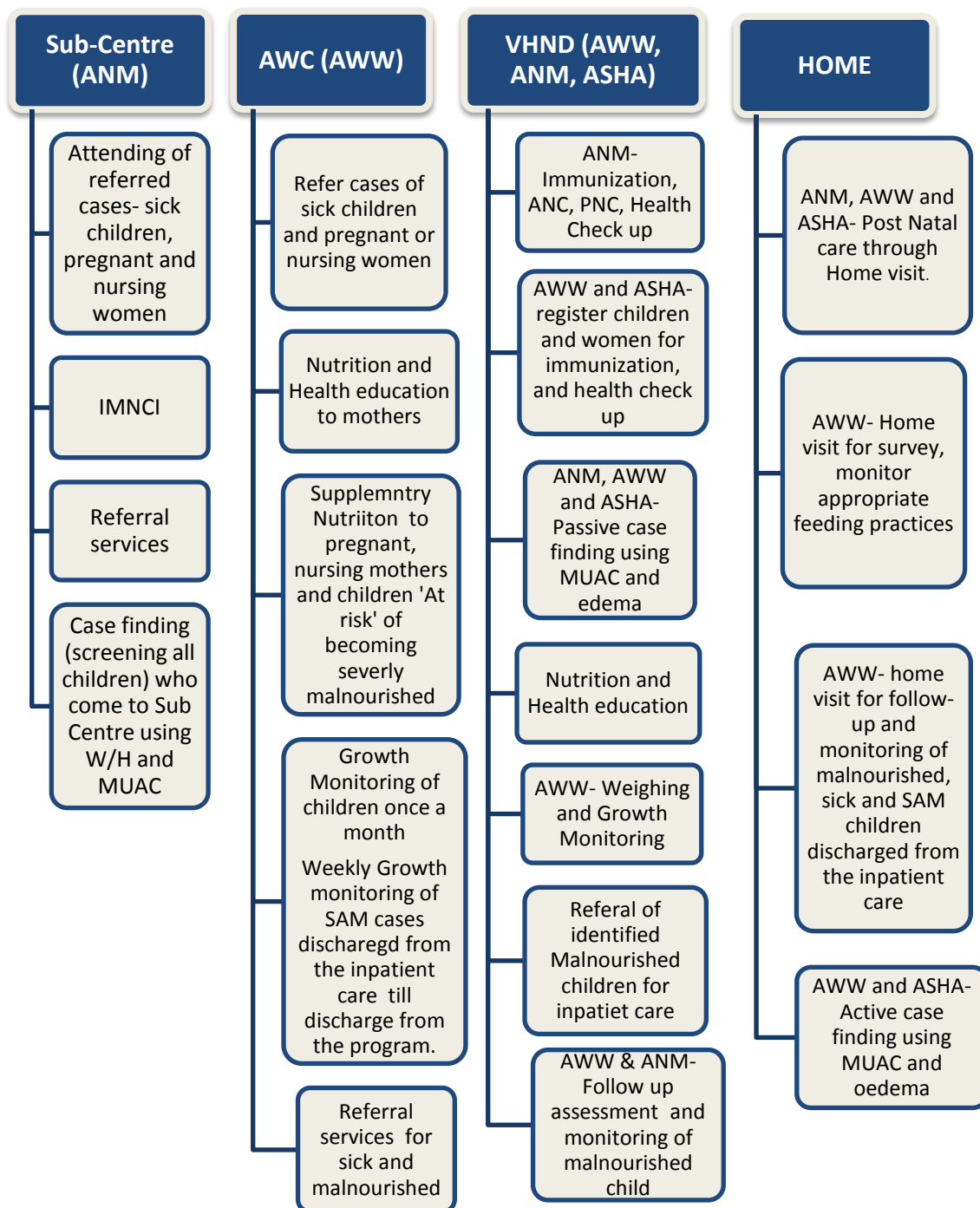
FIGURE No.6.1 Continuum in nutrition care and Malnutrition management services provided by the ICDS



(Source: Adapted from NIPCCD 2006, Ministry of Health and Family Welfare 2013 and Ministry of Health and Family Welfare 2014a)

These services are result of a convergence between the NRHM and ICDS and are delivered by Frontline Health Workers (FHWs); Auxiliary Nurse Midwife (ANM), Accredited Social Health Activist (ASHA, known as Sahiya in Jharkhand) and anganwadi workers (*Handbook for anganwadi workers*, 2006; Ministry Of Health and Family Welfare, Governemnt of India, 2013; Ministry of Health and Family Welfare, 2014). These three service providers have distinctive role to play in providing preventive, promotive, treatment and rehabilitative care services to the community. These services are provided at three care points namely; home, Anganwadi centre (AWC) and Sub- Centre.

FIGURE No.6.2 Package of services and Role of FHWs in malnutrition care and management at the community level



(Source: Adapted from Ministry of Health and Family Welfare, 2011; DOHFW and NIPCCD, 2006; Ministry of Health and Family Welfare, 2011; Ministry of Health and Family Welfare, n.d.; and Handbook for anganwadi workers, 2006).

6.1.1 Health promotion and preventive care

Community based care has a significant role to play in prevention of malnutrition among children through nutritional intervention at two phases; (a) the first 1000 days i.e. from pregnancy to 2 years of the child and (b) catering to health and nutrition care need of children between 3-6 years. Home based care¹³⁹ and services delivered through anganwadi centers¹⁴⁰ serve as an excellent arrangement for providing preventive and promotive health services at the community level to address three major contributors of childhood undernutrition i.e. intergenerational malnutrition or LBW, illness and substandard nutrition (Home Based Newborn Care. Operational Guidelines, 2011)

The ICDS program delivers various services through AWCs for addressing malnutrition, such as:

- Providing health care and nutritional support right from pregnancy to dent the cycle of intergenerational malnutrition.
- Behavior change through educating mothers on health, nutrition and hygiene and mobilizing community for improved child care practices.
- Routine growth monitoring
- Connecting the community to primary Health services and providing care support services for children of 0-3 and 3-6 years

Home Based Newborn Care: Home Based New Born Care (HBNC) and support to mother and family for better care and feeding practices, play a significant role in ensuring appropriate and seamless care right after birth. A Sahiya is responsible to make home visits to all new born children¹⁴¹ (Ministry of Health & Family Welfare, 2016). Primary

¹³⁹ Home based care primarily includes support services such as, care for newborn through home visits in the first six weeks, informing and capacitating mothers and caregivers on breastfeeding/infant young care and feeding, screening new born for low birth weight or preterm and make appropriate referrals, early identification of illness and support for home based care or appropriate referrals and follow up of sick new born discharged from care facility.

¹⁴⁰ Anganwadi centre provides a range of services such as, supplementary nutrition, immunization, health check-up, health monitoring, referral and nutritional education. These services are delivered at the anganwadi centers through anganwadi workers.

¹⁴¹ The ASHA is responsible for making home visit to all newborns in within the first six days for institutional delivery and first seven days for home births. The ASHA is also responsible for follow up of sick and newborn children through home visits. These newborns form a cohort of highest contributors to prevalence of underweight and stunted children. Regular home visits even beyond the stipulated period

objective of these house visits is promotion of exclusive breastfeeding, timely initiation of complementary feeding, prevention of common childhood illness, hygiene practices, capacitating mothers/caregivers on danger signs, early identification and referral of sick children to an appropriate health care facility. The sick new born are to be referred for facility based care; to Sick Newborn Care Units (SNCU) or to the New Born Stabilization Units (NBSU). Good referral services and transport services are essential to link HBNC with facility based care of sick newborns (at SNCU and NBSU).

In study area, the prerequisite of HBNC i.e. home visits were highly compromised. The Saiya is responsible for making house visits on first third and seventh day of birth for institutional deliveries. However in actual practice house visits were made by the Saiya on the 6th or 7th day of the birth¹⁴².

“No one came after my child was born only Saiya came after narta...she asked me if the child was ok? She asked me if he has any illness... no she did not check him” (Mother, Karra)

In most cases the FHWs did not make any home visit to the new born child. The mothers reported of no home visits by Saiya for checking or weighing newborn babies. Some mothers informed that Saiya visited their child after a week. According to these mothers, Saiya did not touch or check the baby but asked the mothers if baby was ‘alright’ and if the baby was having any ‘health problem’. This home visit lasted for 5-10 minutes.

“She keeps on coming. She asks me how my child is... she sit for few minutes” (Mother, Mandar)

Instead of extending new born care to the household level, Saiya inform mothers to attend VHND. At VHND weight of the baby is recorded and immunization is conducted. Mothers informed that first health check up and weight measurement of their babies was conducted at VHND.

(of first month post birth) are important to follow for identification of children with growth faltering, complication and timely referral to appropriate care provider or care facility.

¹⁴² Among the communities it’s a common practice to isolate mother and newborn immediately after birth. The mother and child are perceived as unclean. They are to live in separate space within the house and are not to get into physical contact with anyone. Duration for this separation varies across communities; however it extends to a maximum of 7 days. The community believes that this separation will protect mother and child from disease and infections as both are vulnerable post birth. The family conducts a post partum ritual where the mother and child are bathed for the first time. This occasion is celebrated as an end to their confinement and they are welcome to share the common space once again. Being from the same community the ASHA uphold these practices and make their first visit only after the cleaning ceremony is over.

“No one came to see my child at home... sahiya often come home. She told me to come to anganwadi for immunization” (Mother, Chakradharpur)

None of the mothers reported to have been supported for new born care, breastfeeding, identification of danger signs or health counseling by any FHW. However they do reported house visits by Sahiya before VHND to inform them to bring their children for immunization. None of the mothers interviewed could state the signs in their children that signal towards need of seeking care from a health care provider.

“I never noticed anything unusual about my child but I use to think my son do not run like other children. He eats fine but he does not look like other children...sahiya didi told me his weight has reduced from last month” (Mother, Mandar)

The mothers were not informed by the FHWs about due date of VHND every month but only on months when the immunization of their children is due. Sahiya responsible for informing mothers about VHND do their job but selectively, i.e. informing only mothers who need to bring their children for immunization. The children/ mothers or caregivers get to meet FHWs at AWC only on their schedule visit for immunization.

Integrated Management of Neonatal and Childhood Illnesses and referral for Facility Based Management of Neonatal and Childhood Illnesses:

Integrated Management of Neonatal and Childhood Illness (IMNCI) through home visit and active case management by frontline health workers narrow down chances of children succumbing to malnutrition on account of unattended illness. On the other hand timely referral of children for facility based management of severe medical complication such as; neonate with low birth weight, diarrhoea, pneumonia, malaria and severe acute malnutrition connect community based management of childhood illness to facility based care (F-IMNCI). The F-IMNCI approach integrates health care provided at community to the facility based care (Ministry of Health & Family Welfare, n.d.).

HBNC and IMNCI is an important community level intervention for children to mitigate immediate cause of malnutrition among Under5 children. However on absence of home visit the FHWs are unable to keep an account of incidence of sickness in their area, unless the child happens to attend VHND during that period of time. In absence of adequate support for child care (especially sick child care) caregivers depended on home remedies for treating childhood illness like, cough, cold, diarrhea and fever.

“We massage them with warm oil. We cover them well. There is one doctor (quack) nearby we go there. That doctor does not check patients, but only give medicine based on symptoms. So we tell him the problem and he gives medicine. We do not need to take our children to the doctor” (Mother, Karra)

Parents/caregivers were unaware of health services available at AWC, or the childhood illness for which they could contact AWW or Sahiya or ANM (at sub centre). The mothers were not aware of danger signs that indicate need of prompt medical care. None of the mothers interviewed were sure of medicines they could get from FHWs. The mothers shared their experience of being shuttled between AWW, Sahiya and ANM (at sub centre) for medicine.

“Earlier anganwadi didi use to give us medicine. Not always but some time she use to give medicine for fever and diarrhea. Now she says that we should ask Sahiya didi for medicine. Sahiya didi says she do not have medicine” (Mother, Chakradharpur)

“We don’t know when health center open” (Mother, Karra)

The mothers reported that, to avoid confusion, families preferred to contact rural medical practitioners for treatment of their children. If the illness becomes unmanageable through home based care, families seek medical care from private health care providers¹⁴³. The mothers were not aware of health care services provided at the sub centre. Another major reason for under utilization of health services are; infrequent opening of Sub Center and availability of ANM in these sub centers. The opening of health sub centre and availability of ANM at sub centre is so infrequent, that it becomes difficult for community to avail services from this particular facility. The community finds it convenient to utilize care from other providers. Though seeking treatment from a private provider add to their financial burden but it involves less waiting time and a hassle free experience.

“There is a doctor (quack). In case of fever, cold and other illness we take our children to this doctor. He takes fees of Rs.100-200 but the child gets well. Here, we don’t know who will give us medicine” (Mother, Karra)

The families seek treatment for their children from traditional healers, quacks and/or private doctors depending on the severity of illness. Government doctors or public health facility is accessed as the last resort when all other health care providers fail to provide any relief to the sick child.

¹⁴³ The private health care providers sought for childhood illnesses include, RMP, local chemist, and private doctors.

“We first bring medicines by telling symptom to the doctor (quack). If condition of child does not improve we take them to the doctor in town. Sometime children get well, sometime they give injection. The fees are high but at least the child gets better” (Mother, Mandar)

If the FHWs come across sick children (at VHND, home visit or by self referral) they refer these cases to the CHC/FRUs. The FHWs counsel mothers to seek treatment from the ‘hospital’ (CHC/FRU) for their sick children. If the family agrees for referral, FHWs guide them to avail care at the facility. The mothers reported that the FHWs informed them of better care services at the hospital. The mothers were informed that if they seek care from hospital their child will recover soon. The medicines provided at hospitals would make their children strong and they will not fall ill this often.

“Sahiya didi told me that weight of my son had decreased. Next month there was some improvement but it decreased again in following month. She told me they (MTC) are calling such children.” (Mother, Mandar)

All cases for unmanageable illness are further referred to the district hospital. The FRUs and CHCs did not have pediatric unit and malnourishment treatment centers as separate units. Sick children and malnourished children were treated under the same unit. Sick children (with fever, diarrhea and prolonged cold/cough) with low W/H and MUAC were also treated for malnutrition during their stay at the facility.

VHND provides a significant platform for preventive and health promotion services to the community. It serves as the primary interface between community and health service providers (AWW, ASHA/Sahiya and ANM). Immunization, Growth monitoring, health & nutrition education and supplementary nutrition together contribute to keep the effects of immediate cause of malnutrition at bay. Immunization session was organized every month at the AWC of VHND. This activity was taken up at the AWCs and FHWs at a mission mode. Even the community had a positive response towards compulsory immunization, however more so, immunization for children as compared to pregnant women. The mothers were aware that their children need to be immunized and that immunization is good for their children. However they were not aware of the utility of immunization. All

mothers interviewed, reported of attending every ‘tikakaran diwas’¹⁴⁴ (immunization day) whenever the Sahiya inform them about it.

While women bring their children for immunization without failure, similar zeal is absent to bring children for growth monitoring. This can be attributed to two reasons: (a) The FHWs do not emphasize as much on other services as on immunization and (b) The FHWs do not notify all mothers to come for VHND. The community is aware of VHND and associates it to immunization i.e. *tikakaran diwas* (Immunization Day). Mothers/caregivers are aware that on this particular day immunization is conducted. Another service that mothers talk about most is weight measurements.

“There they measure weight... sahiya tells us the weight” (Mother, Mandar)

The community is aware that on every immunization day, weight of children is measured but they were not aware that weight of those children is also measured who do not need to be immunized. Mothers therefore make time from their busy day for every immunization schedule and take their children for immunization. Whereas on other months, mothers go merely to collect their quota of take Home Ration (THR), not necessarily on VHND but any day as per their convenience.

“No not every month...we go on immunization day... no we can go any day and collect packets from anganwadi” (Mother, Chakradharpur)

Infant and Young Child Feeding: Health and Nutrition education an important component of VHND, however these services face a setback in the midst of immunization and weight measurements. The FHWs take charge of different services during VHND; (a) ANM conduct immunization (of pregnant women and children), health check up (ANC, PNC and 0-5 years of children), distribution of medicines for common childhood illnesses and referral (b) AWW distribute supplementary nutrition (Take Home Ration), assist in anthropometric measurements (weight and MUAC), health and nutrition education (c) The Sahiya is responsible for assisting anthropometric measurements and health and nutrition

¹⁴⁴ Mothers and caregivers know Village Health and Nutrition day as *tikakaran diwas* (immunization day). They are aware that children get immunized on tikakaran diwas. They are also aware that if they go for tikakaran diwas they will get supplementary nutrition. However the mothers reported that carrying back, packets of supplementary nutrition from tikakaran diwas is not necessary as they can collect it on any other day from the AWC.

education. The activities on VHND often start late¹⁴⁵, start by 11-12 a.m. and ends up by 2-3 p.m. Besides, immunization of pregnant women and children and updating the mother-child protection (MCP) card are given prime emphasis which takes most of the time in VHND. Counseling and health and nutrition education comes next and weight measurements are conducted depending on the availability of functional weight machines. AWCs that have a functional weight machine measure weight of pregnant women and children and plot it on the growth monitoring chart.

“We have it. But it is not correctly made. I was taking the measurements. It’s incomplete. Look I have written it here but haven’t filled in the register.”
(Anganwadi worker, Haruhappa)

This holds true for ANC checkup as well as weight monitoring of children. The AWW and Sahiya participate in taking anthropometric measurements¹⁴⁶ and distributing THR ration to mothers. In total the VHND lasts for a maximum of two to three hours. The ANM provide counseling to mothers of sick children; mothers of children with low weight or growth faltering are counseled by AWW. The health advice provided to mothers is mostly regarding giving medicine on time and ‘appropriate feeding’.

“We both do it together (Sahiya and anganwadi worker). We measure weight and MUAC and tell the ANM. We advise mothers to feed nutritious food to their children. We tell them their child is becoming weak. If they feed them well they will become strong” (Anganwadi worker, Karra)

Informing mothers on growth faltering and referrals are made on the VHND itself. This depend on factors such as; (a) Functional weight machine and MUAC are available at the AWC ; (b) AWW and Sahiya are skilled on technique of taking measurements; (c) AWW and Sahiya are skilled to assess these measurements and identify children with malnutrition (malnourished children comprise of the spectrum of Severe Acute Malnutrition, Moderate Acute Malnutrition and Severe Chronic Malnutrition); (d) If the ASHA, AWW and ANM hold knowledge on appropriate care providers (care facility/care provider for sick, sick and malnourished and malnourished children).

¹⁴⁵ By the time FHWs arrive and mothers start coming for VHND it’s almost mid day. It is more difficult to start early in hard to reach areas. The ANM face two biggest challenges of lack of transportation and difficult terrain. Besides the vaccines and THR are to be carried to the VHND site.

¹⁴⁶ Mostly weight measurements were conducted. MUAC measurements were taken in AWC which had MUAC tapes)

The AWW and Sahiya interviewed were not aware of the distinguished categories of malnutrition among children. They understood malnutrition under the umbrella term of 'kamzori' or weakness. They were not aware of these categories of malnutrition of the specific need of children with SAM, MAM or SCM. They were also not aware of their own role in care and management of malnourished children. The FHWs do not provide counseling or advice to mothers till the child become weak or signs of malnutrition become visible.

“If children become very weak, their arms and legs become thin. The color of their eyes turns yellow. We tell mothers that their children have become malnourished” (Anganwadi worker, Karra)

AWC conducting weight monitoring or MUAC measurements inform mothers if the anthropological measurements shows sever growth faltering. On the other hand the AWW do not inform mothers if children show constant but slight growth faltering over several months. The AWWs do not perceive growth faltering to be harmful if the growth curve remains in green zone or yellow zone. Mothers are not informed of declining growth status of their children, irrespective of W/A (Weight for Age) indicating them to be in green or yellow zone.

“Here in this register (Growth monitoring curve) if the child is at red zone we tell mothers that their child has become malnourished...” (Anganwadi worker, Mandar)

The AWWs start advising or counseling mothers only when a child falters from one 'colored band to another in the growth chart'. The AWW inform mothers when; there is a (a) remarkable fall in weight of child (from green to yellow or yellow to red) or if (b) GMC indicate child in the red zone. If the weight of child shows a gradual decrease staying within green zone or yellow zone, the mothers are not informed. The AWW do not probe mothers on reason for this decline in the growth curve or provide advice to take necessary steps to prevent further decline. One probable reason for this might be that, while weight measurements are taken on VHND, the graphs are plotted later. The process of weight measurement on VHND does not include comparing of the past and current weight of the child. Once growth curve of children reach the red zone, the AWWs make a list of such children and inform mothers about it on their next visit for VHND.

“...we do not tell them anything if the child is within green zone. If the child is in green, it means he is healthy. If children go to yellow we tell mothers to feed their children well” (Anganwadi worker, Karra)

Another reason might be that, while AWWs were not equipped to interpret the meaning of decline in growth curve. They are aware that decline in growth curve from green to yellow means the child need attention and if the child reached the red zone, it means the child has become malnourished. However they were not aware that constant decline in the growth curve within a particular color band also need attention. The AWWs advice mothers accordingly.

The counseling sessions on VHNDs are to be focused on promotion of health and nutrition, prevention of malnutrition and illness (Ministry of Health & Family Welfare, 2007a). The AWWs and Sahiya are responsible for providing counseling and health and nutrition education to mothers based on the health need of each child. In practice, similar counseling is provided to mothers of all sick children and malnourished children pertaining to care and feeding practice. Mothers are advised to feed their children ‘well’ but counseling sessions are not used by FHWs to capacitate mothers on ensuring better nutrition for their children, capacitate mothers on i.e. adequate diet, diversified food intake, frequency of meals etc.

Neither of the mothers reported to have been capacitated on nutritional need of sick and malnourished children. Mothers are counseled on complementary feeding and abstaining from convenience food. However they are not oriented on locally available nutrition rich food that can be fed or food that they should refrain from feeding to children. Mothers lack clarity on food that are ‘good’ for children and food that are ‘not good for children’.

This is reflected in the practice of complementary feeding by the community. On one hand mothers consider feeding convenience food (*kurkure, chips* etc) as unhealthy for their children; on the other hand they perceive biscuit and bread as food items suitable for children during sickness.

“I fed her bread soaked in milk it is good for ill children. Sahiya didi advised me to feed bread and milk. It is easy to feed” (Mother, Mander)

“The Anganwadi didi advised to feed horlicks to by child. This will make him stronger”. (Mother, Chakradharpur)

The FHWs discourage mothers from feeding convenience food (all type of snacks procured from the market) but the workers do not take initiative to inform mothers to distinguish convenience food from nutritious food. The mothers perceive readymade snacks available in the market as unhealthy for children. The mothers were aware that food items from market should not be given to children; however none of the mothers could cite the reason behind it. However mothers do not perceive snacks made at home such as, puffed rice and beaten rice as convenience food.

“We do not feed chips or kurkure to my son. It is not good for small children...we give them puff rice and sweet bun made at home” (Mother, Mandar)

It is a common practice to feed children (breastfeeding and complementary feeding) on hunger cues and not according to a feeding schedule. The mothers reported that on an average they breastfed their children 4-5 time a day on the other hand children (6 months and 59 months) are fed twice a day. The mothers follow certain cues from their children to understand if the child is hungry or need to be fed. The mothers informed that children usually do not ask for food in between two meals. Possibly, in between these two meals children are given other food items such as puffed rice and beaten rice, beside this children are also fed by other family members when they eat their meal. Consumption of convenience food keeps children full for long reducing the demand for breastfeeding and complementary feeding.

“I leave my daughter with her elder siblings. For whole day we are out of the house. I come back for breastfeeding once at noon and then once in evening. In between her siblings feed her rice. I also leave some biscuit and some snacks for my daughter. Her elder sister feed her biscuits and snacks if she cries in between” (Mother, Mandar)

“I started giving him biscuit and bread when he was 5 months old. It keeps his stomach full. He does not ask for breastfeeding so often” (Mother, Chakradharpur)

Care and hygiene: Primarily AWW and Sahiya advice mothers and caregivers on appropriate child care, cleanliness and hygiene practices. The FHWs do not have a specific theme, chronological order or content for providing health and nutrition advice. The FHWs did not have any IEC material for conducting health and nutritional education or capacity building of mothers on child care. The FHWs provide care advices on VHND or anytime the mothers approach them for support.

“We advise mothers on VHND or whenever we meet them in the village”
(Anganwadi worker, Karra)

Care advice in an official setting (such as VHND or AWC) is uni-directional. Instead of the session being a discussion between mother and FHWs, guided by the health need of children or health and nutrition advice need of the mothers, very generic advices are provided to mothers such as, ‘to take good care of children’, ‘feed them well’, ‘to take good care during sickness’.

“At anganwadi they tell us, keep your children well and feed your children well”
(Mother, Mandar)

“They tell us to feed green vegetables to our children. They also tell us to feed fruits to our children...What I fed today? Rice and salt. My daughter doesn’t like to eat vegetables. She likes to eat rice with a pinch of salt” (Mother, Karra)

“What I fed them today? I fed them rice and vegetable...What vegetable? Potato. What else would you get in this season?” (Mother, Chakradharpur)

Health advices are focused on local care practices which mothers are already familiar with¹⁴⁷. On the other hand care advices given in unofficial setting is more need based as it is the mothers/caregivers that seek specific counseling. None of the mothers reported of receiving any health counseling or nutrition counseling from the FHWs, apart from being instructed time and again that they should focus on appropriate feeding to their children. None of the mothers reported to have been capacitated by FHWs on identification of signs that indicate towards poor nutrition in children or poor health in children. Mothers rather normalized visible signs such as thinness, prolonged illness (fever, diarrhea) or lethargy. These conditions in their children do not alarm them till the child becomes extreme weak; severely ill or unable to play and move like other children.

“My daughter was small and weak since birth. Her hands and legs were thin but everyone in our house is thin...no I never thought she is malnourished. Then anganwadi didi checked her and told me my daughter was malnourished”
(Mother, Mandar).

“My son could not walk straight like other children. He used to fall after a few steps. He was checked and the Sahiya didi told me he is malnourished” (Mother, Mandar)

The FHWs advice mothers to maintain hygiene and cleanliness. While mothers are advised to wash hands before cooking and feeding food to children it is not actually

¹⁴⁷ Such as protecting children from cold, massaging them with warm oil etc.

practiced. On account of lack of clear instructions by FHWs, mothers exhibit contrasting understanding on hygiene practices. Mothers practiced hand washing before feeding 'food' (*khana*) to their children however some practices were not followed before feeding other food items to children, such as snacks or fruits. While mothers were oriented on health, nutrition, sanitation and cleanliness, their understanding on these issues were not cross checked by the FHWs.

Nutrition assessment

Screening is an important measure for early detection and appropriate care for malnourished children as well as children who are at risk of becoming malnourished. At community level, FHWs are responsible for conducting growth monitoring of children at frequent intervals i.e. once every month up to attainment of 3 years of age and then once in every 3 month for 3-5 years old children. The ICDS provides for growth monitoring of all children through (a) weight measurements and (b) plotting of measured weights into growth curve. Growth faltering¹⁴⁸ or growth curve of a child guides the FHWs for providing appropriate counseling to the mother (NIPCCD, n.d.). A constant decline in growth curve indicates the child being at risk of getting malnutrition. This provides scope for corrective action even before the child starts to become thin. Timely action on very first sign of growth faltering can facilitate restoring of health.

The guidelines suggest that growth monitoring is to be started right from the first day of birth; however it does not translate into practice at the field level. Institutional births are at an advantage of having birth weights recorded right from the start but cases of home delivery are different. The Sahiya responsible for home visit to a new born (as a part of HBNC), does so only by the 6th or 9th day once the mother-child has been bathed.

“Sahiya came to my house on 7th day. She checked the weight of my baby. She asked me if the child had any health problem. She told me to come to the anganwadi” (Mother, Mandar)

This is for the first time when a new born is checked or screened for any health problem. This means delay in addressing the health issues and care need of a LBW baby. It also mean that the mother do not get support from FHWs for exclusive breastfeeding and

¹⁴⁸ Growth Faltering- if the weight of a child plotted on Growth Monitoring Chart and the growth curve do not show growth as expected, remains constant/flat or show a decline. Inadequate growth, no growth or weight loss indicates growth faltering.

appropriate child care. However none of the mother interviewed were visited by any FHWs within first week of delivery.

Unlike the protocol¹⁴⁹ children of 0-3 years are not weight regularly by AWW; one of the reason can be attributed to the fact that not all mothers of 0-3 year of children attend VHND; second reason can be that children who do not attend VHND are not traced back at the community for weight measurement or screening; and third reason can be lack of facilities for weight monitoring. This reduces chance of a child being identified and treated as LBW. The AWC uses weighing machine for recording weight of infants¹⁵⁰. As stated above selective notification by the FHWs hamper growth monitoring of children as mothers bring them only for scheduled immunization.

“We do not have a working weight machine. For immunization day we borrow weight machine from the nearby shop” (Anganwadi worker, Mandar)

“We do not have a working weight machine. The batteries are not replaced since so many months. We have not measured weight of children since then” (Anganwadi worker, Karra)

Participation of Mothers/caregivers is important in early identification of malnutrition. However mothers/caregivers involvement in the process of early identification of malnutrition, prevention and its management was minimal. Despite of provisions under the ICDS for; health and nutrition education, capacitating caregivers on danger sign and counseling during home visits, these services were not being adequately delivered to the community. Mothers were not skilled to identify danger signs among their children, or were capacitated for appropriate response to these danger signs. They were ill informed about the health care personnel (Sahiya and ANM) they could contact for care support.

The mothers showed poor awareness on malnutrition, its cause and symptoms but they were aware of the difference between a healthy and weak child. The community has its own social construct of illness (malnutrition); it understand *weakness* among children by appearance of visible signs like thinness, lethargy, inactiveness, irritating or whining child, poor appetite or loss of appetite and frequent illness.

¹⁴⁹ The NICCPD Growth Monitoring Manual clearly states weight measurements for children; weekly for 0-1 month, monthly measurements for 1 month -2 years and quarterly measurements for 3 years-5 years.

¹⁵⁰ The FHWs first mothers' weight is recorded. Then mother's' weight along with their child is measured. From this weight mothers weight alone is deducted. This is how the FHWs get a child's weight.

