Evaluation of Child Immunization Service Quality at Governmental Health Centers in Gondar Town, Amhara Region, North West Ethiopia

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Jimma, Ethiopia

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Abstract

Background: In Ethiopian, the immunization program was launched in 1980 with the objective of achieving 100% immunization coverage of all children under two years old by 1990. The available information on quality of immunization Program in Gondar town was insufficient. This evaluation tried to fill the identified gap and to help identify the strength and weakness.

Evaluation Objective: To evaluate child immunization service quality at governmental health centers in Gondar town.

Methods and materials: Case study design and both quantitative and qualitative data collection methods were employed from March 1 to 30, 2017 at six governmental health centers of Gondar town. This evaluation was focused on process component of the program based on Donabedian structure-process–outcome model of health care quality with formative evaluation approach. A sample of 422 care givers were interviewed using structured and interviewer administered questionnaire. Moreover, twelve health workers providing vaccination services and Program focal persons were interviewed using semi-structured questionnaire. A sample of 36 direct observations of service provision processes were carried out. Registration books, immunization charts and immunization units were reviewed. Quantitative data was checked, coded and entered into EPI data version 3.1 and exported to SPSS window version 21 for Logistic regression analysis was used. Qualitative data was used and analyzed under each thematized area.

Result: Lack of in service trained providers due to high attrition and constantly turned over of trained providers. Satisfaction was positively affected by convenience working hours and service received based on previous appointment. The dimension of availability of resources, compliance with Guidelines and satisfaction of immunization program was 73%, 67.6% and 74% respectively based on Pre-set criteria.

Conclusion: The overall quality of child immunization program based on the stakeholder's three dimensions of pre-set criteria parameter value was 71.5% which had good achievement level. But facilitate in-service training for providers and undertake integrative supportive supervision and provide job aid materials for the professionals. Finally, Good to conduct community based study.

Key words: child Immunization program, quality, satisfaction, evaluation and care givers'

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Acronyms /Abbreviations/

AUC	Africa Union Commission
BCC	Behavioral Change Communication
BCG	Bacilli Calmette Guerin
CC	Cold Chain
CDC	Communicable Disease Control
CMYP	Comprehensive Multi-Year Plan
EDHS	Ethiopian Demographic and Health Survey
EHMIS	Electronics Health Management Information System
EPI	Expanded Program on Immunization
FMOH	Federal Ministry of Health
GAVI	Global Alliance for Vaccines and Immunization
GIVS	Global Immunization Vision and Strategies
GLs	Guide Lines
HCs	Health Centers
HDA	Health Development Army
HEP.B	Hepatitis B
Hib	Heamophilus influenza type b
HSDP	Health Sector Development Program
HWs	Health Workers
IDSR	Integrated Disease Surveillance Report

IEC	Information, Education and Communication
IMNCI	Integrated Management of Neonatal and Childhood Illnesses
ISS	Integrative Supportive Supervision
MCH	Maternal and Child Health
MDGs	Millennium Development Goals
MOH	Ministry of Health
NEPI	National Expanded Program on Immunization
NGO	Non-Governmental Organization
NIP	National Immunization Program
NNT	Neo-Natal Tetanus
OPV	Oral Polio Virus
PCV	Pneumococcal Conjugated Vaccine
PENTA	Diphtheria Pertussis and Tetanus
RED	Reaching Every District
SPSS	Statistical Package for Social Science
UHEWs	Urban Health Extension Workers
UNICEF	United Nation International Children's Emergency Fund
VPDs	Vaccine Preventable Diseases
VVM	Vaccine Vial Monitoring
WHO	World Health Organization

Operational definition

Partially/ incomplete immunized child: A child with 12 months old who had missed any of vaccines from the ten recommended vaccines.

Dropout rate calculated based on Penta-valent-: are a proportion of children who vaccinated for Penta-valent-1 minus Penta-valent-3 divided by Penta-valent-1 and *100. It is used to measure continuity/follow up utilization of quality immunization services.

Fully immunized dose: One dose BCG and measles, three doses of Penta-valent, PCV and OPV except OPV0 at birth and two dose of Rota virus at WHO recommended age less than one year.

Self-employment: regarding socio-economic status of occupation caregivers who weren't non-governmental organization employee and governmental organization employee.

Quality: the measure of stakeholders' expectation based on pre-set judgmental criteria on service delivered and compliance with Guide lines, outcome of each dimension (availability, compliance, care givers satisfaction) of achievements of quality level. >85%, excellent, >75-85% very good, 60-75%good, 45-59%fair, <45% poor.

Caregiver: is the most responsible person that provides child care for the 12 months old child whose brings child for immunization service in health centers.

Incomplete registration: immunized child registration didn't contain date of birth or date of registration or both date of birth and date of registration.

In-service training: At least one immunization service provider available at each health centers who received in-service training in immunization unit the last 12 months.

Open vial policy of vaccine: the health facilities require on average six children in order to open a vial of reconstituted vaccines (measles and BCG) to protect wastage of that vaccines.

Penta-valent-**1 coverage:** to measure access of a child with 12 months old who had eligible for vaccination

pre-set judgmental value level: a referenced test criteria of an objective test is in which a pre-set cut-off score to measure against carefully of the written objective of specific program indicators to meet the minimum standards that determined an acceptable performance or not.

Chapter One: Introduction

1.1. Background

Vaccination is defined as the act of introducing a vaccine into the human body to produce immunity to a specific disease [1]. The prevention of child mortality through immunization is one of the most cost-effective and widely applied public health interventions. According to World Health Organization (WHO), immunization helps to prevent between 2 and 3 million deaths globally each year less than one year children [2].

Vaccination is crucial to reducing infant and child mortality. But nearly 22.4 million children less than one year failed to receive full doses of vaccine. Due to this reason Vaccine Preventable Diseases (VPDs) are responsible for about 25% of the 10 million deaths occurring annually among less than five years' children [3, 4].

WHO states that children are considered fully vaccinated when they have received a vaccination against tuberculosis (BCG), three doses each of the Penta-valent, PCV and polio vaccines, two dose of Rota and a Measles vaccination by the age of 12 months. In 2011, nearly 107 million infants (83%) worldwide received at least 1 doses of Penta-valent vaccine [2- 4].

The increasing use of new introduced vaccines in Africa is already having a positive impact on (VPDs). Despite the fact that Africa has made remarkable progresses in immunization services, large numbers of children remain unvaccinated and under-vaccinated [5, 8].

According to the work of WHO in the African region 2015–2016 immunization vaccine coverage reported, Penta-valent-1 and Penta-valent-3) were 90% and 75 % in 2015, respectively. For instance, Ghana, Rwanda and Togo have reported reductions of 45-65% of rotavirus hospitalizations in large referral hospitals for the period 2014-2015 [6, 7].

‘’Ethiopian FMOH has prepared a comprehensive Health Sector Transformation Plan (HSTP) in alignment with the national Growth and Transformation Plan (GTP) two which has three major focus areas like: Quality, efficiency and equity of services [9].’’

According to (EDHS) 2016 and(FMOH,2015) annual performance reported in Ethiopia, the vaccination coverage of children age 12- 23 months showed that BCG 69%, OPV1 81 %, OPV3 56 %, Penta-valent-1 73 %, Penta-valent-3 53 %, PCV1 67 %, PCV3 49 %, Rota virus1 64 %, Rota virus2 56 %, measles 54%and Children in this age group hadn't received any vaccinations was 16%. Complete fully vaccination coverage among children aged 12 months was 40.5 % and dropout rate was 27.4% [10].

According to 2015 annual performance vaccination coverage among children age 12- 23 months reported showed that BCG 75.2%, OPV3 61%, Penta-valent-3 63.8%, PCV3 60.5%, Rota virus 59.1 %, measles 61.9 % and Complete fully vaccination coverage of 44.5 % and dropout rate 26.3% in Amhara region, 2015 [9,10].

Vaccines are very sensitive biological products, if they are exposed to temperatures beyond the recommended range of temperature, they lose their potency. So, proper forecasting, procurement, handling, storage and distribution of the vaccine are vital in order to provide effective vaccines to protect children from (VPDs) [11].

According to Donabedian, Quality is the application of medical science and technology in approach that maximizes its benefits to health without in the same way increasing its risks. The degree of quality is, therefore, the extent to which the care provided is expected to achieve the most favorable balance of risks and benefits [12].

Study conducted in Tanzania showed that determinants of perceptions of quality of services include; perceived time spent at the health facility, availability of resources needed for immunizations services; availability of child health services and the HWs staff strength of at the health facilities [13].

Quality care can be measured at three levels: the policy level; the service delivery level; and the care giver /outcome level. Evaluated and upgraded quality of immunizations services must be a priority to the health systems through different approaches to prevent (VPDs) [14].

1.2. Statement of the Problem

Around 29,000 children die each day and more than 2.5 million child deaths each year worldwide mainly due to vaccine preventable disease (VPDs) and approximately 21.8 million

eligible children did not receive 3 doses of diphtheria tetanus- pertussis vaccine (DTP3); among them, 9.6 million (44 %) started, but did not complete DTP3-dose series Globally, in 2012 [5,15].The VPDs threatened 60% of the world's population and killed every fourth infected children worldwide between 1999 and 2003 [16].

Measles-caused deaths declined by 89% in the region of Africa, 2008 [17]. However, VPDs estimated to 1.6 million deaths occur every year of which 50-60% of those were contributed by Measles outbreak in Africa, 2012 [8].

About 1 million children were estimated to be unvaccinated in Ethiopia. Due to this problem VPDs kill around 470,000 children in Ethiopia per year. VPDs attributed to 16% under-five mortality [] which has 30 times more probability of death than a child found in Western Europe [18, 19].

According to EDHS 2016 showed that only 40% of complete fully vaccination among children aged 12–23 months and dropout rate was 27.4 % nationally. Full vaccination coverage was much higher in urban than rural areas (65 % versus 35 %). Full vaccination coverage is highest in Addis Ababa (89 %) and lowest in Afar 15% [10, 20].

WHO and NIP Guidelines recommended that the dropout between the first dose of Penta-valent-1 and the third dose Penta-valent-3 is the most acceptable indicator to measure the presence of service continuity and follow up visit of caregivers' and it should be less than 10%. According to 2015 annual performance vaccination coverage among children age 12- 23 months reported showed that dropout rate was 27.4% and 26.3% nationally and in Amhara region, respectively [9, 21 and 22].

According to Gondar town health office 2016/2017 reported that immunization service coverage was: BCG vaccine 90%, Penta-valent-1=89%, PCV one 89 %, PCV three 71%, Penta-valent-3 71%, OPV-1= 89%, OPV-3= 71% measles 68% and Rota virus one 89 %, Rota virus two 71 % and the children received 89% of first dose Penta-valent and 11% was unvaccinated from the targeted population [23].

According to Gondar town administration health office 2015/2016 of immunization service report, most (91%) children receive at least 1 dose of the routinely recommended vaccines at the

WHO recommended ages. children completed fully vaccination all ten-recommended vaccination were 61 % [16]. But there is an increased dropout rate (16%) and there was measles outbreak in Gondar town, in 2014, 2016 and 2017, respectively [23]. These may indicate that the presence of quality problem on implementation of immunization program in Gondar town.

Up to the knowledge of the researcher, there was no information that had been evaluated of child immunization service quality at governmental health centers in the study area. So, accurate and valid information on the immunization service quality is essential to answer how/ why high dropout rate (16%) and the presence measles outbreak problems in Gondar town [23]. To provide continued quality immunization service and increased achievements with child immunization service quality those problems must be addressed.

The aim of this evaluation was, to identify the point where immunization service quality failure would occur and to answer how/ why determinants on the implementation process of immunization service quality in selected governmental health centers in Gondar town, Amhara regional state, northwest Ethiopia,2017.

1.3. Significance of the Evaluation

This evaluation will be try to fill the identified gap and help responsible bodies to identify the strength and weakness of immunization service quality toward the required goal and take corrective action for improving the service delivery system.

The information obtains by evaluation will be used by the implementers of the program: health care providers, health service managers and nongovernmental organization which may improve immunization service quality in Gondar town.

The evaluation study will be creating opportunity to show the gaps and helps to fill the gap of the program and provided base line data for other researchers.

Chapter Two: Program Description

Immunization program begun in 1974 is considered one of the world's most successful public health programs, as measured by equity and coverage of its intended target population [2]. According to (WHO) immunization report, Universal immunization of children against six common (VPDs), namely tuberculosis, diphtheria, whooping cough (pertussis), tetanus, polio, and measles, recently additional four vaccination program for pneumonia, Rota virus, Hepatitis B, Hib are launched.

The emerging post-2015 sustainable development agenda cites equity as a central principle of the renewed global development goals and targets and the implementation of the declaration will contribute to reducing child mortality within the context of the Sustainable Development Goals (SDGs)

At birth or as soon as possible one dose bacillus Calmette–Guerin (BCG) and oral polio vaccine initial dozes (OPV_0). Three doses of Penta-valent, polio and (PCV) vaccines are given at approximately age 6, 10, and 14 weeks, two doses of the (RV) at 6 and 10 weeks and IPV was introduced for national immunization program in 2016. One dose of IPV vaccines are given at or as soon as after weeks14. Measles vaccinations should be given at or as soon as after age 9 months. A child is said to be fully vaccinated if he/she received all vaccines according to schedule recommended [11, 21, and 22].

2.1. Program Stakeholders

At the beginning, we should identify stakeholders or concerning bodies that was affected or be affected by the expanded program on immunization [25, 26]. Based on that, we include potential stakeholders that don't work in health sector.

Identified stakeholders to conduct evaluability assessments were: Gondar town health office, HCs head, Amhara regional health bureau, Health care providers and UHEWs, Gondar sub cities administers women, child and youth affaires. Kebele administers. The stakeholders were provided us information on program performance and identified and prioritized the area of program that was evaluated. They were participated on indicator development and assigning

value for each indicator and prepared maximum value for level of program quality judgment [26, 28].

2.2. Communication with Stakeholders

Face to face and Phone contact communication was performed with health office and health centers head, program managers, and key group of representatives of the community about the priority area which was evaluated [26].

2.2.1. Stakeholders Analysis

Face to face and Phone communication was performed to know who was the key actors, their role, interest and level of important in evaluation of the program, according to that, analysis was important to implementers to interact more effectively with stakeholders, and enable evaluators before Carrey out evaluation to detect and act to prevent potential misunderstandings and/or against to implement evaluation [26, 28].

Table 1 : The stakeholders' identification and analysis matrix for evaluation of child immunization service quality at Gondar town, 2016/2017

S/No	Stakeholder	Role in the program	Interests /perspective on evaluation	Role in the Evaluation	Communication strategies	Level of importance H,M,L
1	Gondar town health office	Budget allocation and Ensure supply of drugs and medical equipment Supportive supervision Capacity building Monitoring the progress and Evaluation	Use of findings for child immunization service quality & implementation for Capacity building and continuous supportive supervision	Define the problem Formulate evaluation question Source of information Use of findings	Face to face meeting Formal letter phone	H
2	Health centers	Planning of the Program implementing of the Program	child immunization service quality	Define the problem Formulate evaluation question & method Indicator selection Source of information	Face to face meeting Formal letter phone	H
3	Program service provider staff	Use of evaluation findings for program planning and providing quality vaccination services.	Use of findings for Planning and child immunization service quality	Define the problem Formulate evaluation question and method Indicator selection Source of information	Face to face meeting Formal letter	H

S/No	Stakeholder	Role in the program	Interests /perspective on evaluation	Role in the Evaluation	Communication strategies	Level of importance H,M,L
4	Gondar town Kifle ketema administration	Administrative support in community mobilization Facilitation of program service	Use of findings for child immunization service quality	coordination of the evaluation process & giving administrative support	Face to face Formal letter	Medium
5	Amhara Region health berue	Monitoring and evaluation Integrative supportive supervision Planning of program implementation Ensuring availability Of supply and logistics. Provision of training about program.	Use of finding for planning and further program improvement by capacity building and supportive supervision	Provision of data for proposal development	Telephone	medium
6	HDA/1 to 5(community representatives)	Administrative support in community mobilization Facilitation of program service	Use of findings for child immunization service quality	giving administrative support for the evaluation process	Meeting	medium
7	immunization program service users (caregivers')	Beneficiaries of the Program service.	Use Evaluation findings for child immunization service quality.	Source of information	Face to face Interview	medium

S/No	Stakeholder	Role in the program	Interests /perspective on evaluation	Role in the Evaluation	Communication strategies	Level of importance H,M,L
8	NGOs (UNICEF)	Monitoring and evaluation supportive supervision Ensuring availability Of supply and logistics	Use of findings child immunization service quality by capacity building and supportive supervision.	Giving required information for evaluation. Formulate evaluated Judgment criteria	Telephone Meeting	H

2.3. Program Goal and Objectives

According to Gondar town health office plan for expanded program on immunization 2016/2017 the goal and objectives of child immunization program described as follow:

General objective: To contribute the reduction of infant and child mortality and morbidity associated VPD by providing quality immunization service to all under one year children in Gondar town [29].

Gondar town 2016/2017 main program specific objectives for less than one year children

1. To increase the coverage of Penta-valent-1 from 89% in 2016 to 94% ages less than one year children were attained at the end of 2017.
2. To increase the coverage of PCV1 vaccine from 89% in 2016 to 94% ages less than one year children were attained at the end of 2017.
3. To increase the coverage of BCG vaccine from 90%, in 2016 to 95% ages less than one year children were attained at the end of 2017.
4. To increase the coverage of Penta-valent-3 from 71% in 2016 to 89% ages less than one year children were attained at the end of 2017.

2.4. The Major Program Strategies

The cMYP 2016-2020 shall be implemented within the framework of Global Immunization Vision and Strategies (GIVS) thus the Key approaches for Implementation is; Implementation of all components of the Reach Every District (RED)/ Reach Every Child/Community (REC) approach and other locally-tailored approaches were promoted to maximize the accessibility and utilization of immunization services. This will ensure greater involvement of individuals and communities moving from supply-driven to demand-driven immunization services [22, 28].

The program goal has been implemented through two main strategies:

Static service: it is providing with other maternal and child health services in the health facility. Outreach service: it is providing service routinely which was compulsory strategy the targeted plan in certain area where immunization coverage and access of service is low [21].

2.5. Program Resource and Activities

Resource refers to Physical facility, human and financial resources, NIP Guideline, Medical equipment and supply, computer, Document, registration and reporting format which are prominent ingredient of child immunization program [21, 22].

According to NIP guideline program activities are:

- Health education
- Review meeting and training
- Registration and reporting
- Provide vaccine for child
- Cold chain maintains
- Advocacy and social mobilization
- Program management

2.5.1. Program Output:

Increased community awareness on availability of the services and importance of seeking program service: Effective coordination and partnership created among partners, Better information flow established, Availability of sustainable supplies generated and utilized.

2.5.2. Program Outcome

- Decreased dropout rate between first and third dose of Penta-valent and
- Increased level of caregivers'' satisfaction on service provided.
- Improved knowledge of health care providers and health behaviors
- Improved quality of program service utilization
- Decreased morbidity due to VPDs.
- Decreased mortality due to VPDs

2.6. Program Logic Model

Assumptions about resources and activities how those are interact to realizing the outcome referred to as program theory [30).

A logic model is one of the tools important to describing program theory [27, 28]. Accordingly, program theory, child immunization program prepared as follow.

