Objective Oriented Evaluation of Outpatient Therapeutic Feeding Program for Prevention of Severe Acute Malnutrition for six month to five years age Children, at Selected Health centers in Seka Chekorsa Woreda, Jimma Zone, Oromia Region

An Evaluation Report Submitted to Jimma University, Institute of Health science, Faculty of Public Health; Department of Health Economics, Management and Policy, Health Monitoring and Evaluation program unit for partial fulfillment of requirement for the degree of Master of Science in Health Monitoring and Evaluation.

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May, 2017

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Abstract

Background:

Globally, it is estimated that there are nearly 20 million children with acute severe acute malnutrition; most of them live in South Asia and Sub-Saharan Africa. Ethiopia is one of the countries in the sub-Saharan Africa with the highest rates of severe acute malnutrition. Understanding multidimensional burden of malnutrition; it is clear that prevention and treatment is critical to child survival and development. Therefore ministry of health Ethiopia implemented Outpatient therapeutic feeding program which brings improvement for management of severe acute malnutrition by availing service closer to the community by the use of ready to use therapeutic foods.

Evaluation Objective: To assess, if operational objectives of severe acute malnutrition management program has been achieved as intended at selected five health centers in Seka Chekorsa, Woreda, Jimma zone, 2017

Methods: Cross-sectional study design with both quantitative and qualitative data collection methods was employed to assess Outpatient Therapeutic feeding Program from March one to twenty 2017. Study participants were Health Workers who offer service, Health Extension workers, and program focal person at health centers and program coordinator at Woreda health office. Data was collected through clinical document review (n=384), clinical care observation (n=50) and key informant interview (n=12). Descriptive and logistic regression analysis was used to express the result of study on program components and possible effects of the program also qualitative data were analyzed manually to support quantitative findings. All evaluation processes were undertaken after ethical clearance was obtained from Jimma University and conducted by respecting rules, ethics and culture of community

Result: Resources needed for the program was partially distributed. Ready to use Therapeutic food was available in all Health Centers, essential drugs were not available and medical equipments were fairly available. The conformity of health workers to program guideline was rated as fair based on both qualitative and quantitative findings. The program was effective as most of clinical outcome results were within acceptable range of sphere standards. Results of main clinical outcomes were; cure rate 82.5 percent, death rate 2.9 percent, defaulter rate 8.7 percent, average weight gain rate was 5.12gm/Kg/day and average length of stay in the program was 48.28days.

Conclusions

Even though result of this Objective Oriented Evaluation of Outpatient Therapeutic feeding program is rated as good by scoring 81.7% based on judgment parameter; the necessary resources needed for effectiveness of program and also issues related to provision of service as per national program standards needs attention.

Acknowledgments

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Acronyms

CMAM	Community Management of Acute Malnutrition
EDHS	Ethiopian Demographic and Health Survey
EPI	Expanded Program of Immunization
FMOH	Federal Ministry of Health
ICCM	Integrated Community Case Management
ISS	Integrated Supportive Supervision
MAM	Moderate Acute Malnutrition
MUAC	Mid-Upper Arm Circumference
NCHS	National Center for Health Statistics
NEP	Nutrition Extension Package
OHB	Oromia Health Bureau
ORS	Oral Rehydration Salt
OTP	Outpatient Therapeutic Feeding Program
RDT	Rapid Diagnostic Test
RUTF	Ready to Use Therapeutic Foods
SAM	Severe Acute Malnutrition
SC	Stabilizing Center
SFP	Supplementary Feeding Program
TFP	Therapeutic Feeding Program
UNICEF	United Nations International Children's Emergency Fund
W/H	Weight for Height
W/L	Weight for Length
WHO	World Health Organization

Operational and Standard definitions

Appetite test: It is an activity done by OTP service provider during service delivery, by direct observation while a child starting RUTF based on national guideline procedure.

Availability: is a characteristic of resources that are operable or usable upon demand to perform its designated or required function at the start of a SAM management program, or it is the relationship between the volume and type of service (and resources) to SAM case volume and type of needs.

Compliance: In general, **compliance** means conforming to a rule, such as a specification, OTP guidelines, policy, standard or law.

Cured/ Recovered: Patient that has fulfilled discharge criteria

Death: SAM patient that has died while he/ she was attending the program at the facility or in transit to another component of the program but has not yet been admitted to that facility. For the out-patient program, the death has to be confirmed by a home visit.

Defaulter: Patient that is absent for 2 consecutive weeks (14 days), confirmed by a home visit for out-patient component of the program

Discharge criteria: W/L≥85% or W/H≥85% on more than one occasion. (Two weeks for out-patients). No edema for 14 days if present (out-patient).

Effectiveness: The degrees to which objectives of outpatient therapeutic feeding program were achieved and the extent to which targeted Severe Acute Malnutrition problems were solved.

Non-responder: Patient that has not reached the discharge criteria after 2months in the out-patient program.

Severe acute malnutrition (SAM): weight for height/length (W/H or W/L) < 70% or MUAC < 110 mm with a Length > 65 cm.

Unknown: Patient that is absent for 3 consecutive weeks in out-patient care (21 days) but whose outcome (actual defaulting or death) is not confirmed.

Weight gain (g/kg/day): is average weight (in gram) increase for every Kg of body weight of the child per day

Relapse: A case considered to be relapse if that patient has ever been severely malnourished before and cured

Co morbidity: Is when the child admitted to OTP program has additional illness than only severe malnutrition.

Meta-evaluation: is the process of describing, obtaining, and applying descriptive information and judgmental information - about the utility, feasibility, propriety, and accuracy of an evaluation and its systematic nature, competent conduct, integrity/honesty, respectfulness, and social responsibility to guide the evaluation and/or report its strengths and weaknesses.

Chapter 1: Introduction

1.1: Background

Nutrition is very important for everyone, it is especially important for children because it is directly linked to all aspects of their growth and development; factors which have direct ties to their level of health as adult. Providing right and a well balanced diet helps to promote a better quality of life but absence of sufficient and healthy diet leads to malnutrition, which is broadly categorized in moderate and severe acute malnutrition (1).

Severe acute malnutrition (SAM) is defined by weight for height < -3 standard deviation or by Mid-Upper Arm Circumference (MUAC) value of less than 110 mm in children aged 6-59 months(2). However, instead of using MUAC <110 mm, the World Health Organization (WHO) guideline updates on the management of SAM strongly recommended the use of MUAC<115 mm to identify children with SAM. Evidences indicate that the risk of mortality in acute malnutrition is directly related to its severity (2).

Globally, it is estimated that there are nearly 20 million children who are severely acutely malnourished, and there are about 1.5 million child deaths associated with severe wasting and 3.5 million deaths associated with moderate wasting every year (2, 3). Most of them live in South Asia and Sub-Saharan Africa (3). Directly or indirectly, malnutrition contributes to 53% of deaths of children under-five in developing countries. According to the United Nations International Children's Emergency Fund (UNICEF) estimates, around 26 million under five children suffer from SAM in developing counties (4).

Ethiopia is one of the countries with highest under-five child mortality rate, with malnutrition underlying to 57% of all children deaths. As stated in the latest Ethiopia Demography and Health Survey (EDHS, 2016), Weight-for-age is a composite index of weight-for-height and height-for-age and thus does not distinguish between acute malnutrition (wasting) and chronic malnutrition (5). Children can be underweight for their age because they are stunted, wasted, or both. Weight-for-age is an overall indicator of a population's nutritional health. The results show that 24

percent of all children are underweight (below-2 SD), and 7 percent are severely underweight (below -3 SD). The EDHS data also stated that the indicators of severe malnutrition (below-3SD) in Oromia regional state are 17.1%, 3.5%, and 6.6% for wasting, stunting and underweight respectively (5, 6).

In Ethiopia, the 2016 EDHS reported a remarkable decline in under five mortality, from166 per 1,000 in the year 2000 to 67 per 1,000 in 2016, however, the prevalence of wasting in Ethiopia has remained constant over the last years (6). Hence in light of the growing understanding of the links between episodes of acute malnutrition and stunting, it is clear that prevention and treatment of acute malnutrition is critical to child survival and development (4, 6).

According to data of UNICEF in 2013, an estimated 2.9 million children under five were admitted globally for treatment of SAM. This figure represents significant progress when compared with just over 1 million reported during 2009 yet is clearly insufficient when compared to the global burden of 17 million children affected by SAM. Children with SAM are nine times more likely to die than well-nourished children (6).

Until recently, treatment has been restricted to facility-based approaches, greatly limiting its coverage and impact, but in the past decade, the treatment of SAM has dramatically shifted from an inpatient model of treatment to community management of acute malnutrition (CMAM) programs, where care is given to patients without complications on an outpatient basis through community centers (4, 7). A number of studies have shown that outpatient therapeutic programs are more effective and cost effective than inpatient protocols, but most of these studies were undertaken in relatively stable low-income environments (8).

Among rehabilitative and curative intervention measures provision of ready-to-use therapeutic foods is the last and currently applied selective feeding program in most countries including Ethiopia. Therapeutic feeding program (TFPs) can be implemented through three ways known as therapeutic feeding center, stabilizing center, and outpatient therapeutic program (9).

From those three models of SAM case management, distribution of ready to use therapeutic foods is the commonest intervention at nationwide, and the only approach at the study area.[1]

1.2: Statement of the problem

Globally, it is estimated that there are nearly 20 million children who are severely acutely malnourished, and there are about 1.5 million child deaths associated with severe wasting and 3.5 million deaths associated with moderate wasting every year. About 9% these cases are live in Sub-Saharan Africa (2-4).

From total morbidity and mortality of under five children, SAM has the biggest contribution of death (50%), so it needs specialized treatment and prevention actions (10). According to study of UNICEF in developing countries SAM contributes for 53% of deaths and 26 million under five children suffers from SAM. From those morbidity and mortality burdens of SAM majority of cases are from south Asia and sub-Saharan Africa(6, 11) .

Ethiopia has a high prevalence of Acute and Chronic Malnutrition, with 10 percent of children are wasted, and 3 percent are severely wasted (below -3 SD).Wasting (Acute malnutrition) defined as weight for height with Z-score below minus two standard deviations from the median weight for height of the standard reference population. Sever wasting; Weight for height below -3SD or less than 70% of the median WHO reference values (5).

According to report of EDHS, 2016 the percentage of severe stunting, wasting and underweight in Oromia region is 17.1%, 3.5%, and 6.6% respectively. Rigorous consequences of malnutrition includes; reduction of function of immune system, poor wound healing, increased chance of pressure sores, impaired quality of life an increased mortality are the commonest complications. Thus this condition causes for medication and increased length of admission in hospitals, resulting increased health care costs. SAM causes effects not only on physical and physiological functions but also on intelligence of children (5, 12).

[1] Index of Height for Age = Stunting
Index of Weight for Age = Underweight
Index of Weight for Height = Wasting

Since SAM is biggest concern from global to continental level, when it is for underdeveloped country like Ethiopia it has to be paid high level attention because as indicated in most literatures malnutrition has severe consequences, to reverse this burden ministry of health implemented different type of interventions (13). OTP is one of the implemented interventions nationwide with three main models of provision of RUTF for out-patient, stabilizing center and inpatient care for severely affected children in compliance with national guideline (14).

In Oromia region the burden of SAM has also been paid similar attention, hence the prevention program implemented in similar manner with ministry of health, at study area since 2006 (15). Even though the program is implemented with the main aim of maximizing access and screening of SAM patients; there were challenges and limitation that hinders the program to meet its goal (14, 15). Among those constraints, incomplete availability of supply, interruption of supply delivery for health facility poor management of supply was the commonest operational problems. Hence it is difficult to manage all cases successfully so that the availability of right and sufficient resources as per requirements of national OTP protocol is an important indicator of implementation (15).

Ethiopian has made remarkable expansion and decentralization of OTP program, but according to study of UNICEF there were challenges like missing intended clinical outcomes as that of program guideline; inconsistent, incomplete recording and poor record keeping, hence it leads to missing of information about treatment and admission of SAM patients. Even though there are different protocols, records, reporting forms in the Woreda, it is not utilized properly at all levels (4, 14).

As it is indicated in annual report of Jimma zone Health office OTP program there are potential barriers and limitation which may limits success of the program. Also there is plan to address those challenges encountered the program. Gaps in screening of children, recording, reporting , poor adherence to OTP protocol, mismanagement of RUTF (wastage, storage problem) and miss-utilization(share, sell) of RUTF, luck of follow up, supervision feedback and others are the main factors which affects efficiency of resource utilization and effectiveness of the program. According to report the above constraints are among the factors contributes for inability of

properly identifying interventional outcomes like cure rate, average weight gain rate, and defaulter rate (16).

OTP offers service to severely malnourished children age 6-59 months. Even though Ready-to-use therapeutic foods are an important component of effective outpatient treatment of severe wasting, their effectiveness in the population- based prevention of moderate and severe wasting has not been evaluated satisfactorily (8, 17).

This study tried to identify availability of resource for the program, compliance level with national guideline, identifying facilitators and barriers of the program implementation also tried evaluate clinical outcomes according to objective of intervention so that to generate information related program effectiveness hence contributes for filling gaps related program improvement.

1.3: Significance of the evaluation

Through this evaluation the details of inputs for the program were assessed. The level of conformity of health worker to program standards was also indicated, barriers and facilitating factors for program implementation was identified and also possible treatment outcomes OTP on SAM cases were described. Hence the purpose of this evaluation was to contribute for future improvement of OTP service at the selected Health centres. The evaluation generates knowledge related to program implementation also the study tried to show gaps for future studies on the area

Finally the result of this objective oriented evaluation with its recommendations were provided to Seka Chekorsa Woreda health office, Jimma zone health department and different stakeholders according to their interest on the program so that it helps for decision making, planning and improvement of the program for the benefit SAM patients; which in turn contributes for reduction of morbidity and mortality from SAM.

Chapter 2: Description of the program

Outpatient therapeutic feeding program (OTP) is one type health intervention which is implemented for management of SAM by providing service at decentralized to primary health care setting i.e. closer to the community. Outpatient therapeutic feeding program espouses a public health approach to manage severe acute malnutrition that aims to clinical outcomes and coverage (2, 14). According to OTP guideline the program has achieved encouraging outcomes in terms of reducing mortality improved cure rate and defaulter rates when compared with sphere standards. OTP offers service to severely malnourished children age 6-59 months by providing Ready-to-use therapeutic foods and other essential drugs according to specifications in the guideline (14).

The commonest essential treatments and prophylaxes offered for SAM cases as per recommendation of OTP guidelines includes:

- Antibiotics (Amoxicillin)
- Vitamin A and Iron supplementation
- Measles vaccination
- Anti-helminthes
- Malaria testing and treatment

2.1: Program stakeholders

Stakeholders are who in some significant way are affected by, or involved in, the program or project during its lifetime and beyond. They deal with the activities of a program are well-designed also ensure that the goals and objectives of the program are practically accomplished as planned thus the role of stakeholders in the success of the undecided evaluation is very important and should be fairly emphasized (17).

Hence the identification of stakeholders was the first step during evaluability assessment that shows the way to arrangement of meeting for interaction and dialogue between interest groups. The evaluator identified and involved key Stakeholders and Partners named as: hospitals, health centers, health posts, Woreda and zonal health office, health professionals, the head of the Health centers, the community leaders and governmental organizations.

Table 1: Stakeholder analysis matrix for the evaluation of OTP service for SAM prevention program at selected health centers in Seka Chekorsa Woreda Jimma Zone, 2017

Stakeholder	Role In The Program	Role In The Evaluation	Interest Or Perspective On Evaluation	Ways of communication	Level Of Importance
1. Oromia regional health bureau	Administrative support Provision of guideline, protocols, supplies Technical support an supervision Coordinates all activities of financial support	Defining the problem Formulation of evaluation question, Utilization of findings	Identify the gaps, Use findings to increase the coverage and utilization of the programs	-letter, Face to face	High
2. Zonal health department	Technical support Resource allocation Financial support Conduct training and review meetings	Defining the problem Formulation of evaluation question, Utilization of findings	Use findings to increase the coverage and utilization of the programs	-Face to face -phone	High
3. Seka Chekorsa health office	Planning, implementation Resource allocation Document management, reporting Provide technical support, -Facilitate management activities and monitoring and evaluation Coordinates all activities of OTP	Defining the problem Formulation of evaluation question, Utilization of findings	Use finding for planning, Use findings to increase the coverage and utilization of the programs	-Face to face -phone	High
4. Woreda administrative office	Budget allocation Community mobilization Administrative support	Defining the problem Utilization of findings	Use findings to increase the coverage and resource allocation	-Face to face	Medium
5. PFSA	logistic procurement and supply	Formulation of evaluation question, Utilization of findings	-utilize findings to improve flow of supply	-Face to face	Low

…Continuation Stakeholder analysis matrix					
Stakeholder	**Role In The Program**	**Role In The Evaluation**	**Interest Or Perspective On Evaluation**	**Ways of communication**	**Level Of Importance**
6. Health Development Army	work with the Health Centre community mobilization	Source of data during evaluation	Use the findings to improve services and coordination with Health Centers	-Face to face -phone	High
7. Hospitals/ Health Centers	Planning Implementation, community mobilization, technical support for health extension workers, monitoring and follow up, recording and reporting	Recommend evaluation of the program; was directly involved in the evaluation, including defining evaluation questions and program description	Would like to identify the gaps in program implementation, utilization and believe that findings from the evaluation will help to program accountability improvement, and knowledge	-Face to face -phone	High
8. Kebele administration	Mobilization and community sensitization on benefit of OTP	Providing information related to programs activities	Interested in the evaluation findings, to use for community Mobilization and sensitization on benefit of OTP	-Face to face -phone	Low
9. Community/Care givers/Mothers	Performs tasks they told through health education	Source of information	Involved in program activities like immunization, nutrition screening	Discussions	Medium

2.2: Expected program effects/objectives

Children who are at risk of malnutrition should obtain appropriate care and treatment according to national and international standards at a right time with a right dose of ready to use therapeutic food. Hence outpatient therapeutic feeding program should provide rehabilitative diet with treatment and care for disease and complication related to severe acute malnutrition. In addition to this, the program is expected to contribute for reduction of morbidity and mortality from SAM, by increasing service utilization and coverage (2, 13).