“She used to fall ill very frequently. In every 14-15 days she will fall ill. She will have fever, cough cold, diarrhea or vomiting. She will have some illness or the other, which is why she has become so weak” (Mother, Mandar)

“This is puni disease that often affects young children. It makes them thin and weak” (Mother, Karra)

Though thinness and weakness among children concern mothers, they do not seek health care as they; (a) do not associate these symptoms to a condition of sickness, (b) normalize weakness among children and (c) lack knowledge and appropriate guidance on available care services to address weakness among children. However *extreme weakness*¹⁵¹ in children generates concern among family; and this is when they seek treatment. If some sickness precedes or antecedes extreme weakness the family’s response towards these experiences vary¹⁵². However treatment is ultimately sought for these particular experiences of sickness and not weakness. Thus despite of knowledge that the weak child needs some additional care the mothers/ caregivers do not seek medical attention for their children they becomes extremely weak (severely malnourished).

“We take such children to the traditional healer. He takes some money and some offering but treat our children of their illness. Sometime even traditional healers cannot treat extreme weakness among children and then we go to the private

¹⁵¹ Extreme weakness is marked by visible signs such as; extreme thinness, continual loss of weight, inability to digest milk/food, wrinkled skin around waist and leg and lack of mobility (among infants its is understood as inability to turn by themselves and among elder children it is seen as inability to walk or move). The community normalise weakness among children. Mothers understand the difference between physical appearance of a child that is ‘normal’ and a child that is ‘weak’. A weak child is perceived by the community to have very thin hands and limbs and one can see bones under the skin. The community see children with not very thin hands or limbs as healthy and children with fuller cheeks, hand and limbs as very healthy. No additional care is taken for a child who is weak. Mothers see and compare their child’s health with children in the community. The community do not perceive thinness among children as a concern till a thin child become weak. If a thin child becomes inactive, experience lethargy or cries all the time the family pay special attention to their progress. If a child becomes thinner and thinner especially despite of illness and proper feeding the community see this as a sickness ‘dhenā’. The community understands that in this sickness a child may or may not loose appetite. Therefore till the children have an appetite, feeding is not the primary concern but treating the cause of thinness is at focus. The community associates evil spirits and supernatural forces responsible for dhenā among their children. If the traditional healers are unable to cure their children they seek medicine from private doctors to increase weight of their children.

¹⁵² If a weak child experience frequent episode of illness (fever, diarrhoea, cough and cold) the family seek treatment from medical care providers. Once the illness gets cures no further care is sought for weakness or thinness in their children.

If extreme weakness is aftermath of multiple episode of illness such as diarrhoea, fever or cold the community seek treatment from traditional healers identifying these symptoms as ‘puni’. The community believe that a child having puni show extreme thinness down waist and the skin becomes loose. This illness is identified as extreme weakness with extremely thin limbs and bulged stomach and a loss of appetite. If the traditional healers are unable to bring relief to a child, the family seek care from medical doctors.

doctor. There are children who were taken to a doctor for treatment and they became well. But mostly children get well after we take them to the healer”
(Mother, Karra)

Growth monitoring for Severely Underweight or ‘at risk’¹⁵³ children is important to prevent development of SAM and relapse of children treated for malnutrition. While such children are to be weight every month, the AWW is unaware of their responsibility in this regard. An AWW neither follow case of a SAM child discharged from the facility not provides care support for malnourished children (SAM and MAM) in the community.

Irregularity in weight monitoring and lack of clarity on plotting growth curve leave AWWs with poorly maintained GMC. In absence of a clear growth chart the FHWs are unable to assess growth of children, let alone counseling of mothers on appropriate care of these children. The AWWs were found to maintain weight measurements in their separate registers and inform mothers on increase or decrease in weight of children. However, this practice hinders early identification, timely intervention, appropriate care and timely referral (home based or facility based) especially for MAM or at risk children unless the child becomes severely undernourished.

Anganwadi centers having MUAC tape were using it to screen children for malnutrition. MUAC was used by FHWs to screen children mostly during VHND. The FHWs informed about taking MUAC measurements two incidences; (a) During house visit by Sahiya and (b) on VHND by the AWW and Sahiya. The FHWs mentioned that, they screened children during VHND. However if a child do not come for VHND, they carry their register and MUAC tape and screen them during home visit. However none of the mothers reported to have been visited by a FHW for screening their children with a tape that is tied around their hand.

The FHWs reported lack of clarity in the technique of using MUAC for screening children. When FHWs were asked how a MUAC tape is used for screening, none of them FHWs could demonstrate it correctly (the process was observed). Frontline health workers were not sure about the method of using MUAC¹⁵⁴. The AWWs and Sahiya informed that

¹⁵³ At Risk- children with anthropometric measurements i.e. Weight for age and MUAC falling between the yellow and red zone.

¹⁵⁴ The FHWs did not know which hand is to be measured, tapes were not adjusted, mid arm circumference was not marked, grading was not recorded as indicated by window at the tape and the measurements were not repeated. The Workers took wrong measurements and same measurements were recorded in registers.

their decision of referring a child for facility based care depends on MUAC measurements. The FHWs had been trained on referring children to MTC if the arrow in MUAC tape indicates red. However the FHWs were not sure on measures to take if the arrow at tape indicates yellow. Mothers are not informed about the child's MUAC recordings if it falls in the yellow or orange zone or shifts between zones.

These FHWs also complained about the fact that cases that they screen and identify as malnourished often do not qualify for admissions at the inpatient care facility. The AWWs were worried that the referred cases when refused admission put a negative impression on community. The FHWs were not aware, as how to treat cases that are denied admission at MTC and come back to the community; neither were they aware of specific services for these children.

Nutrition intervention

The ICDS scheme bear potential to break intergenerational malnutrition through a holistic approach, such as (a) addressing poor fetal growth through pre-pregnancy services and ANC; (b) Preventing fatal illness among children through immunization, hygiene, hand washing, early detection, care and ORS distribution; (c) Improving sub-optimal nutrition by health and nutrition education, supporting for food sufficiency, counseling and support for child care and sick child care. Beside this the ICDS provisions for specific age appropriate nutrition interventions Such as: (a) For 0-2 years of children- new born care/ breastfeeding, care for LBW babies, care of small and sick neonates, immunization, continued breastfeeding with complementary feeding; and(b) For 3-5 years- supplementary nutrition and management of childhood illness.

There are certain specific nutritional interventions for management of malnutrition at the community level, namely:

- Promotion of exclusive breastfeeding for the first six months and complementary feeding after 6 months to prevent onset of malnutrition among children.

Exclusive breastfeeding was being promoted by FHWs in the community. Mothers are aware that early initiation and exclusive breastfeeding is good for their children. The narration of mothers, regarding exclusive breastfeeding was different for institutional and home births. Mothers reported initiation of breastfeeding, as soon as their milk 'start to come in', however this period varied for mothers. Some

reported to have started having breast milk between 12-24 hours, others reported to have it after 72 hours.

“I had onset of breast milk by second day, only then I breastfed her...no she was not kept hungry. She was given water and rice starch so that she would not cry till I am able to breastfeed” (Mother, Karra)

Mothers/caregivers reported that their children were fed on rice starch till their breast milk started to come. None of the mothers mentioned feeding colostrum to their children. The mothers associated late initiation of breast milk to ‘poor dietary intake’ and ‘weakness’ among mothers. Starch and water was being commonly used to keep the new born babies hydrated. However once the mothers start having milk, they initiate breastfeeding. In contrast, mothers having institutional delivery reported initiation of breastfeeding within 1-2 hours.

“I could breastfeed my baby after two hours. I was inside. When I was brought outside my daughter was given to me and then I breastfed her”
(Mother, Mandar)

This draws attention to the ANC care of mothers. Amidst household chores, collection of firewood, securing livelihood, caring for children and cultivation; attending ANC is not in a common practice among women. Most of the mothers interviewed reported to have complete immunization but not attended all the ante natal check up (ANC). The mothers did not collect supplementary nutrition, every month and even if they collect it sometime, they did not consume it.

Very few mothers had collected IFA tablets and consumed it during pregnancy. As stated before the FHWs visit women at the 6th-7th day of delivery and counsel on exclusive breastfeeding. While exclusive breastfeeding is practiced by mothers its initiation is delayed by most women. The FHWs inform mothers that colostrum is good for their children. They also motivate them to feed the first ‘thick yellow discharge’ to their babies. The mothers were aware that the ‘first thick milk often yellow in color’ is colostrum. They were also aware about benefits of colostrum feeding. None of the mothers were aware that colostrums could also look any different¹⁵⁵.

The mothers reported the practice of squeezing out the first milk. They perceived that first milk that comes out is ‘unclean’. They do not feed this milk to the baby.

¹⁵⁵ Such as a thin runny liquid instead of being thick and white or orange in color instead of yellow.

The mothers usually wait for white and thick milk to come out. This might take 2-3 days or even more. Till then the neonates are fed on rice starch or water.

“We squeeze the white watery liquid that comes out at first. In a day or two milk starts to flow, this is when we start breastfeeding” (Mother, Chakradharpur)

The mothers were counseled by FHWs that they should not feed any food to their children for six months, and only breastfeed them. Mothers reported to practice exclusive breastfeeding till children are 4-6 months of age. These mothers perceive that children should be given water when they are thirsty however they ensure that children are breastfed for 4-6 months and no solid food is during this period.

“We give them water if their lips start becoming dry. We do not give them anything other than breastfeeding, at least for 5-6 months. Not even cooked rice or pulses” (Mother, Karra)

Mothers start complementary feeding to their children at an early age of four to six months. The most common reasons cited by mothers for early initiation of complementary feeding were; insufficient breast milk, paucity of time and livelihood as major constrain to continuing exclusive breastfeeding for 6 months. Some mothers also reported to have started feeding packed baby foods such as cerelac and horlicks on advice of FHWs. The mothers did not cook separate food for their children. Meal for whole family was cooked twice a day. The same food was made palatable for children before feeding¹⁵⁶ as suggested by the FHWs.

“No I do not cook separately for my children. I cook twice a day. I feed them the same food that we eat. I mash cooked rice and mix it with thin watery pulse; I feed this to my child” (Mother, Chakradharpur)

In due course breastfeeding reduces to two to three times a day (to be more specific, mornings before mothers leave for work, afternoon when mothers come for food and evening when mothers return home).The mothers continue breastfeeding for another two months, till children are 6 months of age.

- Age appropriate feeding and continued breastfeeding for 0-2 years of children along with adequate dietary intake.

Mothers start complementary feeding at an early age but it is not made age appropriate for children. Mothers begin feeding cooked rice and pulses to children

¹⁵⁶ Such as mushy rice, cooked pulse made soft and diluted and biscuits soaked in water

even before they are 6 months of age. This practice was reported mostly by women who were engaged in income generation or lived in a nuclear family. These mothers reported early initiation of complementary feeding so that they could work outside home without leaving their children hungry. They reported rice and dal kept their babies full for long and they did not have to worry about feeding them in between their work.

“Usually we do not leave our child at home while going for work. Sometimes if we are not able to take them then we ask our neighbour of elders to feed child on time, look after when they cry and feed biscuit if rice or food is not available” (Mother, Mandar)

Women living with elders in their family reported to have continued breastfeeding till their children were six months of age. These women reported, of resuming work (household chores or cultivation) once their baby were one year old. Gradually mothers start feeding rolled wheat bread, soaked in cooked pulses. By the time children are one year old mothers start working for livelihood and children are left at home under the care of elders or elder siblings.

Children are given food (most commonly rice with potato or cooked pulses) in a utensil to eat by themselves. If they are unable to finish it, the same food is kept aside and served again when the child is hungry. Vegetables, seasonal fruits, milk or meat are not a part of their daily diet. Mothers manage feeding their children primarily in the morning and evening. For rest of the day children eat along with their grandparents or siblings. There is no fixed timing for child feed. The community reports feeding children as many times they ‘ask for it’ taking cues from their crying.

The ICDS promotes age appropriate feeding practices and continued breastfeeding, however it do not offer support for young child care. In absence of a day care support, mothers take young children to their work site, where they manage to give food and/or breastfeed once or twice a day. Mothers having elders in their family or siblings old enough to take care of infants; leave their babies at home, where they are fed by these family members at least 1-2 times in a day.

The mothers and caregivers also give convenience food to their children, mostly as a distraction to keep them from crying or to keep them occupied. This is a common practice in nuclear families where parents work out of home leaving their children

under the care of elder sibling or neighbors in these circumstances convenience food keep them full for long.

Nutrition monitoring

Screening, early identification of malnourished children and monitoring - As stated before growth monitoring is done for children who come for VHND, for those who cannot, the FHWs (AWW and Sahiya) take weight in their respective home. Under such circumstances FHWs club weight monitoring with their regular home visits. However this is not a regular activity under taken by the FHWs. In addition to this the work burden on mothers make them spend most of their time outside home¹⁵⁷, this act as a major barrier in weight monitoring of young children through home visit, especially if the mothers carry them to work, to the forest or to the farm.

While there is irregularity in weight and MUAC measurements conducted by the FHWs, there is also inconsistency in plotting of GMC or updating the chart. Incomplete registers and irregular updating of GMC effect consistency in sharing information on child health status with their mothers. This affects early identification of children in the village by FHWs and timely initiation of care services.

“We have to carry that card on immunization day...sister didi ask us to bring that card every time we come for immunization” (Mother, Mandar).

The MCP card that could be used by the FHWs for weight monitoring of young children, identification of children at risk, educating mothers on danger signs and counseling was used mostly for ANC and immunization of mothers and children¹⁵⁸. The mothers/family

¹⁵⁷ Women spend a lot of their time outside home in activities such as, fetching drinking water, washing clothes/utensils etc at the river, collecting wood for fuel, going to the forest for livelihood, purchase of goods at the local market ‘haat’ etc.

¹⁵⁸ The weight measurements, immunization, supplementary nutrition and IFA were routinely provided by the FHWs. The FHWs did not inform mothers on the weight that they should be gaining nor they were informed of their weight was weight was increasing adequately or decreasing. The mothers received counseling on consumption of nutrition rich diet such as ‘tiranga bhojan’ (the tri-color meal that should engage cooked rice, pulses and vegetables or fruits). However the FHWs did not provide specific dietary suggestion to women with low weight gain during pregnancy. The mothers having low weight or low weight gain were advised to eat well and consume IFA tablets.

members were aware that they need to carry their card to AWC, but they were unable to explain the use of MCP card¹⁵⁹.

Weight and MUAC of children up to 3-6 years of age is to be regularly measured and updated on the GMC by the AWW. It was observed that while weight measurement is common among AWW, updating the same and plotting it in the GMC was not. This gap in using the recorded weight for weight monitoring act as a hindering factor in active identification of children at risk. Also, active monitoring and early identification of malnourished children is jeopardized. As a result, children with growth faltering, mild and moderate malnutrition do not get appropriate care and service till visible signs of malnutrition appear. The FHWs fail to provide suitable counseling to mothers on child care and feeding at early stages of growth faltering. However, only when malnutrition becomes visible children are referred to a higher level care facility by the FHWs.

6.1.2 Curative care, Treatment and Corrective services for malnourished children

Management of mild malnutrition

Frontline Health Workers i.e. ANM, AWW and ASHA play a significant role in referring malnourished children to the MTC for appropriate treatment. The FHWs (AWW and Sahiya) were aware that malnutrition treatment centers provide treatment to malnourished children and children falling into red zone in MUAC tape and growth monitoring chart should be referred. The ambiguity however lies with community based management of malnourished children.

The NIPCCD guidelines state that mild and moderate malnutrition without severe medical complication is to be managed at the AWC and all malnourished cases need to be followed up at community level. The document state three major functions of the AWWs in this regard, namely; (a) growth monitoring, (b) distribution of additional supplementary nutrition to malnourished children and (c) follow-up of malnourished children through

¹⁵⁹ A contrast was observed regarding use of MCH card among tribal mothers in hard to reach areas in comparison to mothers who reside in habitation closer to the administrative unit, well connected with roads and transport facility. MCP card is to be refereed by the ANM for providing scheduled health services and need to be updated during every VHND. While mothers in hard to reach areas did not carry MCH card to the AWC on VHNDs or got it updated, mothers in areas well connected to the administrative centre were carrying MCH card for each VHND session and got it updated.

home visits (NIPCCD. (2006). The guidelines clearly state for screening, specific intervention for cases that can be managed at home, responsibilities of AWWs for management of malnutrition (grade I, II, III and IV) through distribution of additional supplementary food, counseling, health and nutrition education to mothers and referral (if required). Similarly double rationing of supplementary nutrition is to be given to children with grade III or grade IV malnutrition and appropriate referrals are to be made to the according to the health need of malnourished children.

“We inform sister didi about those children who come at red band. Then they send their name to the MTC. Then they tell us to take these children to MTC for treatment” (Anganwadi worker, Karra)

The AWWs and Sahiya workers could not state their role in community based management of malnutrition among children. While the AWWs are aware that severely malnourished children (those in the red zone) get additional supplementary nutrition as take home ration, but they were not aware of any other services¹⁶⁰ provided for malnourished children. The guidelines for VHND clearly state the role of Sahiya in preparing list of malnourished children who require care prior to the scheduled VHND, so that appropriate care service can be provided (Ministry of Health and Family Welfare, 2007b). The NIPCCD guidelines suggest role of AWW in (a) prioritizing mother of malnourished children for counseling through demonstrating the growth monitoring chart, (b) exploring reason for growth faltering and (c) provide appropriate guidance on nutrition care. However the Sahiya did not express knowledge on any support service available for malnourished children at the community level.

“Whichever child come at less than 11.5 (MUAC) we have to take them to MTC” (Anganwadi worker, Mandar)

“Children who come into red zone by weight but yellow in tape (MUAC), we shall not take these children. They do not admit such children” (Anganwadi worker, Karra)

Both AWW and Sahiya expressed awareness regarding treatment of malnourished children at the inpatient care facilities located at the ‘hospital’ (CHC/PHCs) and distribution of double supplementary nutrition to the malnourished children but none showed awareness on exploring reason for growth faltering or providing counseling/ health education to mother of malnourished children. The mothers were not regularly

¹⁶⁰ Such as counseling mothers on care of malnourished children or follow up.

informed by FHWs on growth progress of their children nor were they aware of health and nutrition services available for malnourished children. The mothers were not well informed on home based management of malnourished children.

“We give them four packets of supplementary ration...we tell the mothers that this child is becoming weak because they are not taking proper care. We ask them to take care of food and feed complementary food also” (Anganwadi worker, Mandar)

Regarding care and treatment of MAM and at risk children, the FHWs were unaware of provisions, processes and their accountability in this regard. As stated above, while they are aware that a grade III and grade IV child is entitled for additional ration they do not have instructions for managing health need of children at grade I and II¹⁶¹). None of the FHWs were aware of their role in ensuring appropriate feeding to these children and early reporting of non-responders. The FHWs were unsure about their role in care of children as they progressed from grade I to grade II or III.

ICDS directly addresses the immediate cause of malnutrition among children namely, inadequate dietary intake and disease. ICDS together with NRHM provide services such as supplementary nutrition and disease prevention (immunization, de-worming and vitamin supplements) dedicated on VHNDs. The ANM is responsible for health check up of children 0-5 and appropriate treatment. Any child identified as SAM or severely sick is referred by the ANM to the MTC for further treatment. The AWC provides daily hot cooked meal to children (3-5 years of age) and monthly quota of supplementary nutrition, that mothers need to feed at home. The FHWs provide counseling to women regarding appropriate feeding of supplementary nutrition to children¹⁶².

Referral

Referral at the community level takes place in two forms; (a) referral through FHWs and (b) self referrals. Village Health and Nutrition Day (VHND) serve as the platform for active case finding and appropriate referral. The ANM, AWW and ASHA refer the identified SAM children for inpatient care facility at MTC. At the field level the FHWs

¹⁶¹ Including children with growth faltering, MAM, non responders and children discharged from the inpatient facility at -2SD, -3SD or -4SD

¹⁶² It was a common complaint by mothers that children fall ill (diarrhea and indigestion) if they consume supplementary nutrition distributed by AWC. The AWWs counseled women to feed well cooked supplementary nutrition and keep them hydrated to prevent indigestion among children. They also suggest mothers on different ways that supplementary nutrition can be made palatable for children.

(ANM, ASHA and AWWs) were found to be unsure regarding accountability for active case finding (screening and identifying the malnourished children). According to the guideline it is the responsibility of AWW to refer children to the nearest PHC in case of continuous growth faltering for 2-3 consecutive months and all those in the grade III and IV category (Ministry of Health and Family Welfare, 2007b). The FHWs were aware that any of them can refer children to MTC if the MUAC is <115mm (referral by AWW and Sahiya) along with some illness (referral by ANM) or if the child falls into the red zone in GMC (referral by AWW) and MUAC (AWW or ASHA).

The AWWs are aware of their role in passive screening i.e. through regular weight monitoring, updating growth chart and making referrals accordingly. Active screening through MUAC on the other hand was conducted by the ANM, AWW and ASHA on VHND. If mothers did not bring their children to VHND, they were later screened by Sahiya during home visits. While the AWWs and Sahiya could not demonstrate correct technique in measuring MUAC, they did express their concern over admission denied to the cases they referred to MTC.

“We refer all children that come in red zone. Some children are admitted at the hospital, some are sent back” (Anganwadi worker, Mandar)

Similarly the AWWs expressed confusion over malnutrition cases they can refer, i.e. the FHWs (AWW and ASHA) were confused on denial of admission to certain malnourished children referred to MTC based on the growth monitoring chart; whereas others were admitted. Similarly they reported ambiguity over admission of certain children at MTC referred on the basis of visible severe wasting (*kamzori*) whereas others return without any treatment. The FHWs reported that they refer all children they find suitable for inpatient treatment, some are admitted in the hospital (MTC) whereas some are sent back. The FHWs inform mothers that their children could get ‘good’ treatment at the hospital (MTC), however the FHWs are not aware of the services that children get at MTC.

Self referrals are not very common in the community. Often parents end up at the MTC after seeking care from a number of health care providers, namely; home remedy, rural medical practitioners, traditional healers, private doctors and government health care providers. The parents either seek treatment for ‘weaknesses’ or frequent illness among children. The decision of parents to seek treatment for their child at hospital (MTC) is mostly influenced by the success cases they see or hear in their community.

Government health care providers are the last resort when none of the other providers are able to provide relief to their children. Parents coming to the PHC (OPD) for treatment of their children are then referred to the MTC for further diagnosis and admission. Even parents who come straight to the MTC with their children are screened for malnutrition and if required, admitted for treatment.

6.1.3 Rehabilitation

Care and counseling for discharged SAM cases

The VHND guidelines clearly state the responsibility of Sahiya to list out children in need for malnutrition care and ensure that mothers bring them to the AWC on VHND for consultation (Ministry of Health & Family Welfare, 2007). These FHWs however exhibit poor understanding on: (a) health status of children discharged from MTC and health status of children discharged from the nutrition rehabilitation program. They perceived that children getting treated at MTC gets completely; (b) They had poor knowledge on additional care of children discharged from inpatient care; (c) Lack of awareness on their own role in providing community based follow-up care to such cases and ensuring their follow up visits to the MTC or; (d) They were not certain about their role in providing care support and counseling to mothers of children discharged from MTC on child care and feeding.

The AWW and Sahiya get are constantly instructed by the higher officials to screen and refer children to the hospital (MTC). Some MTCs contact FHWs to refer children at MTC, especially during agricultural season. However the AWWs and Sahiya reported of never been informed about cases discharged from the inpatient care facility. Hence these FHWs perceive their role to be limited till referring children to the MTC and not beyond that.

Follow-up of SAM/MAM cases

Children with severe acute malnutrition (SAM) or moderate acute malnutrition require additional care after discharge from an inpatient care facility. Community based follow-up of children discharged from MTC, support for: home based care, appropriate care and feeding, attending follow up visit at NRC and early detection of non-responders. The Treatment protocol for malnourished children suggest for a facility based care for two weeks followed by rehabilitation care at the community level four to six months (Ministry

of Health and Family Welfare, 2011). The rehabilitation care is to be provided at home with regular visit to MTC for follow up. The treatment regimen MTC focuses on stabilizing health condition of children, facilitating behavioral change and capacity building of caregivers on child care and feeding. These services are provided to malnourished children till the medical complications get cured and they start to gain weight. On the other hand community based rehabilitation focuses on appropriate dietary intake; hygiene and care till the malnourished child meet exit criteria form nutrition rehabilitation program. The document suggests FHWs to support rehabilitation at the community level till a child exit the program¹⁶³. However any services for follow-up of discharged cases at the community were found to be dormant. On one hand FHWs were not aware of their role in community based follow up and management of discharged children; on the other hand mothers/care givers were ignorant of any support services that they children are entitled to. Mothers/caregivers find it easier to adhere to the care advises in a facility than at home¹⁶⁴. The supervision and support that they receive at MTC discontinues when they come back home¹⁶⁵. In absence of persistent counseling for behavior change and guidance on child care and feeding mothers tend to follow the same old routine of care and feeding.

Home visit by FHWs to follow the discharged, at risk or malnourished cases was a rare practice. Mothers, based on their understating and capacity try their best to feed their recovering child. While the mothers get additional ration of supplementary nutrition, they do not get support from the FHWs for appropriate child care. Mothers who are aware of

¹⁶³ The MTC guideline suggest AWW workers to conduct weekly home visits for discharged children in the first 4 weeks and then bimonthly till the child exit from the program (Nutrition rehabilitation). The AWW is to observe feeding practices and provide appropriate counseling to the mothers. The document also suggest that such children are to be weighed weekly at eth AWC. It is the responsibility of Sahiya and AWW to ensure that the child attend all the scheduled follow up at MTC. Similarly on every VHND the ANM is to follow the case of all children discharged during VHND till they exit the program.

¹⁶⁴ Facility based care provide basic amenities to the caregiver accompanying a SAM child. These basic amenities include water, food and sanitation facilities. The mothers accompanying children have all the time and attention to care for their malnourished child. They are free of responsibilities of household chores or income generation. They are able to feed their children at regular intervals, spend more time with them and are able to take better care of health and hygiene of their children.

¹⁶⁵ Mothers juggle between their regular responsibilities such as house hold chores, income generation, care of other children etc. Amidst all these work it becomes difficult for a mother to practice routine of child feeding and care as she uses to do at the MTC/NRC. This is more difficult for women from a nuclear family and engaged in income generation as compared to women in a joint family. Even if such women are engaged in income generation other family members take responsibility of the dietary and health care need of SAM/MAM children after they are discharged from hospital.

services available at community their quota of supplementary nutrition from the AWC; however not knowing how to adjust the required number of small-frequent feed in their daily work hours mothers prefer feeding home cooked food i.e. whereas supplementary nutrition is not fed to children. Even if mothers collect supplementary nutrition, its inclusion in the daily diet of children was found to be a rare practice.

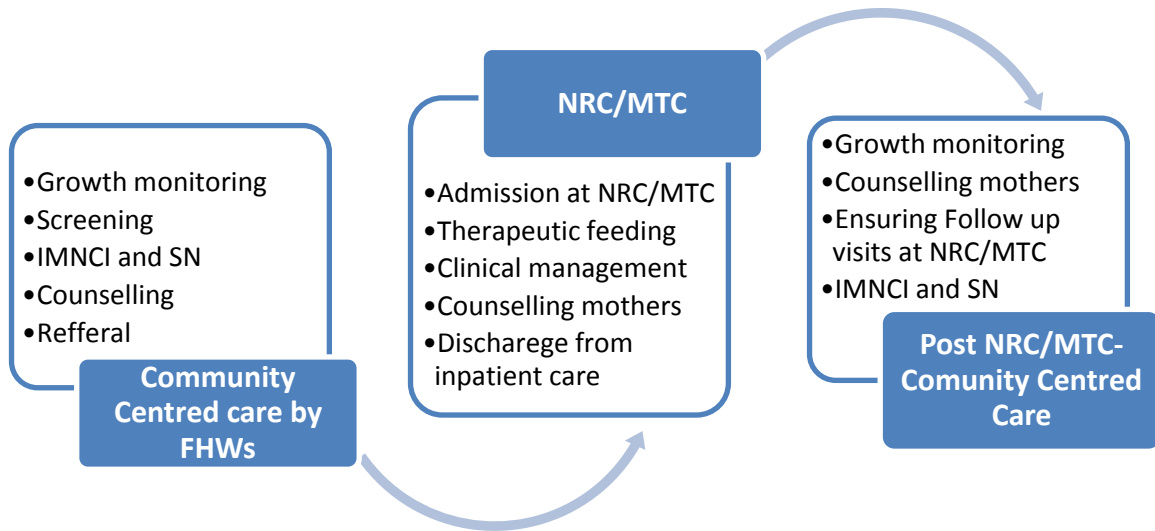
Lack of monitoring by the FHWs and adequate counseling might be one of the reasons for inability of mothers/caregivers to include supplementary nutrition and home cooked in daily diet of their children. Under these circumstances, care advice provided by FHWs could be a huge support to mothers in planning daily meal for children recovering from malnutrition. Mothers supported by the FHWs in deciding affordable nutritious food, found it easier to manage diversity in daily intake for their children as compared to mothers who were never visited or received any counseling post discharge from a facility.

In absence of house visit sickness episodes often does not get detected by the FHWs unless it is around VHND¹⁶⁶. The mothers/caregivers resort to traditional practices for management of childhood illness or seek treatment from private practitioner. As stated before they resort to the public health care providers if is no improvement in the condition of a sick child. Such delays might lead to a setback in complete recovery among children undergoing community based nutrition rehabilitation. Such delay in seeking appropriate care can be attributed to; lack of information among mothers/caregivers on suitable public health care providers (such as Sahiya and ANM for minor ailments and doctors for serious illness), inability to access care from health sub centre, travelling required to reach public health facility and long waiting time.

¹⁶⁶ As stated before mothers of malnourished children discharged from inpatient care are not informed about weekly weight measurement at AWC or routine monitoring by ANM on VHND unless the child is scheduled for immunization. There is a high chance that if a child is not scheduled for immunization the only follow up they receive is at the MTC (if mother/caregivers choose to make visit to the MTC. Attending follow up visit by mothers is very rare as compared to mothers of nearby villages who attend up to 2-3 follow up visit).

6.1.4 Continuum of Care in community centered care

FIGURE.NO.6.3 Continuum of care in community based care



6.1.4.1 Management Continuity

Community based management of malnutrition involve multiple stakeholders. Planning and delivery of care services for: health promotion, prevention, treatment and rehabilitation of malnourished children delivered by AWWs in isolation. It is a combined effort and shared responsibility of AWW, Sahiya and ANM. There is a gamut of services in place under ICDS and NHM that encompass care services which focus on household or family centred care. Beneficiaries include pregnant women, lactating mothers and children between 0-6 years of age. Services for health promotion, prevention, treatment and rehabilitation are provided through a central point i.e. AWC and extended up-to household through home visits.