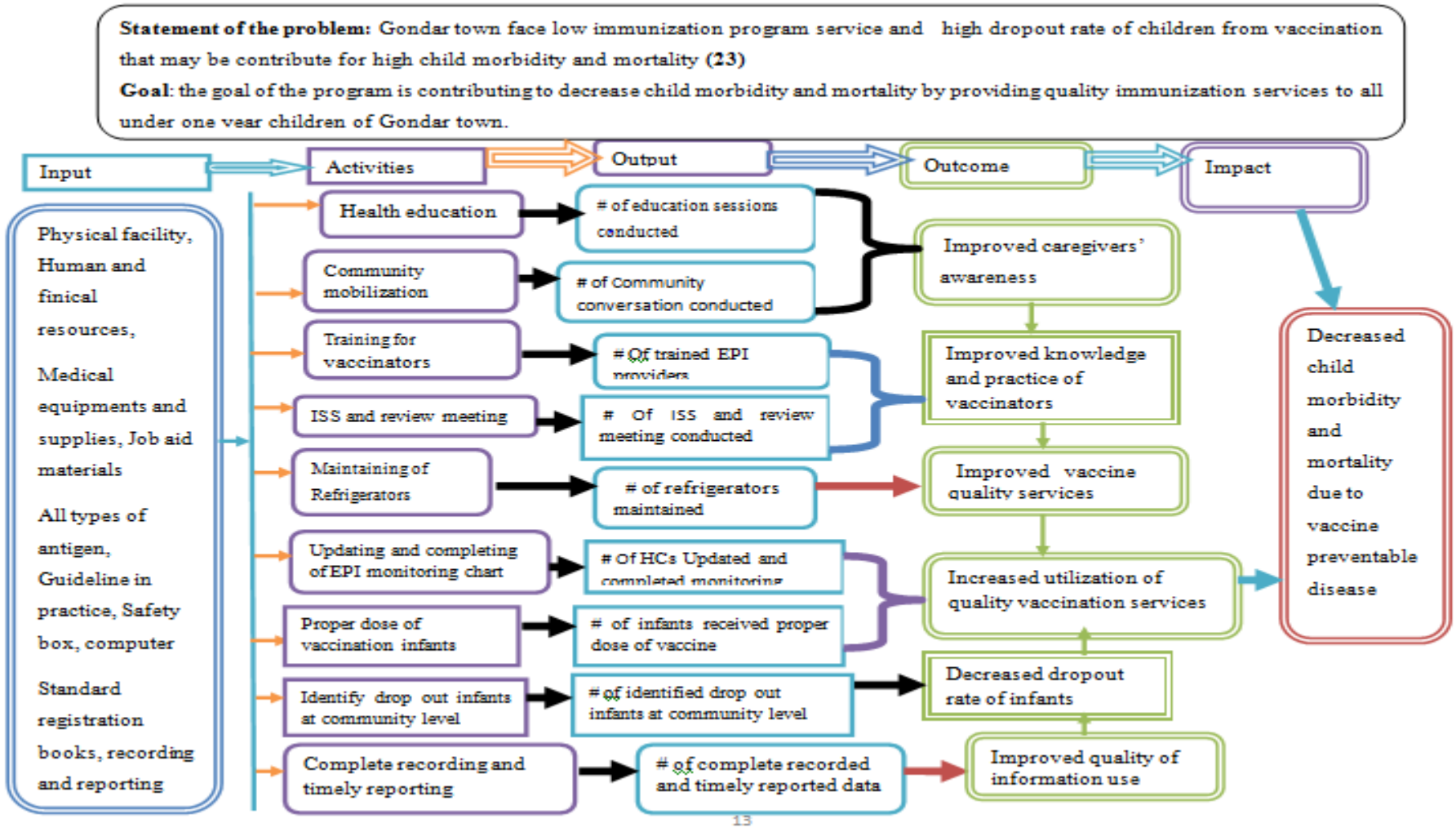

Figure 1: Logic model presentation of Immunization program service in Gondar town, 2017

2.7. Stage of Program Development

2.7.1. Global Situation

Expanded program on immunization established in 1974 by WHO that build on small box eradication program after the program was success, to ensure that all children in world to be benefited from six life –saving antigens [21].

WHO set out a plan which aimed to achieve a world free from vaccine preventable diseases by the year 2020 by envisioning vaccination coverage of ≥90% each nation? By the year 2014, about 86% (115 million) of infants worldwide received complete doses of Diphtheria- Pertussis-Tetanus (Penta-valent3) vaccine and 85% (115 million) of infants had received at least one dose of Measles vaccine by their first year [22].

2.7.2. The Expanded Program on Immunization in Ethiopia

The Expanded Program on Immunization (NEP) was established by the World Health Organization in 1974 to control vaccine preventable diseases. In Ethiopian, NEP programmed in 1980 with the objective of achieving 100% immunization coverage of all children under two years old by 1990.The Ethiopian health policy had given emphasis to the prevention and control of major communicable diseases. Thus, in Ethiopia expanded program on immunization (EPI) was initiated in 1980 with an intention of reaching 100% coverage by 1990, this program goal has largely remained unrealized even using different efforts. Despite the high prevalence of vaccine preventable diseases in the country, immunization coverage rates very poor and remained very low for many years. As a result many children in Ethiopia do not get the benefits of immunization. The objective of the National Immunization Policy was to reduce morbidity and mortality in children from the EPI target diseases through the immunization of all children under the age two in the first five year, but later after 1986, it was revised to focus children under one year of age in order the child exposure time to natural infection [21].

The Ethiopian immunization implementation guideline has been revised in 2015. Children of under-one year of age and women of reproductive age group (15-49 years age) are the targets for the currently available immunization vaccines in Ethiopia (BCG, Measles, Penta-valent (Penta-valent- valet), and Rotavirus, Pneumococcal vaccine (PCV), OPV and TT).

Routine immunization in Ethiopia introduction of PCV, IPV and Rotavirus vaccine into the national immunization program Penta-valent3 coverage of 96 % was planned to be attained by 2015 and the actual coverage for 2014 was 87% [21,22].

The comprehensive Multi-Year Plan (cMYP) 2016-2020 is the document to provide direction and guidance to national and sub national levels of indicator performance. Based on this document national policies and national targets programs contain a set immunization and financial indicators monitored and feedback provided to policy and programme managers within the existing health sector monitoring and reporting framework [22].

Evaluability of child immunization program determined during Evaluability assessment in Gondar town.

Chapter three: Literature Review

Donabedian model was used for measurement of quality immunization program in Gondar town 2017.

1. Structure
2. Process
3. Outcome

1.Efficacy: the ability of care, at its best, to improve health; 2.effectiveness: the degree to which attainable health improvements are realized.3.efficiency:the ability to obtain the greatest health improvement at the lowest cost.4.optmality:the most advantageous balancing of cost and benefits.5:legitimacy: conformity to social preferences concerning all pillars.6.equity:fairness in distribution of cares and its effects in health.7.acceptabilty: Acceptability: Is the level of conformity to the wishes, desires and expectations of patient**s.** Usually related to what beneficiaries of healthcare value more including Accessibility of services- the ease with which persons can obtain care, Empathetic provider – patient interaction, Time expense, physical comfort to receive services, Patient preferences regarding the effects, risks and costs of care. Acceptability of service delivery design and input arrangements in care givers expectation toward service provided can evaluate care givers satisfaction [12, 30].

Factors affecting quality of immunization programs from different literatures are expressed by a conceptual framework to know external environmental factor**:** infrastructure, human and financial resources, Skills of health care provides, attitude of health care provides, politeness of health care provides, environmental condition, work hour of health care provides, distance of health centers, cleanness immunization unite, availability medical equipment's and supply [27, 28].

3.1 Availability Dimension

Availability of trained health workers are one of the necessary inputs to provide quality immunization services. The MCH directorate is the overall coordinating body for the NIP activities at national level and almost all health facilities were hold by only one health worker to provide all MCH services. Monitoring, supervision and program reviews are being coordinated through the directorate. However, according to cMYP (2016-2020) nationally, the objectives and

activities set forth in this Multi-Year Plan provide the Framework required meeting beyond previously stated goal of reducing infant and child Mortality and morbidity associated with vaccine -preventable diseases (VPD). It is also limiting to provide technical and financial support to the regions and ensures updating NIP implementation guideline, standardization of training manuals, job aids and any related supplies. According to FMOH -2015 reports, inadequateness of trained health care worker was one of the problems at national health facility level.

According to NIP guideline, availability of functional cold chain with regular uninterrupted vaccine and related supply is one of the necessary components of child immunization program [22]. The evaluation conducted in Amhara region, the case of sekota zuria Woreda; 16% of health centers had no functional cold chain system [9].

According to FMOH -2013 reports, the study findings in Ethiopia revealed 53 percent of Facilities that offer child immunization services have guidelines and 47 percent of them have at least one Staff member trained on child immunization service. A great majority of these facilities have equipment for Vaccination services with the exception of vaccine refrigerator (18 percent) with a great disparity between Government facilities (18 percent) and private facilities [32]

According to FMOH -2015 annual Performance Report, in Amhara region, 2014, the resource availability coverage was like: guidelines 58%, in service immunization program trained HWs 39%, vaccine storage refrigerator 22%, vaccine container IC packs 94%, safety box 96%, syringe and needless 94% [9]. According to cMYP (2016-2020) Achieve 90% timeliness, accuracy rate and completeness of HMIS reports through programmatic reviews and NIP performance monitoring system and Strengthen program of M&E officers at all levels 2017[22].

According to study conducted in India, Care giver satisfaction in immunization is when 100% of care givers are satisfied with availability of services, interpersonal quality, professional competence, and skill 8% of care givers were unhappy with duration to wait and fulfillment of health care facility, 30% were unhappy with facilities and equipment, and 20% were unhappy about efficiency to treat [33].similarly, the evaluation conducted in Ghana indicate that 30% of health care workers that work in immunization and cold chain unit were not trained on vaccine provision management [34]. study conducted in Tanzania, reported that the availability of appropriate medication at the first point of contact with the health care system is one of the most important components of the quality of primary health care of utilization [35].

Moreover, the evaluation conducted in Thailand indicates that one out of five health care workers worked in immunization unit not trained on immunization program and cold chain maintenance [36].

Similar study conducted in Turkey showed that the lowest average mean percent score was inadequacy of drugs (44.8%), availability of politeness nurse 57.4% [37].

The evaluation conducted in Ghana many of health care workers that provide immunization service have not guideline in practice for service provision and most of them who work on cold chain unit have not guideline to monitor vaccine wastage [34].

According to the study done in Uganda satisfied patient is more likely to develop a deeper and long-lasting relationship with their health care provider, leading to improved compliance, continuity of care and ultimately better health care outcomes. Facility and favorable environments in addition to individualization of care, orientation of patient; informational effectiveness and safety procedures are important factors affecting patient satisfaction [38].

Most important causes of users' dissatisfaction were the absence of health workers for all the services, poor staff attitude for all the services, distance for all service and lack of drugs for curative services. Very few mention cost and long waiting hours as a reason [13, 39].

3.2 Compliance Dimension

The most predictor for care giver satisfaction at government health services was the provider's behavior towards the care givers, particularly respect and politeness. This aspect is much more important than the provider's technical competence (characterized by elements such as explaining the nature of the problem, physical examination, and giving advice) and technical competence, information given to care givers, inter-personal relations, mechanisms to ensure follow up and continuity to decrease high dropout rate and an appropriate consultation of services was assessed [14,39).

Competence of health team diagnosis and treatment of children and politeness of nurses are among aspects of care in satisfying the users. Quality of care can be measured at three levels: the policy level; the service delivery level; and the care giver /outcome level. Outcomes have received special emphasis as a measure of quality [1, 39]. Maintaining cold chain is important to protect vaccine failure or vaccine to have good potency. however, the evaluation conducted in

Thailand indicate that half of primary health care units had no temperature monitoring chart, as a result, temperature inside refrigerator not monitored twice in a day yet [36], WHO recommended that refrigerator that used to store vaccine must monitored two times per day. The main reasons children don't get immunized were beliefs and behavior; parental knowledge and understanding of immunization; parental fears of immunization; low motivation for immunization; care givers' time costs and other constraints; location of service provision; drop outs, absence of vaccination cards; community participation; traditional health practitioners; traditional health beliefs; research methodologies and health education approaches; and, counseling guidelines, affect utilization of immunization. The evaluation on the reasons for low quality childhood immunization from a variety of countries in the world have been identified such factors as inadequate immunization services, poor parental knowledge and attitudes, limited access to service, poor health staff attitude and practices, unreliability of services, false contraindications, and fears of side effects, conflicting priorities, and parental beliefs. Immunization process like greeting vaccine education, waiting time, hygiene, dose, manner of health care providers, availability, affordability, accessibility, environment, distance of facility and transport are determents for maternal satisfaction and quality of immunization program [40 -44].

Studies done in Bloomberg showed that majority of parents were satisfied with their child's health care. The negative effect of fair/poor satisfaction on immunization was largely explained by reduced utilization of age-appropriate well-child care [41]. According to immunization program guide line, Dropout rate between the first and third dose of Penta-valent is the most acceptable indicator to measure service continuity and presence of follow up [22].

3.3 Care Giver Satisfaction

Care givers satisfaction primary customer of the immunization program, therefore it is important to measure their expectations and pursuit to meet those expectations during service provision.

Immunization uptake in the Republic of Ireland remains below the World Health Organization target which is 90%. Examining the maternal aspects of this phenomenon has established the following factors as contributing to suboptimal uptake: low knowledge regarding immunization particularly the timing of the next day of vaccine appointment. Care givers point to long waiting times and inconvenient working hours [45].

Study done in Nigeria reported that 95.9%, of respondents were satisfied with the childhood immunization received according to the day of vaccine appointments (42).

According to the study done in Egypt, 57.3% of care givers evaluated childhood immunization services as good while 2.1% evaluated it as inappropriate. Maternal satisfaction about staff attitude was 66.7%, satisfaction about waiting place was 62.9%, and satisfaction about information giving was 61 % and 395 (95.2%) 0f mothers were satisfied with convenient working hours of childhood immunization [33].

3.4 Theoretical Framework of Evaluation

Based on guidance, from a conceptual framework to know external environmental factor for evaluator, which is appropriate for evaluation of quality immunization program investigation [27]. In this evaluation, Donabedian model quality of measure with some modification was applied. Based on Donabedian, there are three components important to measure quality of program which are structure, process and outcome. The model was developed to assess clinical practice but we used to evaluate quality of immunization program service in Gondar town, 2017 as it is or with some modification [12].

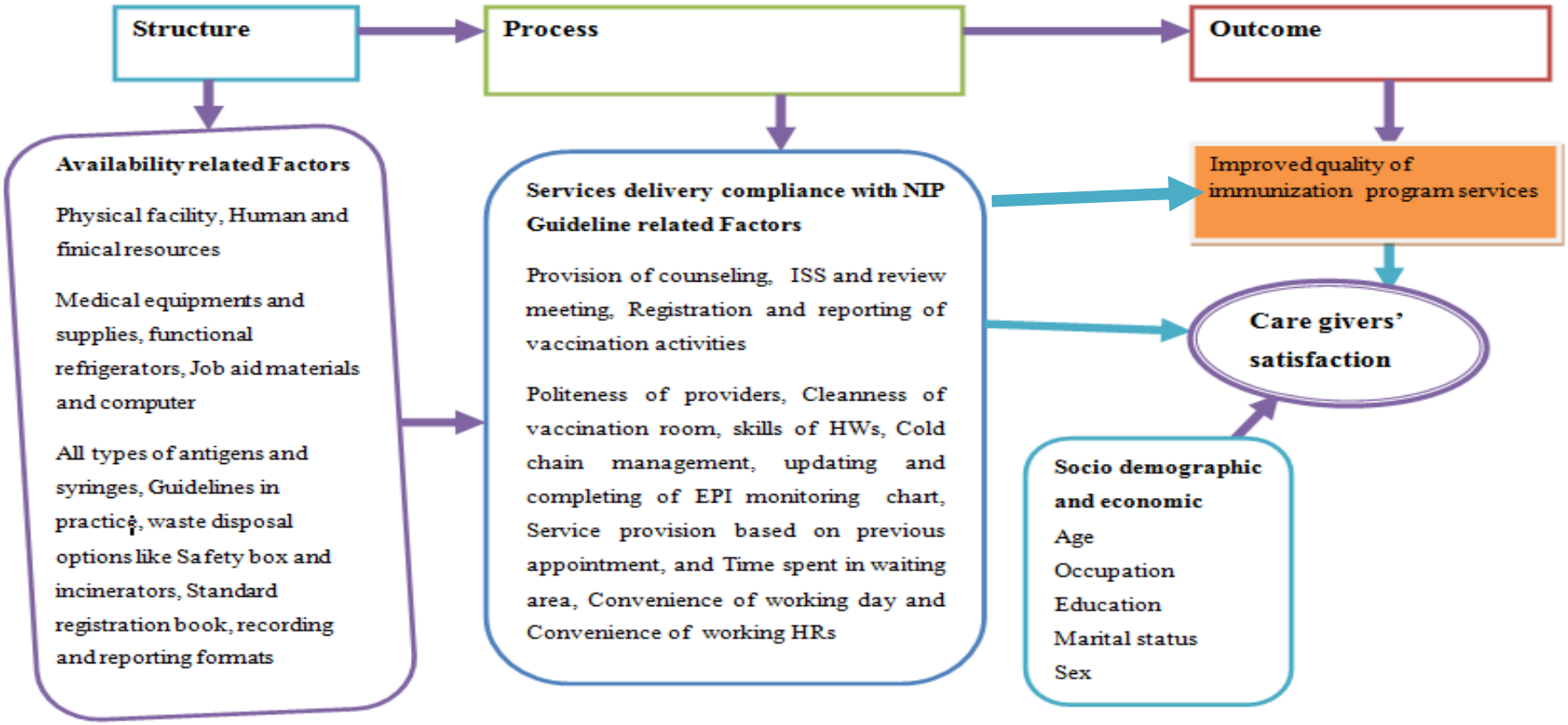

Figure 2: conceptual framework was adapted from Donabedian model for measure quality health care with some modification for Evaluation of child immunization service quality at Gondar town, 2017[Donabedian, 2003].

Chapter Four: Evaluation Question and Objectives

4.1. Evaluation question

What was the level of child immunization service quality in Gondar town, Amhara region, Ethiopia?

1. Were there the required resources to carry out child immunization service quality in Gondar town, Amhara region, Ethiopia if not why, if yes how?
2. Did health care providers complying with NIP standard while providing child immunization service ? How/why?
3. Were child cares givers satisfied with the care given to them? If not, why?
4. What factors contributed to care givers satisfaction with child immunization service quality provided?

4.2. Objectives

4.2.1. General Evaluation Objective

To evaluate the quality of child immunization program in governmental health centers of Gondar town, 2017.

4.2.2. Specific Evaluation Objectives

1. To assess the availability of resources for implementation of child immunization service quality
2. To assess the compliance child immunization service provider with the standard of NIP guideline
3. To determine the level of care giver satisfaction on child immunization service quality Provided
4. To determine factors that has contribute to care givers satisfaction on child immunization service quality provided

Chapter Five: Evaluation Method and Materials

5.1. Evaluation Area and Period

The study was conducted in Gondar town which is the capital city of north Gondar zone. It is located 747 km north west of Addis Ababa180 km of north east of Bahir Dar and also located at 12^{th} 30' north and 37^{th} 30'east [47]. The town limits of Gondar enclose an area of 48.27 km^2.

Today, Gondar is approximately to 323, 000 people, twelve sub-cities and twenty kebele. The town has two hospitals: one governmental and one private; six governmental health centers and nine private clinics.

According to demographic data of Gondar town 2016/2017; among the total population of Gondar town10, 304 are under one year children [48]. But only governmental health facilities provide expanded program on immunization service. The process of quality evaluation on immunization program was done according to the basic steps and framework identified by CDC public health evaluation [27].

The evaluability assessment was done to identify what question is being asked, who was asked and what was done the information gathered from December 16-27, 2016. The data collection period was from March 1 to 30, 2017 in Gondar town, Amhara region, Ethiopia 2017 [24, 27].

5.2. Evaluation Approach

Formative evaluation approach was used to evaluate immunization program service quality in Gondar town. Formative evaluation was conducted for the purpose of improving programs and it can be highly descriptive. It provides depth and detail about the programs strengths and weakness. What's working? What's not working so well? And what is the perception of program participants about immunization program service quality.

Formative evaluation is particularly valuable in the early stages of a program activity and outcome. It is not level of or amount of attainment that was achieved with the purpose of program improvement by examining the input, the delivery of program technology and quality implementation process [24-30].

5.3. Evaluation Design

Case study design one of the non-experimental designs that preferred when posed by how or why questions. The researcher ability to control over actual behavioral events and it focuses on

contemporary phenomena within real life context rather than historical backgrounds. It helps to give a detailed and depth understanding of the picture of the immunization program service quality. Answer the question like how and why the program operation related to its activities and outcomes. So, Case study design was used to get deep and detail source of information from real life context of immunization program service quality in Gondar town [24-30].

Both quantitative and qualitative data collection methods were employed and collected concurrently, analyzed separately, and integrate during interpretation of findings [27, 29].

5.4. Focus of Evaluation and Dimensions

This evaluation was focused on process part of the program service quality based on some modifications of Donabedian structure-process–outcome model of health care quality measurements. **S-P-O**: are areas of where information gathered [12]. Depend on the assumption that the entire program can't be evaluated or does not be necessary to be evaluated at point in time. The correct way of evaluation that program based on what the stakeholders question is being asked, who are asked and what will be done the information gathered from real life context which is the immunization service quality. Throughout the evaluation process stakeholders had been involved to provide necessary information identify focus areas, to recommend alternative solutions and to communicate and utilize evaluation results [24-30].