General Objective:

To contribute for reduction of morbidity and mortality of under five years of age children that result from severe acute malnutrition in Seka Chekorsa Woreda, 2016.

Specific Objectives:

- Increasing identification of SAM cases from 80% to 90% by the end of 2016
- To increase cure rate of children with SAM from 85% to 90% by the end of 2016
- To reduce 90% mortality risk of children with SAM, by the end of 2016
- Providing follow up support for 90% of children who have been treated for SAM by the end of 2016

2.3: Major strategies

Resource chain assurance, acquisition and refilling

- Assuring continuous sustainable availability of resource and supplies at Woreda level
- Checking availability of supplies according to guidelines and protocols in each health facility
- Constructing best communication channel regarding early acquisition of resource.

Capacity building

- Enhancing skill of health professionals on SAM management and care at all health facility level.
- Giving responsibility to trained health worker on SAM management
- Orientation and continuous sensitization training on OTP protocol and case management for newly employed health professionals

Community mobilization

- Awareness Creation for the community on burden SAM and ways out of the burden
- Giving awareness creation training for health development army on how to screen and refer SAM cases to nearby health center
- Creating link of SAM cases with health extension workers for ease of follow up

Supervision

- Developing standard documents like checklists, form, records which helps for supervision.
- Having continuous and sustainable supportive supervision schedule
- Giving timely feedback for respective Health centers

2.4: Program components

Trained human power, money and information needed are usually inputs of the program to mount program features effectively (18, 19). Hence the resources (inputs) of implementation of OTP program include:

Resources (Inputs)

- Skilled human resource
- Sufficient financial resources
- Infrastructure
    - Health center
    - Health post
    - Clean water supply
- Medical equipment's
    - Weight, Height measurement scale
    - MUAC measurement tape
    - Thermometer
- Drugs and Vaccines
    - Amoxicillin syrup
    - Anti-malarial drugs
    - ORS
    - Vitamin A

- Measles Vaccine
- TTC Eye ointment
- Albendazole

- Supplies
  - RUTF (plumpy nut)
  - Malaria screening RDT
- IEC/BCC Materials
- OTP National Guideline
- OTP quick reference book
- Recording and Reporting Documents
  - Registration book
  - OTP card
  - Reporting and Referral forms
  - Standard supportive supervision checklists

Activities

- Allocation of all types of resource for the program
- Giving training's to enhance skill of relevant health professionals on SAM management and care at all health facility level.
- Providing all technical supplies to trained health worker with Responsibility
- Correctly identifying children with SAM
- Providing RUTF and other medication for eligible children and follow up
- Referring complicated cases of SAM to hospitals
- Orientation and continuous training on OTP protocol and case management for new employed health professionals
- Awareness Creation on SAM burden and ways out of the burden for the community.
- Creating link of SAM case with health extension workers for follow up and support
- Community involvement and discussion on means of improvement of the program
- Data management, recording and reporting of each activities

Expected program outputs

Outputs are the direct products of activities, which can be viewed as activity refined intangible or countable terms and outputs are usually the immediate results of utilized program resources (19). Hence OTP program output includes:

- Number of participant of health education
- Number of health worker attending training
- Number of recruited and assessed SAM cases
- Number of SAM cases identified with medical complications
- Number of SAM case treated with RUTF
- Number of clear and timely recorded and reported
- Number of ISS and Review meeting conducted,

Expected program outcomes

Outcomes are intermediate effects (changes) that were result from program activities of the proposed target beneficiaries of the intervention (19).

Outcomes of OTP program includes:

- Improved community awareness on malnutrition and utilization of OTP
- Improved SAM case identification and management
- Improved clinical outcomes of SAM cases (cure rate, average weight gain rate and mean length of admission)
- Improved follow up, reporting accuracy and data quality

Impacts of the Program

Impacts are the long term effects of the program on the whole society rather than the target beneficiaries of the program (19).

So that the proposed impact of OTP program is “reduction of morbidity and mortality resulted from SAM”

2.5: Program Logic model

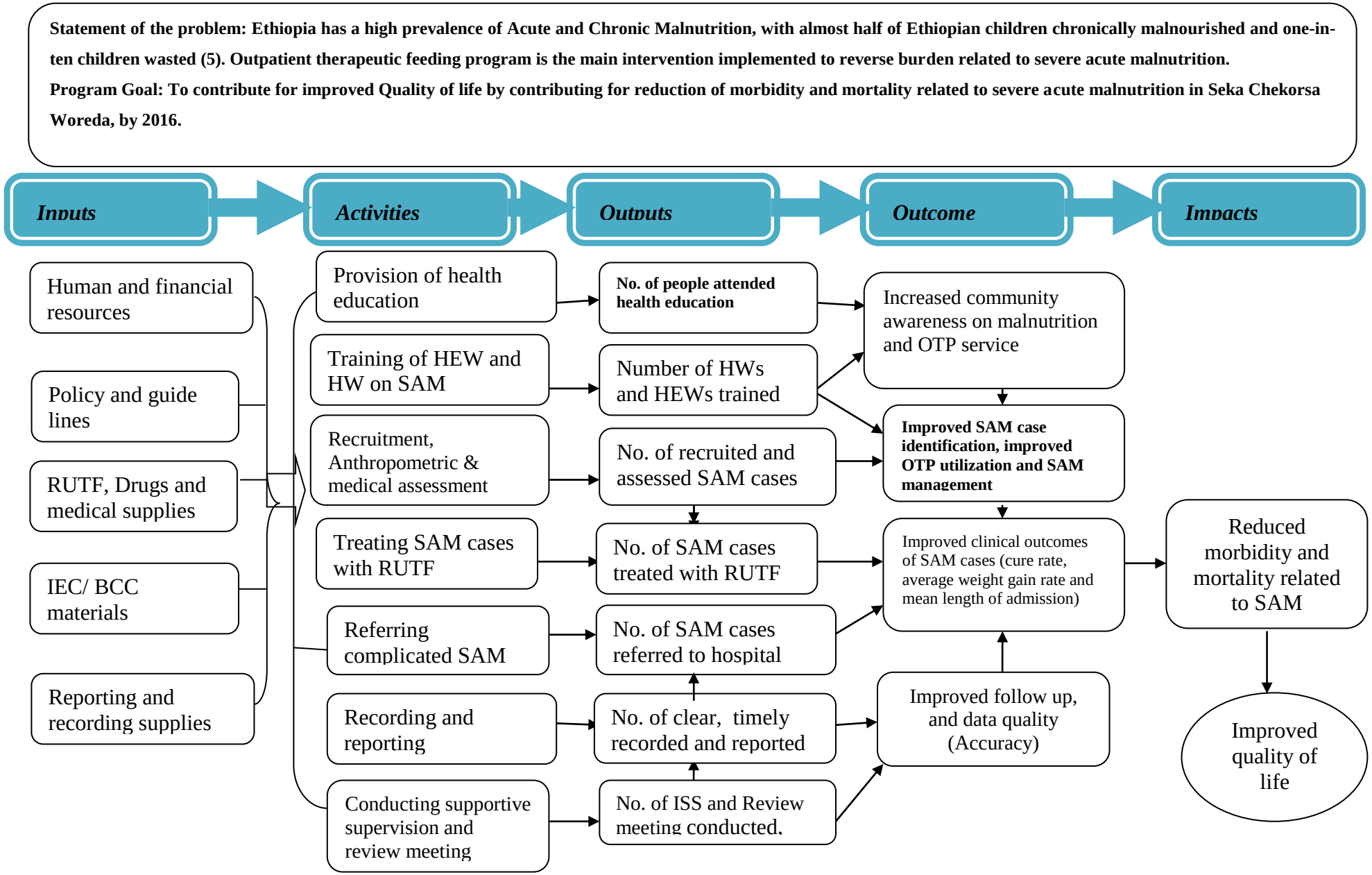

Figure 1: OTP program logic model Seka Chekorsa Woreda, Jmma zone, 2016

2.6: Stage of program development

Since 2002 G.C the recognition burden of dealing with severe acute malnutrition; mangment programs are in steps forward in Ethiopia. The program was mainly characterized by three major landmarks with respect to different driving forces of the program, integration in to health system treatment components a geographical scale up (14).

The first landmark was the establishment of structured SAM treatment programs scaled up in response to an emergency. This occurred in 2002/2003 during the period of drought and food shortage, which caused an increment in SAM prevalence. The second milestone was occurred between 2004 and 2008. This period was characterized by major changes in the approach to SAM treatment, including use of community-based system which dispensed ready to use therapeutic foods (13, 14).

The treatment was managed through OTPs and was further decentralized to HCs to increase coverage and access. The third landmark was occurred from 2008 to present time. In 2008 drought and high food prices again caused dramatic increment of SAM cases. The federal ministry of health decided to rapidly scale up CMAM by decentralizing OTP to Health posts and made concerted for the last 10 years in the study area, it was mature enough to see immediate outcomes on the target groups and then it can provide information for the evaluation (13, 14).

Chapter 3: Literature Review

Studies conducted in the area OTP intervention for SAM management revealed that the overall implementation of the program as well as progress made in terms of saving lives of children, who are affected by SAM, in addition they assessed and revealed potential factors which have significant associations with the intervention. Hence according to the objective of this evaluation, summary of the literature is presented below.

Globally, around 1 to 2 million children die every year due to severe acute malnutrition and 20 million children live with severe acute malnutrition (1). In developing countries around two percent of children have SAM; from this, South Asia and Sub-Saharan African countries took biggest share. SAM is the commonest cause of hospital admission in the pediatric ward and it is a reason for 25 to 30% death in many poor countries (1, 11, 12).

Ethiopia is one of the countries in the sub-Saharan Africa with the highest rates of severe acute malnutrition. Over the past fifteen years, the trend of malnutrition revealed that there is a reduction in stunting by 31% and underweight by 39%. However, there was only a small decline in the prevalence of wasting over the last 15 years (from 12 to 9 percent). In Ethiopia, 3 percent of under-five children have SAM and 2.2 percent are found in Oromia regional state (5).

Similarly, SAM is the primary diagnosis in 20% of pediatric hospital admissions in Ethiopia. The problem of SAM is not only medical disorder rather it is also social disorder. Therefore, successful management of severely malnourished patients requires both medical and social efforts. Child under-nutrition has long-term negative effects on child's lives and this will affects the human capital of a country on which the economy relies (5, 14).

Also as stated in the latest EDHS, 2016, the indicators of severe malnutrition (below-3SD) in Ethiopia were 18 percent, 3 percent, 6.7 percent and in Oromia regional state are 17.1 percent, 3.5 percent and 6.6 percent for weight-for-height, height-for-age and Weight-for-age respectively (5).

Under nutrition encompasses stunting (chronic malnutrition), wasting (acute malnutrition) and deficiencies of micronutrients (essential vitamins and minerals). The high mortality and disease

burden resulting from under nutrition call for urgent implementation of interventions to reduce their occurrence and consequences and this would include determined action on the social determinants of under nutrition (20).

The development of ready-to-use therapeutic food (RUTF) in mid-90s has brought a radically new method to management of SAM, among approaches, provision of RUTF for management SAM was restricted to health centers or therapeutic feeding centers but currently offering services of RUTF expanded to outpatient therapeutic program (21).

Availability and compliance dimensions

The information coming from evaluation assessments shows that performance of OTP services should improve through more and better trained staff and uninterrupted supply of essential inputs so it can have a positive impact on program effectiveness. Hence the availability of sufficient resources, particularly skilled and motivated health staff, is a vital determinant of success and effectiveness. In practice, skilled staff needed is rarely available also shortages of skilled staff commonly preclude the effective and sustainable implementation of OTP guidelines for the management of SAM (1, 22).

According to Evaluation of outpatient therapeutic Program conducted in Zambia One key issue on the implementation and sustainability of OTP mentioned by the stakeholders was the challenge of resource which is short-term donor-dependent funding. This was believed to affect the implementation and outcomes of program. Other issues mentioned which were believed to hinder sustainability were lack of re-training for OTP staff, inadequate monitoring and review meetings. Although budget support for monitoring and supervision were included in the annual action plan for the district, long term support of OTP activities were not fully considered (23).

The persistence of high case-fatality rates is commonly attributed to inappropriate case management as a result of poor knowledge. The accepted view is that wider implementation of the WHO guidelines through in-service training is the key to substantially decreasing case-fatality rates worldwide. However, where as there is good evidence that adequate training of health staff in the management of SAM is essential if the implementation of the WHO guidelines

is to be effective, the evidence base supporting the view that the wider implementation of the WHO guidelines is key to the reduction of case-fatality rates is weak (2, 18).

A study conducted on assessment of outpatient therapeutic program in three regions of Ethiopia (Addis Ababa, Oromia, and SNNPR) has been widely investigated that continuous and sustainable availability of the supplies for the OTP were at poor level hence interruption of a supply leads to poor quality service and ends up in defaulting of cases, lack of trust in the program. As revealed in this study; the supply for the plumpy nut was good but other essential drugs and reporting as there were interruptions in some places due to accumulation of the supplies at the regional stores (24).

Another study conducted on Challenges in Implementing the Integrated Community-Based Outpatient Therapeutic Program for Severely Malnourished Children in Rural Southern Ethiopia, discovered that even though health workers provide RUTF as a treatment for SAM children, their caregivers misuse (share or sell) for other purpose endangering the effectiveness of program (22).

Another study carried out on Malnutrition in Tigray has been identified importance of availability of essential drugs and has been recognized and prioritized by child survival program, including oral rehydration solution for diarrhea; antibiotics for SAM related infections, vitamin A supplementation, anti anemia drugs, and vaccinations. This study also recommends consideration of coverage while evaluating the program; geographical coverage and treatment coverage. These two types of coverage estimations are not only different, but they should be used for different purposes. Geographical coverage should be used as a process indicator to evaluate the scaling-up and decentralization of SAM treatment services. Treatment coverage should be used as an impact indicator to evaluate the extent to which available services are successfully reaching a high proportion of SAM cases in catchment areas(7, 25).

Effectiveness dimension

Goal of the program were feeding ready-to-use therapeutic food (RUTF) until children gain adequate weight and recovered also treating with a short course of basic oral medication to treat

infections. Follow-up including the provision of the next supply of RUTF, should be done weekly or every two weeks by a through trained health workers (3, 7).

A study on Outpatient Therapeutic Feeding Program Outcomes and Determinants in Treatment of Severe Acute Malnutrition Northern Ethiopia demonstrated that Medical complications and OTP treatment outcomes after the OTP intervention, children showed a 21.4% weight increase during discharge as compared with their admission weight and failure to gain any weight for at least three consecutive weeks was17.90 percent, death rate was 3.02 percent. The defaulter rate was13.85 percent and the average defaulting time was 3.34weeks. The mean length of stay under the intervention was6.48weeksand Children who didn't reach any of the discharge criteria (non-respondents) were 8.91 percent (26).

Another retrospective study conducted Predictors of nutritional recovery time and survival status among children with SAM conducted Southern Ethiopia indicates; Treatment outcomes of children with severe acute malnutrition among the total study subjects, 82.4 % cured, the median nutritional recovery time of the entire cohort was 26 days in relation to medical complications, median nutritional recovery time was 26 days, also the overall median length of stay for the entire cohorts of children with SAM was 26.4 days (27).

A study on outcome Rates and Determinants in Treatment of Children with Severe Acute Malnutrition using Outpatient Therapeutic Feeding Program in Sidama Zone, South Ethiopia shows of the total children admitted to OTP; the recovery rate from SAM was 68.8%. Whereas 1.3%, 24.1%, 3.2%, 2.3%, 0.3% children died, defaulted, transferred, unknown (quit the program with unknown outcome status) and non responders (who did not reach any of the discharge criteria) respectively (28).