Prevention

Providing supplementary nutrition for pregnant women is a significant intervention to prevent intergenerational malnutrition. Anganwadi centre serve as an important platform for proving supplementary nutrition, iron tablets, frequent weight monitoring and providing appropriate care advice to the pregnant women. Similarly lactating mothers and children between 6 months to 6 years of age are entitled to supplementary nutrition. It is

an important support towards nutrition rich weaning and complementary feeding for children. Early identification and treatment of sickness by the FHWs (through VHND and home visits) is a significant marker towards preventing sickness induced malnutrition. Since sickness and malnutrition is interlinked, role of FHWs become important in; (a) preventing a sick child from becoming SAM, (b) mortality of a complicated SAM child and (c) preventing a rehabilitating SAM child to fall in the trap of sickness and malnutrition. Delivery of preventive care services was found to be weak within the continuum of community based care.

Prevention of intergenerational malnutrition depends on regular ANC, regular weight monitoring and prevention of anaemia among women along with support through health and nutrition counselling. The ANC services were limited to immunization, distribution of supplementary ration and IFA tablets. Delivery of services such as growth monitoring and counselling were sub optimal. Anganwadi centres were not equipped to deliver all services enlisted under VHND in lieu of inadequate spacing and infrastructure; lack of functional equipment (weight machine) and time constrain. Since FHWs were unable to register weight of pregnant women, it hinders monitoring of change in weight and providing of appropriate advice in case of poor weight gain or weight loss by pregnant women.

At the community level, delivery of HBNC services was inadequate. Post natal visits (if at all performed) are often delayed by the FHW¹⁶⁷, where mothers reported to have initiated early weaning as they experienced difficulty in breastfeeding. Sahiya duly visit mothers to inform about scheduled immunization. These are quick visits where Sahiya inquire about the babies' health. There are no home visits made by FHWs for follow up of infant feeding practices. The FHWs inquiring mothers about their problems related to breastfeeding or provide counselling/advice to nursing mothers to promote adequate and exclusive breastfeeding. There is no follow up and monitoring of Low Birth Weight (LBW babies) or premature babies. Neither mother/caregivers of such babies are supported with assistance for breastfeeding. This holds true for facility born as well as out born babies. In absence of regular home visits neither FHWs get to observe adequacy or technique¹⁶⁸ of breastfeeding nor are they aware of challenges mothers face in practicing exclusive

¹⁶⁷ Post natal visits within first 3 days are rarely made by the FHWs. These visits are either made between 5-7 days of delivery or as in most cases there are no visits made by either of the FHWs.

¹⁶⁸ Guiding mothers on: correct position for breastfeeding, breast attachment technique, period of breastfeeding etc. to facilitate mothers in adequate feeding.

breastfeeding. VHNDs provide opportunity for counselling mothers on health and nutrition practices but these meetings are not enough to explore problems faced by mothers in child care and feeding, nor does it permit for substantial advice to solve problems interfering with exclusive breastfeeding.

Similarly, appropriate child care is significant in preventing malnutrition due to inadequate feeding and care during sickness. Early identification of sickness among newborns and home based care is crucial to prevent children from slipping into malnutrition. Absence of effective HBNC places small babies, LBW babies and discharged babies at risk of becoming malnourished. Early weaning and initiation of complementary feeding is a common practice by the community. Though breastfeeding is continued by mothers, weaning and complementary feeding is introduced at an early age. Capacity building of mothers/caregivers on adequate and age appropriate feeding is undermined due to lack of contact between FHWs and mothers/care givers (except on VHND).

FHWs are vested with the responsibility of early identification of sickness, support home based care, manage common childhood illness at community level and make appropriate referral if necessary. None of the above mentioned services are in place at the field. Identification of sickness are dependent on encounter between mother and FHWs ideally on VHND or often if the Sahiya or ANM is from the same village. There are times when FHWs come to know about sick children and provide appropriate assistance (by providing medicine or referral). Prevention of SAM among children through immunization, oral rehydration and de-worming is practised by the FHWs however early diagnosis and treatment of common illness such as cough, cold, fever etc is inadequate. Most of the times mother/caregivers either depend on home based care, traditional/faith healers or private health care providers (Rural medical practitioners, chemists, compounders, private doctors).

Assessment

To a large extent early detection and management of malnutrition depend on watchful growth monitoring since birth. The low birth weight and premature babies need additional focus in terms of appropriate care and feeding. In this regard consistent weight monitoring of infants facilitate corrective measures to prevent them from becoming severely malnourished. The AWC is responsible to maintain record of weight and MUAC for

children in the community. Weight measurements are either taken on VHND or during home visits. Since 0-6 months of babies are outside the care purview of AWCs, weight monitoring during home visits and VHND become crucial in early identification and management of inadequate weight gain or weight loss. As stated before, the aspect of weight monitoring during post natal period or for children below 6 months of age is not fulfilled at the field level. Not all mothers attend VHND regularly, probability of such children of not getting timely and appropriate care is high. .

Operational challenges¹⁶⁹ constrain FHWs from conducting regular assessment of growth. Neither growth of children is monitored at frequent interval nor is register updated to facilitate assessment. Even if the FHWs conduct regular growth monitoring and screening at community level, children who are uncomplicated MAM and SCM remain undetected as the measurement of growth monitoring are not plotted in the GMC for evaluation. Besides the focus of FHWs is to assess SAM among children, whereas similar involvement to assess MAM, at risk children and SCM is missing¹⁷⁰. Even if growth measurements are plotted in the GMC, the FHWs are not adequately skilled to detect children who are not SAM but require nutrition correction (those with growth faltering). Similarly regular assessment and follow up of discharged SAM cases are not conducted at the community. These children undergo growth assessment during their follow up visit to MTC. However between these follow up visit they are neither assessed for growth not followed up through home visits or at VHND. Under such circumstances children outside the purview of AWC (children of 0-6 months and those who do not attend AWC or VHND regularly) are most vulnerable of slipping back into SAM.

Intervention

The preventive services provided at community are skewed towards disease prevention and complementary nutrition. Two services namely immunization and distribution of supplementary nutrition is diligently delivered by FHWs. Mothers are aware about immunization and supplementary ration distributed at the AWC on VHND. Other services

¹⁶⁹ Such as poor infrastructure, irregular supplies, lack of functional equipments for weight monitoring, inadequate training etc.

¹⁷⁰ This can be a factor of poor knowledge or skill among FHWs for assessment of MAM, children at risk or SCM.

such as promotion of age appropriate feeding, hygiene and cleanliness, early identification and treatment of illness, screening and early detection of malnutrition and capacitating mothers/caregivers for home based care (of sick, MAM, children with growth faltering and discharged SAM) have not received equal attention.

As stated before early identification and management of sickness through HBNC, home visits and consistent counselling is inadequately practiced by the FHWs. ASHA and ANM are responsible for management of common childhood illness, however this comes into practice if and when these FHWs become aware of sick children in their village. Limited contact of mothers with FHWs and poor knowledge about available care services act as a hurdle them in accessing care for their sick children. Rather they depend on other providers for treatment of common childhood illness. Therefore services available at community level for childhood illness remains underutilized.

Services for children with growth faltering, MAM and uncomplicated SAM are not delivered at the community. Neither the FHWs nor community are aware regarding such services. The FHWs are aware that children with SAM or complicated SAM are to be referred to the MTC for further treatment. Whenever a SAM case is detected the FHWs refer them for facility based care. However due to uncertainty regarding care of children who are sick, SAM or complicated SAM, the FHWs refer all children they suspect to be malnourished to MTC for treatment. Frontline health workers had poor awareness regarding management of uncomplicated SAM or MAM children at the community level. Hence referred children are denied admission at MTC and sent back, no services are provided in terms of nutritional care, appropriate counselling to mothers/caregivers, consistent growth monitoring or follow up.

FHWs lacked clarity regarding care need of children discharged from MTC till they get discharged from the program. While SAM cases discharged from MTC are entitled for additional ration from their respective AWC, follow up through house visits and appropriate home based care; none of these entitlements were being seamlessly delivered at the community level. All FHWs were not aware that discharged SAM children get double supplementary nutrition during their rehabilitation. None of the FHWs were aware of their role in following discharged cases for weight monitoring, prevention of sickness and ensuring adequate and age appropriate feeding. Nor were they aware about their role, if SAM children discharged from MTC experience weight loss or sickness. One of the

most important interventions to ensure consistent weight gain, prevention of illness and early management of illness in between MTC follow up visits is regular counselling to mothers which is not practised by FHWs. If discharged children develop SAM or complicated SAM they are again referred for facility based care for treatment.

Care planning for care, care transition and rehabilitation

At the community different services contribute to ensure comprehensive and consistent care to malnourished children i.e. health, nutrition, water and sanitation. Each of the service providers (ICDS, NHM, Public Distribution System etc.) has their own work field with certain intersecting points. Neither community nor service providers are aware of services for malnourished children. Under such circumstance absence of case management slow down the movement of beneficiaries across these services, whereas in some cases it impede movement of beneficiary from one service to another.

There are four primary stakeholders in management of malnourished children at community, namely AWW, ASHA, ANM and mother family. At community level, there is no practice of developing need based care plan for malnourished children or to set a target outcome. Given that malnourished children have different care need (MAM, SAM, and complicated SAM) there is no mechanism of making care plans. There is no mechanism for case management of these children at play in the community level. Since there isn't a care plan, the FHWs are not motivated to identify their different care need. The role and responsibility of each FHW in this regard is not assigned or supervised by the higher officials. This confusion can be seen at all care phases, such as; from screening malnourished children, referring them to a facility, providing need based care after discharge from MTC, motivating mothers for follow up visit to MTC or providing care services till children get discharged from the program and after. Specific challenges in home based management or difficulties faced in utilization of appropriate care by the family is neither explored nor met by FHWs.

6.1.4.2 Informational continuity

Home based care or care services provided at the household level is crucial, as it marks the commencement of nutrition care for children and it's continual to a facility based care and beyond. In this regard, information transfer between providers and beneficiary serve as a vital link. Exchange comprehensible and clear messages is important between providers or

between provider and beneficiary (in this context the family of children) so that the receiver of message is able to receive it, understand, interpret and utilise it correctly. Credibility and completeness of message add to the quality of information exchange. Continuity of information is the most important tool to maintain seamless care especially during care transition.

Fissure in information continuity regarding management of malnourished children is evident across all levels of care, across all phases (such as neonate and children) and across providers. Transfer of imprecise message between provider(s) from one level to another hurdle in developing an appropriate care plan. On the other hand indistinct or generalized messages delivered by a service provider to the beneficiary (in this case to a mother or family members) fail to bring change in health practice, behavior change or strengthen the knowledge of community. Care and feeding practice of mother/family is grounded in their cultural understanding, perception and belief of a sickness and its treatment.

The FHWs play an important role in prevention of malnutrition among children, beginning right after their birth. Postpartum care (through VHND and house visit), HBNC, IMNCI provide for constant interaction between mothers and these community level care providers. There have been inconsistency in these interactions and lack of information exchange between FHWs and mothers regarding care, feeding, identification of childhood illness and its immediate treatment of at different phases, namely; post birth, neonate, infancy and till they reach 5 years of age. Information exchange between FHWs and mothers/caregivers can be viewed with respect to nutrition care and care transition at three different phases, namely; (a) initiation of breast feeding and exclusive breastfeeding post birth; (b) transition from breastfeeding to age appropriate complementary feeding and (c) post discharge from a facility based care. This care phases, lack in clear and consistent information transfer across providers and between providers and mothers or caregivers. This hinders the providers to deliver appropriate care; and for beneficiaries to access care from these providers.

The FHWs are responsible for promoting early initiation of breastfeeding. Mothers who have had institutional delivery reported to have fed their children between the first two hours of birth. On the other hand mothers who have had home births reported to feed their

babies within 48 hours or more. The mothers shared delay in onset of breast milk¹⁷¹ as the primary cause of not practicing early initiation of breastfeeding. These mothers reported to not have been visited by any FHW within first day or first week after delivery. However this was an experience common among mothers/caregivers. None of them reported to have been visited by a FHW for follow up counseling (post partum or discharge after institutional birth). The mothers are neither capacitated by FHWs on technique and frequency of breastfeeding nor to assess its adequacy. Similarly the FHWs neither enquire mothers on challenges¹⁷² in breastfeeding nor do they provide appropriate counseling to overcome these barriers.

There FHWs do not have a standard, easy to understand and suitable IEC material to capacitate mothers on knowledge on appropriate care and nutrition. Nor is there a practice to triangulate that there is minimal discrepancy between information transferred, information received, information interpreted (processed) and information implemented. The FHWs promote exclusive breastfeeding to provide adequate nutrition and prevent sickness among infants. However these FHWs do not explain what comprise for *exclusive breastfeeding*¹⁷³. Mothers' caregivers did not perceive feeding water to an infant during first six months to be unhealthy¹⁷⁴. As a result the mothers/care givers feed water, honey and other edibles that they perceive healthy for their children. Even though mothers to their best of their knowledge adhere to the advice of exclusive breastfeeding its practice is governed by their interpretation of the word 'exclusive'. Many FHWs were not sure if water is to be fed during exclusive breastfeeding. Similar ambiguity persists regarding feeding complementary food to children. The FHWs advice mothers to feed healthy and nutrition rich complementary food to their children. On the other hand advice on dietary intake by the FHWs, is neither according to local availability of food nor by the purchasing capacity of a family. In other words during counseling session, information on

¹⁷¹ The mothers shared delay in onset on breast milk. They describe that breast milk starts flowing within second or third day of birth. They wait for discharge of white liquid which they identify as 'milk'. Prior to this there is discharge of watery, clear and thin liquid, which in their perception is waste. They reported not to feed the baby on this watery discharge. Thereby the onset of breastfeeding is delayed by 24-28 hours or more. During this period they feed baby on other liquids such as rice starch, water or dairy milk.

¹⁷² Challenges in breastfeeding such as; delay in onset of milk, poor milk supply, functional difficulty or lack of knowledge on feeding technique.

¹⁷³ Any fluid or food other than breast milk.

¹⁷⁴ The community perceives that even infants feel thirsty and thus there is no harm in feeding them with water.

age appropriate feeding are not customized according to affordability or capacity of the family.

Information exchange between the family and FHWs is fractured and mostly revolve around scheduled immunization. Neither the family/community reaches out to the FHWs to inform them about illness among children, nor do the FHWs keep a check on their health. In absence of home visit, VHNDs are the only place of interface. However information dissemination regarding VHND is not made for all mothers whose children are scheduled for immunization. Illness and malnutrition are intrinsically interrelated. Appropriate and timely treatment of sickness among children is significant in prevention on malnutrition among children. The community is not capacitated on care services available for childhood sickness and their appropriate providers. Information dissemination by FHWs to mothers/caregivers on identification of danger signs is inadequate. Moreover capacity building of community on: appropriate action for these danger signs, care providers and health care services are barely in practice. On one hand mothers/caregivers are not trained for early identification of childhood illness nor are they supported by FHWs on recognizing early signs of malnutrition among children; on the other hand they poses limited knowledge on available health service, appropriate health care provider and appropriate care facility¹⁷⁵. Each of these factors hurdle timely access for care services. The family either do not utilize available services or land up at wrong service level.

Lack of complete information to the community hinder in informed choice or participation of family in the care process. On identification of a malnourished or at risk child FHWs inform mothers regarding '*kamzori*' (weakness) in their children and advise them to take '*good care*'. However the family is not informed about implication of growth faltering. The, mothers are informed that their malnourished children need medical care but they is not informed on cause of weakness or possible consequences of delay in seeking medical care. The families seek treatment for their weak children or adhere to the referral advice of FHWs once their child loose appetite, become too thin or falls very sick. Thus absence of timely and appropriate information hinders the family in seeking and providing appropriate care at various levels.

¹⁷⁵ Each FHW is responsible to deliver a set of health care service at the community. Mothers/caregivers lack information on available care services and its appropriate provider at the community level. They reach out to these FHWs for different care need, which is often denied and they are referred to a suitable provider.

Information exchange between providers across levels of care i.e. from AWC to facility/community based care centre was found to be a one way exchange. There is no system that ensures information exchange between community and facility based care providers regarding all those cases that have been denied admission. As stated before the community do not inform FHWs about denied admission and hence are devoid of appropriate care till the FHWs come across such children (especially children between 0-3 years of age). Similarly FHWs do not receive information or case detail on discharge of children from the nutrition intervention program (in this context an MTC or for Community based Management of Acute Malnutrition). This practice is not favorable for community based follow up care to these children. In absence of information on discharged cases the FHWs neither conduct home visit to these children nor are they able to provide care support for children recovering from malnutrition under MTC or CMAM. The FHWs play a very limited or no role in rehabilitation of malnourished children, the care responsibility falls completely on the shoulder of the family.

6.1.4.3 Relational Continuity

Relational continuity is about constant interaction and interface between the provider(s) and beneficiaries. In relation to community based care of children, this ongoing interpersonal continuity was found inadequate. Relational continuity in terms of management of malnutrition among children is fractured and compartmentalized into three phases (a) Neonatal (b) Infancy and (c) Childhood. Ambiguity regarding role and responsibility of providers across these stages is the biggest barrier in relational continuity. Lack of knowledge among mothers and community regarding available care services add to the barriers in access and utilization of preventive, treatment and rehabilitative services for children.

At community level different health care services are provided by different health care provider (ANM, ASHA and AWW). Relational continuity during the first phase is very significant in terms of capacitating mothers and family for care post birth. During pregnancy mothers get consistent care by the FHWs however these care services are limited to the arena of VHNDs. The component of home visit by FHWs to capacitate mothers on self care, feeding and birth preparedness is absent. Care services are not tailor-made according to the nature of pregnancy (normal or risk) or specific care need of the women (healthy or underweight). Home visit by FHWs post delivery is not into practice.

If at all these visits are made, it's for informing mothers on scheduled immunization. These meetings last for 10-15 minutes only. Components like screening, counseling and supporting in child care are not adequately delivered. Insufficiency of home visits has an implication on appropriate home based care for neonates, it may also hamper timely referral of neonates (sick, LBW or premature) for specialized services (if needed).

Infancy is the most critical period in terms of preventing malnutrition to set in. This phase require constant support and counseling of mothers for preventive care. While the FHWs motivate mothers on completing the scheduled immunization to prevent sickness among infants, the same involvement is missing on promotion of exclusive breastfeeding, age appropriate complementary feeding and complementary feeding along with continued breastfeeding. Assistance to mothers for higher engagement and empowerment for care¹⁷⁶ and feeding¹⁷⁷ of infants are missed out on accounts of infrequent home visits, interactions and follow up by the FHWs.

Interpersonal relationship is most inconsistent with mothers/caregivers of children between 3-6 years of age. Children who regularly come to AWC are in constant contact with the AWW. However mothers of these children are not regularly called for VHNDs. Instead mothers come to collect the packet of supplementary nutrition as per their convenience. These mothers have minimal interface with the FHWs let alone counseling or assistance for care and feeding of their children. Screening, counseling and treatment of children (MAM, uncomplicated SAM and complicated SAM) get jeopardize due to minimal contact of mothers with the FHWs. Lack of timely counseling hurdle in corrective measure (taken by the family in case of a sick or malnourished children) whereas lack of timely referral lead to delay in care seeking. Lack of interpersonal relationship between community and FHWs affect timely decision making on seeking care, choosing a care provider and accessing care for children. The impact of incoherent interpersonal relationship is huge and can be seen through failures; (a) to bring change in health behavior (care and feeding practices), (b) adhere to the care counseling and (c) adhere to the treatment regimen. This in return might bear implication on utilization of

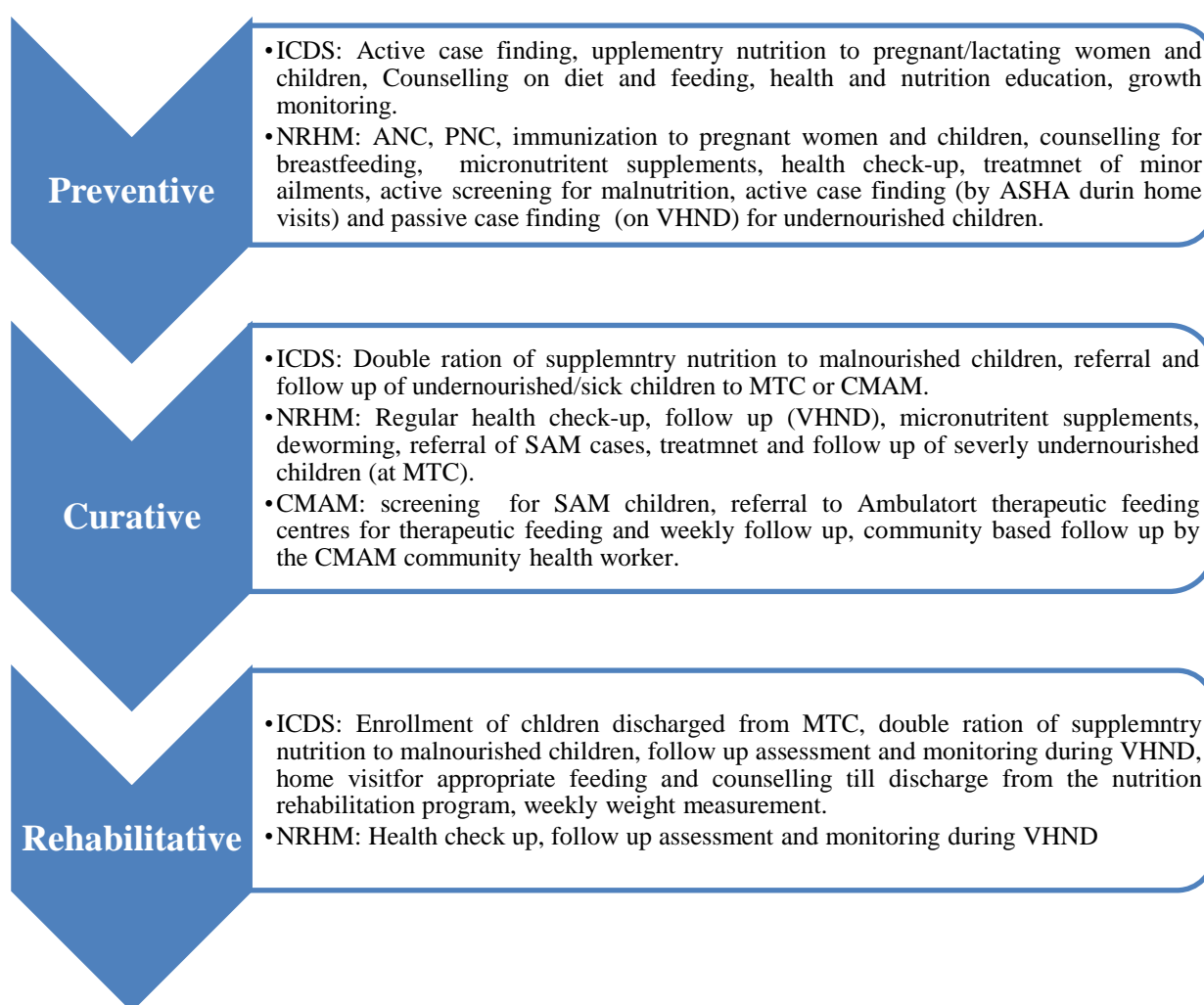
¹⁷⁶ Assistance for: ensuring hygiene, identification of danger signs, special care need.

¹⁷⁷ Assistance for: complimentary feeding along with continued breastfeeding, addressing problems in breastfeeding, identification of sickness among children, choosing a facility and care provider by the family if needed.

preventive and treatment services for children (0-6 years of age) by the family and poor outcome of nutrition intervention programs.

6.1.4.4 Coordination: At the community level, services for prevention of malnutrition, health promotion, treatment of malnourished children and rehabilitation are delivered in cooperation with a team of providers belonging to different departments. The malnutrition management intervention at community was being delivered together by NRHM (ANM, ASHA and care team at MTC) and ICDS (AWW) and MSF CMAM. The interventions are designed in such a way that demands co-ordination between these entities which was found to be suboptimal at the field level.

FIGURE NO.6.4 Coordination of care at community level.



(Source: Adapted from Operational Guidelines on Facility Based Management of Children with Severe Acute Malnutrition. (2011). Government of India. Ministry of Health and Family Welfare)

At each of the above mentioned stage, coordination between providers and beneficiaries was found to be weak. The FHWs play an important role in prevention of malnutrition among children, since right after their birth. Postpartum care, HBNC, IMNCI, VHND and ICDS services provides for consistent and integrated care for children between 0-5 years of age. Despite of working at a close vicinity communication gap between FHWs was found to be huge, especially regarding identification of at risk or malnourished children, corrective measures for community based care and referral of malnourished children to the MTC or CMAM intervention. Either of the FHWs can refer a case to the MTC or for CMAM. It was found that though AWWs lack clarity to refer or not a particular child such confusions are not shared with their respective counterparts; Sahiya or ANM. Since the referral criteria for FHWs and admission criteria at MTC are different, referred cases often do not qualify for admissions and are sent back. There is no system that ensures coordination of care for children who have been denied admission. There is no involvement of FHWs, facility based care providers and the family in developing a strategy for community based care to meet the health need of these children.

On one hand there is no coordination between community and facility based care providers on care of children who were denied admission at MTC or CMAM; on the other hand FHWs are not involved for care of children discharged from MTC and CMAM intervention. Children who do not qualify for treatment at MTC or CMAM are hence left out without further care assistance (especially if they are not attending AWC regularly e.g. children between 0-2 years of age). Neither the FHWs are equipped to develop appropriate care plan for these children, nor are they aware of specific services that such children are entitled to receive.

Similarly case history of children discharged from MTC or CMAM is not shared with the FHWs. The FHWs are not supported in planning for rehabilitation care of discharged children. Children discharged from inpatient care or community based management intervention are not immediately linked to the community based preventive, promotive and rehabilitative services for a smooth transition of care from MTC/CMAM to home based care. This could make children them more vulnerable to default and secondary failure. Some of the FHWs were aware that discharged cases are to be supplied with additional supplementary ration but they were not aware of growth monitoring and follow up of these children. Though children are discharged from inpatient care at different

anthropometric measure (WHZ -4SD to -1SD) they all receive similar services (additional supplementary ration) or even no services during their rehabilitation. The facility based care providers do not play any role in supporting the FHWs in providing appropriate care services to these children. Many MTC and the CMAM model had an established system of coordinating with FHWs to refer children for treatment however the same mechanism is not utilised to ensure linking the facility and community based care for these children during care transition. The FHWs play trivial role in rehabilitation of discharged children. Children discharged from MTC (but not from the nutrition rehabilitation program) are managed exclusively by their mothers/caregivers.

As stated before community care is the beginning and end of malnutrition management interventions; NRC (MTC) and CMAM. Since there are three providers at the community level, it important that the care services delivered through each of FHWs are divided and coordinated, to avoid duplication of services or omission of services. At the community there is lack of clarity among FHWs regarding their own responsibility. The preventive, treatment and rehabilitative services are often or partially delivered by the FHWs. On the other hand information exchange between care providers at the community level and beyond was found to be sub-optimal.

6.1.5 Barriers to Community based care

6.1.5.1 Providers

Programmatic Knowledge and role clarity

Inadequate knowledge regarding screening, identification, referral and community based rehabilitation of treated SAM/MAM children act as a challenge to FHWs. The FHWs themselves expressed concern regarding referred cases that were denied admission for inpatient care. They also expressed concern regarding dissatisfaction among community on refusal to admission of these children. Such experience of community members put the credibility of FHWs into question. This increases their difficulty to convince family for accepting a referral.

FHWs are neither equipped on specific care need of discharged children nor have role clarity regarding their rehabilitation. The FHWs are aware that malnourished children are

treated at the MTC; however they are unaware that these children need additional care¹⁷⁸ post discharge. The FHWs perceive under nutrition as a disease and not as condition that require consistent care. They understand that undernutrition is treated at the MTC; once the child gets treated of this disease they are discharged from inpatient care. They perceive children discharged from MTC as successfully treated cases. This lack of understand restrict their role in providing consistent support and care to the discharged children, till they are eligible to exit the program and beyond. Lack of attention by the FHWs and mothers/care providers on care need of discharged children might increase their vulnerability of slipping back to malnutrition.

Similarly the FHWs are not clear about their role in management of malnutrition at the community. All FHWs were aware that they can refer malnourished children to the *hospital*. None of the FHWs were confident about their role in weight monitoring, screening, identification, counseling, monitoring through home visits and support for home based care post discharge. The AWW and FHWs could not state their responsibility for services provided on VHND or during house visits. However they mentioned about ANM conducting immunization, weight measurement or MUAC. None of them reported to counsel mothers on VHND or during home visits. They do accept that they help with preparing registers on VHND and help ANM in taking weight and MUAC measurements.

Training and skill building (technical and soft skill)

The FHWs reported lack of knowledge and skill to impart services for prevention, identification, management and rehabilitation of malnourished children at the community level. The FHWs expressed lack of knowledge on screening and identification of malnutrition among children, Most FHWs could not remember their last training on child malnutrition. The FHWs reported to have received training on usage of MUAC and maintenance of GMC however; they could not demonstrate the correct technique of using MUAC tape for screening undernourished children.

The AWWs and ASHAs are not equipped in skill to find the cause of poor growth; weight loss among children; or to take corrective actions. The FHWs reported to have attended trainings on use of GMC and MUAC for identification and referral of malnutrition

¹⁷⁸ Such as supplementary nutrition, consistent monitoring through house visit, regular weight measurements and supporting the mothers on adequate feeding and care through appropriate counseling.

however they also mentioned that these were one day trainings and they felt that the trainings were inadequate in terms of time and information provided. The FHWs reported to have received no training on counseling and corrective action for community based management of undernourished children.