5.5. Evaluation Dimensions

Donabedian model with some modification was used for measurement of immunization service quality in Gondar town. **S-P-O**: areas of measurement for immunization service quality based on which information can be gathered and potentially inferred about immunization service quality in Gondar town, 2017.The three categories of measures are not alternatives, from which was needed to mix them [12].

Structure: it is the arrangement in which care is being provided. Physical facility, Human and financial resource, Guideline, Medical equipment and supply, Document, Recording and reporting format availability was assessed [12, 22].

Process: it is the place of interrelated activities that make up what immunization service quality looks like according to Guidelines. Appointment card giving, Greetings for care givers, Dose of

vaccine, waiting time, Vaccine information provided, Examination time taken, provision of vaccine for child and Cold chain maintenance was assessed [12].

Outcome: it is the change observed on beneficiaries of service outcome that is attributable to immunization program service quality. The seven pillars of quality are: Efficacy, Effectiveness, efficiency, optimality, acceptability, legitimacy and equity attributes of health care define Donabedian model of quality care [12].

Availability dimension: is one of the five sub-dimensions to measure access to health care that defines the relationship between the volume and types of services and resources to the care giver's volume and type of need. The dimension of availability was used to assess resource needed for immunization program service quality provision. According to NIP Guidelines resource needed for immunization program service quality provision: Physical facility, Human and financial resource, Guidelines, Medical equipment's and supplies, Documents, Recording and reporting formats that are important for immunization program service quality which are one of the prominent qualities of improvements for service [12,22,30].

Compliance dimension

The dimension of compliance was used to assess the degree to which immunization program service being implemented in Gondar town by HWs are aligned and comply with the NIP guidelines and national protocols [22].

Acceptability dimension and care givers satisfaction

Acceptability: is one of the seven pillars/dimensions to measure access to health care that accessibility of services- the ease with which persons can obtain care, Empathetic provider – patient interaction, Time expense, physical comfort to receive services, Patient preferences regarding the effects, risks and costs of care was assessed. It is the level of conformity to the wishes, desires and expectations of care givers delivery of quality in care givers perspective was measured. [12, 30]

Acceptability of service delivery design and input arrangement in care giver's expectations toward service provided could be evaluative in terms care givers satisfaction.

Conducted care givers satisfaction help to: 1. identify opportunities program and service improvement.2. Identified what care givers want as opposed what staff think.3. Giving feedback

to Provider about service delivery quality what implementers should improve to program effectiveness [27].

5.6. Variables and Indicators

5.6.1. Indicators

The following indicators were negotiated and agreed used during the evaluation of immunization service quality in Gondar town through active participation of stakeholders. The indicators adapted from the objectives and strategies of NIP guideline [22, 23].

List of availability indicators for evaluation of immunization service quality in Gondar town 2017

1. Proportion of HCs with at least one in service trained provider in immunization unit to provide service according to NIP guideline
2. Proportion of HCs with waste disposal options like (safety box, plastic bag, bucket and inclinators) according to Guide line recommendation.
3. Proportion of HCs with annual budget plan specifically for immunization service
4. Proportion of f HCs with functional pipe water
5. Proportion of HCs had Chairs and tables for care givers and health care providers in immunization rooms.
6. Proportion of HCs had education materials like(IEC/BCC)
7. Proportion of HCs with no stoke out of all type of antigen during the last 3months (BCG, Penta-valent -valent, OPV, Measles and TT, PCV, Rota virus, Hepatitis B, Hib)
8. Proportion of HCs with no stoke out of all type of syringes during the last 3 months
9. Proportion of HCs having functional refrigerator using to provide immunization program service quality (functional: refrigerator, fridge tag, ice packs and vaccine carriers).
10. Proportion of HCs having NIP guideline in practice
11. Proportion of HCs having standard registration book
12. Proportion of HCs with existence of documented continuing medical supply & equipment's (gloves, syringe, cotton and antiseptics, safety box) in stock during the last 3 months.
13. Proportion of HCs had computer for E-HMIS of capturing data in immunization unit
14. Proportion of HCs with materials needed for recording and reporting formats.

List of compliance indicators for quality immunization programs evaluation at Gondar town 2017.

1. Proportion of health care providers who advised for care givers on routine and follow up visit of the next subsequent doses according to NIP guideline.
2. Proportion of HCS with fridge tag within refrigerator indicates the range of temperature ($+2c^0$ to $+8c^0$) during data collection period.
3. Proportion of fully registered vaccinated children from the last february1, 2016 to march 30, 2017
4. Proportion of HCs with cleaning of immunization room before service provision during data collection period.
5. Proportion of HCs with registered temperature monitor two times per day according to NIP guideline from the last february1, 2016 to march 30, 2017.
6. Proportion of HCs with Updated and completed immunization monitoring chart on the wall during data collection period
7. Proportion of HCs with documenting practices monthly reporting of immunization data through EHMIS from the last february1, 2016 to march 30, 2017
8. Proportion of health care providers told the dose and type of the Vaccine for care givers that the infant taken
9. Proportion of HCs with documented continuing integrative supportive supervision existence with its feedback in immunization unit for the last two and three quarter.
10. Proportion of HCs kept a vaccination appointment day they prepared, every 28 day
11. Proportion of health care providers discussed about immunization side effects what care givers should do according to guideline
12. Proportion of health care providers gave information on use of target disease of vaccination and
13. Proportion of HCs health care providers who giving greeting to the caregivers'
14. Proportion of HCs timely reporting vaccinated children based on deadline monthly report schedule for the last three months.
15. Proportion of health care providers who correctly checked proper dose of vaccination during service provision by using vaccination card.
16. Proportion of child immunized with Penta-valent-1

17. Proportion of child immunized with Penta-valent-valent -3
18. Proportion of child immunized with measles
19. Proportion of HCs with dropout rate <10 from the last February1, 2016 to march 30,2017

List of Acceptability or satisfaction for quality immunization programs evaluation at Gondar town 2017.

1. Proportion of care givers who satisfied with availability of service based on the previous appointment
2. Proportion of care givers who satisfied with immunization service to working hours was convenient
3. Proportion of care givers who satisfied with the time spent in waiting room.
4. Proportion of care givers who v with the cleanness of vaccination room of HCs was appropriate
5. Proportion of care givers who satisfied with the overall of service provided
6. Proportion of care givers who satisfied with convenience immunization service distance to their home was convenient
7. Proportion of care givers who satisfied with availability of HWs at working time
8. Proportion of care givers who satisfied with politeness approaches of the HWs were good
9. Proportion of care givers who satisfied with HWs was knowledgeable
10. Proportion of care givers who satisfied with appointment immunization day was convenient

5.6.2. Variables

Dependent variables

Care givers satisfaction

Independent variable

Service delivery compliance with NIP Guideline

- Time spent in waiting room
- Provision of health message
- Convenience of working day

- Convenience of working hours
- appointment immunization day is convenient
- Service provision based on previous appointment

➢ Socio-Demographic factors:

- ♦ Age
- ♦ Sex
- ♦ Marital status
- ♦ Religion and ethnicity

➢ Socio-economic factors:

- ♦ Educational level
- ♦ Occupation

5.7. Population and Sampling

5.7.1. Target Population

All health centers, all children less than one year that were served in health centers, and all health workers, documents and registrations book of immunization program found in Gondar town were considered as target population.

5.7.2. Source of Population

Less than one year children that were used the service in sampling health centers, and all health workers, documents and registrations in sampling health centers during the evaluation period were considered as source population.

5.7.3. Study Population

The study populations were selected care givers, sampled HCs, program document and records and health workers that were worked in immunization units.

5.7.4. Study Unit and Unit of Analysis

Study unit: is the actual data source of the evaluation that was included caregiver, health worker, registration book, chart, immunization program coordinator and room of cold chain and immunization unit was considered as study unit.

Unit of analysis: The primary unit of analysis was care givers of vaccinated children. Secondary unit of analysis was health centers. The final unit of analysis was immunization program in Gondar town 2017 [25].

5.7.5. Sample Size Determination

Sample size for exit interview

Trying to obtain a representative of sample of the target population to measure what was intended to measure. Sample size determination was determined by using a single population proportion formula for the purpose of allocation of sample. The sample size for exit interview was determined by using single population proportion formula by considering 95% Ci and …. Up to the knowledge of researcher, there wasn't found similar study of evaluation of immunization service quality related to Caregivers satisfaction. So that p-value =50% was taken to have maximum sample size evaluation of immunization service quality in Gondar town 2017.

Based on these assumptions, the actual sample size for the study was computed using single population proportion formula of fully immunized children aged less than 12 months, which was assumed 50%of caregivers satisfied and with 95% confidence interval (Za/2), expected margin of error(d) of 5% and 10% non-response rate was considered.. Where: n = sample size

Z = Z score for 95 % confidence interval = 1.96,

p = proportion of fully immunized children aged less than 12 months of care givers satisfaction assumed = 50%,

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

d^2 = precision (marginal error) =0.05,

Where, n= sample size, Z α/2= Critical value=1.96, P= caregivers' satisfaction.

Then

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

By adding non-response rate of 10% (38) the total sample size was 422 caregivers.

5.7.6. Sampling Procedure

Sampling procedure for quantitative data: Regional Office for Africa Tools for Assessing the Health Systems guide line said that if a study area having health facilities less than 9 taking all health facilities [49] Because of that all Six HCs were taking which are found in Gondar town. Samples of 422 caregivers were interviewed using structured and interviewer administered questionnaire.

The total sample required for the study was proportionally allocated based on the number of care givers served per month in the six health centers for the study from March 1 to 30 at each health centers. To compensate for non-response, 10% of the calculated sample size was added. The Systematic random sampling technique was used, the first sample is selected by lottery method, and then every other caregiver was selected for data collection for the study from March 1 to 30 at each health centers.

Which is NI ÷ ni=k; every 2 caregivers for all HCs, Azezo health center (Ni) =150 and ni =74, every 2 caregivers, Maraki health center (Ni) =128 and ni=62, every 2care givers, Poly health center (Ni) =148 and ni =73, every 2 care givers, Tseda health center (Ni) =148 and ni =73, every 2 caregivers

Bilagig health center (Ni) =138 and ni =68, every 2caregivers, Gebriel health center (Ni) =148 and ni =73, every 2 caregivers

(Ni) =monthly served care giver in each health center.

N = total monthly served caregivers in six health center=860.

ni = Proportionately allocated caregiver's sample size required for the study from each health centers.

n= total sample size=422.

Diagrammatically representation of sampling procedure was as follow (figure 3).

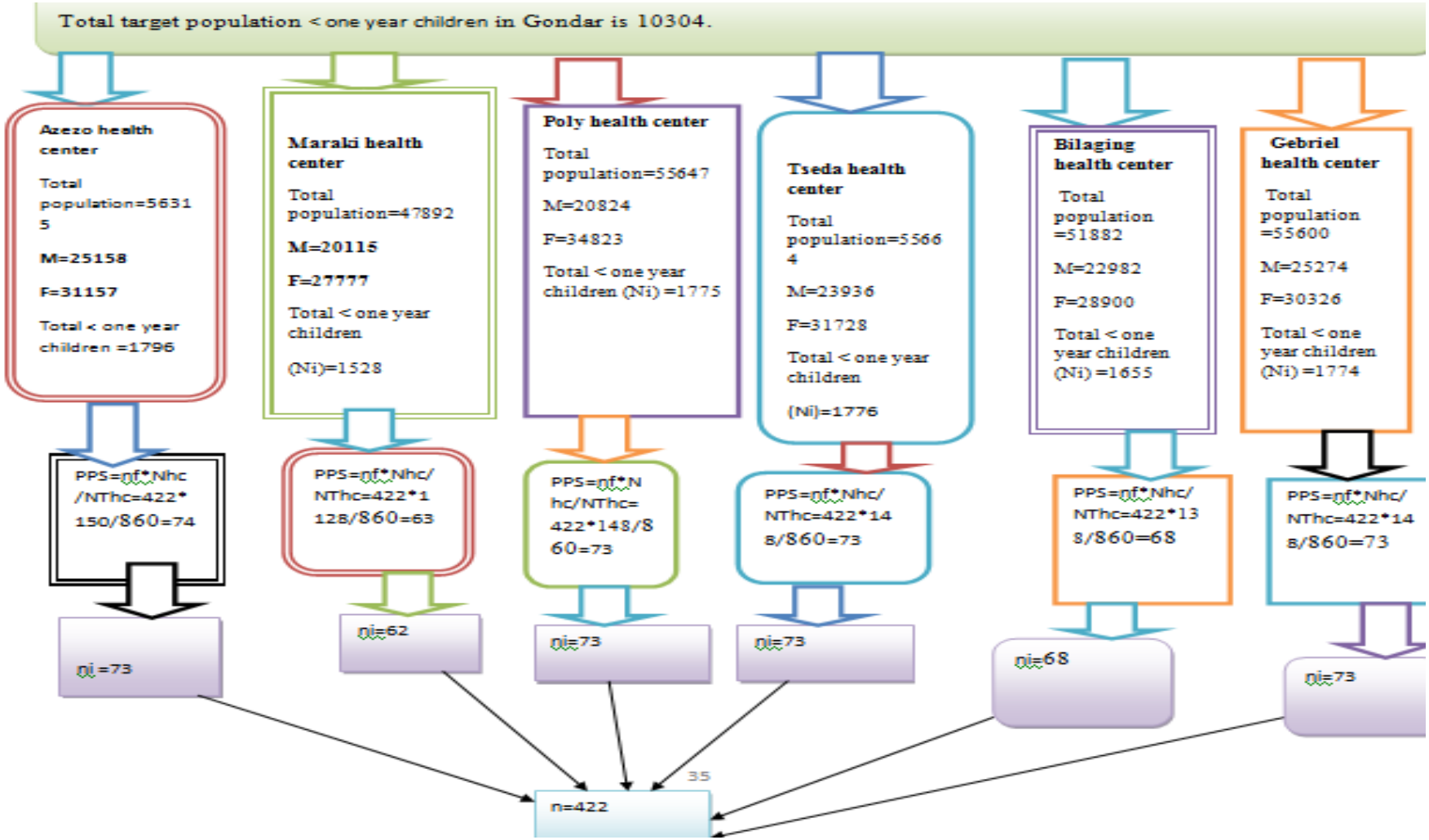

Figure 3: Diagrammatical representation of sampling technique of health centers for evaluation immunization service quality at Gondar town, 2017

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Sample size for qualitative Evaluation:

Sampling procedure for observation: 36 care giver and health care provider interaction was observed. Through non-participatory observation the information was gathered for the purpose of assessing HWs compliance with NIP guideline. The first and the last three consecutive observations were excluded to minimize hawthorn effect (observation bias).

Availability of all type of vaccines and syringes, medical equipment's and supply, refrigerator, NIP monitoring chart was observed from March 1 to 30, 2017.

Sample size for document review

Document review was included reviewing 2016/2017 program plan and achievement of immunization program service records, survey data of immunization program, formal letter, review meeting agendas, immunization program monitoring chart written reports at Gondar town health office, and in all sampling health centers. Retrospective document review: (immunization program registrations book Less than one year children that were used the service in sampling health centers and reports from February 1, 2016 to march 30, 2017was reviewed) [51].

For cold chain and immunization unit observation: six health centers cold chain and immunization unit was observed according to standard guideline. The availability all type of antigens and syringes, medical equipment's and supply in the last two quarter of before data collection period was observed. Refrigerator temperature monitoring chart fill two times per day and VVM okay from March 1to march 30, 2017[22].

Key informant interview

Key informant interview: Key informant interview about the quality of immunization program 12 health care providers who are participated for immunization program were selected from each HCs and town health office during the evaluation period. One immunization program focal person from each HC and four HWs head of HCs were participated for key informant interview. Head and immunization program focal person of Gondar town health office was selected for key informant interview. Triangulation method was employed to mix qualitative and quantitative information to complement each other at the time of interpretation results [24, 27].

5.6.7. Inclusion and Exclusion Criteria

Inclusion criteria: All caregivers came with whose child Less than one year that was used the service in sampling health centers during evaluation period was included from the study

Exclusion criteria: All caregivers came with whose child more than one year that was used the service in sampling health centers during evaluation period were excluded from the study.

5.7. Data Collection

5.7.1. Development of Data Collection Tools

The socio demographic variables, special characteristics of respondents on immunization program follow up and satisfaction survey on care givers at each health center conducted face to face interview.

Semi structure questionnaire: the tool for key informant interview was developed after assessment the program by checklist.

Structure questionnaire: the tool for survey was adapted from WHO -2000 standard satisfaction questionnaire with little modification to do care giver satisfaction survey. This tool was translated into Amharic language, and to back, it was translated to English to validate its consistency [50].

Immunization program resource inventory tool: is an inventory tool containing NIP services drugs and medical supplies, human resources, logistics (guide line, recording and reporting tools). These tools were used to assess the availability of program resources for the delivery of immunization program services. And list of resources was adopted from national guide line of NIP-2016 and adapted from WHO -2003 immunization program evaluation checklist [22, 51].

Document review template: was a tool used to collect data from program documents (immunization program registration book for children less than 12 months of age and administrative records). It was adapted from WHO -2003 immunization program evaluation checklist [51].

Observation checklist: was a tool used to assess the compliance of HWs while delivering immunization services and resources availability. It was adapted from WHO -2003 and NIP immunization program evaluation checklist [22, 51].

Key informant interview guide for HWs: A template was prepared before data collection which was a tool contains of the components participants profiles like: data collection date, place of data collection, types of their profession, their work experience, training taken, benefit of training, awareness about quality of immunization program services and their role in vaccination activities and barriers to utilization of quality childhood immunization services by care givers from provider perspectives.

Key informant interview guide for Heads of Gondar town health office: was a tool comprised of components like support system, training and preparation, services organization and delivery. It was also use to assess the availability of resources of program.

5.7.2. Data Collectors

Data collection was conducted by four nurses and one health officer from university of Gondar referral hospital which is outside of the sampled health centers. Key informant interview, resource inventory and document review was conducted by principal evaluator and for direct observations one trained Bsc nurse was recruited. One heath officer as supervisor was selected. Two days training was given to data collectors and supervisors by investigator, how to use data collection tool, how interact with and protect the right and interest of respondents get maximum data quality which was community representative. Head of each health centers and immunization program focal person assisted the data collection process. The training was in the same day in order to minimize discrepancy between the data collectors understanding and both the data collectors and supervisors.

5.7.3. Data Collection Field Work

Data was collected from each HCs through document review, interviewer administer questionnaire, direct observation, key informant interview of program personnel's (HWs, head of Gondar town health office and each HC and immunization program focal person) and resource inventory.

Document review: the document review in this evaluation was including: immunization program registration book for children less than 12 months of age, ISS, annual budget plan for immunization program, monitoring chart and Temperature monitoring registration book. The document was reviewed at working day and time.

Interviewer administer questionnaire: it was conducted through the total monthly served care givers in each health center was proportionately allocated to the total care giver's sample size. The first sample was randomly selected from **1** up to **K**, and then every **K** care giver was selected for data collection.

Direct observation: the observation was conducted while the HWs deliver the services. Initially the observer was take consent from each HWs and caregivers.

Key informant interview: data collection was conducted by using key informant interview guide and their consent was taken by the interviewer. Prepare rough notes of interviews and Made audio record. Immediately after session type the notes soon, prepare memo, listen to the audio tape then fully transcribe the passage, label and registered data, Head of Gondar town health office was interview after the interview of HWs and immunization program focal person interview completed.

Resource inventory: was conducted using resource inventory observation checklist. It was incorporated direct observation of resources.

Data quality control

For quantitative data: Prior to data collection training was conducted for two days on the evaluation objectives, data collection instruments and techniques for data collectors and supervisors. Everyone in the sample were assured for confidentiality, asked separately and away from health service providers and motivated to give true answers. Data collector was supervised daily and every night the consistency and completeness of data was checked. All incomplete questionnaires were considered as nonresponsive rate.

Pretest was conducted on 8% of the questionnaire in Enfiranz HC which is one of neighbor sampled HCs. The data collectors and supervisors were participated during pre-test and checked sequential problem, understandability, and clarity of questionnaire that was helped modification of the questionnaire.