Another Preliminary work on SAM case outcome focused on a better understanding of the mechanism behind the discrepancy between outcome of SAM case admitted with MUAC and Edema is desirable, inquiries in this area should not delay the implementation of programs aiming at effectively reducing malnutrition related deaths by prioritizing the detection and treatment of children with low MUAC (29).

More recent evidence obtained from study conducted on recovery rate and its determinant in Bahir dar, 2013, it shows that Ninety percent (90.5%) of under-five years SAM admitted children at the therapeutic feeding units had at least one form of co-morbidities. Likewise, the majority of wasted (92.9%) and edematous (86.5%) SAM children had co-morbidities at admission. The rest 7.1% of wasted and 13.5% of edematous children were admitted with only the diagnosis of severe malnutrition. Diarrhea (36.2%), pneumonia (39.2%), anemia (29.7%), and gastrointestinal tract infections (29.4%) were the prevalent co morbidities (30).

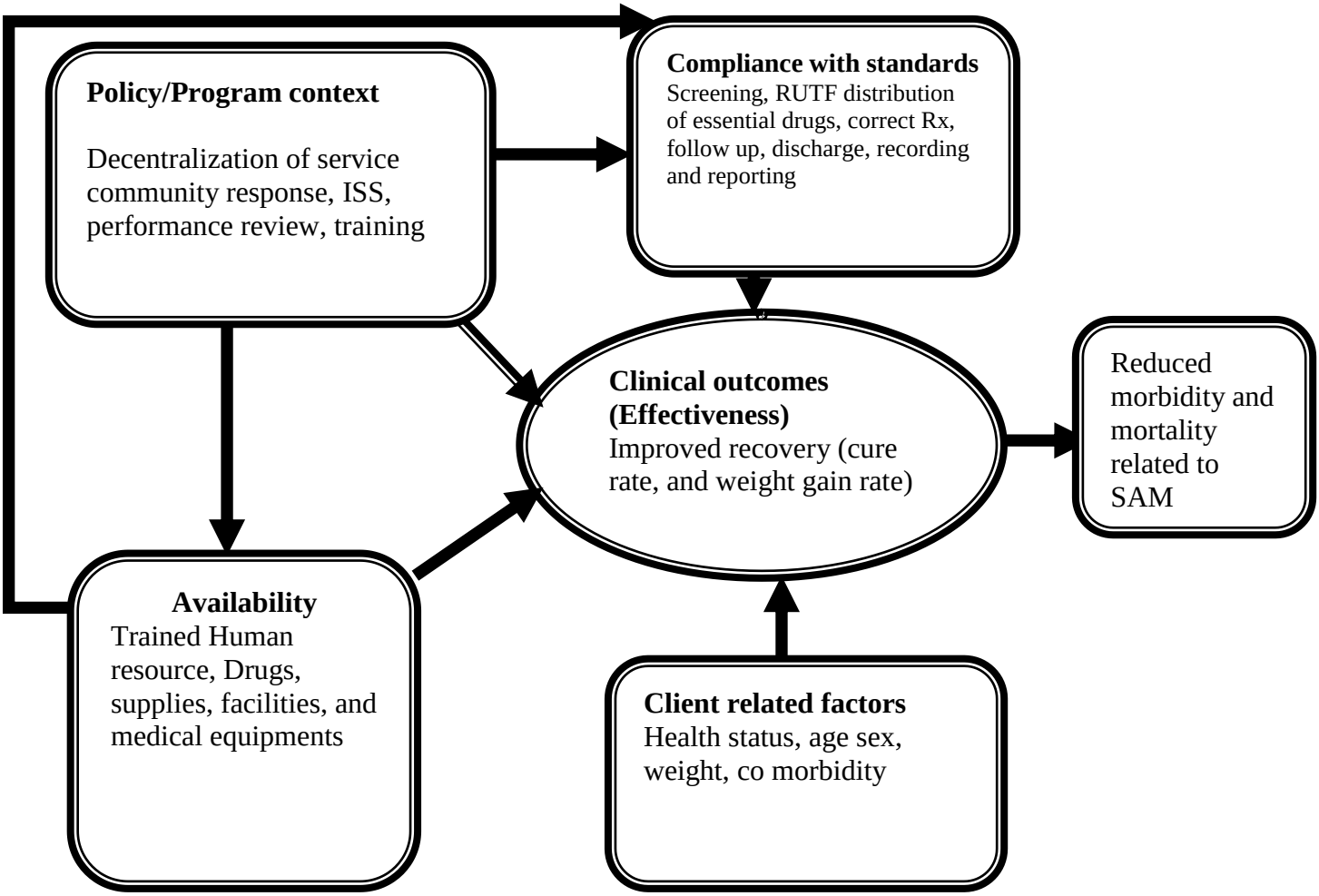

Figure 2: Conceptual Framework of SAM prevention program in Seka Chekorsa Woreda, Jimma zone, May 2017(Adapted from: National and WHO OTP protocols)

Chapter 4: Evaluation Questions and Objectives

4.1: Evaluation questions

- Did the program achieve its objective as intended, if yes, how? If no, why?
- Did the program have the required resources to meet its intended objective? If no why?
- Is the program implemented according to the national guideline? If no why?
- What are possible factors that could affect child's clinical outcomes of SAM management?

4.2: Objectives

General objective

- To assess, if operational objectives of SAM management program has been achieved as intended at selected health centers in Seka Chekorsa, Woreda, Jimma zone, 2017

4.3: Specific objectives

- ✓ To determine the level of achievement of OTP program for SAM management in Seka Chekorsa, Woreda, Jimma zone, 2017
- ✓ To assess the availability of resource needed for OTP service in Seka Chekorsa, Woreda, Jimma zone, 2017
- ✓ To assess compliance of health care providers in implementation of supplementary feeding program to national guideline in Seka Chekorsa, Woreda, Jimma zone, 2017
- ✓ To identify factor which affects clinical outcomes of SAM cases in Seka Chekorsa, Woreda, Jimma zone, 2017

Chapter 5: Evaluation Methods

5.1: Study area

The evaluation was conducted in Seka Chekorsa Woreda, which is one of 18 woredas in Jimma zone, Oromia region. Seka Chekorsa Woreda is located 370 km from Addis Ababa and 18 km from Jimma town. According to data obtained from woreda health office, Seka Chekorsa Woreda has a total population of 272, 015, of which 50.3 percent of them are female and 16.43 percent are under five children. SAM cases comprised of 983(2.2 percent).

Seka Chekorsa Woreda administration comprises of 36 rural kebeles and one urban kebele. Under the woreda, there are 47 government Health facilities(one general hospital, ten health centers and 36 health posts) providing preventive, promotive and curative health services to the woreda population making health service coverage of 91% (Seka Chekorsa Health office, 2016).

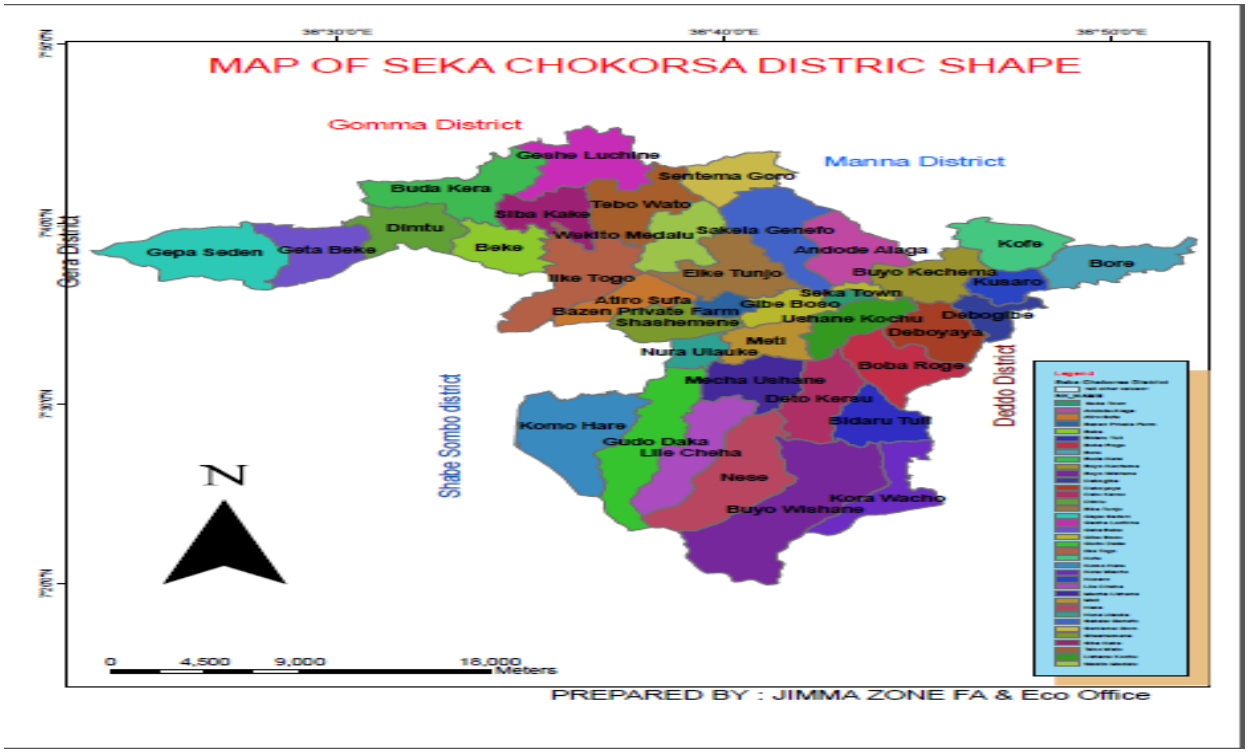

Figure 3: Administrative map of Seka Chekorsa Woreda (Source: Jimma Zone, FA&Eco office Jan, 2017)

5.2: Evaluation Period

The processes of Evaluation was started from January 09-22, 2017 by conducting evaluability assessment in January 1-7, 2017 and followed by data collection from March 05 to March 25, 2017. In general process of the evaluation was undertaken for four months; hence it was completed at end of May 2017.

5.3: Evaluation approach

Formative evaluation approach was adapted to identify how much the program objective was successful. The formative approach was preferred because it helps to identify inputs, activities, outputs and extent of achievements of its goals. Moreover it was performed to gain understanding on type and amounts of resource needed for the program, level of compliance with national guideline, enabling or restraint factors associated with the program hence to contribute for program improvement by providing feedback to different interested bodies (31).

5.4: Evaluation design

Cross-sectional study design was used for evaluation of the program, because it has an advantage to understand programs information of outcome of interest over a certain period of time (usually one year) retrospectively. Also it helps for description of the extent and trend of risk factors, distribution of variables, and association among variables hence it can be adopted as both descriptive and analytic approaches. Therefore for descriptive type variables like coverage of intervention, OTP service utilization, attitude and practice related to program, and for analytic approach assessment of program exposure and its effects (outcomes) on target beneficiaries was carried out (32-34). Information's related to program components was collected using qualitative and quantitative data collection methods.

5.5: Focus of evaluation and Dimensions

5.5.1: Focus of evaluation

The focus of this evaluation was outcome of OTP program through assessment availability of resources needed for program implementation, compliance with national guideline, and identification of limitations in reaching beneficiaries.

5.5.2: Dimensions of evaluation

The evaluation was conducted by using three dimensions namely availability, compliance, and effectiveness (operational outcomes) dimension of the program. Those selected dimensions were employed to measure clinical outcomes indicator part of the program and the implementation components by including inputs, activities and outputs. External factors listed under program context were also considered to identify whether it has positive or negative effects on selected dimensions and program components.

5.6: Indicators/Variables

Indicators

The following 28 indicators were selected with stakeholders of the program to identify inputs, activities, outputs and outcomes of the program of interest based the selected program dimensions.

- Availability dimension 14 indicators
- Compliance dimension 8 indicators
- Effectiveness(Operational Outcomes) dimension 6 indicators

Availability dimension indicators

- Number of skilled health professional in each health facility
- Proportion of trained health professional on OTP service provision in the period of evaluation
- Proportion of health centers with stock of RUTF for at least 6 months
- Proportion of health centers with Amoxicillin syrup for at least 6 months
- Proportion of health centers with vitamin A supplementation for at least 6 months
- Proportion of health centers with MUAC measuring tape in the period of evaluation
- Proportion of health centers with Albendazole for at least 6 months
- Proportion of health centers with folic acid for at least 6 months
- Proportion of health centers with anti malarial drugs for at least 6 months
- Proportion of health centers with functional thermometer in the period of evaluation
- Proportion of health centers with OTP card for planned Number of children in the period of evaluation

- Proportion of health centers with OTP registration book in the period of evaluation
- Proportion of health centers with report formats in the period of evaluation
- Proportion of health centers with clean water supply in the compound

Compliance dimension indicators

- Proportion of children screened using the recommended anthropometric measuring standard
- Proportion of SAM cases appetite test conducted with RUTF
- Proportion of SAM cases treated with proper amount of RUTF according to OTP implementation guideline
- Proportion of discharged SAM cases based on discharge criteria
- Proportion of complicated SAM cases referred to stabilizing center according to OTP implementation guideline
- Proportion of health facility got OTP targeted integrated supportive supervision in the last quarter by standard checklist
- Proportion of health facility got written feedback of ISS from different concerned bodies.
- Proportion of health centers that send their report within reporting periods.

Effectiveness dimension indicators[2]

- Proportion of SAM cases who were cured from total admitted
- Average length of time to recover
- Mean weight gain of recovered SAM cases
- Proportion of Deaths occurred from total admission
- Proportion of Defaulter rate from total admission
- Proportion of non respondents from total treatments

[2] The denominator for the proportion used in effectiveness indicators were 378, which is number of OTP cards reviewed for this evaluation study, at selected HCs in Seka Chekorsa, Woreda Jimma zone, 2017
Ethiopian OTP Protocol of 2007 were used as reference

Variables

Dependent variables:

- Cure Rate of SAM cases

Independent variables:

- Demographic characteristics SAM cases (age, sex)
- Follow up of recommendation/prescriptions: RUTF utilization
- Previous Health condition (History of cough, diarrhea and vomiting)
- Routine medication (essential drugs)
- Medical complication (co morbidities)
- Appetite test result (pass/fail)
- History of Breast feeding
- Admission criteria (Edema, MUAC, both, W/H<70%)
- Admission status (new, defaulter, readmission, refer from other site)

5.7: Populations and sampling

5.7.1: Target population

The target for this study were all children from 6 – 59 months age in Seka Chekorsa Woreda, Jimma zone, all health professionals, all HEWS, all program focal person in each health facility, and program coordinator at office in Woreda.

5.7.2: Source population

All children from 6 – 59 months of age which have developed severe acute malnutrition and visited health facility, all health workers and HEWs offering OTP service, all program focal person in each health facility, and program coordinator at office in Woreda,

5.7.3: Study population

Selected SAM cases, selected health facility providing OTP service, selected health extension workers, all program focal person in each health facility, and program coordinator at office in Woreda,

5.7.4: Study units and sampling units

SAM case cards in selected health facility, and purposefully selected health extension workers, program focal person in each health facility, and program coordinator at office in Woreda.

5.7.5: Sample size

Considering WHO recommendations for selecting health facility for assessment; number of health centers and statistical agreement for sample size calculation, also considering available resource and feasibility of time five health centers were selected from total of 10 health centers available in the Woreda (35). Single population proportion formula was used to calculate the sample size of SAM case card review which was used to examine cure and weight gain rates of SAM cases from their respective cards. The card review was conducted from March 1 to March 20, 2017

Hence according to single population proportion formulae, based on the assumptions that; Level of confidence 95%, 5% margin of error, and P is the proportion of cured SAM cases that shows effectiveness of the program, hence to obtain maximum sample size to evaluate effectiveness of program at study area, p =50% was taken to have maximum sample size. Based on these assumptions the actual sample size for the study was computed using the formula for single population proportion:

$$n = \frac{(Z\ \alpha/2)^2 P\ (1-p)}{d^2}$$

Where, n= sample size, Z α/2= Critical value=1.96, P= proportion of cure rate of SAM cases, d= precision (marginal error) =0.05,

Then $n = \frac{(1.96)^2(0.5*0.5)}{(0.05)^2} = 384$

n=384, from this 384 sample; proportionally and randomly selected children cards were allotted for each health centers based on population proportion in their respective catchment area.

Sample size for Direct Observation

To obtain actual data at its natural context, interaction of 50 SAM cases with service provider was observed while health worker providing the service. This helps to describe compliance level with the guidelines by taking proportion of SAM cases assessed, and treated. The allocation procedure was: from 50 structured observations planned to be conducted ten observations were

equally distributed for each 5HC and conducted and seven successive observations were included but the first two successive observations and last one were not included to reduce observation bias.