The FHWs faced difficulty in interpreting direction of growth curve. They were unable to interpret growth pattern i.e. point out difference in lack of adequate growth, no growth or weight loss through a growth curve. While the AWWs correctly mentioned action required for a child falling in red category of GMC, they were unable to specify action required for children falling in the yellow or green category but with a fluctuating growth curve¹⁷⁹. The FHWs were unable to mention the significance of growth fluctuation and perceived growth faltering not serious enough to raise concern (flat growth curve in the yellow or green zone unless it start to decline). Faltering of growth curve up to the red band or visible thinness raise an alarm and only then they refer such children to the MTC for treatment. This hinders their ability to take timely and prompt action even before visible signs of malnutrition appear among children. The FHWs showed limited ability of detecting early growth faltering or prevention of malnutrition among children.

The AWWs and ASHA workers do not poses adequate knowledge on identification of ‘at risk’ children however all FHWs could identify an undernourished child that falls into the red band. None of the FHWs were aware of management and rehabilitation of malnourished children at the community and the specific services to be provided during VHND. This acts as a hindrance to AWWs in identification of undernourished children who are in need of special care or to provide referral advice to the mothers/caregivers.

The FHWs reported to have received no adequate training to develop their skill on counseling, health education and facilitating behavior change among mothers and caregivers. Their work requires them to support mothers/caregivers for optimal nutrition and health care. However none of the FHWs could mention the specifics measures through which optimal nutrition and health could be achieved for undernourished or at risk children. Their responses were limited to ‘good feeding’ and ‘good care’ but none could explain the components of good feeding and care that the community can afford.

¹⁷⁹ Such as discussing the child’s growth with mother, provide appropriate guidance to support growth and conduct follow up on status of such children.

Similarly the FHWs did not have adequate knowledge on care of low birth weight babies and prevention of under nutrition among children. The AWWs and ASHAs were aware that exclusive breastfeeding is important to protect young children from becoming malnourished however none of them could say what comprise of exclusive breastfeeding. They perceive exclusive breastfeeding as absence of solid food but water and other liquid foods (milk from dairy, fortified milk powder, horlicks etc.) can be fed to children between 0-6 months of age. Similarly they start suggesting mothers to feed complimentary feeding only at completion of 6 months of age. These FHWs suggest mothers to feed their children adequately but are not sure about how much and how many feed is adequate for children. They also could not tell how many times a child should be breastfed in a day.

None of the FHWs reported to have been trained in soft skill such as counseling, providing health and nutritional education and behavioral change. These workers are neither equipped to customize advice according to the condition of a child (SAM, MAM or at risk) not they are supported with specificities to decide the content of messages on their own. While they are bestowed with responsibility of community based management of MAM and discharged children they are not equipped to assess specific needs of these children or modify their advice capacitating mothers/caregivers to address these needs. The one of the challenges faced by FHWs in providing care counseling is; to support the family and mothers to understand the cause of under nutrition and thereby helping them to adopt a healthy care and feeding practice that is suitable to their socio-economic, cultural and environmental condition. The FHWs are not trained for this, however they repeat the same messages they learn in their training and supervisory meetings despite of the fact that the community is unable to relate to these messages. As mothers do not find anything relatable or new in these messages they do not show interest in the counseling session and try to leave from VHND as early as possible. As FHWs are not equipped in counseling, they neither ask about challenges faced by mothers in practicing the care advice nor do they provide support in overcoming these challenges.

Lack of infrastructural support

The AWC operates within government and rented buildings. AWCs operating within government buildings have separate space for storage, sitting and kitchen as compared to the rented buildings where sitting and storage space is common. During VHNDs these rented buildings face space crunch where there are pregnant women waiting for ANC and

lactating mothers waiting for immunization and weight monitoring of their children. There are also villages that have an AWC so small that fails to accommodate people, as a result the VHND take place out in the open (preferably under a tree). On VHNDs the FHWs are busy attending women for ANC and children for immunization. Meanwhile weight and MUAC measurements are carried out along with distribution of packed supplementary ration. The set up of VHND is not conducive for the mothers to wait for a detailed program that entails schedule services and long counseling sessions. The mothers are in haste to attend the scheduled service (ANC, immunization and weight check of the baby), collect the packed supplementary ration and leave. On the other hand the FHWs find it challenging to conduct individual counseling session for these women.

Appropriate and timely action at the initial stages of growth faltering can facilitate health restoration at the community level. Most of the AWW informed that they did not have a functional weighing machine (for children above 6 months of age) and MUAC tape. Lack of essentials such, functional weighing machine and MUAC tape hinder growth monitoring and early addressing of growth faltering and weight loss among children. The AWWs are neither unable to measure, nor update the growth registers. Since the AWWs do not monitor growth, the mothers are not informed on growth faltering. The FHWs start suggesting mothers on visible sign of weakness and make referral on appearance of visible signs of undernutrition. The precious period of prevention, early detection and correction is lost on account of lack of appropriate equipments.

The FHWs were not provided any IEC material for prevention of undernutrition, promotion of health and management of undernourished children. Health and nutrition education and counseling are the three primary mode of reaching out to the community for improved care practices and malnutrition management. There are few points of concern in this regard; (a) the FHWs reported to have attended training on growth monitoring long back. Most of them were not even able to remember when the training was organized. The FHWs reported not to have received any refresher training thereafter. (b) The FHWs reported not to have attended any training or capacity building on management of undernourished children at the community (c) The FHWs do not have any IEC material to provide counseling or advice the mother and family on appropriate care and feeding of children (with normal growth, growth faltering and decline in growth).

Lack of IEC material creates a barrier to effective communication with mothers. The FHWs provide same advice to all the mothers on feeding and caring. The FHWs keep on disseminating the same messages irrespective to the specific need of mothers. In absence of a reference material the FHWs repeat what they remember as and when they remember. Thereby diluting the purpose of counseling mothers for appropriate care and feeding practices or influencing behavior change.

Lack of incentive

The FHWs does not receive enough incentive or motivation for effective service delivery. Initially the program provided FHWs (Sahiyas and AWW) with cash incentive for each referred case. The FHWs use to receive incentive on admission for each case at MTC. The incentive was split into two installments first installment was provided at the admission and second installment at the completion of follow up at the facility. Lately this provision of incentive has been scrapped. The FHWs now refer children to MTC but do not accompany the family. Similarly the eagerness to send a child for follow up visit is also missing among the FHWs.

6.1.5.2 Beneficiaries

Community perception on malnutrition

The communities have their own perception on cause and cure of malnutrition. This perception is shaped by sharing of cultural knowledge, social interaction and their belief system. This understanding of malnutrition has its consequence on community's health behavior and their health seeking behavior. Three points are important in this regard (a) perception of a healthy and sick child (b) perception of malnutrition and (c) perception of being cured.

Mothers/caregivers have their own understanding of a sick and healthy child. Mothers/caregivers are alarmed only if the child becomes too weak, is unable to play or move and loose appetite. It is only then that families seek treatment for their children. Their quest of treatment for this condition is governed by their understanding of causation. They associate these symptoms with a disease locally known as puni/kamzori. The community believes that this disease is caused by supernatural forces; therefore they seek treatment from traditional or faith healers. If the traditional healers fail to bring relief,

parents acknowledge the condition as weakness and only then they seek help from the FHWs.

Community perceives malnutrition as a sickness and they are aware that it's treatable. Mothers are aware that malnourished children are treated at the hospital (MTC). In their understanding malnutrition is a disease and they do not associate faulty feeding practices or sickness as its cause. These understandings govern their compliance with advice of FHWs on adequate feeding, feeding of supplementary nutrition provided at AWC and prompt treatment of sick children as a means to prevent malnutrition.

Communities understanding of malnutrition have a direct impact on their compliance to advice or treatment provided by the health care providers. Parents who have already tried other forms of treatment (for puni/kamzori) show better compliance with treatment provided at MTC. However parents sent by the FHWs directly for inpatient care show poor compliance with the treatment at MTC, such as leaving against medical advice, not adhering to the instructions and not completing follow up visits. Such parents carry on traditional as well as medical treatment of their children having greater dependence on traditional/faith healers.

The issue with this understanding is that, community view malnutrition as an illness and not as a condition that requires immediate medical attention but also constant improvement in diet and care practices. Once children are discharged from the facility, parents perceive them to be cured. They are able to clearly distinguish a difference in their child's condition. While parents take up their old routine of child feeding and care, they do not go back for follow up visit thinking their child is cured of 'weakness'. They neither collect supplementary nutrition from AWC or even if they do, they do not feed it to their children. However these children need consistent care and appropriate feeding along with follow up visits till they exit from the program.

Awareness regarding availability of care services

The community reflected poor awareness on: (a) services for malnourished children (b) facilities where such services are provided and (c) appropriate providers.

The community is not aware of services available for management of malnutrition among children. They do not know that malnourished children need medical treatment and can be

treated at the hospital. Only mothers who have ever availed treatment of their SAM child were aware of such treatment services. Similarly they were unaware about preventive, promotive and rehabilitative services available in community for malnourished children. They know that *packed ration* (supplementary nutrition ration) is provided at the AWC. Parents having children between of 6month to 5 years or age know that they need to feed supplementary nutrition along with home cooked food to their children. However they are not aware that feeding supplementary nutrition can contribute to prevent malnutrition among children.

The community showed little knowledge about providers of treatment for common childhood illness. They expressed their confusion regarding availability of medicines for common childhood illness at the community level. They reported that previously AWW use to distribute medicines for childhood illness but now they do not get any medicine from her. Medicine for common childhood illness is available with Sahiya and ANM however community was not aware that these FHWs provide medicine. Besides, community did not know operating hours of a health Sub Centre. Therefore to save time and confusion they seek treatment from private health care providers for sick children. Similarly the community lack knowledge that FHWs can help in treatment of children with *kamzori* (malnutrition). For health issues such as poor appetite, lack of weight gain and thinness community reach out to private health care providers instead to FHWs. This leads to unnecessary delay in corrective action and appropriate treatment of children with malnutrition.

The community expressed lack of knowledge on specific services for malnourished children discharged from MTC. The mothers/care givers are not aware that such children are entitled to additional quota of supplementary ration. Neither are they aware on the need to feed this additional quota of ration to their children. Lack of effective communication between the FHWs and mothers/caregivers is one of the prime factors for under utilization or in some cases non utilization of services for malnourished children.

6.2 THE ACTION AGAINST MALNUTRITION PROJECT: A NUTRITION SPECIFIC DAY CARE MODEL FOR 0-3 YEARS OF CHILDREN

The AWC provides daycare for children up-to 3-6 years of age whereas children from 6 months-3 years mostly managed at home. Children below 3 years of age are in greater

need of adequate nutrient rich diet, care and immediate medical care in case of illnesses. The first 1000 days of life plays a significant part in bridging the gap in seamless care across ages i.e. right from conception or (if possible) even before that. The malnutrition prevention and management for children through ICDS and NHM have certain missing links such as absence of direct health care intervention of 0-3 years of children and support to mothers for child care. While this is the most vulnerable age group, it is also true that neglect in care and feeding for this age group begins soon after birth. The recent National Family Health Survey (NFHS) data indicate challenges with complementary feeding and optimal child feeding practices (International Institute for Population Sciences (IIPS) and ICF, 2017b). There is an interconnected web of factors such as, mothers' engagement in income generating activity, less time spend with children and lack of support for child care at work places all contribute to challenges in appropriate child care and feeding.

The Action Against Malnutrition intend to support nutrition care for children below 3 years of age and bridge the continuum gap. At present this project is being implemented as a pilot in a total of 7 blocks of 4 states, namely; Jharkhand, Bihar, Chhattisgarh and Odisha. This project addresses malnutrition among children in the deprived tribal areas. This project provides care for children under three through; (a) day care for 6-36 month old children, (b) capacity building of community for child care and (c) channelizing services related to ICDS and NRHM. This model intend to bridge service gap for children of 0-3 years of age for; (a) inadequate home based care (b) children of who are denied admission to the MTC (c) children discharged from MTC for rehabilitation.

Crèche at Hetha (Ranchi District), Jharkhand

This section is based on crèche model for care of children below 3 years of age, currently under pilot testing by Public Health Resource Society (PHRS) in Ratu block of Jharkhand. This project works through four primary components, namely; (a) care, (b) adequate and age appropriate food, (c) prevention of sickness, treatment and rehabilitation and (d) capacity building and community mobilization. This model intervene at three levels, namely; (a) crèche/ day care centre (b) strengthening and mobilizing community (c) system strengthening and supporting NRHM, ICDS and related services, such as; PDS, Water and Sanitation etc. (Public Health Resource Society, 2014).

Services at Crèche

Crèche have a significant role in contributing to child care, to ensure adequate nutrition and health among children. This intervention intends to provide child care support especially where mothers leave children below 3 years of age under the care of elders, older siblings or neighbors. Crèche provides a space for child care and services like; appropriate and adequate food throughout the day, routine monitoring, prompt referral and health care. In short, the model lays foundation for prevention of malnutrition, promotes positive health behavior and support for rehabilitation of malnourished children.

Crèche (locally called as balwadi) are child care centers that operate in a rented space. The center has a worker and a helper¹⁸⁰. Counseling and capacity building of community is done by the Participatory Learning Action (PLA) facilitator and services are coordinated by a block coordinator. Mothers bring their children to these day care centers in morning and taken them back home in evening. While mothers are at work, the workers at crèche provide age appropriate food (locally available and suitable to local food practices) three times a day. This supports in appropriate complementary feeding to children who have completed 6 months of age. Children below 6 months of age are provided day care but the mothers come down to the crèche to breastfeed their children. Children are introduced to practice of hygiene and cleanliness such as hand washing with soap and water before and after eating. Children too young to eat by themselves are fed by the crèche workers. All children attending crèche are weighed on a monthly basis and their height is measured once in 6 months. The results are recorded in separate child card and shared with mothers on a monthly basis.

The facility visited was a model centre where the ICDS services and crèche was collocated¹⁸¹. Children 0-3 year of age were provided day care and on time graduated to the AWC.

¹⁸⁰ The crèche worker and helper are women from the community who were trained for providing care at these day care centers.

¹⁸¹ At the initial period of data collection the crèche and anganwadi centers were functional in two different spaces. These centers were functioning along their own operational arena. In the latter stage of data collection before the wrapping up of data collection, as a pilot project; the AWC in Hatha was shifted to the same building where crèche was functional. The Services are now collocated and coordinated together by crèche workers and providers at AWC. The data presented in this section is primarily based on data collected before the convergence of services at crèche and AWC.

6.2.1. Growth monitoring

Every month weight and MUAC measurement of children are recorded. Each child has a separate record document, where weight and MUAC measurements are plotted. On any shift of growth curve from its expected position¹⁸² the workers immediately identify the child as a special case. The worker marks this child's detail in the format for growth faltering. Special attention is made on feeding and care of these children at crèche and mothers/caregivers are counseled on special care until condition of the child improves.

There is different care protocol for children 0-6 months of age and 6 months to 3 years of age. If a 0-6 month of child does not show improvement in weight despite of adequate care and feeding for a month they are referred to the nearest health facility. On the other hand children above 6 months of age are managed at the community level. This includes; provisioning of additional calories, counseling and support for child care through meetings and home visit. If a child shows improvement in weight continuing for two weeks, special nutrition care continues.

Every week weight and MUAC measurements are recorded till the child recovers completely. If there is no improvement by two month such children are referred to the nearest health facility for further diagnosis. Also the PLA facilitator follows such children through home visits. In either case a complete history of each child with growth faltering is recorded with information on; (a) weight for three consecutive months; (b) illness experiences for previous months and its duration; (c) response of children to the special nutritional care along with weight and MUAC measurements; (d) referral to the nearest facility and (e) report of check up.

6.2.2 Care for children with severe wasting

The model provides special care for stunted, underweight, severely underweight¹⁸³ children. Children with continuous growth faltering are referred to the AWC for further

¹⁸² The growth charts have markers indicating z scores. It is expected that the growth curve shall run parallel to these z score lines. If the growth curve plotted on chart grow flat or move downwards it indicates that the child is having growth faltering.

¹⁸³ The model considers children with <-2SD to be underweight and <-3SD to be severely underweight. If plotted on the growth chart the underweight children appear in yellow band and severely underweight children appear in the red band.

management¹⁸⁴. Severely underweight children with a good appetite continue on special nutrition provided at crèche along with weekly monitoring through weight and MUAC measurement till they move out of the 'red zone' in MUAC.

The PLA facilitator maintains a record for symptoms, MUAC measurements and Z score based on which a malnourished child is referred to the MTC. Similarly information record for each referred case on; date of referral from the crèche, place of referral, admission to MTC and discharge from the MTC is maintained. The PLA is responsible to ensure that the child attend all three follow up post discharge from MTC. Children with severe stunting are referred to the nearest health care provider for further check up. The PLA facilitator make home visit to such children and maintains their case history.

6.2.3 Care for Severely undernourished children

The crèche workers, crèche coordinator and PLA facilitator work as a team for identification and referral of sick and malnourished children. To facilitate early identification and treatment; children with any serious illness are referred to the nearest health care provider (to an ANM or to the health centre). A child with severe malnutrition (W/HZ -3SD) is linked to the AWC for further management. Severely wasted children along with loss in appetite and health complication are referred by crèche coordinator/PLA facilitator to the MTC.

6.2.4 Follow up of malnourished children

Follow up of children with growth faltering and severe malnutrition is an important component of this model. Case history of all referred children is maintained along with their details of follow up in a separate record. Children discharged from MTC continue with special nutrition at the crèche. These children are kept under intensive growth monitoring at crèche. At the same time PLA facilitators follow these cases through home visits. The PLA facilitator is responsible to make home visits for follow up and counseling. Counseling of mothers/caregivers are based on the challenges faced by the family regarding food security, dietary practices, child feeding, cleanliness and hygiene etc which might have an impact on the nutrition care of malnourished children.

¹⁸⁴ The management includes double ration through AWC or referral to the NRC/MTC.

6.2.5 Community and system strengthening

The model brings in children of 0-3 years of age into the purview of nutrition management by connecting community to the service providers. Community mobilization for prevention of malnutrition and capacity building of the mothers/family for self care is integral to this model. Community is capacitated through regular meetings on malnutrition, child care and feeding, growth monitoring and appropriate action.

The community is capacitated and guided to avail health and other allied services. On the other hand malnourished children are followed through home visits. Children are monitored for MUAC measurements and the families are supported with appropriate need based counseling on child care and feeding. If necessary these children are referred to an appropriate care provider (AWC, ANM, doctor, MTC) for further management. Mothers are capacitated on improved home care and health seeking through meetings and counseling sessions¹⁸⁵. These meetings/counseling sessions are supported with home visit specially to support mothers with children showing growth faltering, mothers who do not attend the meetings, mothers of sick children, mothers of children denied admission in MTC or discharged from MTC.

This model links community with the existing health and other allied services. The model capacitates community to access services; on the other hand it capacitates providers to improve their service delivery. Primary focus of this model is on ICDS and NRM however it also envelop other services such as; PDS, MNREGA, water and sanitation etc. The community is connected to these services. The model depends on NHM for ensuring health assessment, treatment, immunization and support through supplementary nutrition.

Poor services delivery through ICDS, VHND, health facilities, absence of active screening and weight monitoring at AWC and poor referral hurdle in effective utilization of services.

¹⁸⁵ These capacity building sessions focus on health and nutrition education, information on malnutrition and illness, growth and growth faltering, IYCF based on locally available food, complementary feeding, identifying and addressing nutrition and health care related issues, appropriate care for newborn and children, prevention of common illness, prevention of malnutrition and appropriate action.

CONCLUSION

The services provided by Integrated Child Development Services (ICDS) and National Health Mission (NHM) are significant for prevention of malnutrition among children and secondary prevention among sick children through timely and appropriate intervention. These services are significant to the chain of continuum as they not only bear potential to prevent the onset of malnutrition but also to prevent a child from being sick to becoming malnourished. The services provided through AWC and the amalgamation of services provided through VHND, health care services provided at the sub centre together contribute towards this objective. These services address health and nutritional need of 0-6 year of children.

The AWC provide nutrition and day care to 3-6 year of children. The continuum of care for children between 0-3 years of age is entirely dependent on the mothers or the family. There is no country wide program that provides support for health and nutrition care of children below three years of age. Crèche model has a significant contribution in this regard that provides nutrition care services for children below three years of age and connects children to the health care providers according to their health need. This model facilitates smooth transition of children through services specifically from 0-3 to 3-6 years of children. This model is still evolving. In the later phase of data collection the model was modified and services of crèche and ICDS were being delivered under a merger. This design has added a significant link to the chain of continuum.

CHAPTER 7

DISCUSSION AND CONCLUSION

This chapter discusses on three models for malnutrition management. The first section provides an overall understanding of the concept of continuum of care and its incorporation in the existing nutrition interventions. Second section presents different models (government and non-government) for malnutrition management in India and the different levels of care that construct continuum in these specific models. This section is further divided into sub-sections which provide insights into challenges in operationalizing these models and continuum gaps in each of these. Third section concludes the study.

7.1 THE CONTINUUM

The concept of continuum of care has so far been studied in the context of different health care services such as Mental Health, Diabetes, RMNCH, Nursing etc. The concept has thus been shaped by the initiating, continuing and concluding events experienced within these specific health care services. The current study has explored how continuum of care (CoC) is understood, imbibed and practiced within Nutrition Care and Rehabilitation services. This section shall discuss CoC in light of findings drawn from this study.

The concept of ‘continuity’ connects care across time that is consistent with changing need, context and preference of the beneficiary. This approach regards people not only as beneficiaries or receptors but as active participants. This understanding of continuum moves beyond focusing on individual diseases. Rather it encompasses health experience of people at clinical as well as community level even encasing care transitions, as and when required. The concept of continuum of care is therefore grounded on certain prerequisites, such as; people, care planning, care coordination, integration, case management and participation across different junctures.

As can be drawn from the study; a holistic view of continuum of malnutrition services brings three care points into picture, namely: (1) Family (2) Community¹⁸⁶ and (3) Facility based care. Continuum of care approach places beneficiaries at the centre and draft care

¹⁸⁶ This includes care services provided at community level and first point of contact for health care i.e. AWC and Sub centre respectively.

strategies around their specific need, through their family, community and an array of health care providers. This calls for effective coordination amidst service providers to assess what is being done, what are the gaps and to build strategies addressing these gaps. In other terms, to develop a care plan that best fit to the need of beneficiary, resolve service gaps and avoid duplication of services.

Seamless care under continuum can be seen as a cycle of services encompassing; prevention, health promotion, treatment and rehabilitation. Within a continuum these stages do not exist in silos. Continuum of care deal with acute care need nested within long term care. The central idea is that care needs are not static but ever changing and at any given point the care need of beneficiary also changes. This calls for movement of beneficiaries from a level of care to another, transitioning between one form of care delivery to another (due to either improvement in health or deterioration in health). This transition across levels of care can be smooth progression or multiple transitions (shift back and forth) depending on the care output.

There are three primary drivers of continuum namely, people, environment and events across the dimension of time and place. The people involved in continuum comprise of providers, beneficiaries and payer at each care environment. Continuum of care functions within a care environment defined by the care model or different care models, care settings and resources. Another point this study brings out is that, not necessarily beneficiaries move from one care environment to another depending on outcome in the previous environment. It is possible that a beneficiary is managed by different care environments at a given point of time. Findings from this study indicate that at a given time beneficiary can be served under more than one care environment¹⁸⁷. The concept of continuum encompasses events that mark experience of beneficiary: (a) at certain level of care (b) during their transition from one level of care to another and (c) followed with being covered by some model of care catering to their changing care needs. This can be viewed as events across time, through and within different levels of care and different models of care delivery. This is when care during transition becomes an important driver to continuity.

¹⁸⁷ Considering NRC and CMAM model the beneficiary is served at more than one care environment; (a) Post discharge from NRC, the beneficiary is managed at three care environment i.e. home, AWC and NRC OPD and (b) In CMAM model the beneficiary is managed at home and ATFC/ITFC respectively.

The continuum of care functions with the attributes of: (a) relationship between provider(s) and beneficiaries within and across levels of care (b) communication between providers across levels of care and between providers and beneficiaries at each level of care (c) coordination and collaboration of care available to best suite the ‘dynamicity’ of care need of the beneficiary. One of the significant contributors to relationship and communication between provider(s) and beneficiaries is the information shared, appropriateness, clarity and comprehensibility of the information shared. This brings together provider(s) and beneficiaries in identifying care need, devising a care plan and facilitating case management. Communication between care providers serves as an important driver to coherent care; avoid care duplication or discontinuation of care. Continuum of care is a people centre model. The concept includes individualized approach to identify specific health need of beneficiaries at all levels of care i.e. from home to facility at the same time emphasize on flexibility in care provided. In other words, the concept emphasize on moving beyond fixed care plan/protocols to a care plan that is flexible according to changing health need of beneficiary.

Existing literature advocates that the concept of continuum of care have an antecedent and a consequence. The beneficiary from a certain ‘population’, come across an antecedent incident. As a following event the beneficiary comes into contact of a certain care environment within the health system. This is followed by change in: (a) care events, (b) relationship between care providers and beneficiaries and (c) communication within that particular care environment. The outcome achieved within a specific care environment determines whether the beneficiary shall move to other care environments or return back to the population. In other words care event in one environment terminate with achieved outcome and as the beneficiary moves from one care environment to another there are periods of transition. At the end of the continuum beneficiary returns back to the population. This concept is based on the understanding of health as absence of disease and overshadows the concept of wellness. This understanding of continuum of care is mostly clinical and facility based therefore placing beneficiary out of its original environment i.e. community.

However as understood from this study, the CoC bears a different connotation. The care events do have an antecedent and conclusion for a certain level of care. Each concluding care event bears an outcome implicating a change in care need of the beneficiary. As the

beneficiary step into a particular care environment, they go through different care events according to their changing care need. Design of care services, providers and communication with these providers changes with time catering to changing care need of beneficiaries. Each of the care events within a specific environment conclude with certain outcomes. These outcomes then lead to antecedent that can no more be catered by the previous care environment but require to be addressed by a different level of care or a different care setting. The concept continuum of care in nutrition care and rehabilitation does not have distinct margins with an initiation or absolute conclusion rather it includes transitions from one level of care to another. Thus in a Nutrition Care and Rehabilitation model, multiple sub-continuums can co-exist within a larger continuum of care.

7.2 HOW CHILD HEALTH PROGRAMS (NATIONAL HEALTH MISSION) VIEW CONTINUUM OF CARE

Child Health program in India is nested within RMNCH+A strategy of National Health Mission (NHM). The strategy integrates interventions that address improvement in child health and nutrition through focusing on factors affecting neonatal, infant, under-five-mortality and malnutrition. In this regard, neonatal health¹⁸⁸, nutrition¹⁸⁹, management of common childhood illness¹⁹⁰ and immunization¹⁹¹ has been the major thrust areas of NHM. In 2013 (RMNCH+A), it was acknowledged that preventive and promotive intervention at home and community, as well as treatment at facility level is essential to link nutrition care to low birth weight babies and SAM children. The documents do not dwell much upon the rehabilitation of SAM children or long term nutrition care; neither do they talk about children who are at risk of becoming malnourished.

An overview of child health under NHM shows that the interventions are in a continuum of services, following different life phases of a child. These child health services include services from birth till childhood¹⁹² (Johnson et al., 2011). These schemes are placed as intervention connecting two important dimensions of continuum namely, time and place.

¹⁸⁸ The NHM highlights three thrust areas in Neonatal Health, namely; essential new born care, facility based sick new born care and home based newborn care and home based young care.

¹⁸⁹ Thrust area under child nutrition are; promotion for optimal infant and young child feeding, micronutrient supplementation, management of SAM and de-worming.

¹⁹⁰ The NHM management of common childhood illness.

¹⁹¹ Intensification of routine immunization, eliminating mortality due to measles and Japanese Encephalitis and polio eradication.

¹⁹² The WHO document on continuum of care defines childhood as pre-school years i.e. 1-5 years.

As these child health interventions address health care need arising at different life stages across different levels of care they function in silos^{193 194 195 196 197 198 199}. On the other hand guidelines for; F-IMNCI, India New Born Action Plan, Control of Iron Deficiency Anemia, Family Participatory care for improving Newborn Health, National Guidelines on Lactation Management Centers in Public Health Facilities, Kangaroo mother care and optimal feeding of low birth weight infants, Home based newborn care, Rashtriya Bal Swasthy Karyakram, Home Based Care for Young Child (HBYC) and facility Based Pediatric Care have acknowledged the need of continuum of care (National Health Mission, Child Health Guidelines, 2018). These program guidelines acknowledge 'continuum' but they do not guide or delineate a mechanism to achieve continuum of care. In larger continuum, these interventions that directly or indirectly contribute to prevention and promotion of malnutrition are marred with discontinuity. Though the document guidelines speak about care transition and care need during transitions, it does not suggest measures to address the same or mentions of accountability. However, it is worth noticing that the component of prevention and rehabilitation for malnourished children through long term care (directly or indirectly) had not been adequately addressed in the existing child health guidelines.

¹⁹³ Facility Based New Born Care Components of FBNC encompass essential care to the newborn linking care at home and facility. This is to ensure that newborns receive supervised facility based care from birth to the next 48 hours followed by community based care for 42 days. Newborn with special care needs (sick or preterm or low birth weight) are to be treated at dedicated facilities and followed with long term care once discharged from facility.

¹⁹⁴ Home Based New Born Care, acknowledge continuum of care through antenatal, intrapartum, immediate newborn, post natal and new born care at home for the first few weeks of life. The intervention provides prevention and early diagnosis of danger signs. Even this approach lack continuum without timely referral to appropriate care provider/facility for management and continue follow up and care at community level.

¹⁹⁵ Home Based Young Children initiates to link complementary feeding, growth monitoring, vaccination and sickness related counseling to mitigate and manage child under nutrition between 3-15 months of age.

¹⁹⁶ Infant and Young Child Feeding acknowledged as a preventive intervention of malnutrition between 0-2 years of children. The NHM have spread the intervention component of information and counseling across different care points under different health interventions, such as; HBNC for first 6 weeks, VHND, routine immunization, IMNCI and F-IMNCI.

¹⁹⁷ The Integrated Management of Neonatal and Child Illness (IMNCI) at community level is to be linked to facility based management of childhood illnesses. The F-IMNCI guidelines suggest integration of IMNCI with F-IMNCI to provide consistent care to ill children linking primary and facility based care.

¹⁹⁸ The Family Participatory Care for improving New Born health guideline acknowledges the importance of continuum of care during transition of care from home to hospital setting and the role of family in care giving and decision making. It also suggests capacitating family to manage care at home post discharge.