For qualitative data: - For ensuring the quality data care was undertaken in the process of data collection and analysis. Qualitative data obtained by observation was drop first and last three

consecutive observations of each HC for minimizing hawthorn effect (HWs) and observer bias (data collectors).

5.8. Data Management and Analysis

5.8.1. Data Cleaning and Entry

Questionnaires were checked for completeness every day after data collection by principal evaluator together with data collectors and supervisors. Consequently, any problems encountered was discussed among the evaluation team and solved immediately. Data was visually understood after entry to software and necessary transformation was conducted to correct outliers (skewedness). Incomplete, inconsistent or invalid data was treated as missed value and excluded from analysis to get maximum quality data before, during and after data entry and finally the data was coded and entered to EPI DATA version 3.1 for further processing and analysis. This software was used to minimize data entry error and clean and checks for completeness and missing values and error will be removed every day. Corrections were made according to the original data. The questionnaires and the soft copy of the data with multiple backups was kept in proper places.

For qualitative data field note was written as fair notes after data collection every night by principal evaluator and audio record for in-depth interview was properly recorded and transferred to computer for the analysis.

5.8.2. Analysis of Quantitative and Qualitative Data

Quantitative data was checked for completeness, edited, coded, entered and analyzed using SPSS version 21.0. Used ten satisfaction items with 5-point Likert scales ranging from strongly satisfied to strongly unsatisfied (1 to 5 points) were used for all the items.

Patients' satisfaction had two categories satisfied above a specified point and unsatisfied below that point. This point is calculated using the demarcation threshold formula which is ***{(total highest score-total lowest score)/2} + Total lowest score [52].***

Descriptive statistics like frequency, proportion and mean of variables were used for reporting the descriptive results.

To see the association between dependent (care giver's satisfaction with immunization service quality) and independent variables, bivariate logistic regression analysis was conducted. Moreover, variables those who satisfy the assumption ($p<0.25$) were taken as candidate for multivariate analysis and multivariate analysis were conducted to check statistical significance at $p<0.05$. The degree of association between independent variables and the outcome variables of the program were conducted by using multivariate logistic regression analysis of 95% confidence interval, P-values < 0.05 was taken as a cut of point for accepting as statistically significant association.

Qualitative data was changed in to fair notes, then arranged and written up in each thematic area. Then it was analyzed under the thematized area used to assess the implementation process and to complement quantitative findings. Finally, the indicators under each dimension for evaluation of immunization service quality in Gondar town, 2017 was judged based on the stated judgment matrix to determine level of the immunization service quality achievement of its objectives.

5.9. Matrix of Analysis and Judgmental Indicators

Matrix of analysis was developed and agreed with stakeholders along with their indicators and matrix of judgment was developed for each sub-dimension for evaluation immunization service quality with relative weight given to each indictor and agreed with their score. The overall relative weight given for each indicator distributed to the three dimensions proportionally based on the number of indictors within each dimension. Then based on that stakeholders with principal evaluator prepared cut-off score for each indicator, dimension, the overall quality of program.

Table 2: The overall judgmental matrix analysis of immunization service quality at Gondar town, 2017

Dimension	**Indicators number**	**Value given(x)**	**Value achieved(Y)**	**Percentage achieved**	**Quality level judgmental criteria**
Availability	14	32.76	Y	**y/x*100**	>85%excellent,75-85% very good, 60-75%good,45-59% fair, <45% poor

Dimension	Indicators number	Value given(x)	Value achieved(Y)	Percentage achieved	Quality level judgmental criteria
Compliance	19	44.24	Y	**y/x*100**	>85%excellent,75-85% very good, 60-75%good,45-59%fair, <45% poor
Acceptability/ caregivers' satisfaction	10	23	Y	**y/x*100**	>85%excellent,75-85% very good, 60-75%good,45-59%fair, <45% poor
Total	43	100	Y	**y/x*100**	>85%excellent,75-85% very good, 60-75%good,45-59%fair, <45% poor

5.10. Ethical Issue

Ethical clearance was received from Jimma University, Institute of Health Science, and Faculty of Public Health Ethical Board. An official letter was written from Gondar town administration health office to get permission and support letter to each health center. Data collectors were trained on how to handle emotional and confidentiality issues and related to confidentiality and any potential risk and benefits from participation in the study was discussed. The purpose of the study was explained to the study participants and a written consent was taken from participants to confirm whether they were willing to participate. In addition, participants were informed that participation was voluntary and they had full autonomy to withdraw the participation at any time they feel. Names and other personal information which could affect the confidentiality of the respondents were used codes. Any information was kept confidential and only used for evaluation purpose.

5.11. Evaluation Result Dissemination

The finding of this evaluation will be presented to the Jimma University scientific community for defense and submitted to the College of Public health and Medical sciences, department of health service management, health monitoring and evaluation unit. After incorporation of comments from different scholars, in the university and guests, the result will be communicated with Gondar town health offices and another stake holder.

Chapter Six: Results

The assessment of general HCs condition shown that all HCs the official working day and hours were from Monday to Friday 8:30 am to 5:30 pm except for lunch time (12:30 am-1:30 pm). All of the studied health centers were provided immunization service quality in based on the schedule they prepared except measles and BCG provided only Wednesday and Friday.

From the total sample size of 422 caregivers in the study of satisfaction during interviewer administer questionnaire, 403 were participated with a response rate of 95 %. From the total planed key informant interview of all program personnel were participated to provide information about immunization quality service. Direct observation of resources was conducted using resource inventory checklist and incorporated it finally.

6.1. Availability Dimension:

6.1.1. Infrastructures and Human resources

By this study 100% of the HCs had that basic infrastructure like electricity with alternative diesel generator and functional piped water, functional incinerators and functional latrine.

Table 3: summery of the availability infrastructures of resources for evaluation immunization service quality in Gondar town, June 2017.

availability of infrastructures for each health centers (yes/no)	Marak i	Azez o	Tseda	Poly	Gebrie l	Bilagig	Gonda r town H/offi ce
HCs with Functional pipe water	yes	yes	yes	Yes	yes	yes	yes
HCs with chairs and tables in Rooms for the service provider and care givers	yes	yes	yes	Yes	yes	yes	yes
#of functional refrigerators (10)	2	2	0	2	1	1	2
HCs with adequate waiting area for care givers	yes	yes	yes	Yes	yes	yes	
HCs with Functional latrine	yes	yes	yes	Yes	yes	yes	yes

availability of infrastructures for each health centers (yes/no)	Maraki	Azezo	Tseda	Poly	Gebriel	Bilagig	Gondar town H/office
HCs with alternative diesel generator	yes	yes	yes	Yes	yes	yes	yes
HCs with Functional incinerator	yes	yes	yes	Yes	yes	yes	
Functional phone for communication	yes	yes	yes	Yes	yes	yes	yes
Functional hand washing facilities	yes	yes	yes	Yes	yes	yes	yes
Cold box, vaccine carriers	yes	yes	yes	Yes	yes	yes	yes

There are a total of 3 MPH, 23 health officers, 84 nurses, 11environmental health, 70 UHEWs, 21 lab technicians and 17 pharmacy technicians in town health office and all HCs.

There was no town health office specifically programm focal Person but only one HW to provide all MCH services and eight vaccinators were provided services at HCs.

According to the document reviewed result, only four (50%) health care providers have been taking in service training from the total providers. (Maraki, Azezo, Tseda and Gebriel had been taking in service training) since the last one year. This finding is supported by result from key informant interviewed. An immunization program focal person said that *"…we have shortage of in service training health care providers especially for immunization program service provision. Among the eight HWs for immunization program service provision, only 4 of them have been taking in service training …'*

Table 4 : summery of the availability of human resource for evaluation immunization service quality in Gondar town, June 2017.

	Gondar town H/office		Maraki		Azezo		Tseda		Poly		Gebriel		Bilagig		
human resource	total available HWs	trained on immunization	total available HWs	trained on immunization	total available HWs	trained on immunization	total available	trained on immunization	total available HWs	trained on immunization	total available HWs	trained on immunization	total available HWs	trained on immunization	total trained
MPH	3	O	0	0	0	0	0	0	0	0	0	0	0	0	0
HO	2	1	3	0	4	0	4	0	3	0	3	0	4	0	1
all type nurse	4	0	12	1	14	1	14	1	13	0	12	1	10	0	4
Env'tal health	2	O	1	0	2	0	2	0	2	0	1	0	1	0	0
HEWs	0	O	12	0	14	0	11	0	11	0	12	0	10	0	0
lab technician	2	O	3	0	3	0	4	0	3	0	4	0	2	0	0
pharmacy technician	2	O	3	0	3	0	2	0	3	0	2	0	2	0	17
Total	15	1		1	41	1	38	1	46	0	34	1	29	0	5

HC name	# of HWs involving EPI unites	# of in service trained provider in EPI n unite	Recording and reporting formats	computer for EHMIS EPI unit (yes/no)	HCs with guidelines in practice yes/no)	Job aid materials like(IEC/BCC) (yes/no)	current budget plan for EPI (yes/no)	last 6 months all type of medical supply and equipment's) (yes/no)	waste disposal options(yes/no)	last 6 months all type of vaccines in stock (yes/no)	Standard registration books
Azezo HC	2	1	yes	no	yes	no	No	Yes	yes	yes	yes
Tseda HC	2	1	yes	no	yes	no	No	Yes	yes	yes	yes
Poly HC	1	0	yes	no	no	no	No	Yes	yes	yes	yes
Bilaging HC	1	0	yes	no	no	no	No	Yes	yes	yes	yes
Maraki HC	1	1	yes	no	yes	yes	No	Yes	yes	yes	yes
Gebriel HC	1	1	yes	no	no	yes	No	Yes	yes	yes	yes
no		4	6	0	3	2	0	6	6	6	6
%		67	100	0	50	33	0	100	100	100	100

6.1.1. **Medical Equipment and Supplies**

By this study findings showed that the availability of HCs with no stoke out of all type of antigen (BCG, Penta-valent, OPV, Measles and TT, PCV, Rota virus, Hepatitis B, Hib) during the last six months was 100% available. HCs with no stoke out of medical supplies like (gloves, syringe, cotton and antiseptics, safety box) during the last six months was 100% available. This finding is supported by result from key informant interviewed. A 30 yrs old female nurse said that "…. *supply of antigen in Gondar town health office and all health centers were constantly available. Due to this reason immunization sessions haven't been cancelled because of insufficient supplies or any other reason in the last six months...".* By this finding all HCs with waste disposal options like (safety box, plastic bag, bucket and incinerator) available according to Guide line waste disposal options was 100% available.

Table 5: summery of availability antigens and syringes from resource inventory checklist of immunization service quality in Gondar town, June 2017.

observed results	Expected No of HCs	Observed No of HCs	observed results	Expected No of HCs	Observed No of HCs
Number of HCs with adequate immunization room for refrigerator	6	6(100%)	Number of HCs with syringe (2ml) for last two quarter	6	6(100%)
Number of HCs with appropriate place fridge tag within refrigerator to indicate temperature.	6	5(83%)	Number of HCs with syringe(5ml) for last two quarter	6	6(100%)
Number of HCs with waste disposal options (safety box, plastic bag, bucket and inclinators)	6	6(100%)	Number of HCs with BCG for last two quarter	6	6(100%)
Number of HCs with recording, reporting tools	6	6(100%)	Number of HCs with Penta-valent-1 for last two quarter	6	6(100%)
Number of HCs with a map of the catchment area	6	6(100%)	Number of HCs with measles for last two quarter	6	6(100%)
Number of HCs with immunization card for last two quarter	6	6(100%)	Number of HCs with cotton for last two quarter	6	6(100%)
Number of HCs with standard registration book	6	6(100%)	Number of HCs with PCV for two last quarter	6	6(100%)

observed results	Expe cted No of HCs	Observe d No of HCs	observed results	Expecte d No of HCs	Observe d No of HCs
Number of HCs with Talley sheets for last two quarter	6	6(100%)	Number of HCs with Rotarix antigen for last two quarter	6	6(100%)
Number of HCs with syringe(0.5ml) for last two quarter	6	6(100%)	Number of HCs with diluents for last quarter for last two quarter	6	6(100%)
Number of HCs with the vaccines hadn't expired.	6	6(100%)	droppers for last quarter	6	6(100%)
cleanness of immunization room unit	6	3(50%)	plastic bag/bucket for last quarter	6	6(100%)
Number of HCs with syringe(0.05ml) for last two quarter	6	6(100%)			

6.1.2. Annual budget plan: These findings showed that Budget plan for the immunization specific financing was zero percent.

6.1.3. Record keeping and Job aid materials

By this study, HCs with materials needed for record keeping like standard registration book, recording and reporting formants were 100% available. But all health centers hadn't computer in immunization program unit for documenting and reporting of immunization program data monthly. This study shown that in Gondar town HCs only 3(50%) had guidelines in practice. In case of findings job aid materials like BCC and IEC for behavioral changes and IPC only two HCs (maraki and Gebriel) had at immunization units.

Table 6: The overall availability summery of resources for evaluation quality of immunization service quality compared with judgmental criteria at Gondar, 217.

Indicators	Expected in no	Observed no	Relative weight given(W)	Results (p*w)	Results in %(p)	judgment parameters
Proportion of HCs with at least one in service trained provider in immunization unit to provide service according to NIP guideline	6	4	2.2	1.4	67	>85%excellent >75-85% very good 60-75%good, **45-59% fair** <45% poor
Proportion of HCs with waste disposal options like (safety box, plastic bag, bucket and inclinators) according to Guide line recommendation.	6	6	2.3	2.3	100	
Proportion of HCs with annual budget plan specifically for immunization service	6	0	3.1	0	0	
Proportion of f HCs with functional pipe water	6	6	2.6	2.6	100	
Proportion of HCs had Chairs and tables for care givers and health care providers in immunization rooms.	6	6	2	2	100	
Proportion of HCs had education materials like(IEC/BCC)	6	2	2.1	1.05	50	
Proportion of HCs with no stoke out of all type of antigen during the last 3months (BCG, Penta-valent -valent, OPV, Measles and TT, PCV, Rota virus, Hepatitis B, Hib)	6	6	3.3	3.3	100	
Indicators	Expe	Ob	Relativ	Results	Result	

	cted in no	served no	e weight given(W)	(p*w)	s in %(p)	
Proportion of HCs with no stoke out of all type of syringes during the last 3 months	6	6	2.1	2.1	100	
Proportion of HCs having functional refrigerator using to provide immunization program service quality (functional: refrigerator, fridge tag, ice packs and vaccine carriers).	12	10	2	1.66	83	
Proportion of HCs having NIP guideline in practice	6	3	1.7	0.85	50	
Proportion of HCs having standard registration book	6	6	2.1	2.1	100	
Proportion of HCs with existence of documented continuing medical supply & equipments (gloves, syringe, cotton and antiseptics, safety box) in stock during the last 3 months.	6	0	2.2	0	0	
Proportion of HCs had computer for E-HMIS of capturing data in immunization unit	6	5	2.3	1.9	83	
Proportion of HCs with materials needed for recording and reporting formats.	6	6	2.8	2.8	100	
Total score of availability			32.8	24		
Overall judgmental parameter value of availability	**24*100/32.8= 73**					

6.2. Compliance to national Guideline

Each HC registration book was reviewed to get the total vaccinated children that were 9,171 (89%). From the total vaccinated children, 7612 (83 %) of them were registered child both their registration date and birth date.

Each HCs immunization program monitoring chart was reviewed to get updated and completed immunization monitoring chart. Even if all six HCs had immunization program monitoring chart on the wall, from the total HCs 3(50%) of them weren't updated and completed immunization monitoring chart on the wall. Registration book was reviewed to get dropout rate of Each HCs. The result showed that from the total HCs only three of them were less than 10 % of dropout rate. According to document reviewed result of ISS feedback, none of the health facilities were supervised by Gondar town health office, regional health office and NGOs in the last two quarter of 2017. Immunization units were reviewed to get HCs with registered temperature monitor two times per day according to NIP guideline from the last february1, 2016 to march 30, 2017.

Among the total 12 refrigerators which had fridge tag within it indicates the range of temperature during data collection period 10(83) of them were indicated the temperature range of ($+2c^0$ to $+8c^0$).

Vaccinated children in Gondar town HCs were reported every month of date 22 and 23. According to document reviewed result of last two months reported data, only four HCs were timely reported based on the above deadline report schedule day. All HCs weren't used computer for monthly reporting of vaccinated children through E-HMIS.

From the total 36 observed sessions of health care providers 19 (52%) of them have greeted the caregivers. From the total 36 observed sessions of health care providers 23 (64%) of them have informed the type of the Vaccine for care givers that the infant taken. Among 36 observed sessions of health care providers 27(75%) of them have advised for care givers on follow up visit of the next subsequent doses of the vaccine according to NIP guideline schedule. Among 36 observed sessions of immunization rooms 23(64%) of them have cleaned before service provision. From the total 36 observed sessions of health care providers 26(72%) of them have given information on use of vaccination. Among 36 observed sessions 27 (75%) of them have discussed about immunization side effects according to NIP guideline. The immunization unit registration book was reviewed to calculate dropout rate. From the total HCs only three of them were more than 10% and all HCs average dropout rate of were 20% in the town. From the total eligible children of under one year, only 68 %(7,007) were received measles vaccine and only 61% (6,285) of them were completed recommended vaccines before the age of one year.

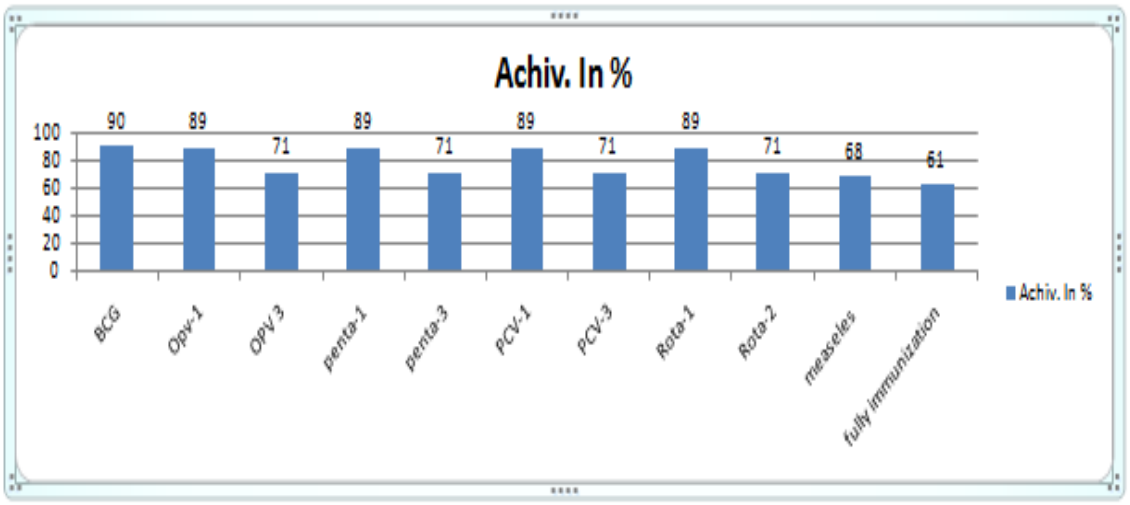

Figure 4: Percentage differences between infants who received the first dose of vaccines and completed fully dose vaccines for children less than one year in Gondar town, 2017.

Table 7: Compliance dimension for evaluation of immunization service quality compared with judgmental criteria at Gondar town, 2017.