Sample size for key informant interviews

Twelve (12) respondents were purposely selected from different categories to obtain sufficient and relevant information:

- 1 Woreda level program coordinator interviewed from purposely selected woreda.
- 5 Program focal persons from selected health centers
- 6 HEWs from randomly selected health posts under health centers catchment areas, one HEW was selected by lottery method from available two HEWs.

Resources inventory

Program resources inventory were conducted at Woreda Health office store, and selected health centers store, total of six inventories was conducted using standard checklist adapted from program guideline. This method was employed obtain data related to availability of resources for OTP service.

5.7.6: Sampling procedure/technique

To conduct document review three hundred eighty four (384) SAM cards were distributed to health centers according to population proportions in their catchment area, and the first SAM card was selected by lottery method from card one to three, and the rest cared were selected every two interval until proposed sample was obtained at selected health facility. For key informant interview the sampling technique was purposefully from different service delivery chain of command.

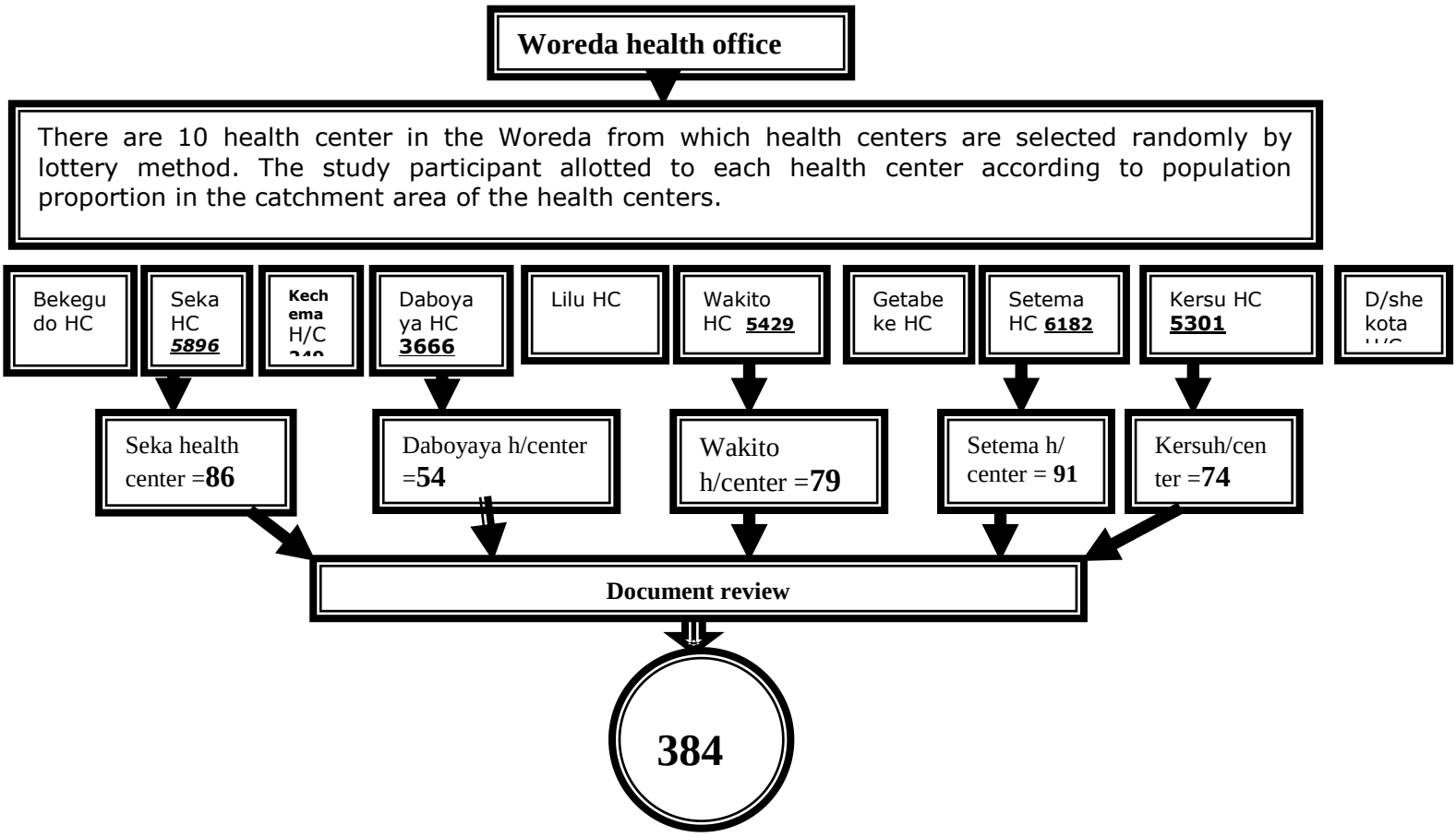

Figure 4: Diagrammatic representation of sampling procedure for Eavaluation of SAM mangament program at selected HCs in Seka chekorsa woreda, Jimma Zone, May 2017.[3]

[3] The calculated sample size for selected health centers were based on proportion of population in the catchment of respective health centers. Total number of under five children in the woreda is 44,692(16.23% of Total population). From this total number sample size of 384 was calculated for document review. This 384 number was divided to health center catchment area population listed in above graph.

5.7.7: Inclusion and exclusion criteria

Inclusion criteria

- All SAM patient cards within last one year, From January 1 to 2016 to December 20, 2016
- Seven observations were included in data from total of ten observations at each HCs.
- Key informants who worked for at least one year in the Woreda was included in the study to obtain rich information

Exclusion criteria

- All SAM patient cards without information of Age, admission weight and weekly follow up weight was excluded because it is difficult to calculate average weight gain.
- SAM case cards that are transferred in or transferred out during study period because time for treatment outcome and referral feedback may go up to beyond study period.

5.8: Data Collection

Both qualitative and quantitative data collection methods were used by developing structured and semi structured questioners based on national OTP implementation guideline, cards and checklists. For quantitative data collection methods like document review: structured checklist were developed by referring OTP implementation guideline to obtain general information about SAM case, information related to admission, health history, physical examination, medication and discharge. While for direct observation structured tools were used to assess compliance of health care provider with national OTP guideline during delivery of service. Qualitative data were collected using semi-structured questionnaire, through key informant interview by using unstructured interview guide to obtain information's about program context, community involvement, availability of resources, performance review and integrated supportive supervisions.

5.8.1: Development of data collection tools

.

A structured and semi structured questioners were developed by reviewing national OTP guideline, OTP cards and checklists. Developed data collection methods were includes:

Clinical card review template: - structured checklist was developed by referring to OTP guideline and cards. The template was employed to obtain general information, information during admission, previous health history, physical examination, medication and discharge information of SAM cases(14).

Resource inventory checklist: - Inventory checklist was adapted by referring to resource list in OTP guideline. This method was employed to obtain data related to availability of OTP program resources like essential drugs, medical equipments, supplies and different program documents.

Observation checklist: - Structured observation checklist was developed by referring to OTP guideline and used to assess level of compliance of health workers with OTP standards while providing service to SAM cases.

Key informant interview: - Unstructured interview guide was developed including local language version (Afaan Oromo) to obtain detail information related to program context, ISS system and resource availability related issues.

5.8.2: Data collectors

Four degree nurses, two health officers and one supervisor with a minimum of one year of exposure to OTP program were selected and they were trained on the subject of interest for two days theoretical and one day practical sessions, then they collected data by document review method and direct observation. For direct observation two health officers were participated and for key informant interview and resource inventory the primary evaluator himself was directly involved. To minimize errors and improve data quality one supervisor with first degree in health was participated.

5.8.3: Data collection field work

Data was collected from selected health centers, woreda health office and health workers through document review, direct observation, resource inventory and key informant's interview from March five to twenty five 2017, in Seka Chekorsa Woreda, Jimma zone. The data was collected through mixed method to obtain rich information about the program and analyzed separately and merged during discussion.

Document Review: - Data collectors were started the procedure after communicating with concerned bodies at health centers and obtained consent. The data was collected in March 2017

by reviewing OTP card of SAM cases until projected sample size reached as WHO standards (2, 14). Supervision was conducted to decrease errors and improve data quality.

Resource inventory: - It was conducted by making interview with logistic manager, reviewing stock cards using standard checklist. The inventory was undertaken by primary evaluator after communicating with Woreda coordinator and health center focal persons using standard inventory checklists adapted from OTP guideline.

Direct Observation: After receiving consent of agreement from both service provider and receiver, non participatory observation was conducted by data collectors while the health worker provides service for SAM cases to obtain information whether the health workers do their job according national standard of OTP program.

Key informant interview:-The primary evaluator was communicated with respondents for arrangement on convenient time for interview and after agreement reached recording for the voice of respondents note writing was undertaken simultaneously.

For all field works one supervisor and six data collectors were employed to participate in data collection. They were hired from outside study areas to minimize bias. Preferred Supervisor was health professional, hence if any errors and malpractice corrective measure was undertaken.

5.9: Data management and analysis

Data quality control

To be familiar with all types of data, tools and data collection methods: - The data collectors and supervisor were trained and demonstrated on each questions before starting any activity. After having common understanding, pretest was conducted for direct observation tool on 5% of sample size outside study area (at Bake Gudoo HC in March two and before data collection period) i.e. from non selected HCs to minimize bias of respondents during actual data collection. Pre test was considered because it helps for understanding sensitivity, complexity and relevance of data collection tools.

During data collection, completeness and consistency of information including typing errors were checked by supervisor and corrected on daily bases, after collection of data crosschecked and complete data were entered to Epi- data version 3.1.

5.9.1: Data entry

After checking for completeness and consistency, the principal evaluator coded, edited, and entered data in to Epi-data version 3.12 and exported to SPSS database version 20 for analysis.

5.9.2: Data cleaning

Data is key resource in any study/evaluation so has to be handled carefully. Incomplete, inaccurate, corrupted, inconsistent or invalid data obtained were detected and corrected or removed by discussing with evaluation team daily. Additionally data was cleaned by sorting and calculating frequencies also missed values were identified.

5.9.3: Data analysis

After collecting data, it was checked for completeness then for quantitative data SPSS version 20 were used for analysis and manual qualitative data analysis after completion of data check up and translation processes (transcription and translation were conducted by evaluation team). Findings of quantitative data were presented using tables, graphs and diagram while qualitative data was expressed in narrative form. Descriptive statistics were used for quantitative data to determine frequencies, means, and proportions and multivariate analysis was employed to identify predictor of outcome of interest for the program, and statistically significant value was considered at cut-off point of $p = 0.05$.

For qualitative data analysis the responses obtained by voice recording and field notes were analyzed manually by categorizing to major thematic areas after analyzing contents of each response. Qualitative data findings were used as supplementation of quantitative data findings. Finally conclusion and recommendations were developed based on outputs of analysis.

5.10: Matrix of analysis and judgment

After identifying evaluation dimensions, the weight of each dimensions and respective critical indicators were given with key stakeholders depending on their level of relevance to the program by the combination of the rational and empirical approaches judgment criteria's. In each evaluation dimension detailed indicators are used to decide the performance of SAM prevention program. The indicators were given weight and the value of dimensions is the sum of respective indicators, then the sum of all dimensions are attributed to the outcome of the

service. The judgment criteria and standards of each dimension, respective indicators and results are summarized in table 10.

5.11: Ethical Consideration

After obtaining Letter of ethical clearance from Jimma University, Official letter of cooperation was written to Seka Chekorsa districts administrations for permission. The aim of the study was fully explained to the study participants to obtain their oral informed consent prior to participation in the study and data was kept confidential. Written and oral informed consent was obtained from each respondent before interview.

The evaluation was conducted as per established time frame to safeguard confidentiality of information obtained during the evaluation and followed in order to ensure the quality of the evaluation. Data collection for this evaluation was done using the local language with all consideration of the norm and values of the population in that area.

5.12: Evaluation dissemination plan

Final draft of this outcome evaluation document was disseminated to the key stakeholders for their comments, after completion of the study before presenting the document to the responsible body. The comments were included without changing the original result. It was then presented to Jimma University Health Monitoring and Evaluation unit and comments will be incorporated before dissemination of hard and electronic copy of the final report to respective stakeholders. Finally efforts will be made to present on seminars and opportunity for publication on suitable journals will be regarded.

Chapter 6: Result

6.1: Availability of OTP Program Resource

6.1.1: Human Resource

In all health centers there were at least two health workers available on OTP service, except one health center from which two health workers who serve on OTP program and under five OPD were transferred to general hospital in the Woreda. All health workers on OTP service delivery unit got SAM management training using RUTF at least once by government or non-governmental organization in different time during the last three years.

This finding is supported by qualitative finding in which 36 years old OTP program coordinator at Woreda health office; mentioned:

"We no problem of human resource because currently we have almost two health officers' in all health centers….[and]also allocation of health worker to health centers is according to current standard of OHB. But the main issues related to this program is trained staff turnover and unavailability of the service at health post level…… where we have a plan to start in all health posts within the coming few years."

Another 29 years, HEW said:

"Even if the service is provided by nearby health center the clients may not go and attend the service, whereas others may interrupt follow up complaining the distance. So it is better if the program is started at our health post"

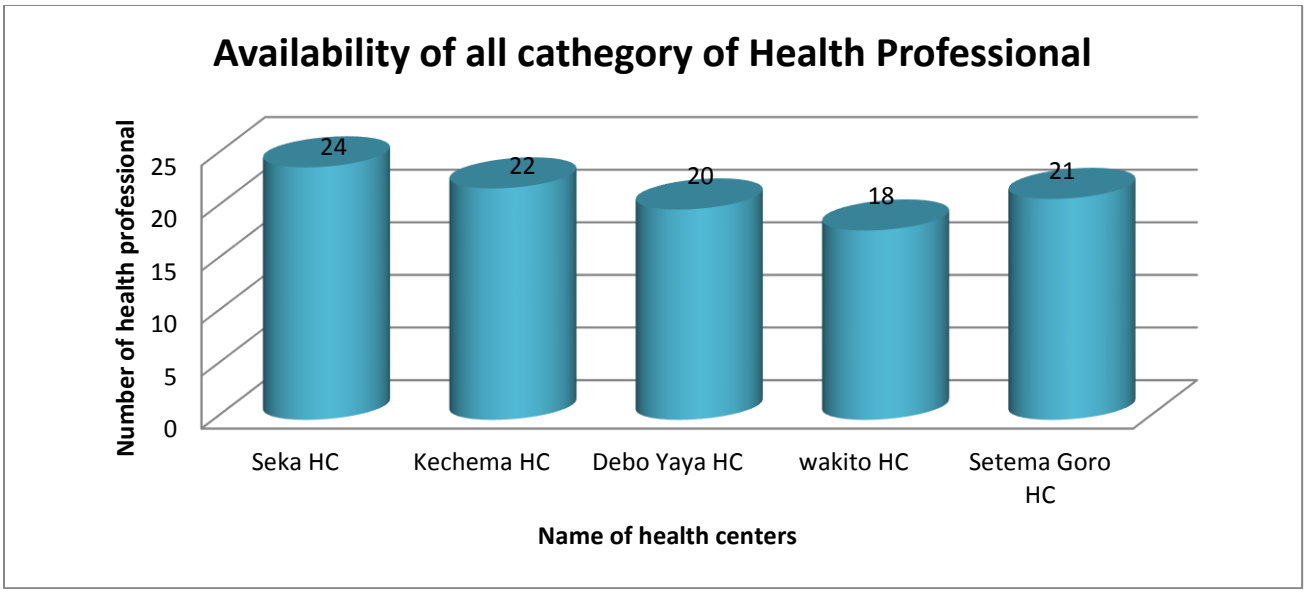

Figure 5: Distribution of Health workers in the five health centers of Seka Chekorsa Woreda, Jimma zone, May 2017

6.1.2: Guideline Reporting and Recording Tool

From observed 5 health centers all of them have OTP registration book, OTP cards and monthly reporting format. OTP guideline and OTP quick reference books are not available in all health centers during study period. Referral form was available in 4and IEC/BCC materials was posted in 4 HCs of health centers, in one recently opened health center (Sept. 2007 E.C) there was no referral form; the health center uses routine service referral form instead of OTP referral form.

6.1.3: Availability of Medical equipment's and infrastructure

All of the health centers have height measuring scale, MUAC measuring tape, weighing scale with basin (measuring weight of children) and functional thermometer. Whereas only one health center of them have clean water supply (Seka HCs) in their compound. The rest four fetches water from protected deep well in health center compound and by transporting from other areas.

6.1.4: Availability of Essential Drugs

Availability of essential drug stock in the last six month prior to this study was almost similar as presented below in figure 6. Amoxacillin, Albendazole and folic acid are available only in one health center; the rest 4 HCs are without those essential drugs for at least six months. As all of health centers focal persons mentioned, free essential drugs formerly supplied with RUTF were stopped to be supplied since the beginning of program, but two HCs (Seka and Kechema HCs) use essential drugs supplied by other programs like ICCM, EPI programs. The rest 3 are prescribes the drugs to buy from other areas, and provides Albendazole, vaccines, ORS, RDT and anti-malarial drugs from other routine programs.

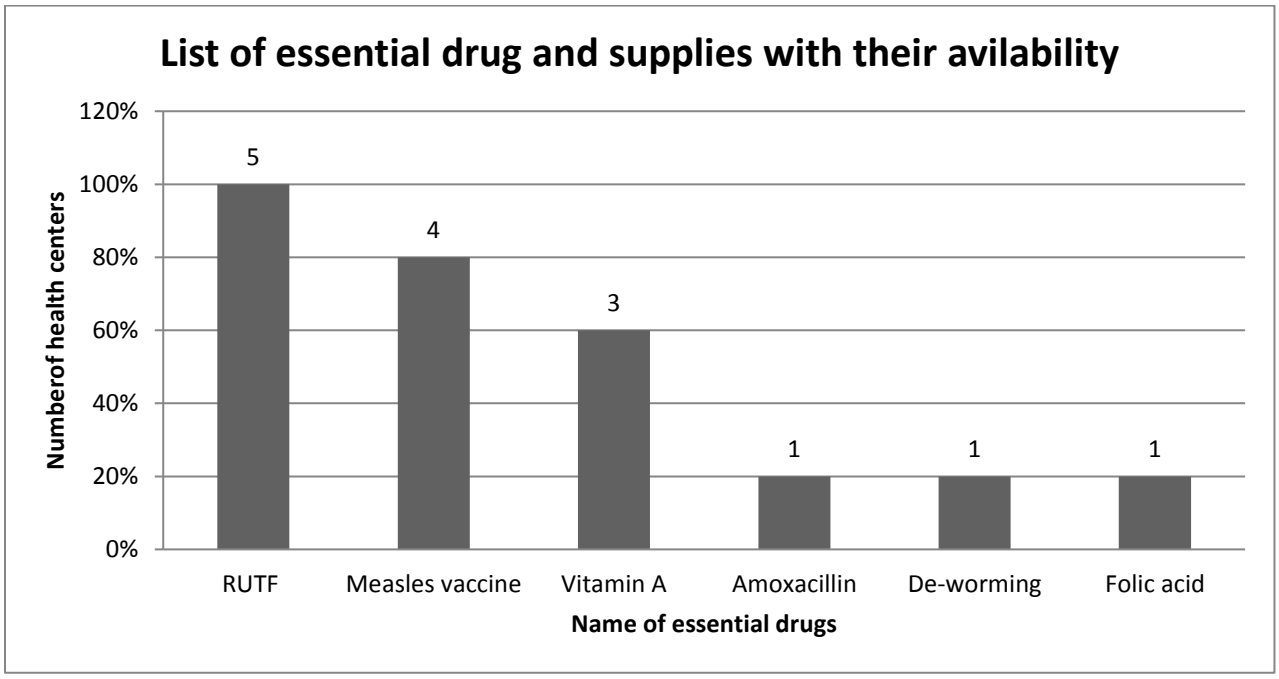

Figure 6: Availability of essential drugs at selected health centers in Seka Chekorsa Woreda, Jimma zone, May 2017

Concerning availability of essential free drugs, health center focal person mentioned:

"*During initial phase of the program all of the necessary free drugs were available adequately but through time, the amount of provision was terminated nowadays. Some items like Albendazole, vitamin A capsule and other routine drugs almost terminated to be provided for us. In my opinion this major problems to be solved by different concerned body otherwise effectiveness of OTP program may not be as expected"*

Another Nurse in other health center who is 26 years old mentioned that …"drugs like amoxicillin and folic acid were never resupplied until 3 years due to this we faced a problem during administration drugs"

36 years old Woreda health office MCH and OTP focal person mentioned that:

"Even though our office was often requested for OTP drugs, the health centers were not regularly supplied with OTP drugs on time and with right amounts, because ….this may be lack of good planning, monitoring and evaluation of program. On other hands the reason for unavailability of OTP drugs were the weak linkage between health office and health centers lack of supportive supervision specifically on OTP program, in almost all of our supervision we observe all service of health center not specific services like OTP separately. Also there is problem of transporting OTP supplies from Woreda health office to respective heath centers, because health center focal persons complain for transportation fee.

Table 2: Judgment matrix for availability dimension of OTP program in selected health centers Seka Chekorsa Woreda Jimma Zone, May 2017

Availability Indicators (35%)	Weight given	Observed value (%)	Obtained score	Agree Criteria	Judgment Parameter
Number of health professional in each health facility	3	100	3	90-100 very good 76-89 good 60-75 fair < 60 poor	V. good
Number of trained health professional on OTP service provision	3	80	2.4		Good
Number health centers with sufficient stock of RUTF	3	100	3		V. good
Number health centers with Amoxicillin syrup	3	20	0.6		Poor
Number health centers with vitamin A supplementation	3	80	2.4		Good
Number health centers with MUAC measurement	3	100	3		V. good
Number health centers with important anti helminthes	3	20	0.6		poor
Number health centers with important anemia drugs	2	10	0.2		poor
Number health centers with important anti malarial drugs	2	100	2		V. good
Number health centers with clean water supply in their compound	2	20	0.4		Poor
Number health centers with functional thermometer	2	100	2		V. good
Number health centers with OTP card	2	100	2		V. good
Number health centers with OTP registration book	2	100	2		V. good
Number health centers with report formats	2	20	0.4		poor
Average score of Availability Dimension	**35**	**72.6**	**25.4**		**Fair**

6.2: Service provider Compliance to the OTP program Guideline

6.2.1: Socio demographic characteristics, referral type and admission information of children during study period

A total of 378 children document were reviewed from which proportion of female and male children was almost similar accounting for 50.8 percent and 49.2 percent respectively. Children have average age in years of 2.1 year with SD=0.779, where the majority of children were in the age range of 25-59 months (37 percent) followed by 13-24 months age groups (35.4 percent) the detail of related information are presented in Table 3 below.

Table 3: Socio-demographic characteristics, referral type and admission of patients in selected HCs Seka Chekorsa Woreda Jimma Zone May, 2017

Characteristics of children (n=378)	Frequency	Percentage
Sex		
Male	186	49.2
Female	192	50.8
Age category		
6-12months	140	37
13-24months	134	35.4
25-59 months	104	27.6
Referral by		
HEW	67	17.7
Community	52	13.8
Self	259	68.5
Admitted By/accepted by		
MUAC	263	69.6
Edema	85	22.5
MUAC and Edema	12	3.2
W/H<70%	18	4.8

Recording procedure of Health Workers during admission, follow up and discharge

Out of 378 reviewed OTP cards, total length of stay were not calculated and recorded for 13 (3.4%) children. Moreover service provider were not recorded a history of diarrhea, vomiting, breast feeding and cough for 23, 32, 15, and 14 children respectively. Figure 6 also showed that service provider were not checked and recorded their temperature of 23(6.1%) children, respiratory rate were not checked and recorded for 90(23.8%) children and appetite test were not done for 20(5.3%) children.

Key informant interview also showed that poor compliance of service provider for the program mainly due to unavailability of refreshment training and weak follow up system of managerial and technical stuffs of the Woreda.

36 years old Woreda health office MCH and OTP focal person mentioned that:

"Even if the program was started in all health centers, the linkage between health office and health centers were weak also supportive supervision is not sufficiently undertaken specifically on OTP program, in almost all of our supervision we observe all service of health center not specific services like OTP separately.

A 27 years Health center OTP focal person indicate that

"Supportive supervision team was come to our health center in different time from Woreda health, office zonal health department and different non- governmental organizations. However the problem is that we do not know schedule they come properly. In addition to this the supervision was conducted for all program not only focused on OTP."

Another 25 years old Health center OTP focal person (R4) also mentioned that

"I started to work as health center focal person before three years after short induction training on OTP, since then there is no basic or refreshment training I have participated, even my colleague supports me with experience he shared from me."

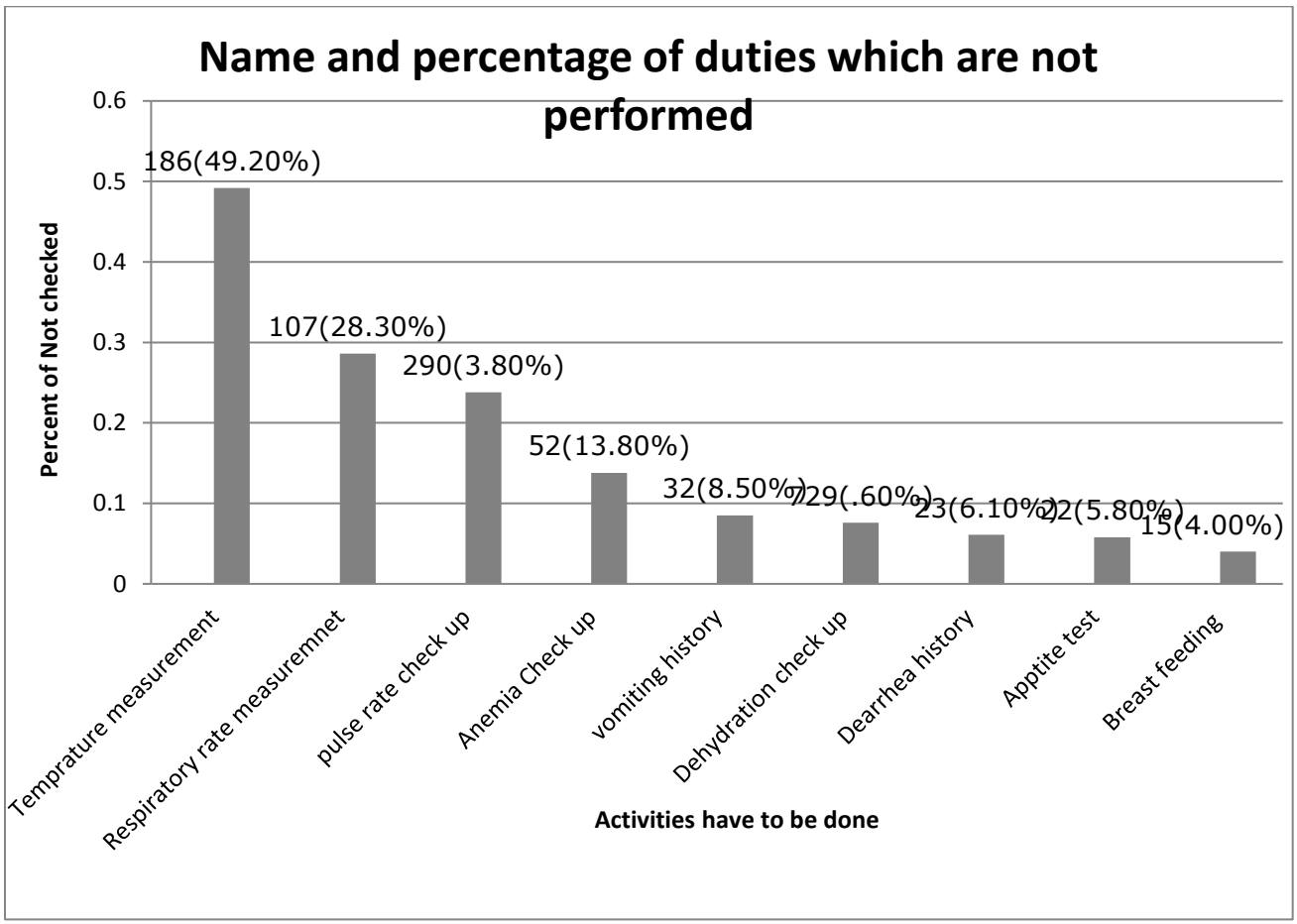

Figure 6: Names and percentage of duties which have to be performed but performed according OTP Guideline in selected Health centers at Seka Chekorsa, woreda, Jimma Zone, May 2017[4]

[4] Lists of activities in Figure 6 are indicated by national OTP protocol to be performed for all children admitted to the SAM management program, but the listed activities were not performed.

Essential Drug Administration[5]

Table 4 describes the characteristics of treatment provision to children admitted to the program. Of the 378 children admitted 240 (63.5%) were treated with amoxicillin, 148 (39.2%) children provided with Albendazole. From those 378 children in the program only 72 (19%) children were provided with folic acid. But the availability of those drugs is not related the OTP service, the drugs were provided from other programs of HCs.

Table 4: Routine medication profile of OTP program at selected health centers in Seka Chekorsa Woreda, Jimma Zone, May 2017

Drugs names list	Availability category	Frequency (Number)	Percent (%)
Amoxicillin	Yes	240	63.5
	No	138	36.5
Albendazole	Yes	148	39.2
	No	230	60.8
Folic acid	Yes	72	19
	No	306	81
Measles vaccine	Yes	112	29.6
	No	266	70.4
Anti malarial drug	Yes	42	11.1
	No	336	88.9
Vitamin A	Yes	108	28.6
	No	270	71.4

[5] Antibiotics should be given to every severely malnourished patient, even if they do not have clinical Signs of systemic infection. Amoxacillin should be give for seven days, Vitamin A on first visit, single dose folic acid, and de-worming for all children on second visit. OTP protocol p 17-22

Direct observation of HWs while delivering the service

Results of direct observation conducted and recorded during health worker provide service for 35 cases to assess compliance with OTP guideline thus it supports credibility findings that obtained from document review.

From 35 direct observation of OTP cases 24 (68.6%) of them were checked their weight to know weekly weight change and to take an appropriate measure while the rest were not checked. From observed 35 OTP case 26 (74.3%) of them were measured their MUAC appropriately the rest were not measured properly, the service providers simply take an arm and measure without trying to put measuring on middle of a children arm.

During assessment of edema 22(62.8%) children were held their thumb for 3 second according to OTP guideline to assess the presence of bilateral pitting edema but the rest 13(37.2%) of children were not held their thumb for same procedure, but the health worker had done, simply by seeing absence and presence of edema.

Out of 35 observation of SAM children 3(8.5%) of care takers were not asked about dehydration history during the previous week and 2(5.7%) children were not asked about history of diarrhea, also history of vomiting and cough were not checked or asked for 1(2.8%) and 2 (5.7%)of children by health workers respectively.

Regarding to physical examination and routine medication only 32 (91.4%) of SAM cases got an appropriate appetite test during follow up but the rest not tested as national guideline.

From those 35 observations temperature measurement, pulse rate, respiratory rate and dehydration check up were not conducted for 2, 4, 3, 3 children respectively. Appropriate routine medication were not given for 20 (57.1%) of observed children but RUTF given appropriately by considering age and weight of children for 34(97%) children.

Table 5: Direct Observation (N=35) result during service delivery of HWs for evaluation of OTP program in selected HCs at Seka Chekorsa Woreda, Jimma Zone, May 2017

Observed Activity	Category	Frequency	Percent
Weight check up	Yes	24	68.6
MUAC measurement	Yes	26	74.3
Edema check up	Yes	22	62.8
History of dehydration	Yes	32	91.5%
History of diarrhea	Yes	33	94.3%
History of vomiting	Yes	33	94.3%
History of cough	yes	34	2.8%
Appetite test	yes	32	91.4%

Table 6: Judgment matrix for compliance dimension to evaluate OTP program in Seka Chekorsa Woreda[6]

Compliance Indicators (25%)	Weight Given	Observed Value (%)	Score	Agreed Criteria	Judgment Criteria
Proportion of 6-59month screened children according recommended anthropometric measurement in national guideline.	4	74.3	3	**90-100 very good** **75-89 good** **60-75 fair** **< 60 poor**	Good
Proportion of SAM cases appetite test conducted with RUTF	3	93.9	2.8		Very good
Proportion of SAM cases treated with proper amount of RUTF according to OTP implementation guideline	3	93.5	2.7		V. good
proportion of SAM cases treated with necessary drug according to OTP implementation guideline	3	55.8	1.67		Poor
proportion of complicated cases referred to SC according to OTP implementation guide line	3	50	1.5		poor
proportion of discharged SAM cases according to discharge criteria	3	92.6	2.76		V. good
Number of health facility got supportive supervision from Seka Chekorsa Woreda health office every three months.	2	80	1.6		good
Number of health center who obtain feedback from supportive supervision	2	60	1.2		Poor
Number of health center who send their complete report according to according to OTP guideline	2	100	2		V. good
Over all compliance dimension	**25**	**76.9%**	**19.23**		**Good**

[6] The results of Table 6 were obtained from document review and key informant interview conducted

6.3: Operational Effectiveness of the program

The OTP outcome indicators for this study are summarized in figure 7 below. Of the 378 children admitted to the program their clinical outcome showed that cure rate from SAM was 312(82.5%). Whereas death 11 (2.9%) and defaulter 33 (8.7%) non- responder 10 (2.6%) and unknown was 12(3.2%) children.

The average weight gains in gram per kilogram per day of children in were 5.12g//kg day with standard deviation of 3.760 at 95% CI (4.81, 5.33) the minimum average weight gain was 0.011g//kg/ day and maximum weight gain was 13.02g//kg/ day. Over all the mean recovery time was 48.28 days with 95% CI of (46.65, 49.09).

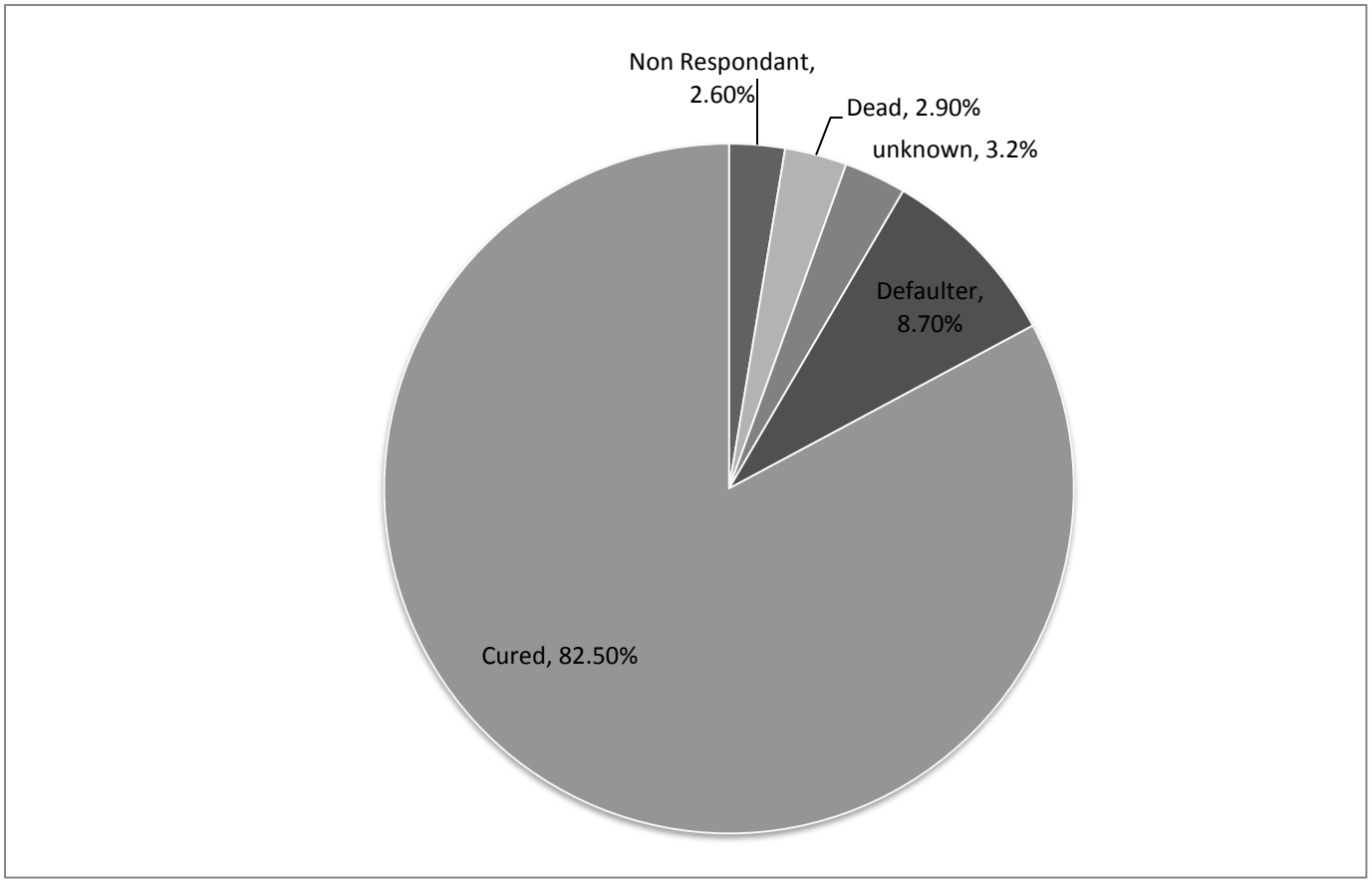

Figure 7 Clinical outcomes of OTP program at selected health centers Seka Chekorsa Woreda, Jimma Zone, May 2017[7]

[7] Results listed in figure 7 were obtained from descriptive analysis of clinical outcomes of OTP program to describe effectiveness of the program and compared with standard acceptable ranges on table number 11for interpretation.

6.4: Factor associated with effectiveness of the program cure rate

6.4.1: Bivariate analysis result

Factors associated program effectiveness (Cure rate) were analyzed one by one using bivariate multinomial logistic regression and those variables with P value < 0.25 were selected for multivariate multinomial logistic regression finally significance of association taken at P value <0.05. Hence the association between dependent variable and independent variables was examined so that variables like: Referred by, admitted with, histories of Diarrhea, vomiting, cough, dehydration, anemia, skin infection, co-morbidity and amoxicillin were found to be significant at P value <0.25 and taken as candidate to Multinomial logistic regression analysis to identify association between dependant and independent variables.

Table 7: Bivariate logistic regression analysis result of selected variable with P<0.25 for an outcomes of OTP program in selected HCs Seka Chekorsa Woreda Jimma Zone, 2017

Variables		**SAM children**		**Total frequency of SAM children**	**P-value**	**COR**	**95% CI**
Name	**Category**	**Cured**	**Not Cured**				
		Number (%)	**Number (%)**				
Referred by	HEW	10(17)	46(83)	56	0.034	3.68	[1.08,12.55]
	Self	160(69.7)	70(30.3)	230			
Co morbidity	Yes	27(28.8)	68(71.2)	95	0.004	6.18	[1.03, 21.28]
	No	167(71.2)	68(28.8)	235			
Dehydration	Yes	10(17.6)	48(82.4)	58	<0.001	13	[3.3, 50.7]
	No	208(79.4)	54(20.6)	262			
Amoxicillin given?	Yes	143(65.8)	74(34.2)	217	0.002	0.249	[0.114, 0.545]
	No	74(65.8)	39(34.2)	113			
Vomiting	Yes	1(5.8)	17(94.2)	18	0.001	0.472	[0.095, 0.46]
	No	278(94.2)	17(5.8)	295			
Anemia	Yes	3(10)	29(90)	32	0.001	1.801	[1.404, 7.997]
	No	244(86.7)	37(13.3)	281			
Admitted with	MUAC	166(70.9)	68(29.1)	234	0.012	0.34	[0.06, 0.97]
	EDEMA	56(78.5)	15(21.5)	71			
Diarrhea	Yes	6(13.6)	39(86.4)	45	0.141	2.546	[1.611, 14.763]
	No	232(83.9)	45(16.1)	277			

6.4.2: Multinomial logistic regression analysis of candidate variables associated with OTP program cure rate

Associated factors with cure rate of SAM cases were spotted using multinomial logistic regression. After backward stepwise analysis co-morbidity was significantly associated with cure rate of SAM cases (AOR= 4 95% CI (1.19, 13.4), P<0.03) and antibiotic (Amoxicillin) treatment was significantly associated with cure rate of SAM cases (AOR =0.221, 95% CI (0.089, 0.549), P<0.001). Also presence of vomiting was significantly associated with cure rate of SAM cases; (AOR= 10.29, 95% CI (1.9, 54.5), P<0.006). The other variables were not associated with the outcome variables.

Based on these findings, children without history of co morbidity were 4 times more likely cured than those with no co morbidity (AOR =3.9 95% CI (1.19, 13.4), p<0.03). On the other hand children who are not treated with Amoxacillin were 77.9% less likely cured compared to those treated with Amoxacillin. And children who had vomiting were about 10 time more likely to be died than those children with no vomiting (AOR=10.2 95% CI (1.9, 54.5), p<0.006).

Table 8: Multinomial logistic regression analysis result of independent variable with dependant variable of OTP program at selected HCs in Seka Chekorsa Woreda, Jimma zone, May, 2017

Variables		**SAM children**		**Total frequency of SAM children**	P-value	**AOR (Exp. B)**	95% CI
Name	Category	**Cured**	**Not Cured**				
		Number (%)	**Number (%)**				
Dehydration	Yes	10(17.6)	48(82.4)	58	0.251	2.79	[1.48, 16.12]
	No	210(79.4)	52(20.6)	262			
Amoxicillin. Treated	Yes	149(67.3)	73(32.7)	222	0.001*	0.221	[0.089, 0.549]
	No	35(32.7)	73(67.4)	108			
Co morbidity	Yes	25(27.6)	66(72.4)	91	0.026*	4	[1.19, 13.4]
	No	173(72.4)	66(27.6)	239			
Vomiting	Yes	1(5.8)	17(94.2)	18	0.006*	10.28	[1.90, 54.4]
	No	278(94.2)	17(5.8)	295			
Admitted with	MUAC	166(70.9)	68(29.1)	234			
	EDEMA	56(78.5)	15(21.5)	71	0.062	4.7	[0.92, 24.24]

Table 9: Judgment matrix for Effectiveness dimension to evaluate OTP program at selected HCs in Seka Chekorsa Woreda, Jmma Zone, May 2017[8]

Effectiveness Indicators (40%)	Weight Given	Observed value (%)	Score	Agreed criteria	Judgment Parameter
Proportion of children who recovered (cured) from total admitted	8	100	8	90-100 Very good 75-89 Good 60-74 Fair < 60 Poor	V. good
Average length of time to recover	7	85 (48.28days)	6.6		Good
Average weight gain for cured SAM cases	7	64	4.48		Fair
Proportion of defaulter rate from total admission	7	100	7		V. good
Proportion of non –response rate from total admission	6	95	6		V. good
Proportion of death rate from total admission	5	100	5		V. good
Overall Effectiveness Dimension	**40**	**92.7**	**37.08**		Very Good

- [8] The interpretation for results of program outcomes for Effectiveness dimension used in Judgment matrix for Effectiveness dimension was based international standards, reference number 36 also on table number 11.
- The values of indicators whose score is within acceptable range of the international standard was marked as full score of weight given in the judgment matrix, the rest are proportionally calculated based on standard ranges.

Judgment matrix for objective oriented evaluation of OTP program[9]

Average value of an overall evaluation of objective oriented of OTP program dimensions was recorded as 81.7% as shows in the table below

Table 10:- Overall judgment matrix used for evaluation of objective oriented of OTP program in Seka Chekorsa Woreda, Jimma Zone, May, 2017

Dimensions	weights given	Value obtained (%)	score	value	Findings
Over all availability of OTP program resource as per to the national guideline	35	72.6	25.4	90-100 very good 75-89 good 60-74 fair < 60 poor	**Fair**
Over all compliance of HEWs to OTP program as per to the national guideline	25	76.9	19.23		**Good**
Overall effectiveness of OTP program	40	92.7	37.08		**Very Good**
Overall objective oriented evaluation of OTP program	100	81.7	81.7		**Good**

[9] Comparing the dimensions of the program based on judgment criteria, effectiveness of the program is greater than the rest two dimensions in achievement, and this could be due to in all observed HCs, the provider's uses resource from other programs of health centers for service of SAM cases.
The service is also provided by relatively more professionals than those at HEWs at health post level

Chapter 7: Discussion

The evaluation employed indicator based approach to assess the availability of program resources, and compliance of health workers to program standards and determine operational effectiveness of OTP program. Generally the findings of this study indicate an improvement in health outcomes rate in children admitted in OTP centers when compared to the minimum standards.

7.1: Availability Dimension

Outpatient therapeutic feeding program (OTP) is one type health intervention which is implemented for management of SAM by providing service at decentralized to primary health care setting i.e. closer to the community(2, 13, 14).

To achieve the intended objective of the SAM management program availability of resource as per national guideline requirements is very important. At the study area, availability of resource was evaluated in different viewpoints. Trained human resources was one of the perspectives it is required to implement planned activities and to achieve intended objectives of the program in the study area the result showed that, in all observed health centers health workers on OTP service delivery were trained at least once during the last three years; this was aligned with the standard of national OTP guideline which remanded that "all services provider either in health center or health post must train at least once in the program" (14). This might be due to communication strategy of the Woreda with different governmental organization and non- governmental organization to train and update health workers also since the Woreda has no hard to reach areas, in all health centers included in study there were adequate number of heath workers hence it may helps uninterrupted service even when there is staff turnover.

The study assesses availability of very important resources like recording and reporting tools which are crucial during an implementation of the program. In all HCs registration book, OTP cards and monthly reporting format were found as per national guideline recommended. However OTP quick reference book, national OTP guideline and referral format were not available during study period, this was also indicted by key informant during interview … the OTP guideline and referral format also OPT quick reference were provided HCs after trainings three years ago but for different reason unavailable now, also the responsible body was not replacing these documents. This finding is not

in line with the national OTP guideline as well as Woreda operational plan which recommend availability in all HCs (14, 16).

Result of availability of essential drug stock assessment reveals; the last six month prior to this study was almost similar at all health centers included in study. Even if national OTP guideline recommends that all uncomplicated sever acute malnutrition children who admitted in the program need to take appropriate routine drug in specified age and duration. But in the study area the findings of the evaluation showed that availability of routine drugs for the program were not in line with the standard treatment guideline. Albendazole, amoxicillin, and folic acid were available at one (20%) health center, where as measles vaccine available in four (80%) health centers and vitamin A was available in three (60%). The finding was comparable with the evaluation conducted on assessment of OTP for SAM in three region of Ethiopian (Oromia, SNNPRs and Addis Ababa) by T. Belachew et.al. The reference study result showed that in all three regions the supply like anti-helminthes, folic acid and amoxicillin were lacking in most OTP sites. As suggested by the study; this is because that there were interruption of supply in same places due to accumulation of the supplies at the regional stores, due to this the supply was not available according to the OTP protocol (14, 24).

This finding supported by result of key informant interview which indicate that even though health office has been often requested for essential OTP drugs, the health centers were not regularly supplied with OTP drugs on time and with right amounts, because of lack of consideration given to the program at different level besides no specific budget allocated for the program.

Regarding clean water supply, it was available only one (20%) health center the rest 4 (80%) HCs are without clean water supply in their compound even though it is very important to deliver OTP services. The result is almost comparable with the study conducted feeding center on treatment outcome of children with severe acuter malnutrition admitted to therapeutic feeding centers in South region of Ethiopia indicated that 15% of heath centers had clean and safe water (26). It could be because of poor coverage of functional pipe water supply in rural kebeles and resource related constraints. Generally the findings of this study indicate the judgment parameter for availability dimension was 72.6% lay on “fair” box, thus it shows partial fulfillment of resources needed for the program.

7.2: Compliance Dimension

Over all judgment parameter of compliance dimension shows the level of conformity of health workers with national OTP guideline was good with score of 76.9%. Result of clinical document review indicated that 86.7% of observed SAM cases were checked their weight change during follow-up also health workers recorded history of diarrhea for 93.9%, history of vomiting for 91.5% and anemia was checked for 86.2% of children. The study finding is also supported by recorded results of direct observation conducted on 35 cases while they are receiving service. Even though these findings are comparable to national OTP guideline, MUAC and edema measurement were not appropriate as per national guideline (14). The result of direct observation shows that health workers were not measure MUAC appropriately for 9 (25.7%) and edema for 13 (37.2%) this might be due to lack of refreshment trainings on the program and also related to irregular and untargeted supportive supervision from Woreda health office and zonal health department.

Ethiopian National as well as WHO guideline for SAM management recommend that, children who admitted to OTP with a diagnosis of uncomplicated SAM has to be treated routine essential drugs like Amoxaccilin, Albendazole, measles vaccine, Vitamin "A" and folic acid for specified age and durations. But according to result of this study; it was less than recommendation of the OTP protocol because provision of amoxicillin, Albendazole, measles vaccine and folic acid were 63.5%, 39.2%, 29.6% and 19% respectively. The finding of the evaluation is lower than the study conducted on outpatient therapeutic feeding program outcomes and determinants for treatment of server acute malnutrition in Tigray, Northern Ethiopia, by HG. Yebyo. Which was recorded as amoxicillin Albendazole measles vaccine and folic acid were 72.13% 54.51%41.6% and 5.8% respectively (2, 7, 14).This might be due to unavailability essential drugs and mismanagement by health workers also may be weak resource management at health centers.

7.3: Effectiveness Dimension

Among 378 (98.4%) sample of study population the finding showed that cure rate of 82.5% which is smaller than Woreda plan (85-90%) and death rate of SAM children was 2.9% which is comparable with Woreda plan to reduce mortality from SAM by 90%. Both cure rate and death rate are within acceptable range compared to OTP protocol standard and sphere standards (>75% and <10%) respectively(36). The finding for death rate was smaller than similar study conducted in outpatient therapeutic feeding program outcomes and determinants in treatment of severe acute

malnutrition in Tigray, Northern Ethiopia which was 3.02% (7). Findings of this study are better in approaching to standards, compared to study conducted in Sidama zone on Recovery rate from SAM Of the total 602 children admitted to OTP; which shows the recovery rate from SAM was 414 (68.8%),Whereas 8(1.3%), 145(24.1%), 19 (3.2%), 14(2.3%), 2(0.3%) children died, defaulted, transferred, unknown (quit the program with unknown outcome status) and non responders (who did not reach any of the discharge criteria) respectively (28). This might be because of better management cases at health centers, where relatively professional health workers are available than at primary health care setting.

Estimated cure rate SAM cases enrolled in this program was 82.5% which is smaller than Woreda plan and within sphere standard 75% (16, 36). However when compared to study conducted on recovery rate and determinants in treatment of children with severe acute malnutrition using outpatient therapeutic feeding program in Kamba district south west Ethiopian which was (67.7%) it was higher. In this study it was found that children who admitted with MUAC (74.4%) were more recovered than those children who admitted with MUAC (18.8%) and others (10%). Children identified as SAM cases by low MUAC gain both weight and MUAC in response to treatment. This could be due to marasmic cases which admitted by MUAC are more prevalent than kwashiorkor patients which admitted with grades of edema, another possible reason could be kwashiorkor cases are less responsive for weight gain and recovery from SAM, while kwashiorkor is somewhat more complex than marasmus (12).

Another finding of this study was change of mean of MUAC measurement before and after treatment on target beneficiaries which is from 11.368cm to 12.09cm (difference is 0.64) at $P<0.05$. This shows significant changes over target group.

The average length of stay under OTP intervention at study area was 6.8 weeks or 48 days this is higher than the acceptable minimum international standard (<28 days) (2). But according to national OTP standards for management of sever acuter malnutrition it was within the standards position because in terms of the individual patients under the program the protocol allows SAM children to stay under treatment up to 8 weeks (14). This length of stay result agree with similar study of recovery rate and determinants of treatment of children with severe acuter malnutrition using outpatient therapeutic feeding program in Kamba district south west Ethiopia 7.14

weeks(50days)(12). Also compared to this retrospective study, the mean length of stay was high because for the mentioned study the mean length of stay was 42 days. As indicated in OTP standards staying long time in the program is a signal of poor cases management and resources hence it increases the cost of the program in terms of staff time and consumption of RUTF considerably (2, 14).

The mean weight gain was significantly less than national OTP guideline standard which was found in alarming range by 5.12g/kg/day while the standard recommends weight gain of >=8 g/kg/day. This finding was consistent with similar study done on outpatient therapeutic feeding program outcomes and determinants in treatment of severe acuter malnutrition in Tigray for which the average weight gain was 5 .23g/kg/d (7, 14).
This might be due to that the caregivers are sharing and selling RUTF for economical benefits, rather than using for their children as indicated.

Regarding associated factors with outcome variables of SAM cases; co-morbidity, vomiting and Amoxacillin treatment were found significantly associated outcome variable at p-value < 0.05. The finding agrees with study conducted in Tigray which indicate that presence of diarrhea, vomiting, failure to gain weight for at least 3 consecutive weeks, appetite loss with Plumpy'Nut, average weight gain, amoxicillin and de-worming drug intakes were significant to predict the recovery rate from SAM (7).

7.4: Possible limitation of evaluation

Certainty it is very difficult to achieve in any study without drawbacks so there are possible limitations which may influence the findings while conducting this evaluation:

- The study design is not gold standard to assess effects of the program. It is difficult to determine temporal relationship of OTP program and its outcomes also with this study design it's difficult to establish clear chronology of exposure and outcome.
- Also since most of information were based secondary data, there may quality issues during registration of those data, but using different method the evaluator was tried to minimize those effects on study result.
- The study finding was only limited one area and only to show gaps for further studies; hence result can be used only for similar setting.

Chapter 8: Conclusion and Recommendation

8.1: Conclusion

Overall aspect of this evaluation lead to reach on the following conclusion based on the sated judgment criteria which were developed with involvement of different stakeholders. The availability of trained health workers, availability of medical equipment availability of OTP cards, availability of monthly reporting formats and Registration book, availability of BCC/IEC materials in each health centers with sufficient amount were very important to accomplish the objectives of the program. However unavailability of routine essential OTP drugs and unavailability of clean water supply in HCs compound at four health centers were very serious setback to achieve the planned objectives of OTP program. Regarding availability and accessibility the program to target beneficiaries almost all key informants were agree that the service were not decentralized at primary health care level (health post) even if it was started at all health centers still it is not accessed for community at large.

Regarding compliance of the health workers with the national OTP guideline in providing the service was not as good as during initial phase of the program. In most HCs there were poor reporting and recording systems and using of feedbacks which were given by different supervisors even though ISS system itself was very weak and irregular. Among all health centers there were reduced conformity to OTP standards which could be related lack of motivation and unavailability refreshment training.

Generally operational effectiveness of the OTP program was rated as very good according to judgment parameter. As national OTP guideline and the Woreda proposed annual plan the cure rate, mean length of stay, proportion of defaulter rate and death rate of children under the program in study period was in good condition but some of the indicators like average weight gain of the children have not meet the objective of the Woreda.

Major factors which hindered effectiveness of the program were unavailability sufficient amount of essential resources at right time and reduced compliance to standards of the program; hence an overall objective oriented evaluation of OTP program was lay on “good “rating by scoring 81.7% based on agreed up judgment parameters.

8.2: Recommendations

Based on major findings of this evaluation the following recommendations were forward to Jimma zone health department, Seka Chekorsa Woreda health office, health centers and health workers in the Woreda

For Jimma Zone Health Department

- Attention should be paid for early distribution of OTP routine drugs timely by considering amount of SAM children in OTP program to the Woreda health office before stock out.
- There should be Program targeted continuous monitoring and regular supportive supervision using different standard checklist
- While Outpatient Therapeutic feeding Program (OTP) is bringing the services for management of Severe Acute Malnutrition (SAM) closer to the community by making services available at decentralized treatment points within the primary health care settings, through the use of ready-to-use therapeutic foods, Zonal health department is highly recommended to start provision service at health post level to address community at large.

For Seka Chekorsa Woreda Health Office

- Early availing and distribution of RUTF, routine drugs and other medical equipments as number children under each health center catchment area
- Close follow –up and regular supervision and fair distributions and timely allocation of available routine drugs for each health center before stock out.
- Starting provision service at health post level by availing necessary resource at health posts.
- Providing refreshment training health workers at health centers on OTP guideline and SAM case management.

Health workers at health Centers

- During every procedure like screening, admission, follow- up and discharge conducting as per national OTP guideline recommendations.
- Documentation, recording and reporting all necessary data as per national OTP guideline recommendations.

Chapter 9: Meta Evaluation

It was a methodology proposed by Michael Scriven in 1969 to describe the quality of a single study or a set of studies in different ways. . Hence, improving the quality of an evaluation enhances the usefulness and credibility of the intended users who was implement meta-evaluation to start at the beginning of the evaluation. Moreover, the evaluation was used meta-evaluation standards to improve the quality of evaluation work(37).

9.1: Utility

Stakeholders involved in the evaluation have different needs and expectations from the evaluation. So to make them utilize the information obtained from this evaluation, the evaluator did everything possible and involved key stakeholders in the whole process of the evaluation hence their interest were respected for the utility of this evaluation results.

9.2: Propriety

The evaluation was designed and conducted by assuring right and welfare of human subject involved in this evaluation and anybody who was affected (positively or negatively); hence the whole process were conducted legally and ethically. Evaluator was ensured dissemination of result for the stakeholder.

9.3: Feasibility

Evaluation was designed and conducted in a manner that was careful, practical, diplomatic and cost effective standards and used to assess the strengths and weaknesses of a proposed OTP program and present directions of activities which was improve a project and achieve desired objectives. Measures were taken to reduce wastage of resource by clear communication with those involved in the evaluation.

9.4: Accuracy

The accuracy of evaluation was maintained by using valid data collection tools, and training was given to data collectors to come up with adequate and correct information that was persuade the decision making bodies to take corrective and timely measures to solve any problem found in OTP services which could contribute to the improvement of the client need.

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Annexes

Annex I Information and Judgment matrix

Information matrix for indicators used Objective Oriented evaluation of OTP service in Seka chekorsa woereda, 20017

Evaluation Questions	Indicators	Source of Information	Data collection methods	Data collection tools
Does the program have the required resources to meet its intended objective? If no why?	Number of trained health professional on OTP service provision in the period of evaluation Number Health centers with stock of RUTF for at least 6 months Number Health centers with Amoxicillin syrup for at least 6 months Number Health centers with vitamin A supplementation for at least 6 months Number Health centers with MUAC measurement in the period of evaluation Number Health centers with important anti parasite for at least 6 months Number Health centers with important anemia drugs for at least 6 months Number Health centers with important anti malarial drugs for at least 6 months Number Health centers with functional thermometer in the period of evaluation Number Health centers with OTP card in the period of evaluation Number Health centers with OTP registration book in the period of evaluation Number Health centers with report formats in the period of evaluation Number Health centers clean water supply in the period of evaluation	Health centers clinical records of SAM cases Health workers HCs	Both quantitative and qualitative methods	Structured questioner and resource inventory checklist
Is the program implemented according to	Proportion of children screened using the recommended anthropometric measurements Proportion of SAM cases appetite test conducted with RUTF Proportion of SAM cases treated with proper amount of RUTF according to OTP	Health centers clinical records of SAM cases Health workers	Both quantitative and qualitative	Structured questioner and Observation

the national guideline? If no why?	implementation guideline Proportion of discharged SAM cases based on discharge criteria Proportion of complicated SAM cases referred to stabilizing center according to OTP implementation guideline Number of health facility got supportive supervision from Seka chekorsa Woreda health office Number of health facility who obtain feedback from supportive supervision Number of health facility who send their complete report according to according to OTP guideline Number Health centers that send their report within reporting periods.	HCs	methods	
Did the program achieve its objective as intended, if yes, how and how much? If no, why?	Proportion of SAM cases who cured from total admitted Average length of time to recover Mean weight gain of recovered SAM cases Proportion of death occurred from total Admission Proportion of defaulter rate from total admission Proportion of non respondents from total treatments	Health centers clinical records of SAM cases Health workers HCs	Both quantitative and qualitative methods	Structured questioner/Document review Template

Annex II: Overall Judgment matrixes and analysis for Objective Oriented evaluation of OTP service in Seka chekorsa woereda, 2017

Dimension	Weight given (%)	Percentage achieved (%)	Score Obtained	Agreed criteria	Judgment criteria
Availability	35			• 90-100 Very good • 75-89 Good • 60-74 Fair • < 60 Poor	
Compliance	25				
Effectiveness	40				
Overall	100				

Annex III: Meta-Evaluation Checklist for Judging Evaluation Designs and Reports

Title of Evaluation: Objective Oriented Evaluation of Outpatient Therapeutic Feeding Program for Prevention of Severe Acute Malnutrition, At Selected Health centers in Seka Chekorsa Woreda, Jimma Zone, Oromia Region May, 2017.

By: Tilahun Kekeba

1. Utility standards				
Standard: Stakeholder Identification	Criteria met			Elaboration
	Yes	No	NA	
Specific Criteria:				
• Are the audiences for the evaluation identified?	1			
• Have the needs of the audiences been identified?	1			
• Are the objectives of the evaluation consistent with the needs of the audience?	1			
• Does the information to be provided allow necessary decisions about the program to be made?		1		
Standard: Evaluator credibility				
Specific criteria				
a. Does the person conducting evaluation was competent?	1			
b. Are the evaluation findings achieve maximum credibility?		1		
c. Are the evaluation finding achieve maximum acceptance?		1		
Standard: information scope and selection				
Specific criteria				
a) Are the collected information address pertinent questions about the program?	1			
b) Are the information responsive to the needs and interest of clients and other stakeholders?	1			
Standard: values identification				
Specific criteria				
a) Does the perspectives use to interpret the findings are carefully described?	1			
b) Are the procedures used to interpret the findings carefully described?	1			
c) Does the rationale used to interpret the findings are described?	1			
Standard: Report clarity				
Specific criteria				
a) Does the evaluation report clearly describe the program being evaluated?	1			
b) Does the evaluation report provide essential information?	1			
c) Are the evaluation report clearly understood?	1			

Standard: report timeliness and dissemination				
Specific Criteria				
a) Are the interim findings and evaluation reports distributed to intended users?		1		
b) Do the intended users utilize the report in a timely fashion?		1		
Standard: Evaluation impact				
Specific criteria:				
a) Does the evaluation planned in ways that encourage follow-through by stakeholders?	1			
b) Does the evaluation conducted and reported in ways that encourage follow-through by stakeholders	1			
c) Does the evaluation reported in ways that encourage follow-through by stakeholders		1		
Total score /20	**16(80%)**	**4(20%)**	**0**	
2. Accuracy standards				
Standard: Reliable Information				
Specific criteria:				
• Are information collection procedures described well?	1			
• Will care be taken to ensure minimal error?	1			
• Are scoring or coding procedures influenced by the evaluators own perspectives?		1		
• Is information generated using evaluation instrument verifiable?	1			
Standard: valid information				
Specific criteria				
a) Does the information gathering procedure developed?	1			
b) Does the information gathering procedures implemented?	1			
c) Are the interpretations of the evaluation valid for the intended users?		1		
Standard: systematic information				
Specific criteria				
a) Are the information collection procedures systematically reviewed?	1			
b) Are the errors corrected?	1			
Standard: analysis of quantitative information				
Specific criteria				
a) Are quantitative information's analyzed appropriately and systematically?	1			
b) Are evaluation questions answered effectively?	1			
Standard: analysis of qualitative information				
Specific criteria				
a) Are qualitative information's analyzed appropriately and systematically?	1			
b) Are evaluation questions answered effectively?	1			

Standard: justified conclusions				
Specific criteria				
a) Does the conclusion explicitly justified the evaluation?	1			
b) Are the stakeholders assessing them?		1		
Standard: impartial reporting				
Specific criteria				
a) Does the reporting procedures should guard against distortion caused by personal feelings and biases of any party to the evaluation?	1			
b) Are the evaluation reports fairly reflecting the evaluation findings?	1			
Standard: meta-evaluation				
Specific criteria				
a) Does the evaluation itself should be formatively and Summative evaluated against this and other pertinent standards?	1			
b) Do stakeholders on completion closely examine its strengths and weaknesses?		1		
Total score/19	**15(79%)**	**4(21%)**		
3. Feasibility standards				
Standard: Practical Procedure				
Specific criteria:				
• Are the evaluation resources (time, money, and personnel) adequate to carry out the projected activities?		1		
• Are management plans specified for conducting the evaluation?	1			
• Has adequate planning being done to support the feasibility of conducting complex activities?	1			
Standard: political viability				
Specific criteria				
a) Does the evaluation planned with anticipation of different position of various interest groups?	1			
b) Does the evaluation conducted with the anticipation of various interest groups?	1			
c) Does the evaluation obtained the cooperation of various interest groups?	1			
Standard: cost effectiveness				
Specific criteria				
a) Does the evaluation produce information with sufficient value?	1			
b) Does the resources expended for the evaluation justified?	1			
Total score/8	7(87.5%)	1(12.5%)	0	
4. Propriety standards				
Standard: service orientation				
Specific criteria				

a) Does the evaluation designed to assist organizations?	1			
b) Does the evaluation address the needs of targeted participants?	1			
c) Does the evaluation effectively serve the needs of the full ranges of targeted participants?		1		
Standard: formal agreement				
Specific criteria				
a) Does the obligations of the formal parties to an evaluation was agreed?	1			
b) Does all the formal parties adhere to all conditions of the agreement?		1		
Standard: rights of human subjects				
Specific criteria				
a) Does the evaluation design to respect and protect the rights and welfares of human subjects?	1			
b) Does the evaluation conducted with the respect and protect the rights and welfare of human subject?	1			
Standard: human interaction				
Specific criteria				
a) Are the evaluators respect human dignity and worth in their interaction with other persons associated with an evaluation?	1			
b) Does the participants are not threatened or harmed?	1			
Standard: complete and fair assessment				
Specific criteria				
a) Does the evaluation complete and fair in its examination and recording?	1			
b) Are the strengths and weakness of the program being evaluated was described fairly?	1			
c) Are the evaluation strengths built up on and problem areas addressed?		1		
Standard: Disclosure of findings				
Specific criteria				
a) Does the full set of evaluation findings along with pertinent limitations are made accessible to the persons affected by the evaluations?		1		

Standard: conflict of interest				
Specific criteria				
a) Does conflict of interest deal openly and honestly?	1			
b) Are conflict of interests compromise the evaluation process and results?	1			
Standard: fiscal responsibility				
Specific criteria				
a) Are the evaluators allocations and expenditures of resources reflect sound accountable procedures?	1			
b) Are the expenditures accounted and appropriate for the evaluation?	1			
Total score/17	11(64.7%)	6(35.3%)	0	
Overall score/62	**48(77.4%)**	**14(22.6%)**		

Judgment parameter:
If <50%-Unsatisfactory
51- 60 Satisfactory
60-80% Good
>80%-Very good
Based on the meta evaluation Score ***77.4%*** which is at ***Good*** rating, the evaluation needs improvements.

Table 11: Reference values for the main Indicators from Sphere Standards used for Treatment Outcome of OTP Service at selected HCs in Seka Chekorsa Woreda, Jimma Zone, May 2017

Indicators	**Acceptable**	**Alarming**
Recovery rate	>75%	<50%
Death rate	<10%	>15%
Defaulter rate	<15%	>25%
Weight gain	>=8g/kg/day	<8g/kg/day
Length of stay	<4weeks	>6weeks
Coverage	>50-70%	<40%

Annex IV

Dummy tables

Investigator declaration

I confirm that this evaluation proposal, which is intended to evaluate Objective Oriented SAM management program at selected health Centers in Seka Chekorsa Woreda Jimma zone and submitted in partial fulfillment degreeof master ofscience in health monitoring and evaluation is my own effort. As much as possible I obeyed in accordance with Jimma university acadamic regulations, also I have been acknowledged and referenced all documents I used in accordance accadamical requiriments of Jimma University..

Consent form

Consent from between health worker and data collector

I thank you for taking time to meet me today .My name is _____from Jimma university and I am here to observe the OTP service at this unit this is part of the overall program evaluation and it will help to improve the implementation of outpatient therapeutic program service delivered at this health center. The observation was conducted during you provide the services and all findings of the observation was kept confidential. Further we wasensure that any information we include in our report does not identify you as the respondent. Remember, everything was undertaken with your agreement. Do you agree to participate in this interview?

_____

Interviewee Observer Data

Consent form between health care provider and Care givers

Thank you for visiting our health center for receiving services. Today I was providing you services in collaboration with my colleagues. He is here to observe the clinical process and provide additional support which was helping me to provide you better services. During the overall process your information was kept confidential as previous and no one was identifying you as part of the observation or respondent. Remember, everything was undertaker based on your will. Are there any questions about what I have just explained?

Are you willing to participate in this interview?

_____

Interviewee Observer Data

Annex V

Data Collection tools

Date collection tools for OTP Program

Jimma university institute of health, college of public health department of health economic, management &policy: health monitoring and evaluation program unit

Title: - A data collection tool developed for Objective oriented Evaluation of Outpatient Therapeutics program (OTP) of SAM cases in selected health facility Jimma zone, Seka Chekorsa Woreda 2017.

Questionnaire I: - Tools adapted from OTP standards for collection of data from OTP health centers SAM cases clinical document review to evaluate congruence of service implementation to national standards and effectiveness of the program (2, 14).

Letter of Permission from Health Faculty

I am _____ BSc. /MSc. student from Jimma University and I am one of the research team working as a research assistant entitled as: objective oriented evaluation of OTP program of malnourished children in, Seka Chekorsa Woreda, Jimma zone, Oromia Region, 2017

The purpose of the evaluation was to evaluate the intended objective of the outpatient therapeutic program in line with implemented objectives in Jimma zone, Seka Chekorsa Woreda in 2016. The information that was generated from this study was used to understand the compliance & effectiveness of the program. The research approach involves collection data from information in the health Center registration book and patient's OTP follow up card while the client was under the care of health Center during the time period of January 1, 2016 to December 30/2016. I waspresent a request for clearance from Jimma University and wasnot undertake any part of this research until such clearance is received.

Many I continue to review the OTP cards & registration book? 1. Yes 2. No

Thanking you! Signature of evaluator ----------

Instruction: - This questionnaire was used to conduct document review in order to assess the OTP cards of SAM children during the stud period of January 1, 2015 to December 30, 2016 from selected health centers in Woreda.

Registration number		Write 9 for other than listed category						
Code	Questions that was obtained from OTP card	category						
		1	2	3	4	5	9	Remark
General Information								
001	Name of Health Center _____							
002	Age of child (month)_____							
003	sex of child 1=male, 2=female							
004	Distance to home (min)._____							
information during admission								
005	Date of admission _____							
006	Deferred by 1=HDA 2= Community other than HDA 3=Self							
006	Type of admission 1=new 2= return after default 3= readmission 4= refer from SC site 5= other							
007	Admitted with 1=W/H >70% 2=MUAC 3=edema							
008	Weight _____							
009	Grade of edema 1= +, 2 =++, 3=+++ 4= no (+= grade 1, ++=grade 2 &+++= grade 3)							
010	MUAC(cm)_____							
Information health history								
011	Diarrhea 1=Yes 2= No							
012	Vomiting 1=Yes 2= No							
013	Cough 1=Yes 2= No							
014	Was the child on breast feeding 1= yes 2= No							

Code	Questions that was obtained from OTP card	Category						
		1	2	3	4	5	NA	Remark
Physical Examination								
015	Is appetite test done 1=yes 2=No							
016	If yes for Q. 015 Appetite test 1=pass 2=Fail							
017	Was temperature measured? 1=yes 2=No							
018	If yes for Q. 017 Temperature (^{0}c_____)							
019	Was respiratory rate measured appropriately 1=yes 2=No							
020	If yes for Q. 018 Respiratory rate per minute = --------							
021	Dehydration 1-yes 2=No 3=Not checked							
022	Anemia 1=yes 2=No 3= Not checked							
023	Skin infection 1=yes 2=No 3=Not checked							
Routine Medication								
024	Was Amoxicillin given? 1=yes 2=No							
025	Was malaria drug given? 1=yes 2=No							
026	Was Albendazole Given? 1=yes 2=No							
027	Measles vaccine 1 = yes 2 = No							
029	Folic acid 1 = yes 2 = No							
030	Was RUTF given? 1 = yes 2 = No							
031	If yes for Q. 030 No of RUTF Was 1= much child weight 2=not much with child weight							

Code	Questions that was obtained from OTP card	Category						
		1	2	3	4	5	NA	Remark
Information During Discharge								
032	Day of discharge---------- Total length of stay in the program _____							
033	Target Weight (Kg)_____							
034	Weight (kg) during discharge _____							
035	Edema 1=Yes 2=No _____							
036	MUAC_____							

038	Average Weight gain _____							
039	Clinical outcome 1=cured 2= dead 3= defaulter 4= non –responder 5= other							
040	Was home visit conducted for clinical outcome other than cured cases 1=yes 2=No							
041	Reason for home visit (to check which clinical outcome)1=dead 2=defaulter 3=non- responder 4=other							

Question II: Direct observation checklist (Guide)

An observation checklist used to assess the compliance of health worker in OTP service delivery at health Center

Instruction: -This checklist will used to conduct direct observation of health worker at health post while assessing, checking, testing (appetite test), classifying, treating &counseling services providing and follow- up.

Consent from between health worker and data collector

I thank you for taking time to meet me today .My name is _____from Jimma university and I am here to observe the OTP service at this unit this is part of the overall program evaluation and it washelp to improve the implementation of outpatient therapeutic program service delivered at this health center. The observation was conducted during you provide the services and all findings of the observation was kept confidential. Further we ensure that any information we include in our report does not identify you as the respondent. Remember, everything will be undertaken with your agreement. Do you agree to participate in this interview?

_____

Interviewee Observer Data

Consent form between health care provider and Care givers

Thank you for visiting our health center for receiving services. Today I will provide you services in collaboration with my colleagues. He is here to observe the clinical process and provide additional support which will help me to provide you better services. During the overall process your information was kept confidential as previous and no one was identified you as part of the observation or respondent. Remember, everything was undertaker based on your will. Are there any questions about what I have just explained?

Are you willing to participate in this interview? Yes--- no----

_____

Interviewee Observer Data

Identification and respondents background

Name of the Health Center _____

Date of observation _____

The first component will be completed once and the other per each sessions.

Before starting the observation make sure that you took consent from the health care provider and client. Moreover you are expected to complete the table if you observed the session only (tick below after you do

S. No	Activity	Yes (1)	No (2)	NA(3)	Remark
For new admitted children					
1.	Do the HWs show respect for the client (greeting and offer seat)?				
2.	Do the HWs ask the age of the sick child				
3.	Do HWs check edema of the child				
4.	Do the HWs measure the weight of the sick child				
5.	Do the HWs measure MUAC of child as guideline				
6.	Do HWs check any medical complication to refer or admit in OTP				
7.	Do HWs an appetite test in private place with considering weight of the child				
8.	Do HWs check respiratory rate of child (#min)				
9.	Do HWs check temperature of child (^{0}c)				
10.	Do HWs check dehydration stage rate of child				
11.	Do HWs ask history of breast feeding				
12.	Do HWs calculate target weight for child				
13.	Do HWs check weight change and record				
14.	Do HWs check measurement of MUAC change for revisits				
15.	Do HWs check edema change for revisits				
16.	Do HWs ask a history of diarrhea in a child				
17.	Do HWs ask a history of vomiting in a child				
18.	Do HWs ask a history of fever in a child				

19.	Do HWs ask a history of cough in a child				
20.	Do HWs examine an appetite test for revisits				
21.	Do HWs give appropriate routine medication as a standard				
22.	Do HWs give RUTF for child by considering weight				

Closing: Thanks the Heath Worker as well as the client parent and the finish your observation!!

Observer's name _____Observation Date _____Signature _____

Checked by/ Supervisors name _____checked date _____Signature _____

Questionnaire III: - OTP Resource inventory check-list

Instruction: this checklist will be used to conduct resource audit (inventory) in order to assess infrastructure, human resource, OTP drugs and supplies in al selected Health centers

Name of Health Center----------

Total population ----------

Total number of 6-59 month children----------

Number of HWs ----------

Expected (planed) Number of SAM cases to identify ----------

Code	Items	Standard on OPT guideline	Available and use it		If the item was stock		Remark
			Yes	No	Day of stock out	reason of stock out	
	Recording &Reporting Tool						
1	OTP guide line						
2	Registration Book						
3	OTP quick reference						
4	OTP card						
5	Monthly Reporting format						
6	Referral formats						
7	IEC/BCC materials						
	Medical equipment and Infrastructure						
Code	Items	Standard on	Available and		If not available and		Remark

		OTP guideline	functional		functional	
			Yes	No	Reason it	
8	Height measurement					
9	MUAC measuring tape					
10	Weighing scale –Baby lying or sitter scale with bowel					
11	Thermometer					
12	Clean water in the compound					

Essential Drugs

Code	Items	Standard on OTP guideline	Available and use it		If the item was stock out		Remark
			Yes	No	Day of stock out	Reason of stock out	
13	Albendazole (Mebendazole)						
14	Anti- malaria with RDT						
15	Vitamin A capsule						
16	Measles vaccine						
17	RUTF						
18	ORS						
19	Antibiotics (Amoxicillin)						
20	Folic acid						
21	TTC eye ointment tubes						

Thank You!!

Data collector name ----------supervisor's name ----------

Data of data collection ---------- Checked date ----------

Signature ----------Signature ----------

Questionnaire IV: - interview guide for key informants

Instruction: this questionnaire/tool will be used to evaluate the OTP program service delivery, program context, resources sustainability, monitoring strategy and the strength and weakness of the implementing the program.

Consent from

I thank you for taking time to meet with me today. My name is _____ from Jimma University and I would like to talk to you about your experiences participating in the OTP program.

Specifically, as one components of our overall program evaluation we are assessing program implementation in order to capture lessons that can be used in future to improve the program. The interview will be take 30 – 45 minutes of your time. All responses will kept confidential. This means that your interview responses will only be shared with research team members and we will ensure that any information we include in our report does not identify you as the respondent. Remember, you don't have to talk about anything you don't want to and you may end the interview at any time.

Are there any issues I have to explain?

Are you willing to participate in this interview?

The information about the proposed research study and consent has been explained by

Name of data collector_____ signature _____

Statement of consent

I have fully understood the nature of this study, so I am agree to participate.

Signature of participant _____ date _____

I. Guiding question to health extension workers

Identification of HEW:
Name of HP _____
Name of cluster HC _____
Qualification of HEW:

- 10+1
- Level IV

Training status: trained _____ untrained _____
Service year (year started): _____

1. Could you please briefly describe community involvement on OTP service?

……
……
……
……
……
……

Probes:- Administrative body participation

2. In your opinion what are some of the prominent problems or factors that affect management of SAM in OTP services at health center?

……

……

……

3. Did you ever receive supportive supervision related to OTP service? Yes, No

Probes: -From Woreda health office, HC?, NGOs?

4. If yes when did last supervision received? (dd/mm/yy) _____/_____/_____
5. How often the support provided? _____
6. Did they give feedback (see the feedback provided)? Yes/No

Thank you!!

Data collector

Name _____ data of data collection _____ signature _____

Checked by/supervisors

Name _____ checked date _____ signature _____

II. Guiding question for health center focal person and program coordinator at Woreda health office

Identification of health care provider

Name of HC _____

Qualification of Health Care Provider

- Diploma in ……
- BSc. in ……
- Master in ……

Training status: trained _____ untrained _____

Service year (year started): _____

1. Could you tell me OTP follow up mechanism in the health post?

Probes: - frequency of supervision conducted? Do you use ISS format?

2. What is the challenges and opportunity regarding to the program?
3. How is the community involved in the program particularly?

Thank you!!

Data collector

Name _____ data of data collection _____ signature _____

Checked by/ supervisors

Name _____ checked date _____ signature _____

Annex VI: Questioner Translated to local language (Afaan Oromo)

Gaafanno afaan Oromootiin Qopha'e

Qajeelfama

Gaafiileen Aarmaan gaditti dhiyaatan haalawaliigalaa tajaajila keniinsaan walqabatee jiru, ciminaafin hanqinoolee dhiyeesan walqabatanii mulata, gargaarsaafii hordofii tajaajilichattin walabatanii jiran, keniinsa dubdeebiifii ciminaafi hanqinoota akkawaliigalaatti mulatani iittin adda baaasuf kan qophaa'anidha.

Hundda dura yeroo keesan Aarsaa gootanii nahaasossisuf waan heyamtaniif baayyee galatoomaa. Maqaan koo Xilaahun Qaqqabaa jedhama barataa"gamaagamaafii hordofii" digrii lammafa (maastarii) Univarssitii Jimmaati.

Kan issin irra barbaadamu hojiilee sagantaa nyaata dabalataa daa'iman jia 6 hanga ji'a 59 kennamaajiru irratti daqiiaa 30 hanga 50 tti gaaffif deebii gabaabaa kan gageesinu yomuu ta'u kaayoon isaasi fooyainsa sangantichaatifii faayadaa Uumataatiifi haluma kannaan odeefannoon isin irraa argamuufii eenyummaan keesan fedhii keesan malee qaamq kamittuu darbee hinkeennamu.

Tarii yoo haalli issintti hinmijoofinne yoo mullate yroo barbaaddan dhaabuu nidandeesu.

Haala arrman olii irratti waanti ifa hintaane yoo jiraate?

Hirmaachuuf fedhii qabduu? Qaba---- Hinqabu------

Eenyumaa raga sassaabbaa/ sassabduu ibsa aarmaan olii kennee.

Maqqaa ----------mallattoo--------Guyyaa----------

Mirkaneesa waliigalitee

Ibsa armmanolitti naafgodhame hubadhee gaafiilee naafdhiyaataniif hangan beeku deebisuuf waliigaleera, kanumas mallatoo kootiin niibsa.

mallattoo ----------Guyyaa-----/-----/----------

yaada ka'umsaa hojjatuu ikisteenshiinii fayyaa irraa yaada fudhachuuf qophaa'ee

Maqaa keellaa fayyaa----------

Maqaa buufata fayyaa isaanniif deegarsa kennu----------

Leenjii OTP irratti:- Fudhatte----------Hinfudhanne----------

Muxannoo hojii waggaaa----------

Sadarkkaa barumsaa:- 10+1----------, Sadarkaa 4ffaa--------

Sagantichaan walqabatee

1. Haala waliigalaa sadarkaa nyaata dabalataa daa'iman jia 6 hanga ji'a 59 kennamaa jiru osoo naaf ibsitanii----------
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2. Sagantichaa irratti hirmaanaan Uumataa maalfakata?----------
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3. Qaamni bulchiinsa (sadarkaa aanaa gandaa) keeniinsa tajaajila nyaata dabalataa kana safisiisuu irratti maali fakaata?----------
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4. Yeroo dhiyoo keesatti hordofiin deegarsaa sadarkaa kana irratti isiniif godhamee beekaa? Beeka----------yoom----------hinbeeku----------
5. Qaama kamtuu isiinf godhe? Buufata fayyaa---------Wajira fayya aanaa---------- qaama bira------(ibsi)
6. Yeroo dhumaatiif kan issiniif godhame yoomiii?----------
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7. Duubdeebiin hordoofichaa issiniif kennamee beekaa?----------
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8. Daa'iman sadarkaan nyaataa kana jala sagantaa ittin hoordooftan qabdduu?----------
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9. Yooqabaatan maal maali hojettu?----------

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10. Yaanni biraa naadabaluu barbaadduu jira?----------

Bayyee Galatoomaa!

Maqaanama raga funaanee----------guyyaaa funaname----------mallatoo--------
Maqaa qindeesaa mirkanesee---------- guyyaaa mirkanessee---------- mallatoo--------