¹⁹⁹ Rastriya Bal Swasthy Karyakram (RBSK) child health screening and early intervention services under NRHM acknowledge continuum of care through systematic approach of early identification and linking care, support for care and treatment extending across different phases of life of a child.

7.3 NUTRITIONAL CARE, TREATMENT AND REHABILITATION INTERVENTIONS

Model 1: The Nutrition Rehabilitation Program

The most prominent model for management of malnutrition specifically SAM is through Nutrition Rehabilitation Centres. The facility based care of SAM focus on treatment of severely wasted children i.e. children with recent experience of failure to weight gain or weight loss attributed to recent episode of acute illness. The core principle of facility based SAM management lies in prevention of mortality among wasted children due to common illness. The entire nutrition rehabilitation program rests on the pillar of facility based care for reducing illness induced mortality among undernourished children. Thereby, the program places its focus on NRC for management of sick children with severe acute malnutrition.

The program guideline explicitly state about Nutrition Rehabilitation, where NRC is the first step towards treatment and management of children with severe acute malnutrition. The admission and discharge in the facility is made under the defined criteria. During their stay, children are provided with therapeutic care; medical and nutritional. The guideline document emphasize on the need of continuation of care provided to SAM beneficiaries in the Nutritional Rehabilitation Program post discharge from NRC (facility based care), until the beneficiary is fit to be discharged from the program. This Program therefore have certain major points of action, namely; medical and therapeutic care; timely, adequate and appropriate feeding practices, skill building of mothers/caregivers on age appropriate care and feeding practices and capacitating identification of danger signs among children. All of this is to be achieved through counseling and support from the health providers.

There are two major care points involved in this model: (a) Facility based/hospital based care. This provides care for SAM children with complications. (b) Home based care/community based care. This provides care for SAM children without medical complication (Collins 2011 p. 2). The services, care points and care providers involved in the Nutrition Rehabilitation program can be viewed under; *Pre-NRC* (promotion and preventive care), during *NRC* (Curative care) and *post-NRC phase* (rehabilitative care). The above mentioned care stages in this model are provided by two major programs namely, Integrated Child Development Services (ICDS) and National Health Mission

(NHM). These programs lack linkages pertaining to malnutrition management and function in silos.

(a) Pre-NRC Phase: Prevention and Early management

The pre-NRC phase involves (a) preventive care for at risk children through corrective measures for early signs of malnutrition and (b) timely appropriate referral for serious SAM cases. The Pre-NRC phase lies mostly on the shoulders of AWW, ASHA and ANM. All the workers have defined roles within the operational schemes of; Ministry of Women and Child development and Ministry of Health and Family Welfare. However, their roles cross path pertaining to malnutrition management at their respective villages. These Frontline Health workers (AWW, ASHA and ANM) are vested with the role of early prevention, early identification, correction and if required referral of children with malnutrition. AWC is a very important pedestal in the chain of continuum of care at the same time care at home holds equal significance. Thus besides FHWs, family and community have an important role to play in management of malnutrition among children.

The ICDS spells three specific objectives delivered through AWCs and NHM, namely: (a) improving nutritional and health status of children of 0-6 years of age (b) reducing incidence of malnutrition (c) to provide health and nutrition education to strengthen capacity of mothers to care health and nutritional needs of their children. This is provided at the village level through services such as; supplementary nutrition and nutrition and health education. These two services are under the purview of Department of Women and Child development at the AWC. These services are provided on a regular basis handled by AWW and anganwadi helper (AWH).

Other three important services such as immunization, health check up come under the purview of the Department of Health and Family Welfare and referral services can be provided by either of the FHWs. Other services are delivered on VHNDs (organized once a month) by the help of AWW, ASHA and ANMs. The role of AWW on VHNDs is limited to assisting ASHA and ANM in delivering services

(Ministry of Health and Family Welfare, 2007b). Further, the anganwadi centers provide a platform for convergence of these two departments.

Prevention is an important part of continuum of care and AWW, ASHA and ANM have a significant contribution in this regard. The AWW are responsible for providing supplementary nutrition to children of 0-6 years of age, monitor growth of children (weekly for children of 0-1 month (through home visits), monthly for children of 1 month to 36 month and quarterly for children 3-6 years of age on VHNDs, take action on signs of inadequate growth (no growth, slow growth or weight loss) through: informing mothers about growth outcome, health and nutrition education, counseling on exclusive breastfeeding, IYCF, IMNCI and additional supplementary nutrition for children of 6 months to 6 years of age. (National Institute of Public Cooperation and Child Development. n.d.; Handbook for anganwadi workers, 2006; Arora, 2009; Ministry of Health and Family Welfare, 2007 and Department Of Women, Child Development & Social Security, 2018).

During VHNDs certain set of services are delivered led by ANM and assisted by ASHA and AWW. These services are health check up of all children, case management of children with diarrhea, counseling mothers for home management of childhood illnesses and preparing them to choose an appropriate health care provider in case of complications. During VHND, the FHWs conduct screening of 0-6 years of children for malnutrition, counsel on age appropriate balanced diet; provide additional supplementary nutrition for children with mild malnutrition and referral of Grade III and IV children for further treatment to NRC (Ministry of Health and Family Welfare. (2007). Referrals are mostly made on VHND (Department Of Women, Child Development & Social Security, 2018). ASHA and AWWs are responsible to accompany family to the nearest NRC for treatment.

For smooth functioning of this plan, the nexus between AWW and ASHA and ANM is important. The AWW and ASHA are required to provide promotional and preventive care at the village level for all children between 0-6 years of age. The ANM are to provide early correction of illness and malnutrition through assistance of ASHA and AWW. This arrangement has its own challenges.

The ICDS and NHM provide multiple services at village level; to prevent malnutrition, promote appropriate care of all children and provide treatment of mild malnutrition at the community level. However, the emphasis on preventive care and management of malnutrition is skewed across different age groups. Children between 0- 2 years of age are largely managed at the household level. Children of 3-6 years of age receive care at household as well at AWC. Though ICDS and NHM provide support for child care and feeding (monitoring and follow up through home visits, counseling, supplementary nutrition, treatment and referral) yet, primary responsibility of prevention of malnutrition and home based management lies on the mother. The time constrained mother juggles between child care, household chores and livelihood (Chaturvedi et al., 2016); struggling to comply with the counseling and feeding advices provided by FHWs at the village level. Dependence on other caregivers increases for child care as mothers engage in work and income generation post delivery. This reduces their ability to pay attention or to spend time on providing age-appropriate and adequate feeding (breastfeeding/ complementary feeding/ balanced diet), maintenance of cleanliness and hygiene. Initiation of complementary feeding at an early age and providing convenient food are certain mechanism adopted by mothers to prepare their young ones to either feed themselves while they are engaged in household chores or to be able to leave them at care of younger siblings/elders/neighbors since convenient food are easy to feed and keep children full for long. This practice is evident among mothers having children 0-3 years of age, more so among those who live in nuclear families or those who cannot depend on social capital for feeding and care of their children. Initiation of complementary feeding or convenient food at an early age relieves the mothers from breastfeeding as they resume work (household, agriculture, forest, and livelihood) after delivery. Chronically poor and food insecure households have shown higher dependence on other caregivers other than mother for child care and feeding (of children between 0-6 months of age), early initiation of complementary feeding and dependence on convenience food. Mothers resume work post delivery, and either carry their infants or leave them behind under the care of 'other caregivers', the challenge is to care for children between 1-3 years of age. Children from these age groups are mostly left behind under the care of grandparents, siblings, neighbors. The practice of feeding is primarily scheduled (caregivers are instructed to give feed at a particular time

interval), inadequate (mothers try to feed children before they leave for work and after they get back from work. The meals in between are mostly convenience food or rice (such food are easy to feed and children can eat on their own) and responsive (food is provided if children ask for it/based on cues). Under these circumstances, practice of feeding THR along breastfeeding/complementary feeding, appropriate feeding of balanced diet, maintaining hygiene and sanitation are challenging for the mothers.

The ICDS and NHM provides most of its services through VHND. VHND is the only interface where ICDS and NHM services are delivered together for healthy children as well as children with malnutrition. The programs enlist a number of services provided to a wide range of beneficiaries, pregnant mothers, lactating mothers, new born, infants and children. Paucity of time is faced by FHWs in providing all the detailed services. On the other hand, mothers have limited time to spare at VHNDs due to the work burden they carry. The VHND hardly last for 2-3 hours and priority is on due immunization, ANC, PNC and distribution of THR. Screening of all children for malnutrition is poorly practiced on VHNDs due to multiple factors; lack of infrastructural support, lack of functional equipment, practice of FHWs to call mothers of only those children enlisted for immunization on their due list and paucity of time. Not necessarily all mothers (lactating and mothers of children 3-5 years of age) come with their children and collect their share of THR on VHND. They come to the anganwadi centre on any day, to collect supplementary nutrition according to their convenience. Counseling of mothers (having 0-5 years of children) on HBNC, appropriate feeding, care, home based management of illness, capacitating them to choose appropriate health care provider, home based management of malnutrition is not materialized, during VHND or during home visits (respondents reported absence of home visit by FHWs for such services). Growth monitoring at the field level is sub-optimal and faces many challenges, such as; lack of equipment for growth monitoring and screening, lack of clarity on use of equipments, lack of clarity on plotting and interpretation and poorly updated registers.

On the other hand, FHWs are poorly trained and lack guidance on taking appropriate action based on the growth outcome, especially for children with

moderate malnutrition or those who are at risk of becoming malnourished. Lack of knowledge: to categories children according to the type of malnutrition, on their specific care need, clear management guideline for different categories of malnutrition, and provisions available at village/NRC level for management of such cases hinder the FHWs ability to take appropriate action. This hold back FHWs from providing prompt and appropriate need based care. On the other hand it hinders the process of referral to a suitable care provider to avoid delays, duplication or omission of services. The FHWs refer all identified malnourished children directly to NRC or wait for VHND so that the child is screened and then referred by ANM.

The Sub Centers are non-functional, under-equipped or understaffed (ANMs are managing two Sub-Centers) to address uncomplicated malnutrition (at risk, moderate, severe). FHWs refer children directly to NRC (sick children, children with moderate malnutrition, uncomplicated and complicated SAM). The Primary Health Centers are kept out of the referral loop by FHWs. The reason cited by them is that they are instructed to refer children falling in red zone (of GMC and MUAC) to NRC for further treatment. NRC is the only place they are aware of, that provides treatment for malnourished children. Self referrals by families also omit PHC from the care pathway. Lack of awareness on services provided at PHC, never having visited a PHC before were and knowledge of children going to NRC for treatment of 'weakness' were some reasons cited by them.²⁰⁰ Children fitting to the admission criteria for NRC get inpatient treatment for stipulated period of time. On the other hand, children at risk, MAM or uncomplicated SAM are sent back to the community. In absence of a system for community based management of malnourished children, untrained and unequipped FHWs, weak primary health care services (Paul et al. 2011; Kasthuri, 2018; and Pandve & Pandve, 2013) and unprepared care home based providers (lack of knowledge, skill and support for management of at risk or malnourished children) the 'at risk, MAM or uncomplicated SAM children' are vulnerable to slip into acute or even chronic malnutrition.

²⁰⁰ The PHCs were not explored by researcher with respect to their infrastructure, trained human resource and support to manage cases of malnutrition among children.

(b) The NRC phase: Treatment

This phase provides for (a) clinical management of SAM with a special emphasis on those with medical complications; (b) capacity building of caregivers (mothers and family) for age appropriate feeding and care. This is done through demonstration, practice and counseling; and (c) identification of non-health factors that contribute to malnutrition and provide appropriate counseling. Therefore there are three stages under Nutrition Rehabilitation Program, i.e. stabilization phase, transition and rehabilitation phase (follow up phase).

Children who do not meet admission criteria of NRC are refused admission and sent back to the community. The program is not designed to handle uncomplicated SAM and MAM. Also does not have a system to link the refused cases to health care providers (community level) for further management. There is no information exchange between NRC staff and care providers at community; PHC/SC/ASHA or AWW on refused cases. Under such circumstances the responsibility of care and feeding of children refused admission in NRC lies solely on the mother/caregiver/family. The Nutrition rehabilitation program does not recommend counseling of mothers/caregivers before sending them off on; specific health and nutritional need of their malnourished child, home based management, identification of danger signs or seeking care from appropriate community health care providers. At the community level the component of health and nutrition education, counseling and capacity building of community (on prevention and management of malnutrition) is suboptimal. In this situation, care of children denied admission faces three major challenges;

- Absence of a community based model for management of uncomplicated malnutrition
- Lack of clarity among FHWs on their role for management of MAM /uncomplicated SAM and special provisions that such cases are to be provided
- Poor capacity of primary caregiver on care, feeding and management of uncomplicated MAM/SAM through home based care.

The phase during NRC i.e. clinical management of SAM is hindered by multiple factors; infrastructure or design of NRC being one of them. The NRCs are

established within existing FRUs/CHCs or district hospitals. These facilities have been squeezed in along other services in the facility, thereby compromising on specific infrastructural requirements (separate ward, separate toilet/bathroom/hand washing facility and dedicated space for beds, counseling, stimulation, feeding and demonstration). Another challenge is absence of a sufficient care team (pediatrician, nursing staff and nutrition counselor, and cook, cleaner and medical social worker) which has a close bearing on the delivery of services at NRCs.

The NRCs function with support of Medical officer/ Pediatrician (one or two), nursing staff (4-8) and attendant or cleaner (one) depending on the NRC to be a 10 bedded or 20 bedded facility (Ministry of Health and Family Welfare, 2011) . While the operational guideline suggest for nutrition counselor (one or two), cook/care taker (one or two) and medical social worker (one) with specific role, none of the NRC had appointed these staffs whereas these units were being managed by 3-6 nurses (at 10 and 20 bedded NRCs respectively).

The facility based care under Nutrition rehabilitation program intend to provide clinical care, therapeutic feeding and capacitating mothers/caregivers to manage malnourished children after discharge from the NRC. Nursing staff are burdened with multiple activities such as, screening, medical care, nutrition and health counseling, demonstrating preparation of nutrition rich food to mothers, preparing feed, case management and discharge of NRC beneficiaries. The support service required by caregivers/mothers (counseling, health and nutrition education, solving feeding related problems, demonstration etc) gets hindered due to work burden of nurse staff and their paucity of time.

Diet chart for each beneficiary is prepared by nurses in consultation of MO and the prescribed guidelines. This rules out the possibility of preparing individual diet chart based on individual feed requirement, especially when the nurses are not trained in nutrition care. The nurses prepare RUTF and supervise feeding. These nurses are neither trained in assessing feeding problem nor in nutrition counseling. Moreover they are unable to supervise feeding, assess feeding problems and counsel mothers every time due to their engagement in NRC activities, such as; screening all children arriving through referral (FHWs, Pediatric/general OPD or self referral), nursing care, updating weight records, clinical care and preparation

of reports. Mothers/caregivers do not receive sufficient support during their stay in NRC on appropriate feeding technique and practice of adequate feeding. For example, the nursing staff does not check if admitted children finish the feed each time RUTF is distributed. It is a common practice among mothers/caregivers to consume RUTF themselves, share with siblings or discard if the beneficiary is unable/not willing to eat. This might be a possible reason for slow or low weight gain by admitted children.

The NRCs are functioning as therapeutic feeding and clinical care center with very little emphasis on empowering caregivers for home based management of SAM. Lack of trained staff (for counseling), work burden on the nursing staff, lack of IEC material for counseling (relatable for beneficiaries' context) and lack of dedicated space are some factors that challenge delivery of all the services defined under Nutrition Rehabilitation program.

Beneficiaries are discharged from the program within 14-21 days of inpatient care. The mothers/caregivers are primary caregiver to these children beyond NRC. However, these primary caregivers are not equipped or prepared to continue giving the care they are able to provide within a facility. Absence of a nutrition counselor in these facilities has led to underutilization of the opportunity for enabling mothers for improved care practices at home.

(c) Post NRC Phase: Rehabilitation and Recovery

The Post NRC phase need follow up of the children discharged from facility. Beneficiaries are discharged from the program on completion of 14-21 days of inpatient care. They are either:

- Discharged and sent back to the community as treated cases on weight gain (15% weight gain for 6-59 months of children and continuous weight gain for 5 days for 0-6months of children), absence of oedema and sickness.
- Discharged from the program as non-responders.
- Referred to a higher facility for further management.

The District hospitals form an important part in the chain of referral of complicated SAM. The NRCs refer children with complicated SAM to the district hospitals for

further management. These facilities are equipped to support specialized care for serious clinical complications that otherwise cannot be managed at the NRC/MTC. The referral mechanism is well established for movement of beneficiary from NRC/MTC to district hospitals however the mechanism for back referral i.e. from district hospitals to lower level facilities is absent. There is no arrangement in place to connect the beneficiary to a health care system post discharge from district hospital. The discharged cases come back to their respective residences. With a weak component of community/home based care of malnourished children and absence of a CMAM program, these discharged cases are not connected to any form of care that cover their health care need during this stage of transition.

The first and second categories require community based management of their condition. As stated before mothers/family, FHWs and primary health care providers are the stakeholders in this phase.

The operational guideline for facility based management of SAM children emphasize on appointment of a medical social worker. None of the NRC visited had a provision for recording social assessment of the SAM child. The purpose of having a Medical social worker is to assess the social condition of the child's family and community, advice the family on available social welfare provisions and to link the family to these welfare provisions if required. The most important role that a social worker could have played is to attend to the non-medical determinants of malnutrition through linking the family to welfare support services based on the specific families' requirements such as anganwadi, PDS and other public welfare schemes. Issues of food security, poverty, lack of safe drinking water, social support for child care, domestic violence, environment and sanitation condition, early marriage and teenage pregnancies, etc. has far reaching implication on child health and nutrition. The probability of strengthening a family's position to prevent reoccurrence of malnutrition on account of the above mentioned factors remains unutilized.

At the village level, there is no community based management of discharged SAM children. Here the FHWs and community health care providers have a significant role to play in management of children discharged from the NRC till they are ready to be discharged from the program (achieving a weight for height of $-1SD$) and thereafter provided with regular health and nutrition services. Children of 3-6 years of age still

get benefit of care at anganwadi centers (supplementary nutrition and day care) as compared to children of less than 3 years of age. There are institutions like daycare centers (crèche/balwadi) to provide feeding and day care to children less than three years of age. Such services are important for mothers bearing burden of child care, household chores, and agriculture and income generation. Besides this involvement of FHWs in delivery of HNBC, IYCF, Nutrition and health education is suboptimal. So is the community based follow up of discharged children. Due to poor understanding of FHWs on malnutrition, perception of treatment provided at NRCs (the FHWs perceive children discharged from NRC are completely cured of malnutrition) and lack of specific guideline on follow up, monitoring and management of discharged cases, children discharged from the NRC are not covered with health or nutrition services prescribed for them. Incentives are an important motivator for ASHA to focus on activities (Guha, Raut, Maliye, Mehendale & Garg, 2018; Goswami, Rai, Dixit, Mahawar & Jain, 2016). Recently, scrapping of incentives for ASHA and AWWs on referral and completed follow up of SAM children has affected their motivation levels; to accompany children to NRC and ensure follow up.

The turnover for follow up visits are low for children discharged from the NRC, even lower for children coming from the peripheral/hard to reach areas. The operational guideline suggest for transport facility for follow up visits to NRC which had not been operationalized. Paucity of time, wage loss, long distance, travel cost, burden of household chores, and responsibility of other children and lack of financial cover to compensate wage loss during follow up visit are some factors that de-motivate mothers/caregivers from attending follow up services at NRC.

Mothers/caregivers/community understanding on malnutrition and role of NRC in treating malnutrition also govern their adherence for attending follow up. The community perceives that 'weakness' (malnutrition) is completely cured at the NRC. This understating fosters a belief among the community that once children are cured, they are 'discharged from the hospital' (NRC). Hence they see do not feel requirement to attend follow up visit. On the other hand, the FHWs perception of malnutrition and treatment provided at NRC bear similar result on the caregivers compliance for follow up visit.

The operational guideline for facility based management of SAM acknowledges the gaps in the program. These gaps are as follows-

- Need for community based management of malnourished children to link care from ‘home and community’ to the health centers or a health facility and back.
- The document acknowledges that the program focus primarily on NRCs. The role of NRC is limited to ‘treatment’ of SAM. At the same time prevention of under nutrition among children 0-5 years of age, is vital and so is improving nutritional status of children.
- The document suggests that for promotive services such as mobilizing for IYCF and appropriate nutritional practices are critical to the Nutrition rehabilitation program.
- The document clearly acknowledges that the Nutrition rehabilitation program have not adequately dealt with the issue of uncomplicated SAM that do not qualify for admission in NRC, appropriate detection of SAM in the community and follow up of discharged cases from the facility.
- Regarding this cause, the document point out towards the need of a separate guideline for community health workers.

What the model overlooks:

a) Specific care need of Low birth weight babies (LBW) and malnourished (LBW) babies

The Nutrition rehabilitation program focuses primarily on SAM management among 0-5 years of children. This program provisions for treatment of 0-6 month of children through facility based management at NRC. Infants of 0-6 years of age are provided with treatment for medical condition, observation, vitamin supplementation and mostly breastfeeding. The treatment of 0-6 month of children at the NRC is dependent on the FHWs for timely referral, self referral or transfer from paediatric OPD/ward. The FHWs at the community are not trained, equipped and bear clarity on identification of malnutrition among 0-6 months of children, aware of specific need of malnourished infants, their management and referral. The

guidelines supporting function of ASHA, AWW and ANM specify management of LBW infants through IYCF and IMNCI for preventing malnutrition.

The program (ICDS and NHM) guidelines do not specify on community based management of LBW infants who are malnourished. The guidelines do not define their role in screening, identification and management of malnutrition among infants (0-6 months) or their rehabilitation once these children are discharged from NRC or paediatric units after treatment. Identification of infants as SAM and their classification as complicated or uncomplicated SAM and providing appropriate care (treatment and rehabilitation) is a challenge (WHO, 2013; *C-MAMI Tool Version 2.0, 2018. Community Management of At risk Mothers and Infants under six months of age (C-MAMI)*, n.d.; Kerac, 2009 ; Lelijveld, Kerac, McGrath, Mwangome & Berkley, 2017).

The Nutrition Rehabilitation program guideline specifies criteria for admission of SAM infants in NRC i.e. (a) too weak or feeble infant facing difficulty to suckle (b) weight-for-length of $<-3SD$ in infants more than 45 cm (c) Signs of visible wasting among infants less than 45cm of length (d) oedema in both feet (Ministry of Health and Family Welfare, 2011). Amidst lack of central guideline in identification and treatment of malnutrition among infants of 0-6 month of age (Dalwai et al., 2013) and their long term rehabilitation their early identification, corrective action, timely referral, treatment and complete rehabilitation cannot be ensured. The component of HNBC is inadequately practiced at ground level, the AWC are under equipped to facilitate screening and growth monitoring of infants, the FHWs are not trained to manage infant malnutrition. The focus of Nutrition Rehabilitation Program is limited to facility based treatment of severely malnourished LBW infants (0-6 months).

The component of secondary prevention at the community level, outreach services and rehabilitation is weak under Nutrition Rehabilitation Program. This is further hindered by challenges of AWCs/VHND such as lack of dedicated space, infrastructure and equipments for weighing or measuring length (Sahoo et.al., 2016), lack of time at disposal for VHND, focus of services provided through FHWs is on ANC, immunization, distribution of take home ration and referral and clarity about treatment of malnutrition). Primary prevention measures face a

setback due to lack of clarity or rather a common understanding among FHS on; early initiation of breastfeeding, exclusive breastfeeding, complementary feeding, and age appropriate feeding and cause of malnutrition. This ambiguity translates into further knowledge gap among mothers/caregivers on appropriate child care and feeding, prevention of malnutrition and care of a malnourished child. Though this service gap exists for all children, however its implication shall be much higher for small/LBW babies.

More so at the community level care of LBW infants and malnourished LBW infants are managed through feeding programs (breastfeeding, complementary feeding) and IMNCI. Despite this, the risk factors associated with mother (breastfeeding issues or insufficient milk) does not gain enough attention at the village (by FHWs) or at the NRC. Moderate malnutrition among LBW infants has not caught enough attention under NHM and ICDS as much as malnutrition among children of 6-59 months. This places malnutrition among LBW infants as a neglected public health issue.

(b) Home as the key care point and stakeholders involved

Family or rather home is the main source of physical, nutritional and health care for children. 'Caregiver' at a family or household level is not necessarily one but can be many including mother, siblings, father, grandparents, neighbors, relatives or day care centers (AWC and/or Crèche). Involvement of caregivers in providing care, namely; nutrition care i.e. age appropriate feeding (timely initiation, frequency, adequacy, active or even responsive feeding), physical care (hygiene and sanitation) and home health practices (identification of illness, providing appropriate care) is crucial at each step of malnutrition management.

In the early days (0-6months) mother is the primary care provider (breastfeeding and cleaning), yet the family have significant role to play in bathing and caring while mothers undertake the household chores. In villages, mothers mostly resume livelihood and agricultural work once their children are 6-12 months old however some resume work even before their children are 4-5 months of age. Even if mothers resume work early and try to come back to breastfeed or feed their children, very few mothers are actually able to do it. Under such circumstances,

early initiation of complementary feeding, convenience food or milk substitutes are common. While mothers are away or engaged in work, these children are looked after by their elder siblings, grandparents or even neighbors, who help with feeding and care. Under such an arrangement feeding by different care providers is largely responsive and depends on hunger cues, such as crying, squirming, accepting feed or fidgeting.

As key care providers the stakeholders at each level of care need to be involved in the process of malnutrition management and equipped with necessary skill to recognize changing nutritional, physical care and health need of their children and be responsive towards such needs. Counseling caregivers on this front have so far been limited specifically to mothers with a normalized understanding that mothers are the primary and only care giver to a child. This is an oversimplified understanding, in reality care at home for (a) other children (b) children treated and discharged from a malnutrition intervention model; is a more complex process where each of the stakeholders (mother, siblings, father, grandparents, neighbors, relatives or day care centers) has their part to play especially as the age of child progress. Counseling these stakeholders to develop skill is crucial for providing appropriate need based care at home.

Both ICDS and NHM have laid out different platforms and personnel accountable for capacitating the key care providers through counseling and health and nutritional education. ICDS has place this responsibility on AWWs to counsel on improved health and nutrition practices based on the outcome of regular growth monitoring. On the other hand ASHAs are to provide care support to caregiver(s) on appropriate feeding, hygiene, prevention of illness and early care during sickness. Similarly the ANMs are to provide counseling for care and feeding based on experiences of illness or growth faltering among children. The program views mother as the sole ‘care provider’ and fail to recognize the role of other care providers. As a result notification regarding VHNDs, additional counseling session or home visits focus on capacitating mothers on child care and feeding whereas the other care providers, equally in need of health and nutrition counseling are omitted in the process. This negatively impacts appropriate child care and feeding at home (a) As the infant ages, the proportion of time/care provided by mother decreases

and time/care provided by other caregivers on care of children increases. However these ‘other caregivers’ are not equipped to provide; adequate, age appropriate and need based health and nutrition care to children. (b) Mothers have lower decision making power and autonomy in terms of health care and nutrition practices at home. Since the ICDS and NHM focus on imparting knowledge regarding health, nutrition and sanitation to mothers and caregivers, at the field level focus of FHWs is mostly on mothers. Even when mothers are prepared by FHWs for appropriate nutrition and health care to children, actual practices at home are governed by the shared decision of in-laws, husband and often relatives. Mothers in such scenario comply with the suggestions, decisions made by elders in the family. Thus impact of counseling provided at the community gets diluted.

(c) Understanding/perception of the care providers (community, FHWs, health care providers, NRC staff): on malnutrition and treatment of malnutrition.

Data from field show, that community had a significant role to play in influencing parent’s decision to seek care, choose a provider, utilize care services and adhere to treatment/care for their malnourished children. There has been little effort to mobilize community for case finding, reducing barriers in utilization of available services or improving treatment outcome.

Mothers as well as families lack understanding on various aspects of malnutrition. This includes knowledge on causes of malnutrition or care need of malnourished children. Hence, mothers do not understand that when a child becomes weak they can be treated at hospital (NRC). The community (mothers, family, and peers) draws its understanding on malnutrition, its cause and care need of malnourished children, largely from FHWs and/or mothers/caregivers of children who had previously accessed treatment from NRC. Mothers of children discharged from NRC perceive malnutrition as an outcome of poor feeding. They are unaware of any other factor that can cause malnutrition. They draw their understanding largely from counseling/ health education/nutrition education provided by NRC staff.

At both the care points (village or NRC) the care providers emphasize on ‘feeding’ children whereas other aspect of appropriate care such as hygiene and prompt management of sickness are not given prominence. This understanding of

malnutrition (as an outcome of poor feeding) and witnessing treatment at NRC which is largely dependent on therapeutic feeding, has led them to believe, that their children get cured of malnutrition at the NRCs. The community (mothers/caregivers having children treated at NRC or not treated at NRC) believe that once children are discharged they are cured of malnutrition and are in no need of further care. The program guideline places little emphasis on developing an understanding among community on malnutrition. The document acknowledges need for community sensitization but for self referral; community sensitization for community based management of malnutrition among children is least of its priority.

(d) Community involvement

Understanding of community and mothers/family on malnutrition and shared experiences has shaped their perception regarding malnutrition, its treatment and treatment outcome. Their understanding and knowledge have a significant bearing in management of malnourished children at facility and at home. On one hand, poor adherence of treatment at facility, default, poor turnout for follow up and relapse can be attributed to poor knowledge of caregivers; on the other hand it can be attributed to poor community involvement in the care process. At each stage, right from screening at community, to referral to a NRC, refusing admission at NRC, treatment planning for admitted cases at NRC, treatment and discharge, the community is kept at the receiving end.

Limited interaction of care providers (FHW and NRC staff) with community (even mothers/caregivers of admitted children); inadequate information sharing between care providers and community²⁰¹ and poor involvement of community in actual treatment of admitted children is contributing to their current understanding/perspective on malnutrition and its treatment outcome. One of the major gaps is that the operational guideline does not provide or emphasize on communication/information exchange or participation between caregivers and care providers at NRCs. on health need, health condition, care or plan for beneficiaries.

²⁰¹ On growth status, pre-referral counselling, counselling before denying admission at NRC, counselling on treatment procedure and possible treatment outcome at NRC, information sharing on daily health status of admitted children, capacity building of caregivers on home based management and care post discharge from NRC.