. No	Indicators	Expected in no	Observed no	Relative weight given (W)	Results (p*w)	Results in %(p)	judgment parameters
1	Proportion of health care providers who advised for care givers on routine and follow up visit of the next subsequent doses according to NIP guideline.	36	27	3.1	2.325	75	>85%excellent >75-85% very good 60-75%good, **45-59%**
2	Proportion of HCS with fridge tag within refrigerator indicates the range of temperature ($+2c^0$ to $+8c^0$) during data collection period.	6	5	3.1	1.575	83	
3	Proportion of fully registered vaccinated children from the last february1, 2016 to	1	0.83	3.1	2.573	83	

. No	Indicators	Expected in no	Observed no	Relative weight given (W)	Results (p*w)	Results in %(p)	judgment parameters
	march 30, 2017						**fair** <45% poor
4	Proportion of HCs with cleaning of immunization room before service provision during data collection period.	36	23	1.1	0.704	64	
5	Proportion of HCs with registered temperature monitor two times per day according to NIP guideline from the last february1, 2016 to march 30, 2017.	6	5	2.1	1.743	83	
6	Proportion of HCs with Updated and completed immunization monitoring chart on the wall during data collection period	6	3	1.2	1.1	50	
7	Proportion of HCs with documenting practices monthly reporting of immunization data through EHMIS from the last february1, 2016 to march 30, 2017	6	0	2.2	0	0	
8	Proportion of health care providers told the dose and type of the Vaccine for care givers that the infant taken	36	23	1.2	0.768	64	
9	Proportion of HCs with documented continuing integrative supportive supervision existence with its feedback	6	0	3.1	0	0	

. No	Indicators	Expected in no	Observed no	Relative weight given (W)	Results (p*w)	Results in %(p)	judgment parameters
	in immunization unit for the last two and three quarter.						
10	Proportion of HCs kept a vaccination appointment day they prepared, every 28 day	6	6	2	2	100	
11	Proportion of health care providers discussed about immunization side effects what care givers should do according to guideline	36	27	2.1	1.57	75	
12	Proportion of health care providers gave information on use of target disease of vaccination and	36	26	3.2	2.3	72	
13	Proportion of HCs health care providers who giving greeting to the caregivers'	36	19	1.1	0.572	52	
14	Proportion of HCs timely reporting vaccinated children based on deadline monthly report schedule for the last three months.	6	4	2	1.34	67	
15	Proportion of health care providers who correctly checked proper dose of vaccination during service provision by using vaccination card.	36	36	2.2	2.2	100	

. No	Indicators	Expected in no	Observed no	Relative weight given (W)	Results (p*w)	Results in %(p)	judgment parameters
16	Proportion of child immunized with Penta-valent-1	0.94	0.89	3	2.82	94	
17	Proportion of child immunized with Penta-valent-valent -3	0.83	0.71	3.1	2.635	85	
18	Proportion of child immunized with measles	0.83	0.68	3.2	2.624	82	
19	Proportion of HCs with dropout rate <10 from the last February1, 2016 to march 30,2017	6	3	2.1	1.05	50	
	Total score			44.2	29.899		
	Overall judgmental parameter value of compliance	29.899 *100/44.2=67.6					

6.3. Satisfaction of caregivers

Socio-Demographic and Economic Characteristics

A total of 403 caregivers participated in the study with a response rate of 95 %. From the total respondents 364(90.3%) were female with the mean age of 26.26 years ±5.4 SD.

The age range of caregivers in this evaluation was 53.8% (217) of the caregivers were between25-35years and only 25 (6.2%) of caregivers were above the age group of 36 years. According to marital status this study, Majority 261(64.8%) of caregivers were married and only 4.2% were widowed. According to religious background; 291(72.2%) of the caregivers were orthodox and majority 353(87.6%) of caregivers were Amhara in their ethnicity. Regarding to

educational status 93(23.1%) of caregivers were attend secondary school and only 46(11.4%) of caregivers were can't read and write and Majority 259(64.3%) of caregivers were self-employment and only 8(2%) of caregivers were non-government employee. From the total of government employee 54(39.8%) of caregivers were BSc professional and only 2(1.5%) of caregivers were manager.

Table 8: Socio-demographic and economic characteristics of respondents of exit interview for evaluation of immunization service quality in Gondar town, June 2017.

Variables	Frequency(N=403)	Percent (%)
Sex		
Male	39	9.7
Female	364	90.3
Age in years		
≤24	161	40
25-35	217	53.8
>=36	25	6.2
Marital status		
Married	261	64.8
Single	40	9.9
Divorced	85	21.1
Widowed	17	4.2
Religious status		
Orthodox	291	72.2
Muslim	98	24.3
Protestant	14	3.5
Educational status		
Can't read and write	46	11.4
able to read and write	48	11.9
Elementary school (up to grade 8)	88	21.8
Secondary school	93	23.1
Diploma	82	20.3
Degree	46	11.4
Occupational status		
Gov't employee	136	33.7
Non-governmental employee	8	2
Self-employee	259	64.3
Government employee		

Variables	Frequency(N=403)	Percent (%)
Manager	2	1.5
BSc professional	54	39.7
Clinical and associate professional	49	36
Secretary	5	3.7
Cleaner and helper	26	19.1
Self-employee		
Agriculture	43	16.6
Merchant	75	28.9
Handicraft	20	7.7
Daily labor	55	21.3
House wife	66	25.5
Ethnicity		
Amhara	353	87.6
Oromo	16	4
Tigre	34	8.4

Health system related information

Among the total respondents 372(92.3%) of them were travel less than and equals to 30 minute to reach the nearest health center to receive immunization services with average time takes 18.9 minute with ± 10.6 SD. For majority 322(79.9%) and 324(80.4%) of caregivers the working hours and days were convenient respectively. Among the total caregivers 323(80.1%) of them were got immunization services accordingly previous appointment. Regarding of caregivers weren't got immunization service accordingly previous appointment 78.8% of them didn't have gotten the services due to personal problems.

Caregivers' satisfaction on services provided

In order to measure process of services delivery in caregiver's perspective we used ten satisfaction items with 5-point Likert scales ranging from very unsatisfied to very satisfy (1 to 5 points) were used for all ten items. From the total respondents of caregivers 145(36%) of them were satisfied with the availability of services based on the previous appointment and 103(25.6%) of them were very satisfied and 72(17.9%) were unsatisfied with mean satisfaction level of 3.68 and ± 1.057SD.

Regarding to caregivers' level of satisfaction towards the convenience of immunization service to working hours; 162(40.2%) of them were satisfied, 145(36%) of them were very satisfied, 62(15.4%) of them were unsatisfied with 3.93 mean satisfaction level and ±SD.

From the total respondents of caregivers with the overall services provided: 180(44.7%) of them were satisfied, 176(43.7%) of them were very satisfied, regarding to caregiver's level of satisfaction towards the distance from immunization HCs to their home: From the total respondents of caregivers, 174(43.2%) of them were satisfied and 134(33.3%) of them were very satisfied. Among the total respondents of caregivers 114(28.3%) of them were very satisfied with the skill of providers and 135(33.5%) of them were very satisfied with the cleanness of immunization room.

Table 9: Level of care givers' satisfaction on each satisfaction measuring items for evaluation of immunization service quality provided in Gondar town June, 2017.

Satisfaction item	Very unsatisfied	Unsatisfied	Neutral (undecided)	Satisfied	Very satisfied	mean	SD
How much are you satisfied with availability of services based on the previous appointment?	2(0.5%)	72(17.9%)	81(20.1%)	145(36.0%)	103(25.6%)	3.68	1.057
How much are you satisfied with convenience immunization service to working hours?	7(1.7%)	62(15.4%)	27(6.7%)	162(40.2%)	145(36%)	3.93	1.094
How much are you satisfied with the time spent in waiting room?	8(2%)	64(15.9%)	48(11.9%)	173(42.9%)	110(27.3%)	3.78	1.077
How much are you satisfied with the cleanness of the vaccination room?	7(1.7%)	52(12.9%)	43(10.7%)	166(41.2%)	135(33.5%)	3.92	1.054
How much are you satisfied with the overall services provided?	1(0.2%)	54(13.4%)	55(13.6%)	176(43.7%)	117(29%)	3.88	0.986
How much are you satisfied with the convenience of immunization service distance to your home?	1(0.2%)	43(10.7%)	51(12.7%)	174(43.2%)	134(33.3%)	3.99	0.954
How much are you satisfied	4(1%)	68(16.9%)	54(13.4%	171(42.4%)	106(26.3%)	3.76	1.052

Satisfaction item	Very unsatisfied	Unsatisfied	Neutral (undecided)	Satisfied	Very satisfied	mean	SD
with the availability of provider at working time?			)				
How much are you satisfied with the friendliness/politeness of provider?	3(0.7 %)	42(10.4%)	62(15.4%)	180(44.7%)	116(28.8%)	3.90	0.958
How much are you satisfied with the competence/knowledge of provider?	3(0.7 %)	48(11.9%)	67(16.6%)	171(42.4%)	114(28.3%)	3.86	0.987
How much are you satisfied with the day of immunization?	0(0%)	56(13.9%)	58(14.4%)	174(43.2%)	115(28.5%)	3.86	0.984

By using demarcation threshold formula on each satisfaction measuring items for evaluation of immunization service quality provided for care givers were classified into two categories satisfied above a specified point and unsatisfied below the calculated point.

This point is calculated using the demarcation threshold formula:

{(total highest score-total lowest score)/2} + Total lowest score [52]

Table 10: Dichotomized care givers' satisfaction using demarcation threshold formula on each satisfaction measuring items for evaluation of immunization service quality provided in Gondar town June 2017.

S. N0	**Satisfaction item**	**Satisfaction category**	
		Satisfied (%)	Unsatisfied (%)
1.	How much are you satisfied with availability of services based on the previous appointment?	248(61.5%)	155(38.5%)
2.	How much are you satisfied with convenience immunization service to working hours?	307(76.2%)	96(23.8)
3.	How much are you satisfied with the time spent in waiting room?	283(70.2%)	120(29.8%)
4.	How much are you satisfied with the cleanness of the vaccination room?	301(74.7%)	102(25.3%)
5.	How much are you satisfied with the overall services provided?	293(72.7%)	110(27.3%)
6.	How much are you satisfied with the convenience of immunization distance from health center to your home?	308(76.4%)	95(23.6%)
7.	How much are you satisfied with the availability of provider at working time?	277(68.7%)	126(31.3%)
8.	How much are you satisfied with the friendliness/politeness of provider?	296(73.4%)	107(26.6%)
9.	How much are you satisfied with the competence/knowledge of provider?	285(70.7%)	118(29.3%)
10.	How much are you satisfied with the day of immunization?	289(71.7%)	114(28.3%)
	Overall services provided satisfaction level	**292(72.45%)**	**111(27.55%)**

Bivariate analysis of satisfaction survey

Table 11 shows Variables like: sex at COR=0.283(0.143-0.559), Ethnicity at COR=0.204(0.099-0.422), traveling time at COR=0.174(0.8o,0.364), convince of working hours at COR=0.013(0.006,0.028), convince of working days at COR=0.013(0.006,0.028), receiving immunization services according to previous appointment at COR=0.012(0.006,0.026) and information about use and side effect of antigen at COR=0.029(0.015,0.054) The Bivariate analysis results revealed that caregivers satisfaction with immunization quality service were candidate for multivariate analysis at (p<0.25) and COR at (95%CI)

Table 11: Bivariate analysis of factors affecting satisfaction of care givers on the overall for evaluation of immunization service quality in Gondar town, June 2017

Variables	Satisfaction category		COR	p-value	95%CI
Sex	Satisfied No (%)	Unsatisfied No (%)			
Male	21(5.2)	18(4.4)			
Female	293(72.7)	71(17.6)	0.283	**0.001**	0.143-0.559
Age in years					
≤24	125(31)	36(8.93)			
25-35	171(42.43)	46(11.4)	1.071	0.786	0.654-1.753
>=36	18(4.46)	7(1.73)	0.741	0.535	0.287-1.912
Marital status					
Married	202(50)	59(15)			
Single	33(8)	7(2)	1.377	0.469	0.579-3.272
Divorced	66(16)	19(5)	1.015	0.961	0.564-1.825
Widowed	13(3)	4(1)	0.949	0.930	0.298-3.021
Religious status					
Orthodox	222(55)	69(17)			
Muslim	81(20)	17(4)	1.481	0.191	0.822-2.668
Protestant	11(2.7)	3(1)	1.140	0.844	0.309-4.202
Educational status					
Can't read and write	38(9.4)	8(1.98)			
able to read and write	43(10.66)	5(1)	1.811	0.332	0.546-6.
Elementary school (up to grade 8)	60(14.9)	28(6.94)	0.451	0.078	0.186-1.093
Secondary school	75(18.6)	18(4.46)	0.877	0.780	0.350-2.201
Diploma	62(15.4)	20(5)	0.653	0.360	0.262-1.628
Degree	36(8.93)	10(2.5)	0.758	0.6	0.269-2.134
Occupational status					
Gov't employee	99(24.56)	37(9)			

Variables	Satisfaction category		COR	p-value	95%CI
Non-governmental employee	7(1.73)	1(0.02)	2.616	0.376	0.311-21.994
Self-employee	208(51.6)	51(13)	1.524	0.089	0.937-2.479
Ethnicity					
Amhara	287(71.2)	66(16.4)			
Oromo	11(2.7)	5(1)	0.506	0.221	0.170-1.505
Tigre	16(4)	18(4.5)	0.204	**0.0001**	0.099-0.422
Traveling time					
≤ 30 minutes	301 (74.6)	71(17.6)			
>30 minutes	13(3.2)	18(4.5)	0.170	**0.0001**	0.80-0.364
Waiting time					
≤ 30 minutes	306(76)	87(21.5)			
>30 minutes	8(1.7)	2(0.04)	1.137	**0.872**	0.237-5.454
Convince of working hours					
Yes	301(74.6)	21(5)			
No	13(3)	68(17)	0.013	**0.0001**	0.006-0.028
Convince of working days					
Yes	302(75)	22(5)			
No	12(3)	67(16.6)	0.013	**0.0001**	0.006-0.028
Receiving immunization services according to previous appointment					
Yes	302(75)	21(5)			
No	12(3)	68(17)	0.012	**0.0001**	0.006-0.026
Information about use and side effect of antigen					
Yes	290(72)	23(5.7)			
No	24(6)	66(16.3)	0.029	**0.0001**	0.015-0.054

N.B- p-value < 0.25 is candidate for multivariate analysis

Multivariate analysis of satisfaction survey

In the multivariate analysis received immunization services according to previous appointment and convenience of working hours are independently associated with satisfaction level of caregivers to quality of immunization program services. Among the total respondents of caregivers, who didn't have provided service with convenient working hours were 93% less likely satisfied than for those provided service with convenient working hours (p-value= 0.011, AOR=0.069, 95% CI (0.007-0.549)). caregivers weren't received immunization services according to previous appointment were 95% less likely satisfied than for those receiving immunization services counterpart (p-value= 0.002, AOR=0.050, 95% CI= (0.007-0.344)).

Table 12: Multivariate analysis result of satisfaction survey for evaluation of immunization service quality in Gondar town, June, 2017.

Variables	Satisfaction category		AOR	p-value	95%CI
Sex	Yes (%)	No (%)			
Male	21(5.2)	18(4.46)			
Female	293(72.7)	71(17.6)	2.887	0.059	0.962-8.668
Ethnicity					
Amhara	287(71.2)	66(16.3)			
Oromo	11(2.7)	5(1)	1.454	0.677	0.250-8.466
Tigre	16(4)	18(4.46)	0.483	0.240	0. 143-1.627
Traveling time					
≤ 30 minutes	301(74.6)	71(17.6)			
>30 minutes	13(3)	18(4.46)	0.815	0.759	0.220-3.022
Convince of working hours					
Yes	301(74.6)	21(5.2)			
No	13(3.2)	68(16.87)	0.069	0.011	0.009-0.549
Convince of working days					
Yes	302(75)	22(5.4)			
No	12(3)	67(16.6)	3.149	0.522	0.094-105.662
Receiving immunization services according to previous appointment					
Yes	302(75)	21(5.2)			
No	12(3)	68(16.8)	0.050	**0.002**	0.007-0.344
Information about use and side effect of antigen					
Yes	290(72)	23(5.7)			
No	24(6)	66(16)	1.022	0.984	0.125-8.338

N.B- p-value <=0.05 is considered as significant

Table 13 shows of immunization quality service provided in caregivers' perspectives score of Quality judgment parameters were: immunization service to working hours (76.2%) of them were satisfied. care givers who satisfied with the overall of service provided were (72.7%). Cumulatively the quality of immunization program services as satisfaction sub-dimension is determined as 74.38 %, it needs improvement according to the decision parameter as shown in table 13 below.

Table 13: Summary of performance of satisfaction sub-dimensions' indicators for evaluation of immunization service quality in Gondar town, June, 2017.

S. No	Indicators	Relative Weight	Score (W*P)	Achievement (%)	Quality judgment parameters
1.	Proportion of care givers who satisfied with availability of service based on the previous appointment	2	1.2	61.5	>85%excellent >75-85% very good 60-75%good, **45-59% fair** <45% poor
2.	Proportion of care givers who satisfied with immunization service to working hours was convenient	2	1.5	76.2	
3.	Proportion of care givers who satisfied with the time spent in waiting room.	2.69	1.88	70.2	
4.	Proportion of care givers who with the cleanness of vaccination room of HCs was appropriate	2.67	1.99	74.7	
5.	Proportion of care givers who satisfied with the overall of service provided	2	1.454	72.7	
6.	Proportion of care givers who satisfied with convenience immunization service distance to their home was convenient	2	1.528	76.4	
7.	Proportion of care givers who satisfied with availability of HWs at working time	2.3	1.58	68.7	
8.	Proportion of care givers who satisfied with politeness approaches of the HWs were good	2.67	1.96	73.4	

S. No	Indicators	Relative Weight	Score (W*P)	Achievement (%)	Quality judgment parameters
9.	Proportion of care givers who satisfied with HWs was knowledgeable	2.67	1.89	70.7	
10.	Proportion of care givers who satisfied with appointment immunization day was convenient	2	1.43	71.7	
Total scores		**23**	**17.1**	**74.38**	
Overall judgmental parameter value of satisfaction		**17.1*100/23=73**			

Table 14 shows the sub- dimensions of availability of resources, compliance with Guidelines and satisfaction of immunization program was 73%, 67.6% and 74% respectively. And the overall quality of child immunization Service quality based on stakeholder's pre-set criteria of three dimensions of judgmental parameter value was 71.5%.

Table 14: summary of all dimensions for evaluation of immunization service quality compared with judgmental criteria in Gondar town, 2017

Dimensions	Indicators number	Relative Value given(x)	Value achieved(Y)	Percentage achieved(y/x) *100	Quality judgment criteria
Availability	14	32.8	24	73	>85%excellent,75-85% very good, 60-75%good,45-59% fair, <45% poor
Compliance	19	44.2	30.498	67.6	>85%excellent,75-85% very good, 60-75%good,45-59%fair, <45% poor
caregivers' satisfaction	10	23	*17.1*	74	>85%excellent,75-85% very good, 60-75%good,45-59%fair, <45% poor
Total	43	100	71.598	71.5	>85%excellent,75-85% very good, 60-75%good,45-59%fair, <45% poor

Chapter Seven: Discussion

In this evaluation indicator driven approach was used to measure the process of immunization program implementation. The evaluation finding showed that the overall process of immunization program implementation in the respective health centers was 71.5 percent. The structure component measured by availability of resource was 73 percent. The compliance of HEWs congruence to the national guideline and the satisfaction of clients also measured and gives 67.6 percent and 74 percent respectively. The status of process of the program needs some improvements according to the judgment parameter.

7.1. Availability Dimension

The availability includes human resource, medical supply and equipment, computer, documentation and recording materials, standard registration book, NIP guide line in practice and others were observed [22].

7.1.1. Human Resources

By this study in Gondar town health office, there was no assigned EPI focal person but only one health worker to provide all MCH services and eight health care providers were provided services at HCs. According to the document reviewed and from key informant interviewed results of this study, only four (50%) health care providers have been taking in service training from the total providers. (Maraki, azezo, tseda and Gebriel had been taking in service training) since the last one year. NIP Guideline recommended that HFs have to at least one Staff member trained on child immunization to provide EPI services [22].

According to FMOH -2015 reports, almost all health facilities were hold by only one health worker to provide all MCH service and lack of in service trained service providers was one of the problems at health facility level [9].

According to FMOH 2013 and 2015 annual Performance Report in Ethiopia shown that Facilities that offer child immunization services had at least one Staff member trained on child immunization was 47% and 39% respectively [21,22].

The national (FMOH -2013 and 2015) annual Performance Reported lack of in service trained service providers was that 47% and 39% respectively of health facilities had provided EPI

services which was close to this our study [9, 22]. The reason most probably due to the high attrition and turnover of in service trained HWs in our study. The current our study is higher than a study in Ghana, reported that 30% of health care workers that work in immunization were not in service trained on vaccine provision [34]. The differences could be in setup context of the vaccination services in the case of Gondar town.

7.1.2. Job Aid Materials

By this study, HCs with job aid materials like BCC and IEC only two (33%) had materials for behavioral changes and IPC in immunization unit.

According to NIP Guideline, EPI is one of the programs given priority in communication through standardization materials like BCC and IEC [22].

This study shown that in Gondar town HCs only 3(50%) had guidelines in practice. According to [FMOH -2013 and 2015] annual Performance Reported in Ethiopia shown that Facilities that offer child immunization services 53 % and 58% have guidelines in practice respectively. The current our study is lower than [FMOH -2013 and 2015] annual Performance Reported in Ethiopia [9, 22]. The differences might be in Gondar town no integrative follow up of in service trainees with guidelines in practice to fill the gap.

7.1.3. Annual Budget Plan for the Immunization Program

These findings in Gondar town showed that Budget plan for the immunization program specific financing was zero percent.

According to (cMYP) 2016-2020: HCs with financial support might be ensured for providing standardization training, job aid materials, ISS and program reviewed which could be sustained adequate supply of good quality services. The main partners financing the program are GAVI (61%), National and regional Government 33%, UNICEF (2%) and WHO (2%), and other partners (2%). When compared our study with (cMYP) 2016-2020 national annual budget plan for the immunization program was lower in Gondar town. The reason might be the immunization program specific financing was provided with other MCH services [22, 23].

7.2. Compliance Dimension

7.2.1. Functional Refrigerator

Among 36-observed sessions from the total refrigerators (12) with fridge tag within refrigerator indicated range of temperature was10 (83%) of them was ($+2c^0$ to $+8c^0$) indicated.

According to WHO recommendation that vaccines are very sensitive biological products; they lose their potency if they are exposed to temperatures beyond the recommended ranges ($+2c^0$ to $+8c^0$) [3].

The evaluation conducted in Amhara region, the case of sekota zuria Woreda; 16% of health centers had no functional cold chain system [9]. the evaluation conducted in Thailand indicate that half (50%)of primary health care units had no temperature monitoring chart, as a result, temperature inside refrigerator not monitored twice in a day [36].

The difference may be health staff motivation using temperature monitoring chart and good Cold Chain Management system of vaccine in Gondar town.

7.2.2. EPI Monitoring Chart

By this study, EPI monitoring chart was reviewed to get HCs had updated and completed EPI monitoring chart on the wall was 3(50%) of them was updated and completed. According to NIP in Ethiopia is adopting new initiatives and strategies aimed at increasing vaccination coverage and reducing 'drop-out' rate by using EPI monitoring chart. It helps compare coverage to plan achievements and to calculate drop-out rate and follow ups and continuing of vaccination child. UNICEF and WHO recommended that EPI monitoring chart has been improving follow up demand for EPI service by the beneficiaries and in the identification of missing children at the HCs and community levels [20]. The reason of our study wasn't updated and completed monitoring chart related lack of skills of service providers to fill it and also lack in service training for capacity building.

7.2.3. Dropout Rate

By this study findings showed that most children receive at least 1 dose of the routinely recommended vaccines was 92% and only 61% of children fully vaccinated at the recommended ages (less than one year) and dropout rate was 20 % in Gondar town, 2017[23]. According to WHO and NIP Guideline, Dropout rate between the first and third dose of Penta-valent is the most acceptable indicator to measure service quality implementation of immunization program. Immunization delays increase the risk of disease outbreak and age-appropriate immunization (less than one year) is a more accurate indicator of quality immunization service than whether immunizations have been received by age 2 years [9, 10]. In Gondar town wasn't within WHO

and federal recommended threshold, less than 10 % [23]. According to 2016 EDHS survey report, dropout rate in Amhara Region; was 26.3% and nationally was 27.4 % [9, 10] which were close to our study. To be compared the slightly difference may be the establishment of an effective continuous vaccine supply and cold chain management systems in Gondar town HCs.

7.2.4. Health Care Provider's Behavior Towards the Care Givers'

Among 36 observed sessions health care providers were given greeting for caregivers 19(52%) them were given greeting. According to cMYP (2016-2020) to improve the interpersonal communication (IPC) skills, training health workers per health facility on (IPC) skills by 2017. Ethiopia has producing job aid material like (BCC) and IEC material for conducting immunization message standardization at all levels. However, there were still gaps in communication such as lack of explaining about the important of NIP service utilization nationally [22]. To be compared this observation session compliance with national NIP guideline, there were still gaps in communication by these study findings such as lack of giving greeting for caregivers'. It may be related to busy of provider and lack of motivation to given greeting in Gondar town.

According to the study done in Uganda satisfied patient is more likely to develop a deeper and long-lasting relationship with their health care provider, leading to improved compliance, continuity of care, and ultimately better health care outcomes particularly respect and politeness. This aspect is much more important than the provider's technical competence (characterized by elements such as greeting, explaining the nature of the problem, physical examination, and giving advice) [34]. The possible explanation for the difference is that in Ethiopia and other countries was difficult because of it contextual nature of greeting.

7.2.5. Standard E-HMIS Captured Data Reports at All HCs

According to (cMYP) 2016-2020, Individual and institution capacity will be strengthened through provided timely standard E-HMIS captured data reports at all levels by 2017. Achieve 90% timeliness, accuracy rate and completeness of E-HMIS reports at all levels by 2017. Documented using E-HMIS reports is important indicators for updating NIP implementation guideline, standardization of training manuals, job aids and any related supplies being coordinated through Monitoring and evaluation, ISS and program performance reviewed. It could be increased to quality of NIP service in Gondar town [22].

According to this study findings had shown that in Gondar town, among 36 observed session HCs, none of them was captured data through E-HMIS. It may be related to lack of computer in immunization units.

7.3. Care Givers Satisfaction Dimension Discussion

The current study attempted to evaluate care givers satisfaction level and using important variables that could contribute for improved quality utilization of childhood immunization in Gondar town. In the multivariate analysis received immunization service quality according to previous appointment and convenience of working hours are independently associated with satisfaction level of caregivers to immunization service quality.

Accordingly; caregivers with the working hours weren't convenient are 93% less likely satisfied than for those the working hours were convenient (AOR=0.069, 95%CI; p-value= 0.011). By this study, majority 314(78%) of Care givers had received the immunization services in less than 30 minute. The level of maternal satisfaction observed in this study was higher than the study done in Jigjiga (78%vs. 53.2%) or received the immunization services in less than 30minute in Gondar town was 78% vs. received the immunization services in less than 55 minute was 53.2% in Jigjiga. The observed differences might be explained by the fact that the study populations in Jigjig were more of pastoralist [53]. When compared with some elsewhere studies done in Egypt (78%vs. 95.2%) and received the immunization services in less than 30minut in Gondar was 78%vs. received the immunization services in less than 27minute was 95.2% in Egypt. The present our findings were low and the differences could be most probably due to the differences in the setup of the vaccination services in the case of Egypt [46].

Accordingly; caregivers weren't received immunization services according to previous appointment are 95% less likely satisfied than for those receiving immunization services according to previous appointment (AOR=0.050, 95%CI; p-value= 0.002).

By this finding majority 314(78%) of Care givers had received the immunization services according to previous appointment.

According to NIP guidelines, children are considered fully vaccinated when they have received a vaccination against tuberculosis (BCG), three doses DPT-HepB-Hib vaccine, polio, PCV and two doses of Rotaviruses and a measles vaccination by the age of 12 months. In Ethiopia, the

vaccination policy calls for BCG vaccine given at birth, three doses of DPT-HepB-Hib vaccine given at approximately 4, 8, and 12 weeks of age, four doses of oral polio vaccine given approximately at 0-2, 4, 8, and 12 weeks of age, and measles vaccine given at or soon after reaching 9 months of age [22].

But the national immunization coverage survey 2012 reported that 45% of health facilities had interrupted immunization services related to did not provide immunization services according to previous appointment [32]. This study indicating better performances and the possible explanation for the differences could be vaccine education given during the procedure and better continuous vaccines and medical supplies is that in Gondar town.

The level of maternal satisfaction observed in this study was lower than the study done in Nigeria (78% vs. 95.9%). BY this study (78%) of care givers satisfied vs. study done in Nigeria (95.9%) of care givers satisfied with immunization services according to previous appointment. The differences could be due to open vial policy changes the schedule of vaccination services in case of Gondar town. The results revealed that did not provide immunization services according to previous appointment most probably contributed to high drop-out rates and low utilization of quality vaccination services.

Limitations

During the data collection time use of observation on clients to provider interaction which is difficult to know the true trained of HWs (hawthorn effect); in order to minimize this, we drop the first and last three observations for observer bias minimization. Sampling unit selection in case of observation and calculated sample might not enough to get saturated information's are the list of limitations in this evaluation, all services delivered might not registered properly was the other limitation of the evaluation.

Chapter Eight: Conclusion and Recommendation

8.1 Conclusion

The overall quality of child immunization program was determining based on the achievements of three dimensions was good. Availability of resources to provide immunization program, compliance of immunization service quality with Guidelines and satisfaction of immunization service quality in the care givers perspective was evaluated in Gondar town, 2017.

There was lack in service trained health care providers due to the high attrition and constantly turned over in service trained child immunization service providers in Gondar town. The achievement level of child immunization service quality compliance with Guidelines was 69%.

Convenience working hours and service provision based on the previous appointment were factors that determine the satisfaction of care givers and they were statistically significant at p value less than 0.05.

Generally, high in service trained staff turnover, lack of regular follow up of HWs performance, lack ISS, interpersonal communication between HWs and caregivers, services weren't provided based on the previous appointment and inconvenient service delivery hours for caregivers' may be lower utilization of quality service in routine vaccination programs in Gondar town, 2017.The overall quality of child immunization service quality was 72% based on pre-set criteria of stakeholders'.

8.2 Recommendation

Based on the findings of the evaluation, immunization service quality in Gondar town, 2017, and the following changes are recommended:

A. **For health care providers**:

1. All HWs should improve on the service process like giving greeting for care givers'.
2. Should improve using Guidelines in practice during provision of vaccine for children.
3. Should improve cleaning of immunization room before service provision.

B. **For health centers:**

1. Tseda, poly and Gebriel HCs should improve timely updated and completed vaccination programs monitoring chart on the wall that may be improved follow up demand for quality vaccination programs by the beneficiaries and helps for the identification of missing children at the HCs and community levels
2. Tseda HC could have improved recommended range of temperature indicators' between ($+2c^0$ to $+8c^0$) which vaccines beyond in these range is at high risk of losing their potency and it should be asked Gondar town health office to give in service training which may be contributed to the standard cold chain and vaccine stock management.
3. Tseda, poly and Bilagig HCs could have improved recommended range of drop-out rates which is less than 10%.
4. All HCs could provide convenient service delivery hours for caregivers' given vaccination service for any child coming to a HC for any reason or a child coming to a HC for any vaccinations should get the routine doses that the child is eligible for during the time of the visit to eliminate the possibility of missed opportunities which may be decreases drop-out rates.

C. **For Gondar town health office:**

1. Should provide job aid materials and standardized Guide lines in practices to capacity building HWs which enhances motivation and retention and scale up of best practices in town.

2. Should provide regular and focused integrative supportive supervision needs to be strengthened at all levels to gain the commitment necessary for a successful immunization service quality.

3. Should have specific Budget plan particularly for the immunization service quality improvement to provide health care providers in service training, follow up of trainees and fill the vacant positions of the turnover trained vaccinators in the newly comprehensive pre-trained on immunization and assign one immunization specific working officer to facilitate these activities in Gondar town health department.

4. Urgent need to improve the cold chain management system through in service training and monitoring, as vaccines in one HC was at high risk of losing their potency.

D. **For UNICEF coordinator**:

1. Should create the mechanism of integrative supportive supervision and regular performance review meeting and providing in service training for vaccinators to share knowledge and learn from good experience.

E. **For researchers:**

- Community based study should be support these findings to identify the behavioral determinants of caregivers and root causes and design appropriate strategies for child immunization service quality improvements in the town.

Chapter Nine: Meta Evaluation

To meet standards of quality and credibility of evaluation findings Meta Evaluation is necessary alongside of the evaluation with stakeholders; from planning, implementations and analysis evaluation findings. Reports must be informative to practitioners and must make a desirable impact on their work. To do this Maintaining contact with audience , Involving of stakeholders throughout the evaluation ,Encouragement and support stakeholders' use of the findings ,Show stakeholders how they might use the findings in their work ,provision of interim reports ,Forecasting and addressing of potential uses of findings ,Making sure that reports are open, frank, and concrete ,Supplement written reports with ongoing oral communication ,Conduct feedback workshops to go over and apply findings and provide follow-up assistance in interpreting and applying the findings were arranged.

9.1 Utility

Stakeholders were engaged and actively participate throughout the evaluation process and agreement was reached with major stakeholders (Gondar town health office, immunization focal person of the health office and respective health facilities) to utilize the finding of the evaluation.

9.2 Propriety

Ethical clearance was received from Jimma University, college of public health and medicine ethical board. Permission (support letter) was taken from Gondar town zone health office. Interviewers were trained on how to handle sensitive and emotional issues and on the importance of keeping confidentiality. Informed written and verbal consent was obtained from the study subjects, by explaining the purpose of the interview. Data collectors were trained on how to handle emotional and confidentiality issues. Issues related to confidentiality and any potential risk and benefits from participation in the study was also discussed.

9.3 Feasibility

NIP program by using the static and outreach strategy is a well-established program with national guideline that makes certain the availability of adequate data for the evaluation. The resources used for the evaluation are justifiable for benefits of program improvement and to the community as a whole.

8.1 Accuracy

To maintain the accuracy standards; we were reviewed appropriate child immunization program documents and records. We were discussed with stakeholders to understand the program and training was giving for data collectors to collect valid, reliable and credible information. Different methods of data collection were used for a single phenomenon to enable triangulating to ensure good quality information to be generated and maximize accuracy.

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Annex-A: Definition of Indicators

Table: List of availability indicators Nominator and Denominator for evaluation of immunization service quality in Gondar town,2017.

S/N	Indicators	Nominator	Denominator	sub compliance
1	Proportion of HCs with at least one in service trained provider in immunization unit to provide service according to NIP guideline	# Of HWs taking in service training on immunization which is not covered by basic training	Total # of HWs planned for in service training on immunization which is not covered by basic training.	Availability
2	Proportion of HCs with waste disposal options like (safety box, plastic bag, bucket and inclinators) according to Guide line recommendation.	Total # of HCs with waste disposal options like (safety box, plastic bag, bucket and inclinators) according to Guide line recommendation	Total # of HCs with expected to have waste disposal options like (safety box, plastic bag, bucket and inclinators) according to Guide line recommendation	Availability
3	Proportion of HCs with annual budget plan specifically for immunization service	Number of HCs have current budget plan for immunization.	Total number of HCs expected to have budget plan for EPI.	Availability
4	Proportion of f HCs with functional pipe water	Number of HCs with functional pipe water	Total number of HCs expected to have functional pipe water	Availability

S/N	Indicators	Nominator	Denominator	sub compliance
5	Proportion of HCs had Chairs and tables for care givers and health care providers in immunization rooms.	Number of HCs with Chairs and tables for care givers and health care providers in immunization rooms.	Total number of HCs expected to have chairs and tables for care givers and health care providers in immunization rooms.	Availability
6	Proportion of HCs had education materials like(IEC/BCC)	Number of HCs with education materials like(IEC/BCC)	Total number of HCs expected to have education materials like(IEC/BCC)	Availability
7	Proportion of HCs with no stoke out of all type of antigen during the last 6 months (BCG, Penta-valent , OPV, Measles and TT, PCV, Rota virus, Hepatitis B, Hib)	Number of HCs with no stoke out of all type of antigen in stock during the last 6 months (BCG, penta-valent, OPV, Measles and TT, PCV, Rota virus, Hepatitis B, Hib).	Total number of HCs expected to all type of antigen in stock during the last 6 months.	Availability
8	Proportion of HCs with no stoke out of all type of syringes during the last six months	Number of HCs with no stoke out of all type of syringes during last six months	Total number of HCs expected with no stoke out of all type of syringes during the last six months	Availability
9	Proportion of HCs having functional refrigerator using to provide immunization program service quality	Number of HCs with functional refrigerator using to provide immunization program service	Total number of HCs expected with functional refrigerator using to provide immunization program service quality	Availability

S/N	Indicators	Nominator	Denominator	sub compliance
	(functional: refrigerator, fridge tag, ice packs and vaccine carriers).	quality (functional: refrigerator, fridge tag, ice packs and vaccine carriers).	(functional: refrigerator, fridge tag, ice packs and vaccine carriers).	
10	Proportion of HCs having NIP guideline in practice	Number of HCs with materials needed for NIP guideline in practice	Total number of HCs observed to have NIP guideline in practice	Availability
11	Proportion of HCs having standard registration books	# of HCs having standard registration books	Total number of HCs expected immunization services from february1, 2016 march 30, 2017.	Availability
12	Proportion of HCs with existence of documented continuing medical supply & equipments (gloves, syringe, cotton and antiseptics, safety box) in stock during the last 3 months.	Number of HCs with	Total number of HCs expected	Availability
13	Proportion of HCs had computer for E-HMIS of capturing data in immunization unit	Number of HCs with computer for E-HMIS of capturing data in immunization unit	Total number of HCs expected computer for E-HMIS of capturing data in immunization unit	Availability

S/N	Indicators	Nominator	Denominator	sub compliance
14	Proportion of HCs with materials needed for recording and reporting formats.	Number of HCs with materials needed for recording and reporting formats.	Total number of HCs expected with materials needed for recording and reporting formats.	Availability

Table: List of compliance indicators Nominator and Denominator for evaluation of immunization service quality in Gondar town,2017

S/N	Indicators	Nominator	Denominator	compliance
1	Proportion of health care providers who advised for care givers on routine and follow up visit of the next subsequent doses according to NIP guideline.	# Of health care providers who advice for care givers on routine and follow up visit of according to immunization guideline that care givers understand.	Total # of health care providers who are expected to advice for care givers on routine and follow up visit of according to immunization guideline that care givers understand.	compliance
2	Proportion of Refrigerators with fridge tag within refrigerator indicates the range of temperature ($+2c^0$ to $+8c^0$) during data collection period.	# Of Refrigerators with proper maintained cold chain temperature ($+2c^o$ to $+8c^0$**)** during data collection period.	Total # of refrigerators with proper maintained cold chain temperature ($+2c^o$ to $+8c^0$) during data collection period**.**	compliance

S/N	Indicators	Nominator	Denominator	compliance
3	Proportion of fully registered vaccinated children from the last february1, 2016 to march 30, 2017	# of HCS fully registered vaccinated children from the last february1,2016 march 30,2017	Total # of HCS vaccinated children from the last february1,2016 march 30,2017	compliance
4	Proportion of HCs with cleaning of immunization room before service provision during data collection period.	# Of HCs with cleaning of immunization room before service provision during data collection period	Total #Of HCs have expected cleaning of immunization room before service provision during data collection period.	compliance
5	Proportion of HCs with registered temperature monitor two times per day according to NIP guideline from the last february1, 2016 to march 30, 2017.	# of HCS registered temperature monitor two times per day according to NIP guideline from the last february1, 2016 to march 30, 2017	Total # of HCs expected registered temperature monitor two times per day according to NIP guideline from the last february1, 2016 to march 30, 2017	compliance
6	Proportion of HCs with Updated and completed immunization monitoring chart on the wall during data collection period	# HC with HCs Updated and completed immunization monitoring chart on the wall	total# of HCs have expected with Up to date and complete immunization monitoring chart on the wall	compliance
7	Proportion of HCs with documenting practices monthly reporting of	#of HCs with documenting practices monthly reporting of immunization	Total # of HCs expected with documenting practices monthly reporting of	compliance

S/N	Indicators	Nominator	Denominator	compliance
	immunization data through EHMIS from the last february1, 2016 to march 30, 2017	data through EHMIS from the last february1, 2016 to march 30, 2017	immunization data through EHMIS from the last february1, 2016 to march 30, 2017	
8	Proportion of health care providers told the dose and type of the Vaccine for care givers that the infant taken	#of of health care providers told the dose and type of the Vaccine for care givers that the infant taken	Total # of health care providers expected told the dose and type of the Vaccine for care givers that the infant taken	compliance
9	Proportion of HCs had documented continuing integrative supportive supervision existence with its feedback in immunization unit for the last two and three quarter.	#of HCs had documented continuing integrative supportive supervision existence with its feedback in immunization unit for the last two and three quarter.	Total #of HCs expected had documented continuing integrative supportive supervision existence with its feedback in immunization unit for the last two and three quarter.	compliance
10	Proportion of HCs kept a vaccination day according to they prepared, every 28 day	#of HCs kept a vaccination day according to they prepared, every 28 day	Total #of HCs expected an appointment schedule according to they prepared, every 28 day	compliance
11	Proportion of health care providers discussed about immunization side effects what care givers should do according to guideline	# of health care providers give information side effects after immunization and discussed what care givers should do about side	Total #of health care providers' interaction expected to give information on side effects after immunization and discussed what care givers should do about side effects	compliance

S/N	Indicators	Nominator	Denominator	compliance
		effects		
12	Proportion of health care providers gave information on use of target disease of vaccination	#of health care providers to give information on use of vaccination, target disease of vaccination	Total number care givers and health care providers' interaction expected to give information on use of vaccination, target disease of vaccination and	compliance
13	Proportion of HCs health care providers who giving greeting to the caregivers'	#of health care providers who give greeting to the care givers.	Total # vaccinated children from the last february1,2016 march 30,2017	compliance
14	Proportion of HCs timely reporting vaccinated children based on deadline monthly report schedule for the last three months.	# of HCs timely reporting vaccinated children based on deadline report schedule from the last february1, 2016 march 30, 2017.	Total # of HCs who expected timely reporting vaccinated children based on deadline report schedule from the last february1, 2016 march 30, 2017.	compliance
15	Proportion of health care providers who correctly checked proper dose of vaccination during service provision by using vaccination card.	# of health care providers who correctly checked proper dose of vaccination during service provision by using vaccination card.	Total # of health care providers expected checked proper dose of vaccination during service provision by using vaccination card	compliance
16	Proportion of child immunized with Penta-valent-1	# of children immunized with Penta-valent-1	Total # of children expected immunized with Penta-valent-1	compliance

S/N	Indicators	Nominator	Denominator	compliance
17	Proportion of child immunized with Penta-valent-valent -3	# of children immunized with Penta-valent-3	Total # of children expected immunized with Penta-valent-3	compliance
18	Proportion of child immunized with measles	# of children immunized with measles	# of children immunized measles	compliance
19	Proportion of HCs with dropout rate <10 from the last February1, 2016 to march 30,2017	#of HCs with dropout rate <10 from the last February1,2016 to march 30,2017	Total #of HCs expected with dropout rate <10 from the last February1,2016 to march 30,2017	compliance

Table: List of Acceptability/care givers satisfaction indicators Nominator and Denominator for evaluation of immunization service quality in Gondar town,2017

S. No	**Indicators**	Nominator	Denominator	Acceptability/care givers satisfaction
1	Proportion of care givers who satisfied with availability of service based on the previous	# of care givers who respond availability of service based on the previous appointment satisfied	Total # of care givers who responds about availability of service based on the previous	Acceptability/care givers satisfaction

S. No	**Indicators**	Nominator	Denominator	Acceptability/care givers satisfaction
	appointment		appointment	
2	Proportion of care givers who satisfied with immunization service to working hours is convenient	# of care givers who respond immunization service to working hours is convenient	Total # of care givers who responds about immunization service to working hours	Acceptability/care givers satisfaction
3	Proportion of care givers who satisfied with the time spent in waiting room.	# of care givers who perceived satisfied with the time spent in waiting room.	Total # of care givers who responds about the time spent in waiting room.	Acceptability/care givers satisfaction
4	Proportion of care givers who satisfied with the cleanness of vaccination room of HCs is appropriate	# of care givers who responds that they are satisfied with cleanness of the vaccination room	Total # of care givers who responds about cleanness of the vaccination room	Acceptability/care givers satisfaction
5	Proportion of care givers who satisfied with the overall of service provided	# of care givers who responds that they are satisfied with the overall of service provided	Total # of care givers who responds about the overall of service provided	Acceptability/care givers satisfaction
6	Proportion of care givers who satisfied with convenience	# of care givers who responds HC distance to their home is convenient	Total # of care givers who responds on HC distance to their	Acceptability/care givers satisfaction

S. No	**Indicators**	Nominator	Denominator	Acceptability/care givers satisfaction
	immunization service distance to their home is convenient		home	
7	Proportion of care givers who satisfied with availability of HWs at working time	# of care givers who perceive availability of immunization HWs at working time is convenient	Total # of care givers who responds about availability of immunization HWs at working time	Acceptability/care givers satisfaction
8	Proportion of care givers who satisfied with politeness or friendliness approaches of the HWs are good	# of care givers who responds HWs politeness or friendliness approach is good	Total # of care givers who responds on HWs politeness or friendliness approach	Acceptability/care givers satisfaction
9	Proportion of care givers who satisfied with immunization HWs is competent/ knowledgeable	# Of care givers who perceive HWs are competent/ knowledgeable.	Total # of care givers who responds about the competency/ knowledge of immunization services providers HWs	Acceptability/care givers satisfaction
10	Proportion of care givers who satisfied with appointment immunization day is	# of care givers who responds their appointment immunization day is convenient	# of care givers who responds their appointment immunization day	Acceptability/care givers satisfaction

S. No	Indicators	Nominator	Denominator	Acceptability/care givers satisfaction
	convenient.			

Table: Information matrix and Source of information for availability indicators Nominator and Denominator for evaluation of immunization service quality in Gondar town, 2017.

Evaluation question	Dimension	Indicators	Source of information	Methods	Tools
Are the resources needed to provide quality of immunization service available? If not why?	Availability	Proportion of HCs staff working in immunization unites taking in service training which is not covered by basic training.	Training log book	Resource inventory	Resource inventory checklist
		Proportion of health center with current budget plan for immunization	Budget document	Resource inventory	Resource inventory checklist
		Proportion of health center with utility (functional pipe water, electricity and communication material).	HCs	Resource inventory	Resource inventory checklist
		Proportion of health center with no stoke out of all type of antigen in stock during the last 4 months (BCG, Penta-	Dispensary & drug	Resource	Resource inventory

Evaluation question	**Dimension**	**Indicators**	Source of information	**Methods**	**Tools**
		valent, OPV, Measles and TT, PCV, Rota virus, Hepatitis B, Hib)	store	inventory	checklist
		Proportion of health center with no stoke out of all type of syringe in stock during the last 6 months	Dispensary & drug store	Resource inventory	Resource inventory checklist
		Proportion of health center having equipments needed to provide of immunization (functional: refrigerator, fridge tag, ice packs and vaccine carrier).	immunization unit	Resource inventory	Resource inventory checklist
		Proportion of health center having immunization guideline.	immunization provider	Resource inventory	Resource inventory checklist
		Proportion of HCs having immunization monitoring chart.	Health center Immunization unit	Resource inventory	Resource inventory checklist
		Proportion of HCs with medical supplies (gloves, syringe, cotton and antiseptics, safety box) in stock during the last 6	Dispensary & drug	Resource inventory	Resource inventory

Evaluation question	Dimension	Indicators	Source of information	Methods	Tools
		months	store		checklist
		Proportion of HCs with Existence of continued reporting & supportive supervision documents from the last two quarter	Health center document	Resource inventory	Resource inventory checklist
		proportion of health center with materials for record keeping, registration books, reporting formats and care giver cards	immunization unit	Resource inventory	Resource inventory checklist

Table: Information matrix and Source of information for Compliance indicators Nominator and Denominator for evaluation of immunization service quality in Gondar town, 2017

Evaluation question	Dimension	Indicators	Source of information	Methods	Tools
Are health	Compliance	Proportion of care givers who advice on routine and follow up visit of immunization	Provider and care givers interaction	Observation	Observation checklist

Evaluation question	**Dimension**	**Indicators**	Source of information	**Methods**	**Tools**
care providers complying with immunization standard while providing immunization service? How/w			immunization room		
		Proportion of refrigerators with maintained proper cold chain (+2to+8c0) during data collection period.	immunization. Unit of room refrigerators	Observation	Observation checklist
		Proportion of HCS fully registered vaccinated children from the last February 1, march to 30,2017	HCs registered book	Document review	checklist
		Proportion of vaccine storage refrigerator with temperature monitored twice per day.	I immunization. Unit of room refrigerators	Document review and Observation	Observation checklist
		Proportion of HCs with Up to date and complete immunization monitoring chart on the wall	HCs	Observation	Observation checklist
		Proportion of HCs Number of care giver who oriented on target vaccination and use of vaccination.	Provider and care givers interaction immunization room	observation	Observation Checklist
		Proportion of health care providers told the dose and type of the Vaccine for care giver that the infant taken?	Provider and care givers interaction immunization room	observation	Observation Checklist
		Proportion Health centers used ice pack, vaccine carriers according to immunization guideline	Health center	observation	Observation Checklist

Evaluation question	**Dimension**	**Indicators**	Source of information	**Methods**	**Tools**
hy?		Proportion of HCs keeping an appointment schedule according to prepared, every28 day.	Document	Document review and Observation	Observation Checklist
		Proportion of health care providers avoiding recapping of needle in immunization unite	EPI unit	Observation	Observation Checklist
		Proportion of EPI service providers gave information on side effects after immunization and discussed what care givers should do about side effects	Provider and care givers interaction EPI room	Observation	Observation Checklist
		Proportion discard opened BCG and MCV at the end of immunization session	immunization unit	Observation	Observation Checklist
		Proportion of HCs timely reporting vaccinated children based on deadline report schedule from the last two quarter	Registration book	Document review	Checklist

Table: Relevance matrix of indicators used for evaluation of immunization service quality in Gondar town, 2017

S. no	**Indicators**	**Dimension**		
		Availability	Compliance	Accommodation (Satisfaction)

S. no	Indicators	Dimension		
		Availability	Compliance	Accommodation (Satisfaction)
1	Proportion of HCs with at least one in service trained provider in immunization unit to provide service according to NIP guideline	RRR	RRR	RR
2	Proportion of HCs with waste disposal options like (safety box, plastic bag, bucket and inclinators) according to Guide line recommendation.	RRR	RR	R
3	Proportion of HCs with annual budget plan specifically for immunization service	RRR	RR	R
4	Proportion of f HCs with functional pipe water	RRR	RRR	RRR
5	Proportion of HCs had Chairs and tables for care givers and health care providers in immunization rooms.	RRR	R	RRR
6	Proportion of HCs had education materials like(IEC/BCC)	RRR	RR	R
7	Proportion of HCs with no stoke out of all type of antigen during the last 6 months (BCG, Penta-valent , OPV, Measles and TT, PCV, Rota virus, Hepatitis B, Hib)	RRR	RRR	RRR
8	Proportion of HCs with no stoke out of all type of syringes during the last six months	RRR	RRR	RRR

S. no	Indicators	Dimension		
		Availability	Compliance	Accommodation (Satisfaction)
9	Proportion of HCs having functional refrigerator using to provide immunization program service quality (functional: refrigerator, fridge tag, ice packs and vaccine carriers).	RRR	RRR	RRR
10	Proportion of HCs having NIP guideline in practice	RRR	RR	R
11	Proportion of HCs having standard registration books	RRR	RR	R
12	Proportion of HCs with existence of documented continuing medical supply & equipments (gloves, syringe, cotton and antiseptics, safety box) in stock during the last 3 months.	RRR	RRR	RR
13	Proportion of HCs had computer for E-HMIS of capturing data in immunization unit	RRR	R	R
14	Proportion of HCs with materials needed for recording and reporting formats.	RRR	RR	R

S. no	Indicators	Dimension		
		Availability	Compliance	Accommodation (Satisfaction)
15	Proportion of health care providers who advised for care givers on routine and follow up visit of the next subsequent doses according to NIP guideline.	R	RRR	RR
16	Proportion of Refrigerators with fridge tag within refrigerator indicates the range of temperature ($+2c^0$ to $+8c^0$) during data collection period.	R	RRR	R
17	Proportion of fully registered vaccinated children from the last february1, 2016 to march 30, 2017	R	RRR	R
18	Proportion of HCs with cleaning of immunization room before service provision during data collection period.	R	RRR	RR
19	Proportion of HCs with registered temperature monitor two times per day according to NIP guideline from the last february1, 2016 to march 30, 2017.	R	RRR	R
20	Proportion of HCs with Updated and completed immunization monitoring chart on the wall during data collection period	R	RRR	R
21	Proportion of HCs with documenting practices monthly reporting of immunization data through EHMIS from the last february1, 2016 to march	R	RRR	R

S. no	Indicators	Dimension		
		Availability	Compliance	Accommodation (Satisfaction)
	30, 2017			
22	Proportion of health care providers told the dose and type of the Vaccine for care givers that the infant taken	R	RRR	RR
23	Proportion of HCs had documented continuing integrative supportive supervision existence with its feedback in immunization unit for the last two and three quarter.	R	RRR	R
24	Proportion of HCs kept a vaccination day according to they prepared, every 28 day	R	RRR	RR
25	Proportion of health care providers discussed about immunization side effects what care givers should do according to guideline	R	RRR	RR
26	Proportion of health care providers gave information on use of target disease of vaccination	R	RRR	RR
27	Proportion of HCs health care providers who giving greeting to the caregivers'	R	RRR	RRR
28	Proportion of HCs timely reporting vaccinated children based on deadline	R	RRR	R

S. no	Indicators	Dimension		
		Availability	Compliance	Accommodation (Satisfaction)
	monthly report schedule for the last three months.			
29	Proportion of health care providers who correctly checked proper dose of vaccination during service provision by using vaccination card.	R	RRR	RRR
30	Proportion of child immunized with Penta-valent-1	R	RRR	R
31	Proportion of child immunized with Penta-valent-valent -3	R	RR	R
32	Proportion of child immunized with measles	R	RRR	R
33	Proportion of HCs with dropout rate <10 from the last February1, 2016 to march 30,2017	R	RRR	R
34	Proportion of care givers who perceive politeness or approach of the HWs are good	R	RRR	RRR
35	Proportion of care givers who satisfied availability of service based on the previous appointment	RRR	RRR	RRR
36	Proportion of care givers who satisfied the health education provided about the dose and type of the Vaccine for care giver that the infant taken?	R	RRR	RRR

S. no	Indicators	Dimension		
		Availability	Compliance	Accommodation (Satisfaction)
37	Proportion of care givers who satisfied the health education provided about information on side effects after immunization and discussed what care givers should do about side effects	R	RRR	RRR
38	Proportion of care givers who satisfied with availability of service based on the previous appointment	RRR	RRR	RRR
39	Proportion of care givers who satisfied with immunization service to working hours is convenient	R	RRR	RRR
40	Proportion of care givers who satisfied with the time spent in waiting room.	R	RR	RRR
41	Proportion of care givers who satisfied with the cleanness of vaccination room of HCs is appropriate	RR	RRR	RRR
42	Proportion of care givers who satisfied with the overall of service provided	RR	RRR	RRR
43	Proportion of care givers who satisfied with convenience immunization service distance to their home is convenient	R	R	RRR

Key: RRR=very relevant, RR = relevant, R= poorly relevant

Annex B: consent form

Dear/sir madam

Good morning/good after noon! My name is _____and I am a member of evaluation team that evaluate quality in child immunization program at Gondar town and the evaluation conduct with the collaboration of Jimma University and by Mesafint Woretaw who is a postgraduate student of Jimma University, as we understand the provision of quality immunization services to improve the program. We proceed to conduct process evaluation of quality in child immunization program in order to find the best practice and to identify the weakness that was improve expanded program on immunization.

Finally, we will provide feedback that important for input to improve the quality of program interesting to ask you some questions to know the weakness and strength in program quality. To assure your confidentiality I am not tending to record your name and individualized information what you give me if you are voluntary to participate.

Please give me your willingness to continue; do you

1. agree
2. not, agree

Notes to the interviewer

If the participant said ‘agree ‘to proceed, acknowledge the participant decision and continue the next interview, if said ‘not, agree’, say thank you and go to the next participant

Data collection tools used at health facilities

Name of health facility_____

Data collector name _____signature _____date__/_____/_____

Super visor name _____ signature _____date__/_____/_____

Annex C: English Version data collection tools

Informed consent form (English version) to do observation on quality of childhood immunization program among children aged upto12 month in Gondar town in Amhara region, northwest, Ethiopia, 2017.

Care givers/ providers' interaction observation checklist for evaluation of immunization service quality in Gondar town, 2017.

S/N	Activities and conditions	yes	no
1	Did the health care provider give greet to the care givers?		
2	Is the waiting place clean before provision of immunization service?		
3	Did the provider wash his/her hand with soap before and after administration of vaccine?		
4	Did the provider correctly assess which infants are eligible for vaccine?		
5	Did the health care provider tell the dose and type Vaccine for care giver that the infant taken?		
6	Did the provider use ice pack, vaccine carriers according to immunization guideline correctly?		
7	Did the provider correctly reconstitute the antigen with appropriate dilute as needed?		
8	Did the provider explain about type of antigen and target disease by using clear language that care givers understand?		
9	When health care provides advice the care givers while using clear language that care givers understand?		
10	Did the provider use safety box to dispose needle according to IP guideline appropriately?		
11	Did the provider dispose of vials, plastics, swabs according to IP guideline correctly?		
12	Did the provider gave information on side effects after immunization and discussed what care givers should do about side effects?		
13	Did the provider avoiding recapping of needle after administer of vaccine according to IP guideline?		
14	Was at the end of immunization session provider discard opened BCG and MCV?		
15	Did the health care provider keep an appointment schedule clear language that care givers understand?		

Documents and Records review checklist for evaluation of immunization service quality in Gondar town, 2017.

S/N	Activities and conditions	yes	no
1	Total children immunization (Penta-valent-3) in from February1, 2008E.C to march 30, 2009 E.C under one year age _____.		
2	Have annual budget plan for immunization service in 2009E.C?		
3	Did they send monthly report of the last two quarter on recommended time schedule, every month of 22 and 23?		
4	Is there immunization following up chart to control the coverage of vaccination which displays on the wall?		
5	Is there dropout rate Penta-valent-1 and Penta-valent -3 less than 10%?		
6	Is HCs with documenting monthly reporting of immunization data through EHMIS from the last february1, 2016 to march 30, 2017		

Total number of children registered _____appropriately registered from February 1, March to 30, 2017.

The numbered of planned immunization session (fixed sessions and outreach sessions) achieved _____since the last two quarter during data collection period

Was the temperature of the refrigerator recorded twice per day and did it remain between $+2^0$c and $+8^0$c from March 1 to 30, 2017.

1. Yes
2. no

Are the health centers attaining its coverage targets on the last quarter of before data collection period? Compare the current immunization coverage of each health center with its annual coverage objectives.

Name of health center _____

S/N	**Administer antigens**	**plan**	**Achievements**
1	Penta-valent-1		

2	Penta-valent-3		
3	PCV1		
4	PCV3		
5	OPV1		
6	OPV3		
7	Measles		
8	Rotavirus 1		
9	Rota virus 2		
10	Fully vaccinated		

Observation checklist of immunization units for evaluation of immunization service quality in Gondar town, 2017

S/N	Activities and conditions	yes	no
1	Did the immunization –monitored chart was filled and plotted?		
2	Was a map of the catchment area has displayed in the unit?		
3	Is the map containing basic information about the population it serves: number of births annually? Number of children less than one year of age, population of areas by village?		
4	Was 2009E.C of the last two quarters integrative supportive supervision feedback results available on immunization unit before data collection period?		
5	Is sub-center and outreach schedule available on the wall?		
6	Did the room clearly prepared before service provision start?		
7	Did computer for documenting immunization data available in immunization unit for monthly reporting.		

Observation checklist of cold chain units for evaluation of immunization service quality in Gondar town, 2017

S/N	Activities and conditions	yes	no
1	Did the provider use vaccine carriers and cold box correctively?		
2	Does the refrigerator functional and it fridge tag (temperature index to keep vaccine potency) kept appropriately?		
3	Are vaccine kept based on temperature sensitivity compartment appropriately?		
4	Are the vaccine kept in the cold chain has remains its VVM okay?		
5	Was the temperature of the refrigerator recorded twice per day and did it remain between $+2^0$c and $+8^0$c from March 1 to 30, 2017.		

Observation of availability checklists for evaluation of immunization service quality in Gondar town, 2017

S/N	Equipment, supplies and furniture's availability	Yes	no
1	Cleanness of immunization service area		
2	Chairs and tables for care givers and health care providers.		
3	Waste disposal system (safety box, plastic bag, bucket and inclinators)		
4	Up to date and complete immunization monitoring chart on the wall		
5	A map of the catchment area		
6	Immunization card for last six months		
7	Standard registration book		
8	Talley sheets for last six months		
9	Syringe(0.5ml) for last six months		
10	Syringe(0.05ml) for last six months		
11	Syringe (2ml) for last six months		
12	Syringe(5ml) for last six months		
16	BCG for last six months		
14	Penta-valent- for last six months		
15	Measles for last six months		
16	cotton for last six months		

S/N	Equipment, supplies and furniture's availability	Yes	no
17	PCV for last six months		
18	Rotarix antigen for last six months		
19	diluents for last six months		
20	Droppers for last six months		
21	Plastic bag/bucket for last six months		
22	Is Pipe water in the compound		
23	Immunization guideline in practice		
24	Cleanness of immunization room unit		

Data collector name _____signature _____date__/_____/_____

Super visor name _____ signature _____date__/_____/_____

QUANTITATIVE QUESTIONNAIRE (ENGLISH VERSION)

Structured interviewer administered Questionnaire prepared to evaluate care giver's satisfaction toward quality of childhood immunization among Children Aged up to 12 Months in Gondar town, 2017.

Greeting: Good morning /good afternoon MOM! /DADY!

My name is _____ address_____

I am member of evaluator team that evaluate quality of service in child immunization program at Gondar town and the evaluation carry out collaborated with Jimma university and Mesafint Woretaw who is a postgraduate student of Jimma University, as we understand the provision of quality immunization services increases care giver's satisfaction. We proceed to conduct process evaluation of quality in child immunization program in order to find the best practice and to identify the weakness of immunization services. Then finally, we will give feedback to service provider and program manager based on information what you provided us honestly and what we are seeing practically, which is input to improve the quality of program. To assure your confidentiality am not tending to record your name and individualized information what you give me if you are voluntary to participate, I am interested to ask some questions to know your

satisfaction level on immunization services provided. Participation is purely voluntary; just let me know it and I will go on to the next question. Besides that, you will have 100 % freedom to stop the interview at any time. I hope you will participate in this study since your information is very crucial.

At this time, do you want to ask me anything about this research?

May I begin the interview now? If she said 'agree' continued the next interview, if said 'not, agree', say thank you and go to the next participant

Please give me your willingness to continue; do you

1. agree
2. not, agree

Signature of interviewer: _____ Date-: _____

Address of the principal evaluator

Phone number: 0946243869

Gmail: mesafintworetaw8@gmail.com

Five solid rules that must be followed by interviewer to select eligible study participant before reading the information sheet and asking verbal consent form

Rule 1: child **must be** with care giver

Rule 2: care giver **must be** can communicate verbally

Rule 3: age group of the child **must be** within 12 month

Rule 4: child and care giver **must** live for six month in Gondar town

Rule 5: persistent diarrhea, sever burn and coma child will not be interviewed.

N.B. IF the visited care giver and child don't full fill all the above-mentioned rules please stop here the interview and wait the next participant. Give ID number only for those who full fill all the

Criteria.

General direction for the interviewer before conducting the interview

Check whether the questionnaire has all parts and pages including this page?

Check the questionnaire contains socio-demographic characteristics, knowledge of care giver satisfaction question, quality care tools, health care provider characteristics, environmental condition,

I. General information

1. Name of health center_____

II Demographic information

1. Age of care givers_____

2. Sex 1. Male 2. Female

3. Marital status: 1. Married 2.not married 3. divorced 4. Widowed 5. Others

III socio economic information

1. Educational status: 1. cannot read and write 2.can read and write 3. Elementary (grade7 and 8) 4. Secondary (9-12) 5. Diploma 6. Degree

2. Occupational status

1. Government 2.non government 3. self

3. If you are government employ, in what occupation? 1. Manager 2. Bsc. Professional 3. Clinical and associate professional 4. Secretary 5. cleaner and helper

4. If you are self employed in what occupation? 1. Agriculture 2. Merchant3. Handicraft worker 4. Daily laborer 5. House wife
5. Religion 1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. others
6. Ethnicity 1. Amhara 2. Oromo 3. Tigray 4. Agew 5. others

IV health system related information

1. How far is immunization service from your home? _____in minutes
2. How much time do you spend waiting area of immunization unit? _____in minutes
3. Is working hour convenient for you? 1. Yes 2. no
4. Is working day convenient for you? 1. Yes 2. no
5. Have you got immunization service accordingly previous appointment? 1. Yes 2. No
6. If not, whey? 1. Peronal problem 2. unavailability of service
7. Did the provider tell you about the use and side effects of the administrated antigen? 1. Yes 2. No

Satisfaction related information for evaluation of immunization service quality in Gondar town, 2017.

S/N	measurements	Very unsatisfied (1)	unsatisfied (2)	neutral (3)	satisfied (4)	Very satisfied (5)
1	How much are you satisfied with availability of service based on the previous appointment?	1	2	3	4	5
2	How much are you satisfied with convenience immunization service to working hours?	1	2	3	4	5
3	How much are you satisfied with the time spent in waiting room?	1	2	3	4	5
4	How much are you satisfied with cleanness of the vaccination room?	1	2	3	4	5
5	How much are you satisfied with the overall service provided?	1	2	3	4	5
6	How much are you satisfied with convenience immunization service post to your home?	1	2	3	4	5
7	How much are you satisfied with availability of provider at working time?	1	2	3	4	5
8	How much are you satisfied with friendliness/politeness of the providers?	1	2	3	4	5
9	How much are you satisfied with the competence Knowledge of the provider?	1	2	3	4	5
10	How much are you satisfied with the day of immunization?	1	2	3	4	5

Did you have any other comments that you would like to share us?

Data collector name _____signature _____date__/_____/_____

Super visor name _____ signature _____date__/_____/_____

Address of the principal evaluator

Phone number: 0946243869

Gmail: mesafintworetaw8@gmail.com

Information sheet for in-depth interview at health center

My name is _____ I am working as a data collector in this evaluation conducted by Mesafint Woretaw who is a postgraduate student of Jimma University, school of public health. the objective of the study is to assess quality of service toward childhood immunization in Gondar town health centers. The reason for why the researcher focused on this research area is to improve immunization service, there are different governmental and nongovernmental organizations that run on the promotion of childhood vaccination, but child hood immunization is still recognized as a deep rooted public health problem across the country and the target is not achieved.

Now you get the chance to participate in this evaluation and the information that will get from you is very crucial to made valid conclusion on immunization Service delivery program. I would very much appreciate your participation.

If it is your will to participate, the following activity was done: 1) yours age, sex, work experience, type of profession, responsibility in the health center, training type, awareness about quality service, awareness about quality care program application, care givers satisfaction, about accessibility, knowledge ,perception and practice, of care givers were measured, and 2) there was 20-30 minute for interview.

Participation will not have any harm and a direct financial or other benefit for you, but your information is valuable to achieve the objective of the research. Whatever information you provide it was kept confidentially and to assure that we will use code number, tape record if you are willing full name will not be written and in addition the document will not be shared with anyone other except people participating in this evaluation. Participation is purely voluntary, and

if I come up with any question that you don't want to answer, just let me know it and I will go on to the next question. Besides that, you will have 100 % freedom to stop the interview at any time. I hope you will participate in this study since your information is very crucial to improve, redesign, and to improvements of immunization service in the health centers as well as in the country. there was a facilitator who will ask the group the relevant question about you and your process activities. All information is secured and confidentially kept in the principal investigator and destroyed immediately when the evaluation is finalized.

At this time, do you want to participate in interview session? Ask me anything about this evaluation? Can we continue the session? If yes, start the interview session, if no, say thank you, and go to the next interview session

Signature of interviewer: _____ Date-: _____

Guidelines for in-depth interview for health care providers at HCs level.

i. Health care providers according to their Personal and work experience

ii. Health care providers according to their knowledge about quality care and quality program application

iii**. in depth interview point to be raise on health center**

1. How long you work in the health center?
2. Are you receiving in service training course of immunization?
3. What is the type of immunization in service training course(s) you took?
4. Is there in service trained HWs in your health center about I mmunization? If not, why?
5. Is your immunization focal person? Are there interrupted supplies and equipments in this HC for a session of immunization service? If yes, how?
6. What hinder the service delivery system of immunization (infrastructure, administrative, economy, attitude?)
7. Did immunization sessions have been cancelled because of insufficient supplies or any other reason in the last quarter?
8. Did the service accessible timely?
9. Is the immunization day done regularly every month? If not, why?
10. Do you have awareness about quality of immunization service?
11. Did follow standard operating procedure while delivering vaccination?

12. How you evaluate the attitude and perception of care giver who comes for child vaccination?
13. Do you have awareness about vaccine side effect to clear up for care givers?
14. Have you monthly meeting to review quality of service and to share knowledge? If not, why?
15. What is your plan to improve the quality immunization service delivery system?

16. Do you believe that your care giver is satisfied in the service you provided (process)?
17. Did you have any other comments that you would like to share us?

Data collector name _____signature _____date__/_____/_____

Super visor name _____ signature _____date__/_____/_____

Address of the principal evaluator

Phone number: 0946243869

Gmail: mesafintworetaw8@gmail.com

Observation checklist of immunization units for evaluation of immunization service quality in Gondar town health office, 2017

S/N	Activities and conditions	yes	no
1	Did the immunization –monitored chart was filled and plotted?		
2	Was a map of the catchment area has displayed in the unit?		
3	Is the map containing basic information about the population it serves: number of births annually? Number of children less than one year of age, population of areas by village?		
4	Was 2009E.C of the last two quarters integrative supportive supervision feedback results available on immunization unit?		
5	Is sub-center and outreach schedule available on the wall?		

Observation checklist of cold chain units for evaluation of immunization service quality in Gondar town health office, 2017

S/N	Activities and conditions	yes	no
1	Did provider load vaccines correctly in refrigerator?		
2	Did provider use vaccine carriers and cold box correctly?		
3	Did provider implement multi-dose vial policy correctly?		
4	Was fridge sealed? (not lose or dirty)		
5	Were all VVMs of antigen okay?		
6	Did the fridge working, and kept appropriately?		
7	Did the vaccines have kept appropriately?		
8	Did the vaccines, which are not expire yet, used?		
9	Does refrigerator temperature monitoring chart fill two times per day from march 1 to 30 2017.		
10	Did the vaccines have kept in cold chain has fragments or freeze?		

Data collector name _____signature _____date__/_____/_____

Super visor name _____ signature _____date__/_____/_____

Address of the principal evaluator

Phone number: 0946243869

Gmail: mesafintworetaw8@gmail.com

Data collection tools used at Gondar town health office department

Name of health office department_____

Interview guide at health office level

Number of workers that work in this department_____

1. Is there at least one in service trained Health worker on immunization unit in practice in this health department? If not, why----------
2. Describe the adequacy of HWs involved in immunization activity in Gondar town? -------

3. What hinder the service delivery system (infrastructure, administrative, economy, attitude?) ----------
4. Are supplies and equipments adequate for last quarter? ----------
5. Do immunization sessions have been cancelled because of insufficient supplies or any other reasons in the last three months? ----------
6. Do the achievements reports on immunization activities have been received on time from all operational HFs in the last quarter? If not, why? ----------
7. Is the immunization day done regularly every month? If not, why? ----------
8. Have you monthly meeting to review quality of service and to share knowledge? If not, why?
9. What is your plan to improve the quality of immunization service of in Gondar town? ----
10. Did you have any other comments that you would like to share us? ----------

documents and records review checklist, evaluation of quality of immunization program in Gondar town, 2017.

S/N	Activities and conditions	yes	no
1	Total children immunization (Penta-valent-3) in from February1, 2008E.C to march 30, 2009 E.C under one year age _____.		
2	Have annual budget plan in 2009 E.C for immunization?		

3	Did they send monthly report of last two quarter on recommended time?		
4	Is there immunization monitoring chart to control the coverage of vaccination posted with update and complete information?		
5	Is there dropout rate Penta-valent-1 and Penta-valent-3 less than 10%?		

Total number of children registered _____appropriately registered from February 1, 2016 to march30, 2017.

The numbered of planned immunization session (fixed sessions and outreach sessions) achieved _____ since the last quarter.

Was the temperature of the refrigerator recorded twice a day and did it remain between +2c and +8c from March 1 to 30.

1. Yes
2. no

Is the town head health office attaining its coverage targets on the last quarter? Compare the current immunization coverage of the Gondar town with its annual coverage objectives of.

Name of health office _____

S/N	Administer antigens	plan	Achievements
1	Penta-valent-1		
2	Penta-valent-3		
3	PCV1		
4	PCV3		
5	OPV1		
6	OPV3		
7	MCV		
8	Fully immunized		

Data collector name _____signature _____date__/_____/_____

Super visor name _____ signature _____date__/_____/_____

Address of the principal evaluator

Phone number: 0946243869

Gmail: mesafintworetaw8@gmail.com

የመግባቢያ ሰነድ

የመግባቢያ ሰነድ ለእናቶች /ለተንከባካቢዎች

ክብርት /ክቡር _____

ጤና ይስጥልኝ! የኔ ስም _____ይባላል በጎንደር ከተማ በህፃናት ክትባት ፕሮግራም ላይ የክትባት ሂደት ከሚገመግሙት ቡድን አባላት መካከል አንዱነኝ፡፡ ግምገማው ከጂማ ዩኒቨርሲቲ ጋር በትብብር የሚከናወንነው፡፡

አንደሚታወቀው ጥራት ያለው የክትባት አገልግሎት መስጠት የተጠቃሚውን አርካታ ይጨምራል፡፡ እኛም አሁን ማከናወን ምንፈልገው ጥራት ያለው ክትባት አገልግሎት ከመሻት አኳያ በሂደቱ ውስጥ ያሉ ጥሩ ተሞክሮችና ድክመቶችን ገምግሞ ለመለየት ነው፡፡ በመሆኑም ከናንተ ያገኘነው በዐይናችን ያየነው የጥናት ውጤት አጠቃለን አገልግሎቱን ለሚሰጡ አካላት በመስጠት የበለጠ ጥራቱ እንዲሻሻል ለማስቻል ነው፡፡ የአርሶዎን ሚስጥር ለመጠበቅ የአርሶዎን ስምና አጠቃላ የሰጡኝን መረጃ ግለሰባዊ አድርጌ አልመዘግብም ፡፡ ፍቃደኛ ከሆኑ የተወሰኑ ጥያቄዎችን በክትባት አገልግሎት ዙሪያ የአርሶን አርካታ በተመለከተ እጠይቃለሁ፡፡ አባክዎን ለመቀጠል ያስችለኝ ዘንድ ፍቃደኝነትዎን ይግለፁልኝ፡፡

1. **ፍቃደኛ ነኝ**
2. **ፍቃደኛ አይደለሁም**

ለመረጃ ሰብሳቢው ማስታወሻ

መግቢያ ሰነዱ ተነቦ ተጠያቂው መረጃ ለመስጠት ፍቃደኛ ከሆነ ወደ ሚቀጥለው ገፅ ጥያቄውን ይቀጥሉ ፍቃደኛ ካልሆኑ አመስግነው ለሚቀጥለው ተጠያቂ መግባቢያ ሰነዱን ያንብቡ፡፡

የመረጃ ሰብሳቢው ስም _____ፊርማ _____ቀን _____

የሱፐርቫይዘሩ ስም _____-ፊርማ _____ቀን _____

ከተጠቃሚዎች መረጃ መሰብሰቢያ ቅፅ

የጤና ተቋሙ ስም _____

ዲሞግራፊክ መረጃ

1. የእናት ወይም የተንከባካቢ እድሜ_____
2. ፆታ 1. ወንድ 2. ሴት
3. የጋብቻ ሁኔታ 1. ያገባ/ች 2. ያላገባ/ች 3. የፈታ/ች 4. የሞተችበት/ባት 5. ሌላካለይጥቀሱ

II. ሶሺዮ -ኢኮኖሚክስ መረጃ

1. የትምህርት ደረጃ 1. ማንበብና መፃፍየ ማይችል/ትችል 2. ማንበብና መፃፍየሚችል/ትችል 3. የመጀመርያደረጃ (7ኛና 8 ኛ) 4.ሁለተኛደረጃ(9-12) 5.ድኘሎማ 6.ድግሪ
2. የስራ ሁኔታ 1. በመንግስት 2. መንግስታዊ ያልሆነ ድርጅት 3. በግል
3. የመንግስት ሰራተኛ ከሆኑ በየትኛው የስራ ዘርፍ . 1. አስተዳዳሪ 2. ባለሙያ
   3.መለስተኛና ተባባሪ ባለሙያ 4. የፅህፈት ባለሙያ 5. የድጋፍና ፅዳት ሰራተኛ
4. በግል የስራ ዘርፍ ላይ ከተሰማሩ 1. ግብርና 2. ነጋዴ 3 በአደጥበብ ባለሙያ4. ጉልበት ሰራተኛ 5. የቤት እመቤት
5. የሚከተሉት የአምነት ዘርፍ 1 ኦርቶዶክስ 2. ሙስሊም3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላካለይጥቀሱ
6. ብሔር 1.አማራ2. ኦሮሞ 3.ትግሬ 4.አገው 5. ሌላከሆነይጥቀሱ _____

IIIየጤናአገልግሎትመረጃ

1. የክትባት አገልግሎት ማግኛ ቦታ ከቤቶ ያለው ርቀት በደቂቃ ስንት ይሆናል፡፡_____

2. በክትባት አገልግሎት ማግኛ ቦታ ክትባቱን ለማገኘት ያባከኑት ጊዜ በደቂቃ ስንትይሆናል፡፡?_____

3. ክትባት የሚሰጥበት ሰዐት ለእርሶምቹና ተስማሚነው፡፡ 1. አዎ 2. አይደለም

4. ክትባት የሚሰጥበት ቀን ለእርሶዎ ምቹና ተስማሚነው፡፡ 1. አዎ 2.አይደለም

5. የክትባት አገልግሎቱን ያገኙት ቀድሞ በተሰጦት ቀጠሮ መሰረት ነው? 1. አዎ 2. አይደለም

6. አይደለም ካሉ ለምድንነው ? 1. በግልችግር 2. አገልግሎቱ ባለመኖሩ

7. ክትባት ለልጆዎ የሰጠው ሰው ስለሰጠው ክትባት ጥቅምና ጉዳት ነግሮዎታል ? 1. አዎ 2. አልነገረኝም

የደንበኞች አገልግሎት ዕርካታን በተመለከተ

በክትባት አገልግሎቱ ያገኙትን የእርካታ መጠን ለሚከተሉት ጥያቄዎችያመልክቱ፡፡

ሰንጠረዥ1: የደንበኞች አገልግሎት አርካታ መለኪያ ጥያቄ የህፃናት ክትባት ፕሮግራም ግምገማ ጎንደር ከተማ፣ 2017

ተ.ቁ	መለኪያ	በጣም አልረካሁም (1)	አልረካሁም (2)	አልወሰንም (3)	እረክቻለሁ (4)	በጣም እረክቻለሁ (5)
1.	የክትባት አገልግሎቱን ባለፈው ቀጠሮ መሰረት በማገኘቶ ምን ያህል ረክተዋል?	1	2	3	4	5
2.	የክትባት አገልግሎት በሚሰጥበት ሰዓት ምን ያህል ረክተዋል ?	1	2	3	4	5
3.	በክትባት በአገልግሎት መስጫ ቦታ ቆይታዎ ምን ያህል	1	2	3	4	5

	ረክተዋል ?					
4.	በክትባት አገልግሎት መስጫ ክፍሉ ፅዳት ምን ያህል ረክተዋል ?	1	2	3	4	5
5.	በአጠቃላይ በተሰጠው ክትባት አገልግሎት ምን ያህልረክተዋል ?	1	2	3	4	5
6.	የክትባት ማቢያው ከቤተዎ ባለው ርቀት ምን ያህል ረክተዋል?	1	2	3	4	5
7.	የክትባት አገልግሎቱ በሚሰጥበት ሰዓት በአገልግሎት ሰጪዎች መኖር ምን ያህልረክተዋል	1	2	3	4	5
8.	በክትባት አገልግሎት ሰጪዎች ሰላምታ ወይም ቀረቤታ ምን ያህልረክተዋል?	1	2	3	4	5
9.	በከታቢዎች እውቀት ወይም ችሎታ ምን ያህል ረክተዋል ?	1	2	3	4	5
10.	የክትባት አገልግሎት በሚሰጥበት ቀን ምን ያህል ረክተዋል ?	1	2	3	4	5

ለማጠቃለያ፡ በአገልግሎት አሰጣጡ ላይ የሚያስተላልፉት መልክት ወይም አስተያየት ይኖሮዎታል? _____

የመረጃ ሰብሳቢው ስም _____ፊርማ _____ቀን

የሱፐርቫይዘሩስም _____ፊርማ _____ቀን