The program has not only overlooked the significance of community participation but has also made very little effort in ensuring their participation in malnutrition management.

(e) Community based monitoring of beneficiaries discharged from NRCs

An effective tracking system is a prerequisite to successful treatment of a SAM child under Nutrition Rehabilitation Program. So far the only point of contact between the SAM child and care support is during follow up visits at NRC in every 14 days. There is no system to inform FHWs about discharged cases for community based monitoring and follow up of these children, or to provide corrective services. Though the NRCs must have a provision of referring discharged beneficiaries to the community based care providers, the facilities hardly practice it.

The guidelines suggest that a SAM case discharged from the facility should be referred to a health facility such as PHC, Sub centre and anganwadi (Ministry of Health and Family Welfare, 2011) to provide necessary services meeting their care requirement through a facility closest to their place of residence. The very intent behind this arrangement is to ensure appropriate and timely care provisioning if and when needed till and beyond their stay in the Nutrition rehabilitation Program. None of the NRC visited during this study were linked to the health facilities (Sub centre, PHC/CHC) or AWC. None of the NRCs were referring children discharged from inpatient care to these facilities for community based monitoring. Thereby increasing barriers in smooth transition of discharged children across different care services, jumping or missing out of care provisions and delayed re-referrals (if needed).

Besides there is no mechanism in place to monitor home based care, improvement of discharged beneficiaries, provide support to the mother/caregiver or to ensure compliance for follow up visits. The FHWs are to follow discharged children through home visit, at AWC and on VHNDs. This service component is poorly practiced. Mothers/caregivers are not equipped to recognize; specific care need of discharged children, their response to home based care and health personnel to be contacted if children show no improvement/deterioration in health. Children either

remain devoid of appropriate health care or end up at the wrong service level. Hence, the chances of children slipping out of an appropriate care regimen, post discharge from NRC are quite high. Existing literature show poor recovery with; high relapses and default rate of beneficiaries treated under nutrition rehabilitation program (Saxena, Pathak, Mahor, Mahor & Agarwal, 2018; Taneja et al., 2002; Sekhar et al., 2018). In the absence of an appropriate mechanism to track children post discharge (from NRC/MTC), it is difficult to mitigate: the loss of children from the program, default cases and deaths.

(f) Case management of SAM children

Availability of a community based health care provider, their training, support and supervision of these workers are absolutely necessary for any community based program (Mason et al., 2006). To a large extent, the Nutrition rehabilitation program is dependent on the FHWs. These FHWs are vested with responsibility of providing preventive and promotive services at the village level along with management of SAM children discharged from NRC. This arrangement works mostly through VHND and house visits. The nutrition rehabilitation program has depended on the FHWs for screening, referral and management at community level, whereas awareness generation and skill building of FHWs to support this program have been nominal (Mason, Sanders, Musgrove, Soekiman & Galloway, 2006) and infrequent. These FHWs are burdened with excessive workload; inadequately trained (Guha et al., 2018; Goswami et al., 2016; Sahoo et al., 2016) for screening/identification/or distinguish between forms of malnutrition (Sachdeva & Dasgupta, 2001) under skilled for counseling mothers and caregivers; management of malnourished children; and have inadequate orientation on the nutrition rehabilitation program²⁰².

²⁰² The FHWs are already engaged in specific health and child development services. They lack clarity on their role in providing nutrition related services. They perceive VHNDs as 'Tikakaran Diwas' (Immunization Day) and are aware that on a schedule day of each month immunization is to be conducted along with THR. The FHWs have low awareness on malnutrition screening and lack skill on screening (technique), identification and referral (of sick children and malnourished children). They are not clear about their role in prevention and management of uncomplicated SAM (those refused admission at NRC and those discharged from NRC). Most of the FHWs interviewed had not received any training or refresher course on malnutrition management or skill building training on counseling the mothers/caregivers. Their awareness regarding nutrition rehabilitation program was found to be poor and this reflected through community awareness on this program. The understanding of care providers (FHWs and nurses at NRC) regarding malnutrition and its

In absence of a community based management model, the role of a community based health care provider becomes even more important in early identification, secondary prevention, appropriate referral. Though the FHWs are entrusted with such activities, their workload and competency act as a barrier in effective delivery of these services. On the other hand the malnourished children that can be managed at the community level (at risk, children denied admission, discharged from the NRC and discharged from nutrition rehabilitation program) need to be linked to an appropriate service provider (AWW, ASHA, ANM, paediatrician) for their changing health needs. This shall require constant monitoring, follow up, support and coordination of appropriate services for at risk and malnourished children (acknowledging the care need of malnourished children shall vary between different age groups i.e. 0-6 months, 6-36 months and 36-59 months). This shall place an additional work load on the already burdened FHWs. The program has completely overlooked the need for case management of children who are refused admission at NRC and children who are discharged from NRC to prevent poor treatment outcome.

(g) Linking facility based care with community based programs: Community based management

The NRCs/MTC cannot act in silos to bring effective results through Nutrition Rehabilitation Program. But it requires to work along other nutrition program interventions. As stated before, the pre and post NRC/MTC phase require support from the health and nutrition care interventions at the community. Two primary players in this regard are the ICDS and Health Sub Centre (Ministry of Health & Family Welfare, 2012). In the pre NRC phase these two care units play a major role in prevention, early identification and referral. In post NRC phase these two units play a major role in preventing relapse and reoccurrence.

treatment are no different than the community. These care providers perceive malnutrition as an outcome of poor feeding. This understanding is also reflected in their counseling/ nutrition education sessions. More emphasis is made on appropriate and frequent feeding than on hygiene, early management of sickness etc. Most of the mothers/caregivers were not adequately informed by FHWs about the program, treatment at NRC and treatment outcome. This also impacted families' willingness to admit their children at NRC even if they adhere to referrals made by FHWs, their stay at NRC for stipulated time period and turnover for follow up.

The Nutrition Rehabilitation program provides care for around 74 ± 7 days; 14-21 days of inpatient care, 60 days of outpatient care with follow up in every 15 days. Children discharged from inpatient care are not completely cured but often fall in the category SAM/MAM i.e. a weight-for-height between -3 and -2SD/z score without oedema and without medical complication. Considering that beneficiaries spend major portion of their stay within Nutrition rehabilitation program at their community; capacity building of caregivers for home based care, linkages with community health care providers and strengthening primary health care structure (trained human resource, infrastructure, equipment, funding) is required to ensure appropriate care till beneficiaries discharge from the program.

Throughout the care pathway from home to facility and back malnourished children move through different care providers (AWW, ASHA, ANM, pediatrician/ general physician, NRC staff). Each of these provider address specific health needs of these children before referring them to another service provider as the need arise. In the first half care pathway i.e. home to NRC, the FHWs play a more prominent role however after discharge the mothers/caregivers are entrusted with the role of ensuring appropriate care, feeding and follow up. Though it is mandated to the AWW, ASHA and ANM to deliver certain care services to malnourished children (Ministry of Health and Family Welfare, 2013c) they lack clarity on their respective role and responsibilities. Besides, there is no system to facilitating these community care providers on appropriate management of refused and discharged cases (inpatient care or nutrition rehabilitation program). The NRC does provide a discharge card to the parents; it contains instructions on care and feeding for care at home. The program document mentions that the FHWs are to be informed on all discharged cases but only to ensure the scheduled follow up visits. The program does not have a mechanism of informing community care providers on case history or specific care need of these discharged children which will facilitate in formulation of a care plan appropriate for community based care. A mechanism that could have strengthened monitoring, supervising care at home, counseling and prompt referral till the child exits from nutrition rehabilitation program is absent.

(h) Strengthening of Referral services

Referral services are jointly provided by the ICDS in convergence with Department of Health and Family Welfare on VHND. This is when mostly SAM children are identified and referred by FHWs for treatment to the NRCs. In practice, referrals were to be made through referral slips providing a document for the reference of AWW, family of beneficiary and the care provider at NRC. At the ground level use of 'referral slip' were not in practice, restraining;

- Beneficiaries to adhere to the referrals made by AWW
- Care providers at NRC to understand the reason of referral for a particular case and take prompt action

Model 2: Community based Management of Acute Malnutrition (CMAM)

India does not have national program for community based therapeutic care for malnutrition. The nutrition rehabilitation program provides inpatient care for complicated SAM. It does not cover health needs of uncomplicated SAM, MAM or at risk children. These care needs are supposedly to be managed by the FHWs and health facilities (Ministry of Health and Family Welfare, 2012). The WHO and UNICEF Joint statement on community based management of SAM (2007) intend to bring SAM treatment closer to the community where timely detection and treatment could be provided at the community level, preferably 'at home' (*COMMUNITY-BASED MANAGEMENT OF SEVERE ACUTE MALNUTRITION, n.d.*). This laid an important marker in community based management of acute malnutrition (CMAM), proposing a strategic combination of community and facility based care for complicated SAM.

There are certain CMAM projects (UNICEF, 2017; Mathur et al., 2018) that plug in the gap of community based management program. These CMAM models provided preventive, promotive and curative services at varying degrees. However these projects are still at a very nascent stage and focus primarily on timely detection, referral to a community based management intervention, treatment and follow up of SAM at community level. This resonates to the approach of WHO/UNICEF viewing CMAM intervention as outreach of clinical care along with Ready to eat Therapeutic Food (RUTF).

The MSF CMAM model operational in Chakradharpur, Jharkhand is based on this very approach of community based management of SAM through outreach services. This intervention first started in 2009 in Biraoul of Darbhanga district in Bihar to bridge the gap of community based SAM management which was then limited to inpatient facility based management through NRCs. The CMAM model functioned through Ambulatory Therapeutic Feeding Centers (ATFC) operational at the community level for outpatient management of uncomplicated SAM children through therapeutic feeding. Children with complicated SAM or children not responding to treatment at ATFCs were referred to inpatient care facility located at PHC. After initial stabilization children were referred back to their respective ATFC. This model relied on FHWs for screening and referral of children as much as it catered the cases of self referral. Mothers/caregivers were counseled on nutrition and education during their weekly visits to ATFC. Weekly monitoring of all beneficiaries was conducted through anthropometric measurements (Burza et al., 2015). This intervention focused on management of SAM only (Burtscher & Burza, 2015). In 2015 MSF handed over this model to Darbhanga Medical College and Hospital and State Health Society (Doctors Without Borders. Médecins Sans Frontières, 2016).

The CMAM model started in Chakradharpur, Jharkhand in 2017. This model is similar to Darbhanga model with few additions. This model has fit in the gaps of nutrition rehabilitation program model. The Chakradharpur model is based on community engagement for treatment of uncomplicated SAM. This intervention works through clusters of villages catered by ATFC. These ATFCs conduct identification of SAM, regular anthropometric measurements of all beneficiaries, nutrition and health counseling and treatment through RUTF. SAM children with medical complication are referred for inpatient care at the MTC in First Referral Unit (FRU), Chakradharpur. After initial stabilization, children are referred back to their respective ATFC. More complicated cases are referred to the NRC/MTC at district hospital Chaibasa.

This model has an added component of community engagement through counseling and health education at community level. Community sensitization is an integral part of this intervention. The CMAM include FHWs and Nutrition Link Workers (NLWs) for screening (active and passive) and referring SAM children to the ATFC for diagnosis and treatment. The NLWs are also responsible for home based follow up of beneficiaries and monitor feeding of RUTF and their care on a daily basis. Children with problem in feeding

or illness are referred to an appropriate care provider. Mothers/caregivers are counseled during these visits for problems in feeding and child care. Nutrition and health counseling is provided at out-reach centers by Nutrition Health educators and medical advice by GNM/ANM of MSF CMAM. This model has shared the work of FHWs for early identification, referral, community based monitoring and follow up of SAM children. SAM beneficiaries are discharged from CMAM care once they attain the discharge criteria and the condition sustains for two consecutive follow up visit.

What The model overlooks:

The model has does not establish linkages with the existing health structure. Its role in SAM management is vital for community mobilization, screening, referral, care support during CMAM and post discharge and even secondary prevention. In present CMAM model, FHWs (ASHA and ANMs) are involved merely as referral links and their role is limited to screening and referral of SAM children. Community sensitization is conducted by the NLWs whereas the FHWs are not included in the process (considering FHWs live at closer to the community and are easily accessible than NLWs or CMAM providers). CMAM can play an important role in linking community to the health providers, thereby empowering community to approach appropriate health providers for health care. However the model do not have a system to link beneficiaries to the health providers nor it coordinates with the health facilities (PHC, CHC, FRU etc) to refer uncomplicated SAM for community based management.

ATFC provides medicine for common ailments (diarrhea, fever, de-worming, cough, cold, infections) along with therapeutic feeding. MAM children (with some illness) are not treated under CMAM but they are not linked to FHWs or a health facility either for community based care. CMAM can play an important role in capacitating community to navigate through health care providers for different care services both for children treated under CMAM and those refused treatment. Thereby, also preventing sickness induced malnutrition among healthy children and relapse among children being treated through CMAM.

AWW responsible for nutrition services, growth monitoring and counseling mothers/caregivers have minimum involvement in the CMAM intervention. The AWWs or AWC have a crucial role to play in providing health and nutrition services, however this

service platform was not included in CMAM. The AWCs could provide daycare and feeding service to CMAM beneficiaries (crucial to the community living in chronic poverty and food insecure areas) and ensure that beneficiaries are linked to care and nutrition services post discharge. This CMAM model caters to the need of 6-59 months of children. The model does not address SAM among children between 0-6 months of age.

The CMAM model overlooks need for case management of beneficiaries. This model provides treatment through therapeutic feeding and health and nutrition education to improve home based care and feeding. Beneficiaries meet the CMAM providers weekly whereas NLWs are to follow beneficiaries on a daily basis at their respective home. Similar to the NRC model, care for uncomplicated SAM is provided mostly at home by caregivers (mothers/ family/ relatives/ neighbors/community). The model does not provide much scope for interface between the health system and CMAM providers for effective case management of beneficiaries. Coordination between FHWs and CMAM providers for management of common childhood illness, appropriate IYCF and navigating beneficiaries to appropriate health providers are certain aspects that still need strengthening within the CMAM approach.

Information exchange between CMAM providers and FHWs on case history of beneficiary, their care need (non-clinical) and specific care need of discharged beneficiary was not in practice. Also there is no mechanism to link CMAM beneficiaries post discharge to AWC (0-6 years) for additional supplementary ration or to the FHWs (ASHA/ANM) for consistent monitoring and counseling the mothers/caregivers.

CMAM model links continuum of care from CMAM to inpatient care facility at FRU and linking stabilized cases back to the CMAM. Similar system is not there to link district hospitals to CMAM. The model does not ensure continuum of care to cases referred from FRUs to the district hospitals. Children discharged from these hospitals are not linked to their respective ATFCs for CMAM. There is no linkage between district hospital and CMAM providers for information sharing on discharged cases so that they are linked to community based care.

This program ignores the role played by community or peers in influencing the family to adhere to the treatment regimen. In absence of child care support (for 0-2 years of age), over burdened mother depends on other care givers (family, relatives, neighbors etc) for

care and feeding²⁰³ of their SAM children. Besides, poor decision making power and low autonomy of mothers place the family/elders/relatives at a very significant position in influencing actual practice of care, feeding and health seeking for children (Burtscher & Burza, 2015). The model strategize community sensitization as a tool for improving referrals, however community sensitization on malnutrition, its causes, prevention and care of SAM children do not form an integral part of the approach.

Model 3: The Community Based Therapeutic Care Model (CMAM plugged into routine health and nutrition care)

The National Nutrition strategy acknowledges continuum of care as a core strategy to address nutrition challenge in India. The strategy document clearly mentions of preventive, promotive and curative care linking all care providers across levels (family, community, AWC and health facilities). The Nutrition Rehabilitation Program and MSF CMAM model provide therapeutic care largely for ‘treatment’ of SAM children. To be specific, it addresses management of children between 6 months to 59 months of age. This leaves children with chronic malnutrition, MAM or those at risk of becoming malnourished out of the purview of nutrition management. The existing models have not placed emphasis on prevention as much as on curative aspect i.e. both primary and secondary prevention to evade possibility of at risk children falling into MAM, SAM or SCM eventually. Whereas promotive and rehabilitation (cure and beyond) components to prevent relapse once discharged from the program have been lightly touched by these interventions.

These interventions are based on the African experience of malnutrition and its management. India on the other hand, has a higher prevalence of malnutrition than Africa. Also the problem of malnutrition in both the countries differ, in the sense malnutrition in India shows a peculiar characteristic of high stunting and high wasting (Bergeron & Castlemen, 2012) with certain overlaps i.e. acute-on-chronic (Dasgupta et al., 2014) compared to Sub-Saharan Africa where SAM is prevalent. Program managing acute malnutrition among children focuses on averting mortality through treating the condition. On the other hand, program for chronic malnutrition focus on improvement in dietary

²⁰³ The RUTF is to be fed to beneficiaries along with regular age appropriate diet which is a time taking activity. In chronically poor and food insecure areas mothers are burdened with work and income generation which provide very little time for child care or age appropriate feeding.

intake, feeding practice and management of illness. Besides, children having acute-on-chronic malnutrition require a longer treatment period. This calls for an intervention that includes; appropriate feeding, support for feeding and child care, longer duration of treatment, prompt treatment of illness along with prevention of malnutrition. Chronic malnutrition is irreversible therefore the key intervention is prevention (intergenerational malnutrition, setting of malnutrition, secondary prevention).

Lately there have been certain CMAM models as well as government initiatives to address malnutrition through a more comprehensive approach, inclusive of seamless care along prevention and treatment. These approach focus on treatment besides nutrition, care, health, improved access to services and capacity building of community.

The Action Against Malnutrition (AAM) project is operational in 7 blocks of Jharkhand, Chhattisgarh, Odisha and Bihar focusing on CMAM through family, community and CMAM providers. Their emphasis is on prevention and treatment of acute malnutrition through peculiar services such as; (a) Providing nutrition and care to children below 3 years of age through crèche. This provides care support to mothers for child care and feeding, (b) Capacity building of community on malnutrition, improved child care, appropriate and adequate feeding, (c) Regular growth monitoring and corrective action on growth faltering, (d) Relational continuity through constant interaction and information sharing between mothers and crèche workers regarding health of their children and (e) Linking the community to appropriate care provider for treatment of illness and SAM through referrals. This approach works toward prevention of under nutrition and wasting among children 0-3 years of age (Prasad, 2017) through complementary feeding and day care while the mothers are at work, community mobilization, home visits, system strengthening and convergence between different services (Murugan, Gope & Dhingra, 2015). This model take up children discharged from NRCs for additional care and then transit them into regular care as their condition improves (Public Health Resource Society, 2014).

Lately, (2016) the services of AAM project in Ratu Block, Ranchi District of Jharkhand, were integrated with the ICDS to provide services under a common roof. This is serving as a platform for convergence of care for children of 0-6 years, through prevention, health promotion and corrective action and referral services along with support for child care and community capacity building for home based care.

Fulwari Scheme, Chhattisgarh is another government intervention that caters; nutrition, health and care need of children between 6-36 months of age and pregnant women through Day Care Centers. This Chhattisgarh government scheme is based on crèche model of Jan Swasthya Sahyog (Jan Swasthya Sahyog, n.d.a; Jan Swasthya Sahyog, n.d. b; Chattisgarh Governmnet, 2013). The intervention targets to reduce birth of babies with low birth weight and under nutrition among children below 3 years of age. This is a joint intervention of State government, UNICEF and JSS operates through day care centers dedicated for preventing and treating under nutrition 'at' and 'by' the community with support of the Mitnin (ASHA) (Chattisgarh Governmnet., 2013).

The most significant addition in this regard was restructuring of the ICDS. The restructuring and strengthening of ICDS was rolled out in a phased manner, starting with the high burden districts. This approach focused on strengthening the package of services with special emphasis on care of children of 0-3 years of age, counseling of their mothers and management of severe, moderate and underweight children. Improving supplementary nutrition, early identification and management of severe and moderate under nutrition was crucial point in the reform. The State and union territories were guided on providing supplementary nutrition to for 300 days to five explicit categories of beneficiaries (Ministry of Women and Child Development, 2014b), namely; (a) snack and hot cooked meal for children of 3-6 years of age, (b) take home ration for children of 6- 36 months (c) take home ration for pregnant, lactating women and (d) additional food supplement to all underweight children 6-36 months and (e) additional food supplement to all underweight children 3-6 years of age (Ministry of Women and Child Development, 2017b).

The Other Promising Interventions

Sneha Shivir was an important component of restructuring and strengthening of ICDS. This intervention intend to deliver community based prevention and management of growth faltering, moderate and sever undernourished children. This is an intervention that targets 200 high burden districts, with appointment of an Additional anganwadi worker/ Nutrition counselor. This approach intends to bring continuum of care by linking care providers at home, community, primary health care facility (Sub Centre) and NRC:

- Children with complicated SAM are to be referred to the NRC for treatment. As they progress from complicated SAM to SAM and MAM/sever underweight their

changing need is to be addressed through Sub centers, home based care and Sneha Shivir.

- Children with uncomplicated SAM are to be managed through Sub Centers and community based follow up (home /AWC).
- Sever underweight children and children with growth faltering are to be managed through Sneha Shivir and follow up at home.
- Other moderate underweight children are to be managed through home based care and counseling at AWC.

Sneha Shivir is a 12 days session for rehabilitation of all moderate and sever undernourished children through counseling, appropriate feeding and capacity building of mothers/caregivers for rehabilitation of children. These 12 days sessions are to be organized in a cluster (3-4 AWC) to capacitate mothers/caregivers on improved behavior (encompassing suggested health behavior and community best practices) based on local knowledge and resources (Ministry of Women and Child development, 2013b). Case management is an important component of this approach. All children enrolled under this program are followed for 18 days post this session and home based care/feeding practices is monitoring. Weight is measured and recorded at the beginning of this session and end of 18 day follow up. Progress made by children are monitored and recorded. Children in need of further care are provided with repeated sessions till they attain normal weight. Children showing no improvement are to be referred by ANM/doctor to an appropriate health facility (Ministry of Women and Child Development, 2014a).

The National Nutrition Mission approved in 2017 shall cover states/UT in a three phases. The approach propose to (a) reduce anemia among women and adolescent girls (b) reduce anemia among children of 6-59 months of age (c) reduce low birth weight babies (d) prevention and reduction of under nutrition among 0-6 years of children (e) prevention and reduction of stunting among 0-6 years of children through intensive monitoring and convergence (Ministry of Women and Child Development, 2017a). Following this POSHAN Abhiyan was launched in 2018 in Rajasthan. This approach proposes convergence of nutrition components of different schemes (under different ministries) and monitor and review its implementation (*Ministry of Women & Child Development, 2018; Ministry of Women and Child Development, n.d.*) This shall encompass a range of services including, adolescent and maternal nutrition, supplementary nutrition, IYCF,

immunization and behavior change (Executive Committee under POSHAN, 2018). In this flagship program, Home based Care for Young Child (HBYC) has been adopted as the crucial component of POSHAN Abhiyan (First meeting of National Council on India's Nutrition Challenges under POSHAN Abhiyaan, 2018).

7.4 IMPLICATION OF THIS STUDY AND FUTURE RESEARCH

This study explores (a) CoC within existing intervention for nutrition care and rehabilitation of children between 0-6 years of age in India (b) challenges/gaps of CoC within these interventions. Findings from this study shall be helpful in guiding the approach of existing interventions with a larger understanding of CoC specifically relating to nutrition care and malnutrition management. The study findings could aid to strengthen the nutrition specific and nutrition sensitive programs for collaboration and convergence to improve delivery of services at the ground level. Specially strengthening services at all the three levels of care (family, community and facility) and establishing linkages across these levels. It could guide the existing programs to strengthen their component of community capacity building, mobilization, sensitization and improved participation. Above all, the study findings could contribute to addressing the gaps or weak links in different models presented and resolving the challenges for better service delivery, utilization and output.

This study leaves much scope for further enquiry such as;

(a) In-depth study of CoC along different nutrition care and rehabilitation models in India that this study has omitted, to provide details on their strengths and weakness. This shall facilitate in deriving a central model for nutrition care and rehabilitation for children in India.

(b) Detailed study of continuum of care within services provided at each level of care to give a more nuanced understanding of interplay of factors in each of these levels. It can bring out detailed analysis of the services that need strengthening.

(c) In depth study of domains of CoC in relation to different nutrition interventions. This shall guide us to understand sensitivity of these interventions towards nutritional health need of an individual and the community as a whole.

(d) Detailed study on the contribution of new interventions/programs to the continuum of nutrition care and rehabilitation.

7.5 CONCLUSION

Nutrition intervention in India shows a skewed approach towards treatment of SAM as compared to addressing acute-on-chronic nature of malnutrition. The nutrition management interventions focus on reducing malnutrition induced mortality however intervention for nutritional health or nutritional well being of children have not received similar attention. Approach for child health programs and policy inclination so far have been towards reducing under five mortality through promoting institutional birth, exclusive breastfeeding and immunization whereas the other drivers of health among children such as; maternal nutrition, appropriate complementary feeding, optimum child feeding, child care, early treatment for childhood illness and care support are yet to receive their due attention.

Malnutrition is still treated as a medical emergency while the other program components such as prevention, health promotion and community based care of malnourished children also need strengthening. The Nutrition rehabilitation program, CMAM or even preventive interventions have placed low emphasis on capacity building of community to sustain care post discharge. While 0-6 month of children are most vulnerable to acute malnutrition, their appropriate treatment at community and/or facility level is not precisely guided.

Preventive and curative interventions, through NRC and CMAM have one common component i.e. community based platforms. These platforms, namely home, ICDS and FHWs have a critical role to play. This also provides an opportunity for convergence of facility and community based management along with the services provided through FHWs to address gaps pertaining continuum of care. Coordination and communication across care providers of preventive and curative care is essential with active involvement of community. At the same time strengthening capacity of the health care system, providers (facility, community, and home), mechanisms of service delivery and care environment is important.

The burden of SAM and SCM or acute-on-chronic malnutrition may vary geographically. Therefore as much as central guideline, protocols and work responsibilities outlined for

management of SAM and acute-on-chronic malnutrition is required, incorporation of principals of CoC into the design and implementation is also significant. State has equally important role to play in extending support for implementation of these program guidelines according to their burden of malnutrition and geographical/social/economic context of the community (Kanjilal et al., 2010).

The States can contribute to development of IEC material for counseling, education and advising community befitting to their geographical, social, economic and cultural context. This might facilitate towards: (a) comprehensive services including prevention, promotion, treatment and rehabilitation, (b) smooth transition between services with (c) improved communication between service providers across programs and (d) capacity building of community for active engagement.

Seasonality and under nutrition are inextricably linked which bear considerable effect on nutrition and India is not exclusive to this phenomena (IFPRI, 2015). This aspect need to be put into perspective of nutrition sensitive (social protection programs) and nutrition specific programs to mitigate tradeoff between mothers time, mothers work and child care/feeding especially during agriculture season and more so during lean season. Nevertheless, integration between different departments to improve: food security, access to health, safe drinking water, sanitation and hygiene need to be acknowledged as prerequisite to all malnutrition management models.

To conclude, there is a need for comprehensive approach to manage treatment for acute malnutrition, prevent children with moderate acute malnutrition/ at risk from further deterioration and prevent children from becoming undernourished. Equal emphasis need to be placed in managing clinical as well as non-clinical determinants of malnutrition among children. The nutrition and health programs need to (a) recognize significance of continuum of care within these respective programs and (b) acknowledge the continuity that each of these programs provide in the larger continuum i.e. prevention, promotion, treatment and rehabilitation. The program guidelines need to move beyond token recognition of the term continuum.

At the same time the programmers, implementers and service providers need to widen their understanding, that (a) continuum of care is not merely consistent care but has a much larger connotation, (b) malnutrition in India is as much a medical problem as social

and (c) a Public Health approach is required for a comprehensive nutrition program that address medical and social determinants of malnutrition to the extent possible.

As India is moving towards up-scaling of nutrition specific intervention through integration of services, it also need to address challenges in implementation of services such as; outreach to remote/difficult to reach areas, socio-demographic characteristics of population, effective management of services, monitoring outcome, community mobilization and inclusive approach towards malnutrition to name a few. Strengthening of effective service delivery and improving coverage shall be crucial along with improving its uptake by the community.

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ANNEXTURE 1

TOOLS FOR CASE 1

1. In-depth interview of mothers/caregivers accompanying children to NRC/MTC

Name:

Age:

Relationship with the child:

Education:

Do you Work outside home:

- How often do you get paid? (Daily/weekly/ monthly?).
- How many days per month do you get work?

Family members	Age	Sex	Education	Occupation

Information about the child:

Name:

Age:

Sex:

Stay at NRC:

(1-less than a week, 2- less than two week, 3- more than 14 days)

Case History:

1. Where was the child born?
2. When did you start breastfeeding your child?
3. At what age did you start giving weaning/complementary food?
4. How long the child was breastfed along with complementary feeding?
5. How was the health of your child? Was the child suffering from any illness?
6. What treatment was provided to the child for the illness? Describe the events.
7. How do you choose to go to this provider or the providers for treatment?
8. Describe the treatment received from these provider(s). How did the child respond to these treatments?
9. Did you face any challenges in providing care to your sick child?
10. Did any health care worker visit your sick child? If yes, please describe the event.

Care experiences at NRC

1. Why did you come to MTC/NRC? Describe the process.
2. What arrangements/preparations did you make to bring your child to NRC? Describe the process.
3. Describe the process of admission at NRC.
4. What treatment is being given to your child here at MTC? Please describe.
5. Describe your role in the treatment of your child provided at MTC/NRC?
6. Describe the support services provided to you at MTC/NRC.
7. Do you see any change in the health of your child since coming to MTC/NRC?
8. Have your child experienced any illness after coming to NRC? Describe the illness and treatment provided.
9. Describe any challenge of difficulty faced by you in seeking treatment for your child at NRC?
10. Do you feel your child his recovering? Describe the signs by which you identify that your child is recovering.

2. Interview guide for mothers accompanying their children for follow up visit to the MTC/NRC

Name:

Age:

Relationship with the child:

Education:

Do you Work outside home:

- How often do you get paid? (Daily/weekly/ monthly?).
- How many days per month do you get work?

Family members	Age	Sex	Education	Occupation

Information about the child:

Name:

Age:

Sex:

Duration of Stay at NRC:

At follow up visit

- i. Why was your child admitted to this MTC?
- ii. Describe the process of admission.
- iii. Describe the treatment provided to your child at MTC/NRC.
- iv. Describe the services provided to you at MTC.
- v. Describe your role in treatment of your child.
- vi. Describe the process of discharge of your child from MTC/NRC.
- vii. Describe the arrangements made for going back home.
- viii. Did you face any challenge in taking care of your child after discharge from MTC? Please describe.
- ix. When was your first meet with the FHWs your child was discharged from MTC?
- x. Did any health care worker visit your child after discharge? If yes, please describe the event.
- xi. Describe the services delivered during follow up visit at MTC.

3. Interview schedule for the Doctors at MTC/NRC

- 1) What do you understand by under nutrition?
- 2) Why does a child become malnourished?
- 3) Who is eligible for treatment at MTC/NRC?
- 4) What are the problems faced in counseling and supporting mothers for child nutrition at the MTC/NRC?
- 5) Do you think, children are benefitting from treatment at MTC/NRC? How?
- 6) How would you define a successfully treated case and a non-successfully treated case?
- 7) What is the procedure of discharge? Who discharge children?
- 8) When a child is discharged does it mean he/she has become healthy and free of malnutrition?
- 9) What are the reasons for which a child is referred to another facility? Describe the process of referral of a case to a higher facility.
- 10) Who conducts follow-up after discharge from MTC/NRC? What are the procedures?
- 11) How is it ensured that the care is continued even once the child has reached back to the community?

4. Interview guide for nurses at the MTC:

- 1) What do you understand by under nutrition?
- 2) Why a child does become under nourished?
- 3) How do children come to MTC for treatment? Who refers them?
- 4) Describe the process of admission.
- 5) What happens to those malnourished children who do not qualify for an admission?
- 6) What care services are provided to children admitted at MTC?
- 7) What services are provided to mothers accompanying children during their treatment at MTC?
- 8) What care/support is provided to the case of non-responders and secondary failures?
- 9) How do you know if a child has been cured of SAM? What is a successfully treated case?
- 10) When is a child discharged from MTC? Describe the process of discharge.
- 11) Is there any specific advice that the mothers are provided before children are discharged from the MTC?
- 12) Who is responsible for ensuring follow-up of discharged cases?
- 13) In your opinion what care do you think a child needs post discharge from MTC?
- 14) What is the role of mother/care giver in treatment of children at MTC?
- 15) What are the problems faced in delivering services at the MTC?
- 16) What are the problems you face in providing counseling to mothers?

Table no. 1. Observation guide for Nutrition Rehabilitation Centres

NRC	Observation points
Institutional arrangements	Number of beds.
	Bed occupancy.
	Location of Patient area, play/counselling area, nursing station, cooking area, bathroom and toilets.
	Sanitation and cleanliness
	Stay area for care givers
Monitoring and supervision	Records and registers
	Monitoring and Supervision processes
Screening and identification	Screening of all children coming to paediatric ward (inpatient/out-patient)
Management of under nutrition among children of 0-six months and six months to 5 years	Admission criteria and Admission procedure
	Assessment at admission
Care procedures at ward	Care process of medical complications in SAM children
	Care process of non complicated SAM Children
	Counselling and capacity building of mothers
	Process of providing sensory stimulation and emotional care
	Demonstration and practice of preparation of energy dense food by mothers
	Process of therapeutic feeding of children with SAM: <ul style="list-style-type: none"> • Starter Diet • Catch up diet
	Who feeds? When? How much? What is the response of child? What is fed? Is the food acceptable? How is the feed measured? Is each food intake recorded? Is the diet modified with change in weight (loss or gaining of weight)?

	Maintaining temperatures of admitted children: Are the children kept warm?
	Process of weighing monitoring of admitted children
	Process of delivering medication to children
	Process of discharge from the NRC: Assessment, decision-making for discharge, pre-discharge counselling.
	Interaction of Care providers (Doctors, paediatrician, nurse, counsellor) to the mothers/care givers
Interpersonal relation between providers and mothers/caregivers	How is the interaction between the family and staff?
	How are the mother counselled?
	Are the mothers encouraged to get involved in caring for the child?
	Do the health providers at NRC responsive to the needs of mothers and beneficiaries?
	Are the children encouraged to eat well? Are they encouraged to play and participate in stimulating activities?
Discharge	Process of discharging an admitted beneficiary from the NRC.
	Process of discharge of a beneficiary from the nutrition rehabilitation program
	Capacity building of care givers
	What is the discharge criteria followed by health personnel at NRC?
Follow up post discharge from NRC	Procedure of follow up visit
	What happen in the follow up visit? Who accompanies the child?
Counselling	Counselling process
	What are the issues covered for counselling?
	Who conducts these sessions? When are these sessions conducted? How are these sessions conducted? What is shared in the counselling sessions? How is the interaction between mothers and health care providers at NRC in a group counselling or during individual counselling?
Referrals	Procedure of referral to the NRC: Who accompanies the referred child to NRC? How is the child brought to the NRC?

	Procedure of referral to the higher facility: Who decides for a referral case? Who accompanies the referred case? Information provided to the mother/caregivers on status of children and need of referral? Is transport facility provided for referral cases?
Preparation of therapeutic food	Process of preparing therapeutic food: Who prepares the therapeutic feeding? How? How is it measured? What is the process of distribution of therapeutic food to the admitted children?
Cleanliness and Hygiene	Hand washing facilities, bathroom and toilet facilities; and Cleanliness maintained at the NRC.
	Cleanliness and hygiene practices of the staff
	Cleanliness and hygiene practices of the mothers and caregivers. Hand washing by mothers before feeding their children at NRC
	Storage of food
	Cleaning of toys
Health personnel at NRC: Medical officer, Nurse, Medical Social worker, Nutrition counsellor, cook and cleaner.	The routine care provided by health personnel at NRC.

5. एनआरसी / एमटीसी में बच्चों के इलाज के लिए साथ में आए माताओं / देखभाल करने वालों का साक्षात्कार

नाम:

आयु:

बच्चे के साथ संबंध:

शिक्षा:

(1- अनपढ़, 2- शिक्षा 5 तक, 3- शिक्षा तक 10, 4-शिक्षा वर्ग अधिक से अधिक 10, 5- अन्य)

आप घर के बाहर काम करते हैं: (1-हाँ, 2-नहीं)

आप को भुगतान कैसे मिलता है? (दैनिक-1/साप्ताहिक-2/मासिक-3)

परिवार के सदस्य	उम्र	लिंग	शिक्षा	रोजगार

बच्चे के बारे में जानकारी:

नाम:

उम्र:

लिंग:

एनआरसी में रहने की अवधि: (1- एक सप्ताह से कम, 2- दो सप्ताह से कम, 3- 14 दिन से अधिक):

व्यक्ति वृत्त

1. आपके बच्चे का जन्म कब हुआ?
2. आपने बच्चे को स्तनपान कराना कब शुरू किया?
3. किस उम्र में आपने बच्चे को भोजन देना शुरू कर दिया?
4. कितने उम्र तक बच्चे को भोजन देने के साथ स्तनपान कराया था?
5. आपके बच्चे का स्वास्थ्य कैसा रहता था? बच्चा क्या हमेशा बिमार पड़ता है?
6. बीमारी के समय बच्चे का क्या उपचार किया गया? विस्तार से बताएं।
7. इस स्वास्थ्य सेवा प्रदान करनेवाले को क्यों चुना गया?
8. बच्चे इलाज किस प्रकार किया गया था? बच्चे में इलाज का क्या असर हुआ?
9. घर पर अपने बीमार बच्चे की देखभाल करने में क्या आपको कोई कठिनाई हुई?

10. बच्चे की बिमारी के दौरान क्या स्वास्थ्य कार्यकर्ता के द्वारा घर का दौरा किया गया? यदि हाँ तो इस घटना को विस्तार से बताये I

एनआरसी में इलाज का अनुभव

- i. आप एनआरसी में इलाज के लिए क्यों आये? इस घटना को विस्तार से बताएं I
- ii. आपको अपने बच्चे को एमटीसी / एनआरसी लाने के लिए क्या व्यवस्था करनी पड़ी? विस्तार से बताएं I
- iii. एमटीसी / एनआरसी में भर्ती की प्रक्रिया क्या थी? विस्तार से बताएं I
- iv. विस्तार से बताएं की एमटीसी / एनआरसी में बच्चे का क्या इलाज किया गया?
- v. एमटीसी / एनआरसी में अपने बच्चे के इलाज में आपकी क्या भूमिका थी?
- vi. आपको यहाँ बच्चे के देखभाल करने के लिए क्या सुविधा मिली?
- vii. एमटीसी / एनआरसी में इलाज के बाद बच्चे की स्वास्थ्य में क्या परिवर्तन आया है?
- viii. एमटीसी / एनआरसी में आने के बाद क्या बच्चा बीमार हुआ है? बीमारी और उसके इलाज का वर्णन करें I
- ix. क्या एमटीसी / एनआरसी में अपने बच्चे का इलाज करवाने में आपको कोई कठिनाई हुई? कृपया विस्तार से बताएं I
- x. क्या आपको लगता है आपका बच्चा ठीक हो रहा है? वो चिह्न बताये जिससे पता चलता है की आपका बच्चा ठीक हो रहा है I

6. एनआरसी / एमटीसी में बच्चों के फॉलो-उप के लिए साथ में आए माताओं / देखभाल करने वालों का का का साक्षात्कार

नाम:

आयु:

बच्चे के साथ संबंध:

शिक्षा:

(2- अनपढ़, 2- शिक्षा 5 तक, 3- शिक्षा तक 10, 4-शिक्षा वर्ग अधिक से अधिक 10, 5- अन्य)

आप घर के बाहर काम करते हैं: (1-हाँ, 2-नहीं)

आप को भुगतान कैसे मिलता है? (दैनिक-1/साप्ताहिक-2/मासिक-3)

परिवार के सदस्य	उम्र	लिंग	शिक्षा	रोजगार

बच्चे के बारे में जानकारी:

नाम:

उम्र:

लिंग:

एनआरसी में रहने की अवधि: (1- एक सप्ताह से कम, 2- दो सप्ताह से कम, 3- 14 दिन से अधिक):

फॉलो उप के समय

- xi. आप एनआरसी में इलाज के लिए क्यों आये? इस घटना को विस्तार से बताएं I
- xii. एमटीसी / एनआरसी में भर्ती की प्रक्रिया क्या थी? विस्तार से बताएं I
- xiii. विस्तार से बताएं की एमटीसी / एनआरसी में बच्चे का क्या इलाज किया गया?
- xiv. आपको यहाँ बच्चे के देखभाल करने के लिए क्या क्या सुविधा मिली?
- xv. एमटीसी / एनआरसी में अपने बच्चे के इलाज में आपकी क्या भूमिका थी?
- xvi. एमटीसी / एनआरसी से बच्चे के डिस्चार्ज के प्रक्रिया के बारे में विस्तार से बताएं I
- xvii. आपने घर जाने के लिए क्या व्यवस्था की?
- xviii. एमटीसी / एनआरसी से डिस्चार्ज के बाद घर पर बच्चे के देखभाल करने में आपको कोई परेशानी हुई? विस्तार से बताएं I
- xix. बच्चे के डिस्चार्ज के बाद आपकी स्वस्थ सेविका से पहली मुलाकात कब हुई?

- xx. बच्चे के डिस्चार्ज के बाद क्या किसी स्वस्थ सेविका के द्वारा घर का दौरा किया गया? यदि हाँ तो इस घटना को विस्तार से बताएं I
- xxi. एमटीसी / एनआरसी में फॉलो-उप विजिट के दौरान मिलने वाली सेवाओं का का वर्णन करें I

7. डॉक्टरों/ बच्चों के चिकित्सक- के साक्षात्कार/प्राकृतिक समूह चर्चा लिए गाइड

- 1) आप कुपोषण से क्या समझते हैं?
- 2) आपके विचार में बच्चा किन कारणों से कुपोषित हो जाता है?
- 3) एम.टी.सी में प्रवेश के मानदंड क्या हैं?
- 4) माताओं को बच्चे के पोषण और देखभाल से संबंधित परामर्श देने में आपको किन समस्याओं का सामना करना पड़ता है?
- 5) क्या आपको लगता है बच्चे एम.टी.सी से लाभान्वित हो रहे हैं? यदि हाँ तो: कैसे?
- 6) आप एक सफल केस और एक गैर सफल केस को कैसे परिभाषित करेंगे?
- 7) एम.टी.सी से डिस्चार्ज के मानदंड क्या हैं? एम.टी.सी से छुट्टी की प्रक्रिया क्या है? इन प्रक्रियाओं को कौन पूरा करता है?
- 8) जब एक बच्चे/ बच्ची को डिस्चार्ज किया जाता है तो क्या इसका मतलब यह है की वह स्वस्थ ओर कुपोषण मुक्त हो गया/ गयी है?
- 9) किन कारणों के लिए बच्चों को दूसरे अस्पताल में रेफर किया जाता है? एक केस के किसी और फेंसिलिटी में रेफरल के प्रक्रिया के बारे में विस्तार से बताएं I
- 10) एनआरसी से डिस्चार्ज के बाद जांच करना किसकी जिम्मेदारी है? इसकी प्रक्रिया क्या है?
- 11) आपके विचार में यह कैसे सुनिश्चित किया जाए की बच्चा गांव लौटने के बाद स्वस्थ रहे?

8. एम.टी.सी में नर्स के साक्षात्कार के लिए गाइड:

- 1) आप कुपोषण से क्या समझते हैं?
- 2) आपके विचार में बच्चा किन कारणों से कुपोषित हो जाता है?
- 3) बच्चे इलाज के लिए एम.टी.सी/ एन.आर.सी कैसे आते हैं? बच्चों को रेफर करने की जिम्मेदारी किसकी है?
- 4) एम.टी.सी में एडमिशन के प्रक्रिया के बारे में बताएं
- 5) ऐसे कुपोषित बच्चे जिनको एम.टी.सी/ एन.आर.सी में एडमिट नहीं किया जाता है उनका क्या होता है?
- 6) एम.टी.सी में बच्चों का इलाज कैसे किया जाता है?
- 7) बच्चों के साथ आये माताओं को क्या सुविधाएं मिलती है?
- 8) जिन बच्चों के स्वास्थ्य में कोई सुधार नहीं होता उनकी क्या देखभाल की जाती है? जैसे नॉन रेस्पॉन्डर और सेकेंडरी फेलियर?
- 9) आपको कैसे समझ आता है की बच्चे का कुपोषण ठीक हो गया है? यह कब माना जाएगा कि बच्चे का कुपोषण पूरी तरह ठीक हो गया है?
- 10) बच्चे को एम.टी.सी से डिस्चार्ज कब किया जाता है? एम.टी.सी/ एन.आर.सी से डिस्चार्ज के मानदंड क्या हैं?
- 11) एम.टी.सी/ एन.आर.सी से डिस्चार्ज से पहले माताओं को कोई सलाह दिया जाता है क्या? इसके बारे में बताएं?
- 12) एम.टी.सी/ एन.आर.सी से छुट्टी के बाद जांच के लिये लाना किसकी जिम्मेदारी होती है?
- 13) आपके विचार जिन बच्चों को एम.टी.सी/ एन.आर.सी से छुट्टी दे दी गई है उन्हें किस प्रकार के देखभाल की ज़रूरत होती है?
- 14) एम.टी.सी/ एन.आर.सी में बच्चों के इलाज में मां/ देखभाल करने वालों की क्या भूमिका होती है?
- 15) बच्चों के लिए निर्धारित सेवाएं प्रदान करने में आप किन समस्याओं / चुनौतियों का सामना कर रहे हैं?
- 16) माताओं बच्चे की देखभाल और पोषण पर परामर्श देने में आप किन चुनौतियों / कठिनाइयों / बाधाओं सामना कर रहे हैं?

ANNEXTURE 2

TOOLS FOR CASE 2

1. In-Depth Interview Of Mothers/Caregivers Accompanying Children To ATFC

Name:

Age:

Relationship with the child:

Education:

Do you Work outside home:

- How often do you get paid? (Daily/weekly/ monthly?).
- How many days per month do you get work?

Family members	Age	Sex	Education	Occupation

Information about the child:

Name:

Age:

Sex:

Stay at ITFC: (1-less than a week, 2- less than two week, 3- more than 14 days)

Case History:

1. Where was the child born?
2. When did you start breastfeeding your child?
3. At what age did you start giving weaning/complementary food?
4. How long the child was breastfed along with complementary feeding?
5. How was the health of your child? Was the child suffering from any illness?
6. What treatment was provided to the child for the illness? Describe the events.
7. How do you choose to go to this provider or the providers for treatment?
8. Describe the treatment received from these provider(s). How did the child respond to these treatments?
9. Did you face any challenges in providing care to your sick child?
10. Did any health care worker visit your sick child? If yes, please describe the event.

Care experiences at ATFC

11. Why did you come to ATFC? Describe the process.
12. Describe the process of admission of your child at ATFC.
13. What treatment is being given to your child here at ATFC?
14. Please describe the activities that happen at ATFC.
15. Describe your role in the treatment of your child?

16. Describe the support services provided to you by ATFC service providers for home based care of your child.
17. Have your child experienced any illness in last one week? Describe the illness and treatment provided.
18. Describe any challenge or difficulty faced by you in seeking treatment for your child at ATFC?
19. Do you feel your child his recovering? Describe the signs by which you identify that your child is recovering.
20. Describe the support provided by anganwadi worker, sahiya and nurse of your village in the treatment process of your child.

2. In-Depth Interview Of Mothers/Caregivers Accompanying Children To ITFC

Name:

Age:

Relationship with the child:

Education:

Do you Work outside home:

- How often do you get paid? (Daily/weekly/ monthly?).
- How many days per month do you get work?

Family members	Age	Sex	Education	Occupation

Information about the child:

Name:

Age:

Sex:

Stay at ITFC: (1-less than a week, 2- less than two week, 3- more than 14 days)

Case History:

1. Where was the child born?
2. When did you start breastfeeding your child?
3. At what age did you start giving weaning/complementary food?
4. How long the child was breastfed along with complementary feeding?
5. How was the health of your child? Was the child suffering from any illness?
6. What treatment was provided to the child for the illness? Describe the events.
7. How do you choose to go to this provider or the providers for treatment?
8. Describe the treatment received from these provider(s). How did the child respond to these treatments?
9. Did you face any challenges in providing care to your sick child?
10. Did any health care worker visit your sick child? If yes, please describe the event.

Care experiences at ITFC

11. Why did you come to ITFC? Describe the process.
12. What arrangements/preparations did you make to bring your child to ITFC? Describe the process.
13. Describe the process of admission of your child at ITFC.
14. What treatment is being given to your child here at ITFC? Please describe a day's routine.
15. Describe your role in the treatment of your child provided at ITFC?
16. Describe the support services provided to you at ITFC.

17. Have your child experienced any illness after coming to ITFC? Describe the illness and treatment provided.
18. Describe any challenge or difficulty faced by you in seeking treatment for your child at ITFC?
19. Do you feel your child his recovering? Describe the signs by which you identify that your child is recovering.

3. Guide For Natural Group Discussion With Mothers Of ITFC/ATFC Beneficiary

1. In your perception what has happened to your child?
2. Why did you seek treatment for your child from this facility?
3. What treatment is provided here? Describe.
4. How do you participate in the treatment process?
5. Describe your daily routine for care and feeding in this facility.
6. Share some food and care practices that are good for your children?
7. Share some food and care practices that are not good for your children?
8. Do you think this treatment is benefitting your children? How?
9. Do you face any difficulty in practicing care of your child according to the ongoing treatment regimen?

4. Reference Questions For Informal Interview Of CMAM Service Providers

- 1) What do you understand by malnutrition?
- 2) Why a child does become malnourished?
- 3) What services are provided through CMAM intervention?
- 4) What are the processes by which children come for treatment through CMAM? Describe your role in this process.
- 5) Describe the process of admission. Describe your role in the admission process.
- 6) Describe the treatment procedure for children. Describe your role in the process.
- 7) What support services are provided to mothers during their child's treatment at CMAM? Describe your role in this process.
- 8) When is a child discharged from CMAM? Describe your role in the process of discharge.
- 9) Is there any specific advice that the mothers are provided before children are discharged from the CMAM? Describe your role in the process.
- 10) What services are provided to children discharged from CMAM? Describe your role in the process.
- 11) What is the role of mother/care giver in treatment of children at ATFC? What support services are provided to mothers? Describe your role in the process.
- 12) What are the challenges you face in delivering services to children admitted in CMAM?

Table No. 1 Observation Guide For CMAM Model

CMAM: ATFC	Observation points
Institutional arrangement	Organization of services
Delivery of care services	Process of screening and identification of children with severe acute malnutrition
	Process of admission of SAM/MAM children into the Ambulatory Therapeutic Feeding Centre (ATFC)
	Process of care and treatment of uncomplicated SAM/MAM children
	Activities conducted at ATFC: for new admission and admitted children.
	Process of referring children to a higher facility
	Process of rehabilitation care of Children discharged from higher facility
	Process of Follow up at ATFC and at community level
Therapeutic Feeding	Distribution of therapeutic feeding
Counselling	Process of counselling to mothers and caregivers
Education on health and nutrition	Process of health and nutrition education to mothers and caregivers
	Interaction between the mothers/caregivers accompanying children and the ATFC care team.
Hygiene and sanitation facility	Hygiene and sanitation facility
	Hygiene and sanitation practices at the ATFC
Discharge	Process of discharging an admitted beneficiary from the ATFC
	Process of discharge of a beneficiary from the CMAM program
	Capacity building of care givers
	What is the discharge criteria followed by health personnel at ATFC?
CMAM: ITFC	Observation points
Institutional arrangements	Number of beds.
	Location of patient area, play/counselling area, nursing station, cooking area, bathroom and toilets.
	Sanitation and cleanliness
	Stay area for care givers accompanying children to the ITFC for treatment
Monitoring and supervision	Records and registers
	Monitoring and Supervision processes at ITFC
Screening and identification	Process of screening of all children coming to paediatric ward (inpatient/out-patient)
Management of under nutrition among children of 0-six months and six months to 5 years	Procedure of arrival to an ITFC. Who accompanies the referred child to ITFC? How is the child brought to the ITFC?
	Admission criteria and Admission procedure
	Assessment at admission
Care procedures at ward	Care process of medical complications in SAM children

	Care process of non complicated SAM Children
	Process of counselling and capacity building of mothers
	Process of providing support to mothers/caregivers for sensory stimulation and emotional care of admitted children
	Demonstration to mothers for preparation of energy dense food
	Process of therapeutic feeding of children with SAM: <ul style="list-style-type: none"> • Starter Diet • Catch up diet
	Who feeds? When? How much? What is the response of child? What is fed? Is the food acceptable? How is the feed measured? Is each food intake recorded? Is the diet modified with change in weight (loss or gaining of weight)?
	Maintaining temperatures of admitted children: Are the children kept warm?
	Process of weighing monitoring of admitted children
	Process of delivering medication to children
	Process of discharge from the ITFC: Assessment, decision-making for discharge, pre-discharge counselling.
	Interaction of Care providers (Doctors, paediatrician, nurse, counsellor) to the mothers/care givers
Interpersonal relation between providers and mothers/caregivers	How is the interaction between the family and health personnel?
	How are the mother counselled?
	Are the mothers encouraged to get involved in caring for the child?
	Do the health providers at ITFC responsive to the needs of mothers and beneficiaries?
	Are the children encouraged to eat well? Are they encouraged to play and participate in stimulating activities?
Discharge	Process of discharge from ITFC
	Capacity building of care givers for home based care of discharged children
	What is the discharge criteria followed by health personnel at ITFC?
Follow up post discharge	Procedures at follow up visit
	What happen in the follow up visit? Who accompanies the child?
Counselling	Process of counselling to mothers and caregivers
	What are the issues covered for counselling?
	Who conducts these sessions? When are these sessions conducted? How are these sessions conducted? What is shared in the counselling sessions? How is the

	interaction between mothers and health care providers at ITFC in a group counselling or during individual counselling?
Referrals	Procedure of referral to the higher facility: Who decides for a referral case? Who accompanies the referred case? Information provided to the mother/caregivers on status of children and need of referral? Is transport facility provided for referral cases?
Preparation of therapeutic food	Process of preparing therapeutic food: Who prepares the therapeutic feeding? How? How is it measured? What is the process of distribution of therapeutic food to the admitted children?
Cleanliness and Hygiene	Hand washing facilities, bathroom and toilet facilities; and Cleanliness maintained at the NRC.
	Cleanliness and hygiene practices of the staff
	Cleanliness and hygiene practices of the mothers and caregivers. Hand washing by mothers before feeding their children at NRC
	Storage of food
	Cleaning of toys
Health personnel at NRC: Medical officer, Nurse, Medical Social worker, Nutrition counsellor, cook and cleaner.	The routine care provided by health personnel at NRC.

5.ए.टी.एफ.सी में बच्चों के इलाज के लिए साथ में आए माताओं / देखभाल करने वालों का साक्षात्कार

नाम:

आयु:

बच्चे के साथ संबंध:

शिक्षा:

क्या आप घर के बाहर काम करते हैं:

आप को भुगतान कैसे मिलता है? (दैनिक-1/साप्ताहिक-2/मासिक-3)

परिवार के सदस्य	उम्र	लिंग	शिक्षा	रोजगार

बच्चे के बारे में जानकारी:

नाम:

उम्र:

लिंग:

ए.टी.एफ.सी में रहने की अवधि: (1- एक सप्ताह से कम, 2- दो सप्ताह से कम, 3- 14 दिन से अधिक):

व्यक्ति वृत्त

1. आपके बच्चे का जन्म कब हुआ?
2. आपने बच्चे को स्तनपान कराना कब शुरू किया?
3. किस उम्र में आपने बच्चे को भोजन देना शुरू कर दिया?
4. कितने उम्र तक बच्चे को भोजन देने के साथ स्तनपान कराया था?
5. आपके बच्चे का स्वास्थ्य कैसा रहता था? बच्चा क्या हमेशा बिमार पड़ता है?
6. बीमारी के समय बच्चे का क्या उपचार किया गया? विस्तार से बताएं ।
7. इस स्वास्थ्य सेवा प्रदान करनेवाले को क्यों चुना गया?
8. बच्चे इलाज किस प्रकार किया गया था? बच्चे में इलाज का क्या असर हुआ?
9. घर पर अपने बीमार बच्चे की देखभाल करने में क्या आपको कोई कठिनाई हुई?
10. बच्चे की बीमारी के दौरान क्या स्वास्थ्य कार्यकर्ता के द्वारा घर का दौरा किया गया? यदि हाँ तो इस घटना को विस्तार से बताये ।

6. ए.टी.एफ.सी में इलाज का अनुभव

1. आप ए.टी.एफ.सी में इलाज के लिए क्यों आये? इस घटना को विस्तार से बताएं ।
2. ए.टी.एफ.सी में बच्चे के एडमिशन की प्रक्रिया क्या थी? विस्तार से बताएं ।
3. विस्तार से बताएं की ए.टी.एफ.सी में बच्चे का क्या इलाज किया जा रहा है?
4. कृपया ए.टी.एफ.सी में होने वाली गतिविधियों का वर्णन करें।
5. ए.टी.एफ.सी में बच्चे के इलाज के प्रक्रिया में आपकी क्या भूमिका है?
6. अपने बच्चे की घर पर देखभाल के लिए ए.टी.एफ.सी सेवा प्रदाताओं द्वारा आपको प्रदान की जाने वाली सहायता सेवाओं का वर्णन करें।
7. क्या आपके बच्चे को पिछले एक सप्ताह में कोई बीमारी हुई है? क्या बीमारी और थी और क्या उपचार किया गया इसका वर्णन करें।
8. क्या ए.टी.एफ.सी में अपने बच्चे का इलाज करवाने में आपको कोई कठिनाई हुई? कृपया विस्तार से बताएं ।
9. क्या आपको लगता है आपका बच्चा ठीक हो रहा है? वो चिह्न बताये जिससे पता चलता है की आपका बच्चा ठीक हो रहा है ।
10. बच्चे के उपचार की प्रक्रिया में अपने गाँव की आंगनवाड़ी कार्यकर्ता, साहिया और नर्स द्वारा प्रदान की गई सहायता का वर्णन करें।

7.आई.टी.एफ.सी में बच्चों के इलाज के लिए साथ में आए माताओं / देखभाल करने वालों का साक्षात्कार

नाम:

आयु:

बच्चे के साथ संबंध:

शिक्षा:

क्या आप घर के बाहर काम करते हैं:

आप को भुगतान कैसे मिलता है? (दैनिक-1/साप्ताहिक-2/मासिक-3)

परिवार के सदस्य	उम्र	लिंग	शिक्षा	रोजगार

बच्चे के बारे में जानकारी:

नाम:

उम्र:

लिंग:

एनआरसी में रहने की अवधि: (1- एक सप्ताह से कम, 2- दो सप्ताह से कम, 3- 14 दिन से अधिक):

व्यक्ति वृत्त

1. आपके बच्चे का जन्म कब हुआ?
2. आपने बच्चे को स्तनपान कराना कब शुरू किया?
3. किस उम्र में आपने बच्चे को भोजन देना शुरू कर दिया?
4. कितने उम्र तक बच्चे को भोजन देने के साथ स्तनपान कराया था?
5. आपके बच्चे का स्वास्थ्य कैसा रहता था? बच्चा क्या हमेशा बिमार पड़ता है?
6. बीमारी के समय बच्चे का क्या उपचार किया गया? विस्तार से बताएं ।
7. इस स्वास्थ्य सेवा प्रदान करनेवाले को क्यों चुना गया?
8. बच्चे इलाज किस प्रकार किया गया था? बच्चे में इलाज का क्या असर हुआ?
9. घर पर अपने बीमार बच्चे की देखभाल करने में क्या आपको कोई कठिनाई हुई?
10. बच्चे की बीमारी के दौरान क्या स्वास्थ्य कार्यकर्ता के द्वारा घर का दौरा किया गया? यदि हाँ तो इस घटना को विस्तार से बताये ।

8. एनआरसी में इलाज का अनुभव

1. आप आई.टी.एफ.सी में इलाज के लिए क्यों आये? इस घटना को विस्तार से बताएं ।
2. आपको अपने बच्चे को आई.टी.एफ.सी लाने के लिए क्या व्यवस्था करनी पड़ी? विस्तार से बताएं ।
3. आई.टी.एफ.सी में बच्चे के एडमिशन की प्रक्रिया क्या थी? विस्तार से बताएं ।
4. विस्तार से बताएं की आई.टी.एफ.सी में बच्चे का क्या इलाज किया जा रहा है? कृपया एक दिन की दिनचर्या का वर्णन करें।
5. आई.टी.एफ.सी में अपने बच्चे के इलाज में आपकी क्या भूमिका है?
6. आपको यहाँ बच्चे के देखभाल करने के लिए क्या क्या सुविधा या सहायता सेवा मिली है? उनका वर्णन करें।
7. आई.टी.एफ.सी में आने के बाद क्या बच्चा बीमार हुआ है? बीमारी और उसके इलाज का वर्णन करें ।
8. क्या आई.टी.एफ.सी में अपने बच्चे का इलाज करवाने में आपको कोई कठिनाई हुई? कृपया विस्तार से बताएं ।
9. क्या आपको लगता है आपका बच्चा ठीक हो रहा है? वो चिह्न बताये जिससे पता चलता है की आपका बच्चा ठीक हो रहा है ।

9. एम.टी.सी/ ए.टी.एफ.सी में माताओं के साथ नेचुरल ग्रुप डिस्कशन के लिए गाइड

1. आपकी समझ में आपके बच्चे को क्या हुआ है?
2. आप अपने बच्चे को इलाज के लिए यहाँ क्यों लाये?
3. यहाँ बच्चे का क्या इलाज किया जाता है विवरण दें .
4. आप इलाज प्रक्रिया में कैसे भाग लेते हैं?
5. अस्पताल/ घर में बच्चे के खान पान और देखभाल करने की अपनी दिनचर्या का वर्णन करें।
6. मुझे कुछ ऐसे भोजन और देखभाल प्रथाओं के बारे में बताएं जो आपके बच्चों के लिए अच्छे हैं ।
7. मुझे कुछ ऐसे भोजन और देखभाल प्रथाओं के बारे में बताएं जो आपके बच्चों के लिए अच्छे नहीं हैं ।
8. क्या आपको लगता है कि उपचार आपके बच्चों को फायदा पहुंचा रहा है? कैसे?

10. CMAM सेवा प्रदाताओं के अनौपचारिक साक्षात्कार के लिए संदर्भ प्रश्न

1. आप कुपोषण से क्या समझते हैं?
2. आपके विचार में बच्चा किन कारणों से कुपोषित हो जाता है?
3. उन विभिन्न स्वास्थ्य समस्याओं का वर्णन करें, जिनके लिए बच्चे CMAM में आते हैं।
4. बच्चे इलाज के लिए CMAM कैसे आते हैं? उन प्रक्रियाओं का वर्णन करें। इस प्रक्रिया में अपनी भूमिका का वर्णन करें।
5. CMAM प्रोग्राम में एडमिशन के प्रक्रिया के बारे में बताएं। इस प्रक्रिया में अपनी भूमिका का वर्णन करें।
6. CMAM प्रोग्राम में भर्ती बच्चों के उपचार की प्रक्रिया का वर्णन करें। इस प्रक्रिया में अपनी भूमिका का वर्णन करें।
7. CMAM प्रोग्राम में उपचार के दौरान बच्चों के साथ आने वाली माताओं को कौन-कौन सी सहायता सेवाएँ प्रदान की जाती हैं? उन प्रक्रियाओं का वर्णन करें। इस प्रक्रिया में अपनी भूमिका का वर्णन करें।
8. CMAM प्रोग्राम से डिस्चार्ज की प्रक्रिया का वर्णन करें। इस प्रक्रिया में अपनी भूमिका का वर्णन करें।
9. क्या बच्चों को CMAM प्रोग्राम से डिस्चार्ज करने से पहले माताओं को कोई विशिष्ट सलाह प्रदान की जाती है? इस प्रक्रिया में अपनी भूमिका का वर्णन करें।
10. CMAM प्रोग्राम से डिस्चार्ज हुए बच्चों को क्या सेवाएं प्रदान की जाती हैं? इस प्रक्रिया में अपनी भूमिका का वर्णन करें।
11. CMAM प्रोग्राम में बच्चों के इलाज में माँ की क्या भूमिका होती है? माताओं को कौन सी सहायता सेवाएं प्रदान की जाती हैं? इस प्रक्रिया में अपनी भूमिका का वर्णन करें।
12. CMAM प्रोग्राम में एडमिट बच्चों का इलाज करने में आपको किन चुनौतियों का सामना करना पड़ता है?
13. CMAM प्रोग्राम में उपचार प्रक्रिया में माताओं को शामिल करने में आपको किन समस्याओं का सामना करना पड़ता है?

ANNEXTURE 3

TOOLS FOR CASE 3

1. Guide for In-Depth Interview Of Mothers

1. When did first breastfed your child?
2. For how long did you breast feed your child?
3. At what age do you start giving solid food to children?
4. Which food items are good for children?
5. Other than home cooked food, do you give your child any readymade or packed foods? Why? How often?
6. What are the common practices of child care/feeding for new born and young children?
7. Share your daily routine of child care?
8. Who all support your in child care and feeding?
9. Is migration a common phenomenon in the village?
10. What are the problems you face in feeding and taking care of your children?
11. How do you work out these problems of child care and feeding?
12. What are some common ailments that your children suffer frequently?
13. What do you do when the child falls sick? What treatment is given to a sick child?
14. What problems did you encounter in managing sickness at home?
15. Do you seek treatment for your sick child beyond home based care? Where?
16. When was the last time you sought care from these providers?
17. What did seeking care from this particular provider cost you? How did you arranged for the resources?
18. Did any health care provider visit your home while your child was ill?
19. Do you think these frontline health care providers have a role to play in care of your sick children? If yes, then what are these?
20. Does your child go to the AWC? What are the services that your child gets at the AWC?
21. What support and services did you receive through the frontline health workers: during lactating phase, weaning and complementary feeding?
22. When was the last time you met the frontline care providers? Share your experience with these care providers?
23. When was the last time AWW shared with you: the results of GMC, provided nutrition counselling?
24. What are the services you get in VHND?
25. When was the last AWW/ANM/ASHA come for house visits? Why?
26. Do you have any concerns regarding nutrition or health of your children?
27. Why do you think this has happened to your child?
28. Is this pattern of child sickness/ill health/weakness associated to certain period of the year?
29. What do you do in response to illness in your children?
30. Are you aware of any health services that are especially for treatment of these children?
31. Are you aware of any child who went for treatment? If yes, then how was their experience at hospital (MTC/CMAM)?

2. Interview Guiding Questions for Anganwadi Workers

- 1) Describe the services provided at anganwadi.
- 2) What do you do if you find out that a child is sick?
- 3) Do the mothers of sick children come to you seeking help (suggestions/ counseling or medicine)? For what type of sickness/diseases?
- 4) What do you suggest parents for other type of sicknesses that cannot be treated at the village level?
- 5) In case of such sickness do the parents follow your advice?
- 6) What happens in a VHND? What role do you play on VHND?
- 7) What do you understand by under nutrition?
- 8) Why a child does become under nourished?
- 9) Can you identify if a child is well nourished or undernourished? How?
- 10) What do you do if you find a malnourished child?
- 11) What are the challenges/difficulties/barriers you face in counseling mothers on child care and nutrition?
- 12) What is the use of GMC and MUAC?
- 13) Do you share the measurements of GMC with the mothers/caregivers? When?
- 14) What role do you play in care of children who are mild underweight / moderately underweight child/ chronically underweight?
- 15) Do you think an undernourished child can be treated? Where?
- 16) Do you think after an undernourished child is treated he/she needs additional care at home?
- 17) What is your role in providing care to such children?
- 18) What services/care is provided to child who has been refused treatment at the MTC?

3. Focused Group Discussion Guide for ASHA/SAHIYAS

- 1) How do you encourage mothers for IYCF practices?
- 2) What happens in a VHND? What role do you play on VHND?
- 3) What is your role in treatment and care of a sick child?
- 4) Do the mothers of sick children come to you seeking help (suggestions/ counseling or medicine)? For what type of sickness/diseases?
- 5) What do you suggest parents for other type of sicknesses that cannot be treated at the village level?
- 6) What do you understand by under nutrition
- 7) Why a child does become under nourished?
- 8) How do you identify if a child is well nourished or undernourished?
- 9) Do you think a child can be prevented from becoming malnourished? If yes then how?
- 10) What do you do if you find out that a child is undernourished?
- 11) Do you have a role in treatment of undernourished children?
- 12) Do you think after an undernourished child is treated he/she needs additional care at home?
- 13) What is your role in providing care to such children?
- 14) In your village what are the customs/practices that make a child healthy and customs/practices that push a child towards being malnourished?

4. Interview/Guiding Questions for ANM

- 1) What happens on VHND? What is your role in VHND?
- 2) What do you do if you find out that a child is sick?
- 3) Where is the closest paediatric services located to villages? What child services are provided at the nearest SC/PHC/CHC in your area?
- 4) In case of sickness do the parents immediately take their child to these government health facilities?
- 5) What do you understand by under nutrition?
- 6) Why a child does become under nourished?
- 7) Do you think mothers of these children need some different counseling? What are the challenges/difficulties/barriers do you face in counseling mothers on child care and nutrition?
- 8) How do you identify if a child is well nourished or undernourished?
- 9) What do you do if you find out that a child is undernourished?
- 10) What do you if a child shows repeated sickness episodes, weight loss but still above the cut-off criteria?
- 11) Can you differentiate between SAM/MAM, SAM with medical complication?
- 12) Describe your role in treatment of undernourished children?
- 13) What kind of care is required for malnourished children discharged from MTC?
- 14) What is your role in providing care to such children?

5. Interview Guide For Crèche Workers

1. Describe the services provided in this facility.
2. Describe your role in the services provided.
3. What do you do if you find out that a child is sick?
4. Do the mothers of sick children come to you seeking help (suggestions/ counseling or medicine)? For what type of sickness/diseases? What do you suggest?
5. What do you understand by under nutrition?
6. Why a child does become under nourished?
7. Can you identify if a child is well nourished or undernourished? How?
8. What do you do if you find a malnourished child?
9. What is the use of GMC and MUAC?
10. Do you share the measurements of GMC with the mothers/caregivers? When?
11. What role do you play in care of children who are mild underweight / moderately underweight child/ chronically underweight?
12. Do you think an undernourished child can be treated? Where?
13. Do you think after an undernourished child is treated he/she needs additional care at home?
14. What is your role in providing care to such children?
15. Do you get any support from the frontline health workers? Describe in detail.

Table no. 1 Observation guide for Village Health and Nutrition Day

VHND	Observation points
Institutional arrangements	Infrastructure and equipments
	Sanitation facility
	Where is VHND organised?
Activities in VHND	When does the VHND start?
	For how long it continues?
	Who are the service providers present for VHND for pregnant and lactating mothers and children 0-6 years of age?
	What all activities are conducted in VHND?
Growth monitoring of children	Process of weight monitoring of children. Who conducts weight measurement? Who records the weight measurement?
	Is the weight recorded as graph then and there? Who does it?
	The process of informing mothers on weight of their children. Who conducts this activity?
	Interaction following the process of weight monitoring: between mothers and the personnel conducting weight monitoring.
Screening children for malnutrition	Process of screening children for malnutrition.
	Who conducts the screening?
	Process of informing mother on the outcome of screening.
	Interaction following the process of screening: between mothers and the personnel conducting screening
Identification of malnourished children	Process of identifying malnourished children
	Personnel involved in conducting this activity
	What action is taken by personnel at VHND on identifying a malnourished child?
Health check up	Process of conducting health check up of children
	Process of providing treatment/care following the health check up

Supplementary nutrition	The process of distribution of supplementary nutrition
Counselling and health education	The process of counselling and health education
	When is counselling or health education provided to mothers?
	Who are the personnel involved in the process of counselling and health education?
	What means are used for this activity?
	Duration of counselling and health education provided.
Interaction between the VHND personnel and mothers	Process of interaction between mothers and personnel

6. माताओं के साक्षात्कार के लिए गाइड

1. पहली बार अपने बच्चे को स्तनपान कब कराया था?
2. आपने कितने समय तक अपने बच्चे को स्तनपान कराया?
3. अपने किस उम्र में बच्चों को ठोस आहार देना शुरू शुरू किया?
4. बच्चों के लिए कौन से खाद्य पदार्थ अच्छे होते हैं?
5. घर के पके हुए भोजन के अलावा, क्या बच्चे को रेडीमेड या पैकड खाद्य पदार्थ दिए जाते हैं? क्यूं कर? कितनी बार?
6. नए जन्मे और छोटे बच्चों के लिए बच्चे की देखभाल हैं क्या प्रथाएँ सामान्य की पिलाने -खिलने /?
7. बच्चे की देखभाल की अपनी दिनचर्या साझा करें?
8. बच्चे की देखभाल और खिलाने में आपकी मदद कौन करता है?
9. क्या गाँव में पलायन आम है?
10. बच्चों को खिलाने और उनकी देखभाल करने में आपको किन समस्याओं का सामना करना पड़ता है?
11. बच्चे की देखभाल और खिलाने की इन समस्याओं के लिए क्या करते हैं?
12. कुछ सामान्य बीमारियाँ हैं जो आपके बच्चों को अक्सर होती हैं?
13. जब बच्चा बीमार पड़ता है तो आप क्या करते हैं? बीमार बच्चे को क्या उपचार दिया जाता है?
14. घर में बीमारी का प्रबंधन करने में आपको किन समस्याओं का सामना करना पड़ा?
15. क्या आप घर पर देखभाल से परे अपने बीमार बच्चे का इलाज चाहते हैं? कहा पे?
16. पिछली बार आपने इन प्रदाताओं से कब इलाज करवाया था?
17. इनसे इलाज करवाने के कितना खर्च आया ? अपने इसकी व्यवस्था कैसे की?
18. आपके बच्चे के बीमार होने पर कोई भी फ्रंटलाइन स्वास्थ्य देखभाल प्रदाता आपके घर पर जाता है?
19. क्या आपको लगता है कि इन फ्रंटलाइन स्वास्थ्य देखभाल प्रदाताओं की आपके बीमार बच्चों की देखभाल में भूमिका है? यदि हाँ, तो ये क्या हैं?
20. क्या आपका बच्चा AWC में जाता है? आपके बच्चे को AWC में कौन सी सेवाएँ मिलती हैं?
21. फ्रंटलाइन स्वास्थ्य कार्यकर्ताओं के माध्यम से आपको क्या समर्थन और सेवाएँ मिली स्तनपान : दौरान के चरण के कराने, दूध पिलाने और पूरक आहार खिलने के लिए?
22. पिछली बार आप फ्रंटलाइन केयर प्रदाताओं से कब मिले थे? इन देखभाल प्रदाताओं के साथ अपना अनुभव साझा करें?
23. पिछली बार आंगनवाड़ी कार्यकर्ता आपके साथ कब साझा किया गया थापरिणाम के जीएमसी :, पोषण परामर्श प्रदान किया गया था?
24. वी.एच.एन.डी में आपको कौन सी सेवाएँ मिलती हैं?
25. आखिरी AWW / ANM / ASHA घर की यात्राओं के लिए कब आई थी? क्यों?
26. क्या आपको अपने बच्चों के पोषण या स्वास्थ्य के बारे में कोई बात है जो परेशान करती है?
27. आपको क्या लगता है कि आपके बच्चे के साथ ऐसा क्यों हुआ है?
28. क्या बाल रोग अ निश्चित की वर्ष पैटर्न यह का कमजोरी / स्वास्थ्य बीमार /वधि से जुड़ा है?
29. ऐसे में आप क्या करते हैं?
30. क्या आप किसी स्वास्थ्य सेवाओं के बारे में जानते हैं?

31. क्या आप किसी ऐसे बच्चे के बारे में जानते हैं जो इलाज के लिए गया हो? यदि हाँ, तो अस्पताल (MTC / CMAM) में उनका अनुभव कैसा रहा?

7. आंगनवाड़ी कार्यकर्ता के साक्षात्कार के लिए गाइड

- 1) आंगनवाड़ी में दी जाने वाली सेवाओं का वर्णन करें।
- 2) अगर आपको पता है कि चलता है की कोई बच्चा बीमार है तब आप क्या करते हैं?
- 3) क्या माताएं स्वयं बच्चे के बिमार होने पर आपसे मदद (सुझाव/ परामर्श/ दवा) लेने आते हैं? किन बीमारियों के लिए?
- 4) आप बच्चों की अन्य बीमारियाँ जिनका गांव के स्तर पर इलाज नहीं किया जा सकता है, के लिए माता-पिता को क्या सुझाव देते हैं?
- 5) इस तरह की बीमारी के मामले में क्या माता-पिता आपकी सलाह का पालन करते हैं?
- 6) VHND में क्या होता है? VHND में आपकी क्या भूमिका होती है?
- 7) आप कुपोषण से क्या समझते हैं?
- 8) आपके विचार में बच्चा किन कारणों से कुपोषित हो जाता है?
- 9) यदि आप एक कुपोषित बच्चा पाते हैं तो आप क्या करते हैं?
- 10) माताओं बच्चे की देखभाल और पोषण पर परामर्श देने में आप किन चुनौतियों / कठिनाइयों / बाधाओं सामना कर रहे हैं?
- 11) क्या आप कुपोषित बच्चे और एक परिपुष्ट/ तंदुरस्त बच्चे में भेद कर सकते हैं? कैसे?
- 12) आपके विचार में जी.एम.सी/ ग्लोथ चार्ट और एम.यू.ए.सी/ बाहू-माप का उपयोग क्या है?
- 13) क्या माताओं को नियमित रूप से अपने बच्चे के जी.एम.सी और एम.यू.ए.सी की स्थिति पर जानकारी/ परामर्श दी जाती है? कब?
- 14) कम वजन के बच्चे / मध्यम अल्पभार बच्चे / लंबे समय से कम वजन के बच्चों के देखभाल और उपचार में आंगनवाड़ी कार्यकर्ता क्या भूमिका निभाते हैं?
- 15) क्या आपके विचार में एक कुपोषित बच्चे का इलाज किया जा सकता है? यदि हाँ तो: कहाँ?
- 16) आपके विचार में क्या ऐसे कुपोषित बच्चे जिनको एम.टी.सी से इलाज छुट्टी दे दी गई है को अतिरिक्त देखभाल की ज़रूरत होती है?
- 17) जिन बच्चों को जो एम.टी.सी से छुट्टी दे दी गई है (-3SD, -2SD, -1SD, सामान्य वजन बच्चे) उनको अतिरिक्त देखभाल उपलब्ध कराने में आप क्या भूमिका निभाते हैं?
- 18) ऐसे कुपोषित बच्चे जो (सैम, मैम, सामान्य वजन) एम.टी.सी में प्रवेश के पात्र नहीं हैं उनको आपके द्वारा क्या सेवा / देखभाल प्रदान की जाती है?

8. आशा/ सहिया के समूह चर्चा के लिए गाइड

- 1) आप IYCF प्रथाओं के लिए माताओं को कैसे प्रोत्साहित करते हैं?
- 2) VHND में क्या होता है? VHND में आपकी क्या भूमिका होती है?
- 3) एक बीमार बच्चे की देखभाल और उपचार में आपकी भूमिका क्या है?
- 4) क्या माताएं स्वयं बच्चे के बिमार होने पर आपसे मदद (सुझाव/ परामर्श/ दवा) लेने आते हैं? किन बीमारियों के लिए?

- 5) आप बच्चों की अन्य बीमारियाँ जिनका गांव के स्तर पर इलाज नहीं किया जा सकता है, के लिए माता-पिता को क्या सुझाव देते हैं?
- 6) आप कुपोषण से क्या समझते हैं?
- 7) आपके विचार में बच्चा कारणों से कुपोषित हो जाता है?
- 8) क्या आप कुपोषित बच्चे और एक परिपुष्ट/ तंदुरस्त बच्चे में भेद कर सकते हैं? कैसे?
- 9) क्या आपके विचार में बच्चे को कुपोषित होने से बचाया जा सकता है? यदि हाँ तो: कैसे?
- 10) अगर आपको पता है कि चलता है की कोई बच्चा कुपोषित है तब आप क्या करते हैं?
- 11) कुपोषित बच्चों के उपचार में क्या आपकी कोई भूमिका है? यदि हाँ तो: क्या?
- 12) आपके विचार में क्या ऐसे कुपोषित बच्चे जिनको एम.टी.सी से इलाज छुट्टी दे दी गई है को अतिरिक्त देखभाल की ज़रूरत होती है? यदि हाँ तो: किस प्रकार की देखभाल?
- 13) जिन बच्चों को जो एम.टी.सी से छुट्टी दे दी गई है (-3SD, -2SD, -1SD, सामान्य वजन बच्चे) उनको अतिरिक्त देखभाल उपलब्ध कराने में आप क्या भूमिका निभाते हैं?
- 14) आपके विचार में ऐसे कौन से रिवाज / प्रथाएँ हैं जो बच्चे को स्वस्थ या कुपोषित बनाती हैं?

9. ए.एन.एम के साक्षात्कार के लिए गाइड

- 1) VHND में क्या होता है? VHND में आपकी क्या भूमिका होती है?
- 2) अगर आपको पता है कि चलता है की कोई बच्चा बीमार है तब आप क्या करते हैं?
- 3) गांवों से निकटतम बाल चिकित्सा सेवा कहाँ स्थित है? इन केन्द्रों में क्या सेवा पर प्रदान की जाती है?
- 4) बीमार होने पर क्या माता-पिता अपने बच्चे को तुरंत इन सरकारी स्वास्थ्य केंद्रों पर ले जाते हैं?
- 5) आप कुपोषण से क्या समझते हैं?
- 6) आपके विचार में बच्चा किन कारणों से कुपोषित हो जाता है?
- 7) क्या आपको लगता है कि कुपोषित बच्चों के मां / देखभाल करने वालों को बच्चे के देखरेख और पोषण पर कुछ अतिरिक्त परामर्श की ज़रूरत है? माताओं बच्चे की देखभाल और पोषण पर परामर्श देने में आप किन चुनौतियों / कठिनाइयों / बाधाओं सामना कर रहे हैं?
- 8) क्या आप बीमार और कुपोषित तथा बीमारी से प्रभावित बच्चों (सैम / मैम) के बीच भेद कर सकते हैं? कैसे?
- 9) अगर आपको पता है कि चलता है की कोई बच्चा कुपोषित है तब आप क्या करते हैं?
- 10) यदि कोई बच्चा अक्सर बीमार हो जाए और उसका वजन घटाने लगे लेकिन वजन एम.टी.सी प्रवेशमानदंडों से कम हो तो आप क्या सहायता देते हैं?
- 11) क्या आप बीमार और कुपोषित तथा बीमारी से प्रभावित बच्चों (सैम / मैम) के बीच भेद कर सकते हैं? कैसे?
- 12) कुपोषित बच्चों के उपचार में क्या आपकी कोई भूमिका है? यदि हाँ तो: क्या?
- 13) आपके विचार में क्या ऐसे कुपोषित बच्चे जिनको एम.टी.सी से इलाज छुट्टी दे दी गई है को अतिरिक्त देखभाल की ज़रूरत होती है? यदि हाँ तो: किस प्रकार की देखभाल?
- 14) जिन बच्चों को जो एम.टी.सी से छुट्टी दे दी गई है (-3SD, -2SD, -1SD, सामान्य वजन बच्चे) उनको अतिरिक्त देखभाल उपलब्ध कराने में आप क्या भूमिका निभाते हैं?

10. क्रेच श्रमिकों के लिए साक्षात्कार गाइड

- 1) क्रेच में दी जाने वाली सेवाओं का वर्णन करें।
- 2) क्रेच में दी जाने वाली सेवाओं में आपकी क्या भूमिका होती है?
- 3) अगर आपको पता है कि चलता है की कोई बच्चा बीमार है तब आप क्या करते हैं?
- 4) क्या माताएं स्वयं बच्चे के बिमार होने पर आपसे मदद (सुझाव/ परामर्श/ दवा) लेने आते हैं? किन बीमारियों के लिए? आप क्या सुझाव देते हैं?
- 5) आप कुपोषण से क्या समझते हैं?
- 6) आपके विचार में बच्चा किन कारणों से कुपोषित हो जाता है?
- 7) क्या आप कुपोषित बच्चे और एक परिपुष्ट/ तंदुरस्त बच्चे में भेद कर सकते हैं? कैसे?
- 8) यदि आप एक कुपोषित बच्चा पाते हैं तो आप क्या करते हैं?
- 9) आपके विचार में जी.एम.सी/ ग्रोथ चार्ट और एम.यू.ए.सी/ बाहू-माप का उपयोग क्या है?
- 10) क्या माताओं को नियमित रूप से अपने बच्चे के जी.एम.सी और एम.यू.ए.सी की स्थिति पर जानकारी/ परामर्श दी जाती है? कब?
- 11) कम वजन के बच्चे / मध्यम अल्पभार बच्चे / लंबे समय से कम वजन के बच्चों के देखभाल और उपचार में आप क्या भूमिका निभाते हैं?
- 12) क्या आपके विचार में एक कुपोषित बच्चे का इलाज किया जा सकता है? यदि हाँ तो: कहां?
- 13) आपके विचार में क्या ऐसे कुपोषित बच्चे जिनको एम.टी.सी से इलाज छुट्टी दे दी गई है को अतिरिक्त देखभाल की ज़रूरत होती है?
- 14) जिन बच्चों को जो एम.टी.सी से छुट्टी दे दी गई है (-3SD, -2SD, -1SD, सामान्य वजन बच्चे) उनको अतिरिक्त देखभाल उपलब्ध कराने में आप क्या भूमिका निभाते हैं?
- 15) क्या आपको फ्रंटलाइन स्वास्थ्य कार्यकर्ताओं से कोई सहायता मिलती है?

ANNEXTURE 4 CONSCENT FORM

Consent Form in English

Title of the Project: **Principles of Continuum of Care: An analysis of Nutritional Care and Rehabilitation Programs in India.**

Investigators: Ipsha Chaand

Centre of Social Medicine and Community Health,

School of Social Sciences, Jawaharlal Nehru University.

Collaborators: N.A

Potential Funding Agency: N.A

Informed Patient/Guardian Consent Form

PART I

	Explained in Detail	Subject's Response if any
1. Purpose of the Study	[]	The study intent to explore integration of principles of Continuum of Care (CoC) into nutrition care interventions planned and implemented at each level of care and across the levels of care. The study shall analyze adaptation and incorporation of the principles of CoC in the nutritional care and rehabilitation programs in India, the missing linkages and constrains in assimilation of continuum in the existing interventions.
2. Study Procedures	[]	The study procedure involves indepth interviews with mothers/caregivers, frontline health care providers, facility based care providers and natural group discussions.
3. Risk of the Study	[]	N. A
4. Benefits from the Study	[]	There will be no direct benefits to you. However after analysis of data is completed, it will be shared with you to get your feedback and support you in improving access to care/treatment for malnutrition.

- | | | | |
|-----|--------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5. | Complications | [] | There are no complications expected to arrive from the study. |
| 6. | Compensations | [] | There will be no compensation made for the time given by you. |
| 7. | Confidentiality | [] | Your names will not be revealed in any document in the public domain |
| 8. | Rights of Participants | [] | It's not binding upon you to participate in the study. If you participants do not wish to participate in the study, you have the right to refuse to participate. If, even after giving consent, you wish to terminate the interview or not continue to participate in the group discussion, you should feel free to do so. |
| 9. | Alternatives to Participation in the Study | [] | N.A |
| 10. | Any Other..... | [] | |

INFORMED CONSENT FORM

I _____, residing/working at _____ willingly, under no pressure from the re-searcher- agree to take part in this research titled 'Principles of Continuum of Care: An Analysis of Nutritional Care and Rehabilitation Programs in India' conducted by the researcher IPSHA CHAAND, Phd scholar, Centre of Social Medicine and Community Health, Jawaharlal Nehru University.

The advantage and disadvantages of the research in which I am expected to participate, has been explained to me. I was allowed to ask questions regarding this research and all my questions were answered. My consent is for participating in the oral inter-view/ group discussion, and for allowing audio recording of the proceedings of the inter-view and group discussion.

My consent is explicitly not for disclosing any personal information. For disclosing any such personal information obtained from the responses from my interview with the researcher, further consent should be obtained.

I am ready to participate in this research.

Name of the Participant:

Date:

Signature of Participant:

Signature of the Investigator:

Date:

Name of the Investigator:

Signature of the Witness:

Date:

Name of the Witness:

सूचित सहमति प्रपत्र

मैं निवासी अपनी इच्छा से, बिना किसी दबाव के, इस शोध में भाग लेने के लिये सहमत हूँ, जिसका शिर्षक है, “प्रिंसिपल्स ऑफ़ कॉन्टीनुम ऑफ़ केयर: एन एनालिसिस ऑफ़ न्यूट्रिशनल केयर एंड रिहैबिलिटेशन प्रोग्राम्स इन इंडिया”। इसे सेंटर ऑफ़ सोशल मेडिसिन एंड कम्युनिटी हेल्थ, जवाहरलाल नेहरू विश्वविद्यालय की शोधकर्ता ईप्पा चाँद (पी.एच.डी छात्र) के द्वारा संचालित किया जाएगा।

मुझे शोध अध्ययन के बारे में एक मौखिक विवरण दिया गया है। यह अनुसंधान जिसमें मैं भाग लेने की उम्मीद कर रहा/रही हूँ इस का लाभ और नुकसान मुझे समझाया गया है। इस शोध अध्ययन के बारे में सवाल पूछने के भी अवसर दिए गए। मैं स्वेच्छा से इस शोध अध्ययन में भाग लेने को सहमत हूँ। इस शोध से संबंधित मौखिक साक्षात्कार/ प्राकृतिक समूह चर्चा में भाग लेने और ऑडियो रिकॉर्डिंग करने की अनुमति देता/देती हूँ।

मेरी सहमति किसी भी व्यक्तिगत जानकारी को प्रकट करने की नहीं है। शोधकर्ता को मेरी किसी भी व्यक्तिगत जानकारी का उपयोग या प्रकट करने के लिए पूर्व अनुमति लेनी होगी।

मैं इस शोध में भाग लेने के लिए तैयार हूँ।

प्रतिभागी का नाम:

दिनांक:

प्रतिभागी के हस्ताक्षर:

अन्वेषक के हस्ताक्षर:

दिनांक:

अन्वेषक का नाम:

गवाह के हस्ताक्षर:

दिनांक:

गवाह का नाम: