

EVALUATION OF QUALITY IN CHILD IMMUNIZATION PROGRAM IN
GODERE WOREDA - GAMBELLA REGION, 2014

THESIS SUBMITTED TO COLLEGE OF PUBLIC HEALTH DEPARTMENT
OF HEALTH PLANNING AND HEALTH SERVICE MANAGEMENT,
MONITORING AND EVALUATION UNIT, FOR PARTIAL FULFILLMENT
OF MASTER DEGREE IN HEALTH MONITORING AND EVALUATION

BY JEMAL HUSSEN (BSc)

JIMMA, ETHIOPIA
SEP. 2014

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Abstract

Background: In Ethiopia, EPI program have been started in 1980 as routine immunization service. However, in 2012, fully vaccinated children, completing immunizations on time and with appropriate interval between doses were 18.6%. Immunization service provision to be effective for long run it is important that giving attention to quality of vaccination service. The aim of this evaluation was, therefore, to identify the point where quality failure would occur with in process and to determining the quality of program.

Method: Case study with qualitative and quantitative methods was used to evaluate the quality in child immunization program. The study population were 189 caregivers, 11 health facilities, 12 health workers, 22 caregiver-provider interactions, immunization registration books and charts. The data were collected by in-depth-interview, document review, observation and survey. The quantitative data was analyzed by using SPSS window version 16. Bivariate (un-adjusted OR) and multivariate (AOR) analysis techniques were used to determine factors that may contribute to caregivers' satisfaction. Qualitative data was analyzed by using Within-case analysis technique. The overall quality of program was determined based on pre-set judgmental value.

Results: The judgmental level of availability dimension was good. Even if it was good, there were shortage of some resources. Health facilities with functional refrigerator 3 (27%), with incinerator were 6 (54.5%) and all of HFs had no water. Compliance dimension was the area that face many constraints. There was no supervision in all health facilities, and immunized children were not monitored in nine health facilities. The average dropout rate of DPT-HipB-Hib1-3 was 20.8% and DPT-HipB-Hib3 and MCV coverage were 47% and 38% respectively. Very good achievement score recorded in acceptability dimension. The mean caregivers' satisfaction lie between undecided(3) and satisfied(4). Caregivers satisfaction on overall service provided affected by service available on appointment date and waiting time. Caregivers that receive service based on previous appointment had 3 times probability of being satisfied than not and Caregivers that wait < 30 minutes had 4 times probability of being satisfied than those wait >30 minutes on overall service provided.

Conclusion and Recommendations: The quality of child immunization program was good. Even if it was good, the program can achieve more by availing water and making supportive supervision, and monitoring immunized child in each health facilities. Providers should strive to reduce caregivers waiting time and provide service based on previous appointment.

Key words: Availability, compliance, acceptability, satisfaction, delivery and content quality

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Order of presentation not show their importance!!

Acronyms and Abbreviations

BCG	Bacilli Chalmette Guerin
CDC	Communicable Disease Control
DPT	Diphtheria, Pertussis, Tetanus
EDHS	Ethiopia Demographic and Health Survey
EPI	Expanded Program on Immunization
FMOH	Federal Ministry of Health
HC	Health Center
Hep B	Hepatitis B
HEW	Health Extension Worker
Hib	Homophiles influenza type B
HF	Health Facility
HP	Health Post
HW	Health Worker
MCH	Maternal and Child Health
MCV	Measles-Containing Vaccine
NNT	Neo-Natal Tetanus
OPV	Oral Polio Vaccine
PCV	Pneumococcal Conjugated Vaccine
SSA	Sub Sahara Africa
U5MR	Under-Five Mortality Rate
UN	United Nation
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VVM	Vaccine Vial Monitoring
WHO	World Health Organization

Operational Definitions

Access: The measure of the number of under-one children who are received DPT-HepB-Hib1

Appropriately registered: Immunized child registration contain at least date of birth and date of registration

Caregiver satisfaction: The measure of caregivers are weather satisfied or dissatisfied after interaction with child immunization service

Cold chain: The system of storage and transportation of the vaccine at cold condition recommended by manufacturer

Dropout rate: The rate difference between the first and third dose of DPT-HepB-Hib vaccine out of hundred

Fully immunized: Children who received all basic antigens including BCG, MCV, and three doses of DPT-HepB-Hib, PCV and OPV excluding polio vaccine given before six week

Quality: The measure of caregiver expectation on service delivered and conformance of program design, and out come with NEPI guideline recommendation

Standard: Quantitative measure with cutoff point that specifies what is good or less so

Timeliness of report: Report send to HC before two days of next month and to woreda health office until the first day of next month

Utilization: The measure of the number of children who receive DPT-HepB-Hib3

Woreda: Geographical classification of area within zone, has the same meaning to district

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Chapter one: Introduction

1.1. Background

Currently vaccine preventable diseases are the major cause of under-five morbidity and mortality. In 2012, globally 5.2 million children were died and among these 29% (1.5 million) were vaccine preventable deaths(1). Even though, under-five mortality rate fall in richer developing regions, the majority of deaths were in the poorest part of the world, Sub-Saharan Africa and Southern Asia. In 2011, these two regions account 83% (5.7 million) of 6.9 million under-five children deaths of world. In sub-Saharan Africa, 1 out of 9 children die before reaching age five. This figure 16 time greater than the average in developed regions (1 out of 152) and two fold of that in Southern Asia (1 out of 16), and was highest compared to Central and Western Africa(2).

World health organization launched routine childhood immunization program in 1974 to reduce child morbidity and mortality due to six vaccine preventable diseases. However, there are number of children under one year of age who did not receive recommended antigens. In 2012 under one year children who did not receive DPT3 vaccine worldwide account 22.5 million, among these more than seventy percent of unvaccinated children were live in ten countries(1); Ethiopia was one of those country that contribute for un immunized children.

In Ethiopia under-five mortality has decreased from 123 deaths per 1,000 live births in 2005 to the 88 deaths per 1,000 live births in 2011(3). Even though in 2012 under five mortality rate show great progress and reach 68 deaths per 1000 live births(1), it was large and demand great endeavor for future progress. The under-five mortality rate varies dramatically by regional states of country. Before ten-years of 2011 survey the death rate range from 53 per 1,000 live births in Addis Ababa to 169 per 1,000 live births in Benishangul Gumuz region(4). This report show that problem was more sever in underprivileged regions than other part of country.

To reduce child mortality, countries in the world use different strategies, among these, immunization is the proven cost-effective one and save a large proportion of children against vaccine-preventable diseases; as a result, many countries eliminated or significantly reduced related morbidity and mortality(1,2,4).

1.2. Statement of problems

Immunization to be effective for the future as a major disease control and prevention strategy it is important to give attention to quality of vaccination service. However, study conducted in three Asian and two African countries including Ethiopia, there were a number of adverse constraints in quality of vaccination service provided especially at the interface of vaccinators and users(5). Similarly, according to study conducted in 27 countries, all countries had predicament in their system of monitoring: these include child immunization monitoring charts were not used consistently, and vaccine stock, immunization service supplies and achievement reports timeliness and completeness were not monitored(6).

Caregiver acceptance and confidence on immunization service were clearly salient factors that dictate immunization service uptake. Professional experience and training in service provision and promotional communication increase caregivers acceptance and confidence that lead to improved vaccination utilization(7). However, in Ethiopia in adequateness of trained health care worker was one of the problem at health facilities level and almost all health facilities were hold by only one health care worker to provide all maternal and child health (MCH) service (8,9).

Coverage with third dose of diphtheria-tetanus pertussis vaccine (DPT3) and MCV by 1 year of age accepted as indicator for measuring EPI performance. In 2012, global DPT3 and MCV coverage were 83% and 84% respectively. Africa wadded behind with DPT3 and MCV coverage of 72% and 73% respectively(1). The coverage especially in sub-Saharan Africa was unpleasant and insufficient compared with World Health Organization recommended coverage, 90% of DPT3 and MCV nationally and 80% of DPT3 and MCV in all district.

In Ethiopia in a year 2012, DPT-HepB-Hib3 coverage was 61% (1) with the regional coverage range from 23% in Afar to 96.4% in Addis Ababa. MCV national coverage was 66% with regional coverage ranges from 34% in Afar to 96% in Addis Ababa. Fully vaccinated children in 1 year age and with recommended interval between doses were 18.6% (10). In the study area in 2013, DPT-HepB-Hib3 coverage was 69.5% and first dose MCV coverage was 49.1%(11). Accordingly, in the study area utilization of immunization service (DPT-HepB-Hib3) were lower than WHO recommended coverage.

Dropout between the first and third dose of DPT-HipB-Hib is the most acceptable indicator to measure service continuity and presence of follow up. In Ethiopia in 2012, dropout rate was 25.6%, and regional coverage range 2.6% in Addis to 63.8% in Somali. Only Tigray region and Addis Ababa city were within acceptable threshold, less than 10% (10). In the study area it was 16 %(11). Accordingly, majority of regions including the study area had dropout rates higher than 10% and it may indicate that presence of quality problem with in program.

These shortcomings were hindering from sustainability of immunization program and promoting growth of non-immunized and partially immunized children. To safeguard continued quality operation and achievement of immunization program it is essential that these difficulties must be addressed(5).

The aim of this evaluation was, therefore, to identify the point where quality failure would occur within process and to determine quality of program based on pre-set judgmental value.

1.3. The Purpose of Evaluation

Evaluation is a crucial part of result based management(12) and it provide clear and accurate information on result achieved by an intervention. The principal purpose of this evaluation was; therefore, to help to increase quality of program by providing valid and accurate information. The information is crucial:

- To implementers, woreda health office and regional health office, support implementation with accurate, and evidence based report about quality of program components that require change and create opportunity to show and reflect organizational good practice that increase staff motivation. Moreover, create opportunity of getting feedback from utilizer to accustom program design with their interest.
- To non-governmental organizations, WHO regional office and CORE group, that support program important to show the gaps and help them to fill the gaps with in program.

Chapter two: Engaged Stakeholders and Description of Immunization Program

2.1. Program stakeholders

Initially, “working group” should identify stakeholders or interested parties who affect or be affected by the program(13), in light of that, we include potential stakeholders that are not primarily working at health sector.

The major stakeholders that identified during evaluability assessment were, Jimma University, Majang zone health desk, Gambella district core group, woreda administration office, women, child, and youth affair, kebele administrators, Metti and Dunchai health centers health care providers, HEWs and religious and natural leaders.

The stakeholders were provided us information on program performance, and they identified and prioritized the area of program that was evaluated. Moreover, they were participated on indicator development and assigning value for each indicator and prepared cut-off point for level of program quality judgment.

2.1.1. Communication with stakeholders

Face to face communication was done with health office and health centers head, program managers and core group representative of Woreda. Phone contact was done with zonal health desk head about priority area that was evaluated, their contribution and how to utilize the results of evaluation.

2.1.2. Stakeholder analysis matrix

Stakeholder analysis was performed to knowing who were the key actors, their role in evaluation and program, their interests and level of important on evaluation and program(13). In light of that, analysis was important to implementers to interact more effectively with stakeholder, and enable evaluator before carryout evaluation to detect and act to prevent potential misunderstandings and/or opposition to implementation of evaluation.

Table 1: The stakeholders' analysis matrix of immunization program evaluation at Godere woreda, 2014

Actors/interested parties	Roles in the program	Interests on evaluation	Roles in Evaluation	Level of importance
Zonal Health Office	- Monitoring & Evaluation, planning and managing - Supportive supervision	-To get information about weakness and strength	-Source of information	High
Woreda Health office	-Implementing -Coordinate and facilitate -Planning -Supportive supervision and monitoring	-To learning from experience -To know the gap	-Decision making & information Source	High
HWs& HEWs	-Service delivery(implementation) -Supportive supervision and facilitation	-To know gap for improvement	-Source of information	High
Woreda administration	-Facilitate -Create supportive environment	-To know equitability of access	-Participating	Medium
Kebelle council	-Planning and monitoring -Facilitate	-To know the level of implementation	-Facilitate -Source of information	Medium
Religious/natural leaders	-Facilitation - Create supportive environment	-To know the level of implementation	-Participation	Medium
Core group	-Material and technical support to reach hard to reach area -Give training to natural leaders -Prepare integrated plan	-To know gap for filling	- Participation	Medium
Women and Child affaire	-Community mobilization -Create supportive environment	-To know the level of achievement	-Source of information	Medium

2.2. Program Goal and Objectives

According to Ethiopia national expanded program on immunization comprehensive multi-year plan 2011-2015(8), the goal and objectives of child immunization program described as follow:

2.2.1. Program goal at national level

The goal of child immunization program is contributing to reduction of child morbidity and mortality by providing quality immunization service to all under one-year children.

2.2.2. Godere woreda 2013/14 major immunization program objectives

- To achieve 95% DPT-HepB-Hib1 coverage at the end of the year
- To achieve 85% MCV coverage at the end of the year

- To achieve 85% BCG coverage at the end of the year
- To achieve 85% DPT-HepB-Hib3 coverage at the end of the year(14)

2.3. The major program strategies

The program goal has implemented with two main strategies, namely:

- Static service: Is providing integration with other maternal and child health service in health facilities.
- Outreach service: The outreach activity carried out routinely that is compulsory for the target in certain area where immunization service is not accessible and vaccination coverage is low.

2.4. Program Resources and Activities

2.4.1. Program Resources

Resource refer to human and financial input, physical facilities, equipment and guidelines that are prominent ingredient of child immunization program and enable vaccination service to be provided(15). According to NEPI guideline, the resources needed are; refrigerator, vaccine carrier, syringe, vaccine by type, trained provider, EPI monitoring chart, reporting format, immunization card, safety box, dropper, diluent necessary for BCG and MCV.

2.4.2. Program Activities

Refer to the interaction of multiple input with technology to achieve the goal of child immunization program(15). According to NEPI guideline, program activities are:

- Service delivery, registering and reporting
- Cold chain maintaining
- Advocacy and social mobilization
- Program management

2.4.3. Program out come

Include immunization of MCV, DPT-HepB-Hib3, dropout rate between first and third dose of DPT-HepB-Hib vaccine and level of caregivers satisfaction on service provided.

2.5. Program logic model

Assumption about resources and activities, and how those are interact to realizing the outcome referred to as program theory(16). A logic model is one of the tools important to describing program theory. Accordingly, theory of child immunization program presented as follow:

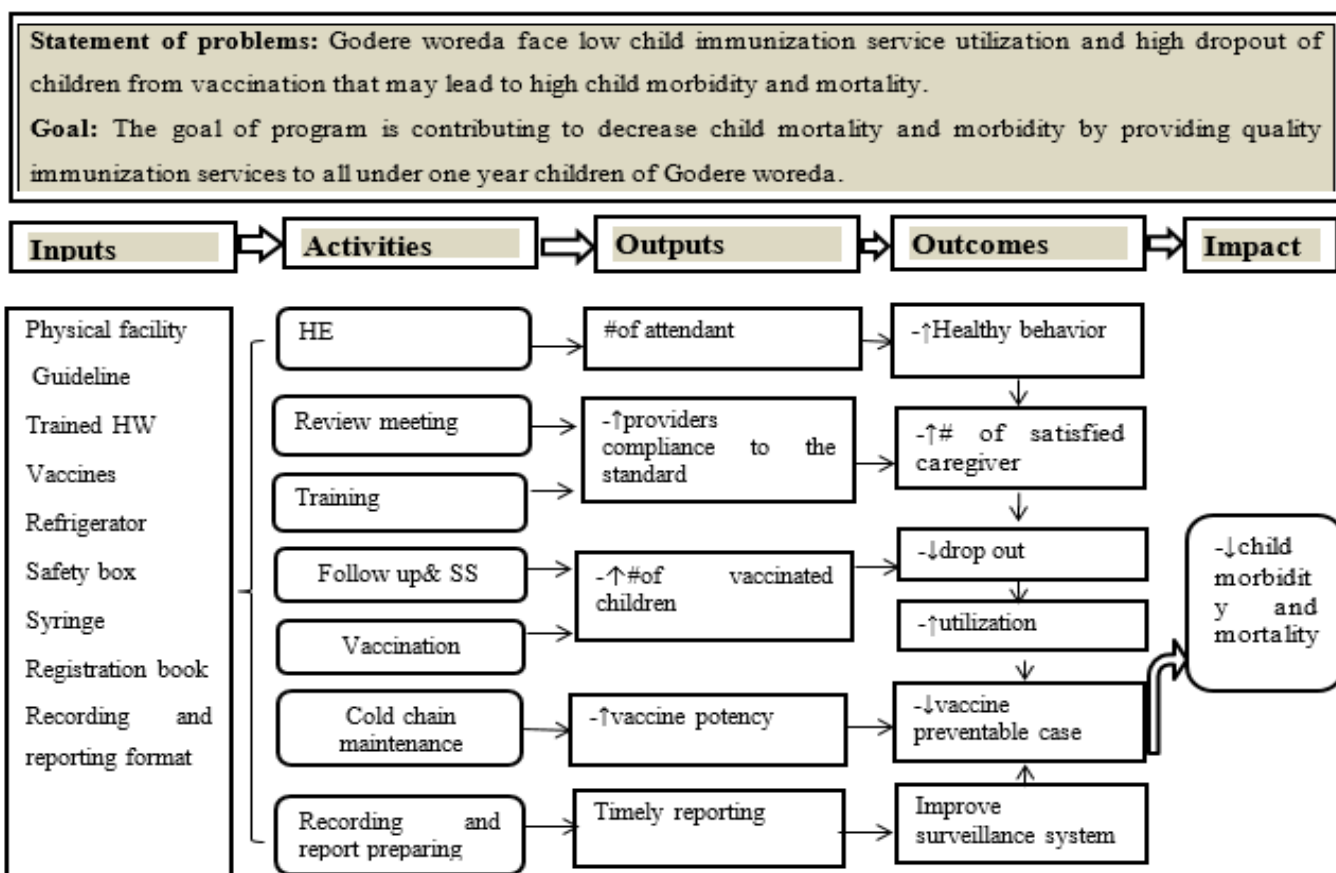


Figure 1: Logic model of child immunization program at Godere woreda, 2014

2.6. Stage of program development

2.6.1. Global situation

Expanded Program of Immunization established in 1974 by WHO that build on smallpox eradication program after the program was success, to ensure that all children in the world to be benefited from six life-saving antigens(17).

In 1990, average coverage of six antigens was more than 70%. As a result of increased utilization of service, incidence and prevalence of diseases were fall melodramatically(17).

In 1990s, service utilization leveled off and reduced in some countries. Even if progress was deteriorate, more than two million deaths were prevented in the year 2000 by MCV and DPT immunizations alone(17). Now a day, globally children protected from 13 vaccine-preventable diseases and will avert two to three million deaths per year(1)

2.6.2. Ethiopia situation

Immunization program in Ethiopia starts with the provision of vaccination against six vaccine preventable disease, BCG for tuberculosis, MCV for measles, DPT for diphtheria, pertussis and tetanus and OPV for polio in 1980 to all under two year children. At the inception, routine immunization service provided with the objective of coverage 10% increment annually to achieve 100% in the year 1990. However, in 1986, the objective was reformed into 75% coverage of under one-year children, but progress was insignificant. Because of progress was insignificant, reaching every district (RED) approach has been implemented since 2004 to strengthen districts that have poor utilization and high dropout rate of children from immunization. Due to this, the program showed marked improvement in utilization (8).

In 2007 immunization service, expand to eight vaccine preventable disease by incorporating HepB and Hib antigens by formulating the previous DPT vaccine in to DPT- HepB-Hib. In the present time child immunization program provide service against ten vaccine preventable disease by incorporating PCV in 2012 and Rotarix in 2013(15).

Even if it was effective strategy to prevent child hood disease, the cost of vaccines was too expensive. Majority of vaccines cost including DPT-HepB-Hib and newly introduced vaccines, PCV and Rotarix financed by GAVI and the cost of traditional vaccines including MCV, syringes, safety boxes and 50% of OPV covered by UNICEF. Ethiopian government have covered the cost of BCG and 50% of OPV by mobilizing resource from partners and salary of government employee. WHO strengthen program by providing support for surveillance of vaccine preventable disease and monitoring program performance (8).

Starting from the inception, service have provided in static service in each health facility integration with other maternal and child health service and outreach service have provided to targets that are far from health facility. Supplementary immunization activity (SIA) for measles immunization have provided, as strategy to those districts have low achievement in measles immunization and mop-up strategy for to those districts have low achievement in OPV vaccination(8).

After doing great endeavor on program, integration with other interventions, U5MR reduced from 1990 level of 123(3) to 68 per 1000 live births in 2012(1). Moreover, the evaluability of child immunization program in the study area were determined during evaluability assessment.

Chapter three: Literature Review

3.1. Input/Availability dimension

Availability of trained health workers are one of the necessary input to provide quality immunization service. However according to FMOH-2010 report, in adequateness of trained health care worker was one of the problems at health facilities level and almost all health facilities were hold by only one health care worker to provide all MCH services(8). 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 and management(18). Moreover, the study conducted in Thailand indicate that one out of five health care workers worked in immunization unit not trained on EPI and cold chain maintenance(19). The finding of this study confirm that knowledge and practice of immunization service provider were significant factors in vaccine failure and had contribution to effectiveness of immunization service by protecting vaccine potency. Similarly, study conducted in Ghana show that almost half of health facilities had no experienced health care workers in light of that many health facilities had out dated and VVM changed vaccine vials with in their refrigerator (18).

According to NEPI guideline, availability of functional cold chain with regular and un-interrupted vaccine and related supply is one of the necessary components of child immunization program (8). However, 2012 immunization survey show that, one out of five health posts and one out of four health centers not get vaccine once per a month, and half of health posts and 2.1% of health centers had not refrigerator. 36.6% of Health posts with un functional refrigerator due to shortage of kerosene and 33.0% of health centers with un functional refrigerator due to lack of maintenance(10). Similarly, evaluation conducted in 2011 in Amara region, the case of Sekota zuria woreda; 16% of HCs had no functional cold chain system(9).

According to national immunization guideline, immunization in practice guideline is necessary and must avail in working area. But the evaluation conducted in Ghana, many of health care workers that provide immunization service have not reference book for service provision and most of health workers that work on cold chain unit have not guideline to monitor dropout rate and vaccine wastage (18).

3.2. Compliance dimension

Maintaining cold chain is important to protect vaccine failure or vaccine to have good potency. However, the study conducted in Thailand indicate that half of primary health care units had no a temperature monitoring chart, as a result, temperature inside refrigerator not monitored twice in a day(19). Yet, WHO recommend that refrigerator that used to store vaccine must monitored two times per day.

NEPI guideline recommend that health posts every fifteen and health centers every month must supervised by immediate higher level of health system organization(8). Accordingly, the evaluation conducted in Oromia region, in case of Toke Kutaye woreda indicate that supportive supervision was conducted in each health post and health center that were found in the woreda. To share knowledge and learn from strength/experience, they execute monthly performance review meeting with all health facilities in the woreda health office (9). This study also describe that health care workers and each kebele representatives made meetings once in every fifteen day, as a result, they scored good achievement result.

According to Ethiopian national immunization survey 2012, DPT-HepB-Hib1, DPT-HepB-Hib3 and MCV coverage's were 80%, 65.7% and 68.2% respectively(10). Similarly, the study conducted in Kombolcha district show that DPT-HepB-Hib1, DPT-HepB-Hib3 and MCV coverage's were 73.8% (512), 33.1% (230) and 40.3% (280) respectively(20). However, the coverage that WHO recommended was above 95% DPT-HepB-Hib1 and 80% DPT-HepB-Hib3 and MCV nationally and 90% in all district(1).

According to 2012 Ethiopian national immunization survey, the antigens that given simultaneously had difference in achievement. DPT-HepB-Hib1, DPT-HepB-Hib2 and DPT-HepB-Hib3 coverage's were 80%, 69.9% and 65.7%. However, OPV1, OPV2 and OPV3 coverage's were 90.1%, 82.3%, and 70.5% respectively (10). Study conducted in Ahmedab the achievement of DPT & Hep-B antigen, they given simultaneously was not equal(21).

Dropout between the first and third doses of DPT-HipB-Hib is the most acceptable indicator to measure service continuity and presence of follow up(8). According to 2012 Ethiopian national immunization survey, dropout rate was 25.6% nationally with regional coverage range 2.6% in Addis Ababa to 63.8% in Somali. Only Tigray region and Addis Ababa city were within WHO and FMOH recommended threshold, less than 10%(1, 10).

3.3. Acceptability dimension/caregiver satisfaction and affecting factors/

Caregivers are primary customer of the immunization program, therefore it is important to measure their expectation and pursuit to meet those expectation during service provision(22). Their expectation mainly affected by waiting time to get service and distance them travel. According to the study conducted in Bangladesh to study clients satisfaction level on service provided, waiting time to get service was one of indicators to measure client satisfaction. The average waiting time of clients to get service was 30 minutes. Most of clients were satisfied on waiting time to get service, only 28% were dissatisfied. On variable satisfaction on courtesy/friendliness of providers, also most of clients were satisfied (23). Similarly, the study conducted in India as sighted on grey literatures collected by center for clinical governance research in health, provider's behaviors had greater effect on client satisfaction next to availability of vaccine(24).

The gray literature collected by Favin and others indicate that, when caregivers were miss work, travel long distance and wait for long time were the impetus of denying to come back to service (25,21,26). These studies show that, distance and waiting time were important cause of partial immunization or not immunized. As Favin sited, study conducted in Senegal show that most of children that live within ten kilometer distance from health facilities were complete vaccination, however only few of them complete vaccination if they live in far from ten kilometer from health facilities. Similarly study conducted in Mozambique confirm that the most common reason for vaccination dropout was places of immunization were too far(26). Similarly, the study conducted in Ahmedab indicate that the most common reasons for partial or not immunized were parents perception regarding immunization necessity(39%), fear (20.4%), immunization priority (16.7%), child sick (14.8%)(20). Lack of immunization had a strong association with mortality in under-five children(26,27).

3.4. Theoretical framework of evaluation

Without guidance from a conceptual frame work, it is difficult for an evaluator to know external environment appropriate for investigation(28). In this evaluation, Donabedian model of quality measure with modification was applied. According to Donabedian, there are three components of program important to measure quality within, structure, process and outcome. The Model was developed to assess clinical practices. However, when the model is used to evaluate program or activities rather than clinical practices, it may work as it is or may

perform with some modification(29). Hence, to fit the model with evaluation of child immunization program, we modified as it is:

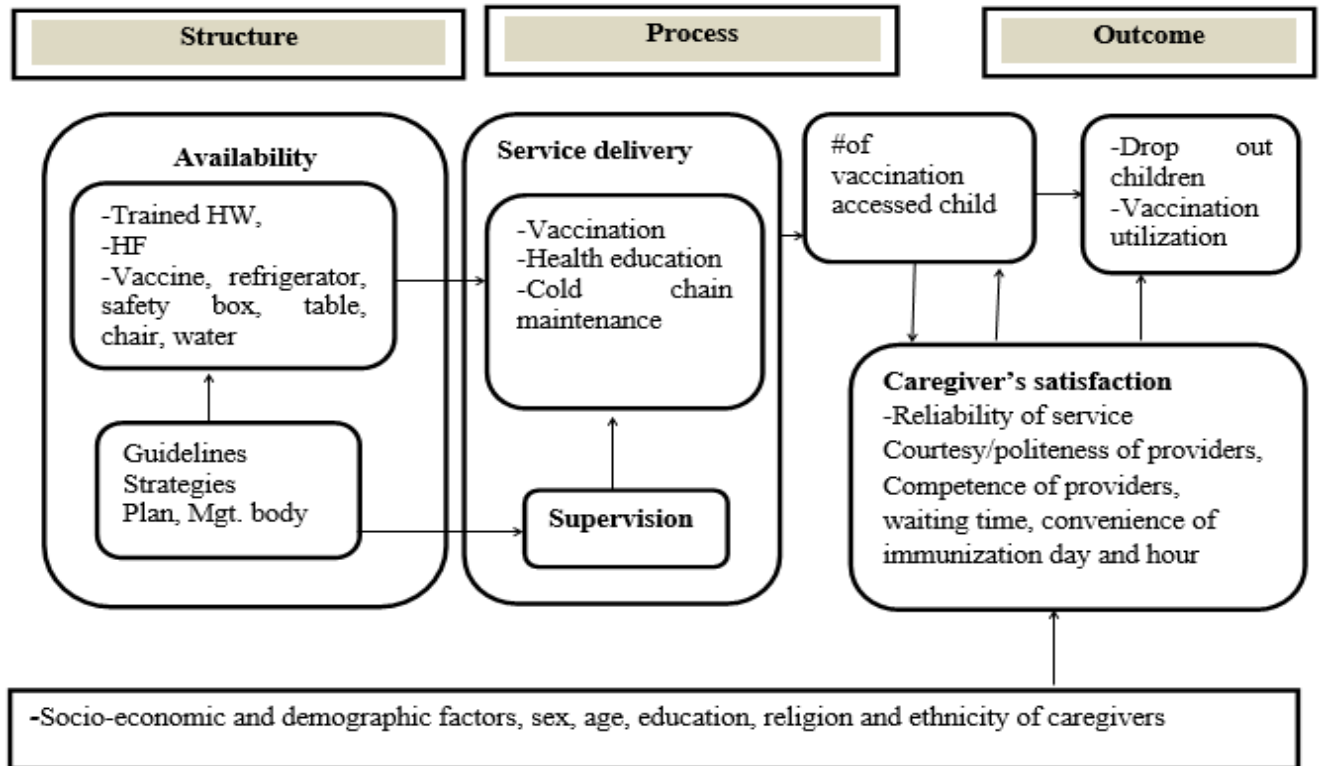


Figure 2: Conceptual framework of quality of immunization program valuation at Godere woreda, 2014

Access: The measure of the number of under-one children who are received DPT-HepB-Hib1
Adapted from A. Donabedian quality assurance in health care, 2003 edition.

Chapter four: Evaluation Question and Objective

4.1. Evaluation question

4.1.1. General Evaluation question

What is the quality of child immunization program in Godere woreda, Gambella region, 2014?

4.1.2. Specific Evaluation questions

1. Are there the required resources to perform child immunization activity? If not, why?
2. Is child immunization program has implemented according to the NEPI guideline? If not, why?
3. Are caregivers satisfied with child immunization service provided? If not, why?

4.2. Objective

4.2.1. General Evaluation objective

To determine quality of child immunization program in Godere woreda, Gambella region, 2014

4.2.2. Specific Evaluation objectives

1. To assess the availability of resources for child immunization program implementation.
2. To assess the compliance of child immunization program with the NEPI guideline.
3. To determine the level of caregiver satisfaction on child immunization service provided.
4. To determine factors that have contribution to caregiver satisfaction in immunization service provided.

Chapter five: Evaluation Method

5.1 Study Area and Period

Study Area

Majang zone is one of the three zones of Gambella region and found 310 Km away from Gambella regional town. Under Majang zone, there are two woredas, and Godere woreda is one of the two. It is bounded by Mangashi woreda at north, Yeki woreda at south, Guraferda woreda and Dimma woreda at east, and Andracha woreda at west with weyna-dega climatic character. The woreda administratively structured in twelve rural and two urban Kebelles. The major ethnic groups live in woreda are Majang, Amara and Kaficho, and economically they depend on farming cash crop like coffee and fruit. The woreda has 51354 total population with 11164 households. Among the total population 1104 are under one year children estimated 2.1% of total population(30).

In the woreda, there are two governmental health centers, Metti and Dunchai health center, fourteen health posts, two medium and eight lower privet clinics and a privet drug vender; however, immunization service have provided only in governmental health facilities. Health workers that work in government health facilities are seventy six with thirty six administrative and supporting staffs(11).

Study Period

The evaluation was conducted from Jun 15 to July 17, 2014.

5.2. Evaluation approach

In this evaluation, formative evaluation approach was used. It focus on gathering information about the quality of program activity and outcome, not just level or amount of attainment(31) with purpose of strengthen or improve program by examining the input, the delivery of program or technology, quality of its implementation, and organizational context(32).

5.3. Focus of evaluation

Focusing the evaluation based up on assumptions that the entire program does not necessary or cannot be evaluated at a point of time. Rather, the right evaluation of program depend on what question is being asked, who is asking, and what will be done with the information(33). Therefore, the scope and depth of any program evaluation is dependent on program and stakeholder priorities, available resource; including financial resource, contractor, and time to the evaluation(34).

Depending on the purpose of this evaluation, focuses are:

- Delivery quality: Involve looking at how something happen rather than examining output or outcome((22,35).
- Content quality: Conformity quality of design or performance with pre-set standard, guideline (22)

5.4. Evaluation Design

Each strategy/design has peculiar advantage and dis advantage, depending on three conditions: 1) The type of study question, 2) The investigator ability to control over actual behavioral or event, and 3) Focus on contemporary as opposed to historical phenomena(36).

Controlled experiment, subjects were randomly assigned to intervention, is desirable but most of time infeasible and overly burdensome, especially in social setting, therefore, instead non-experimental method is used. Non-experimental method is less intrusive and sometimes less costly than controlled experiment, but its validity rest on particular assumptions that are often difficult to test. It is therefore important to find empirical evidence to assess the likelihood that a given method applied in a given context will yield unbiased estimate(37).

Non-experimental study design concerned with describing the general characteristics of the population and environment of interest. These type of design is the most commonly used to all type of evaluation, because it is the easiest to perform and un expensive(38). Case study is one of non-experimental design that preferred when posed by how or why question, the investigator has ability to control over actual behavioral events, and it focus on a contemporary phenomenon with in real life context. It used to integrate quantitative and qualitative information from a variety of sources to give an in-depth picture of the implemented program, organizational context and matrix, and it allow in depth understanding of how and why program operation related to outcome(16,36).

Evidence from the above literatures, Case study design with both qualitative and quantitative data collection methods was used as strategy to evaluate the quality of child immunization program.

5.5. Evaluation Dimensions

Availability Dimension

The dimension of availability was used to assess availability of professional and technical resources that are important for implementation of immunization program.

Compliance Dimension

The dimension of Compliance was used to assess content/conformity quality of program performance with pre-set standard of design and outcome or immunization guideline.

Acceptability Dimension/caregivers satisfaction/

Acceptability of service delivery design and input arrangement in caregiver's expectation toward service provided can evaluate in terms of caregivers satisfaction(22) In this dimension, delivery quality in caregiver's perspective was measured. According to WHO-2000, Caregivers satisfaction evaluation comprise and answer specific evaluation questions relating to reliability and responsiveness of service, courtesy/politeness and competence of provider and security of records(39). Conducting caregivers satisfaction help to: Identify opportunities for program/service improvement; Identify what caregivers want as opposed to what staff think; and provide feedback to implementers about program effectiveness(40).

5.6. Variables and Indicators

Table 2: List of variables and indicators for immunization program evaluation at Godere woreda, 2014

Dimensions	Indicators
Availability	# of HF with at least one trained provider
	# of HF with immunization in practice guideline
	# of HF with standard registration book
	# of HF with waste disposal options according to guide line
	# of HF with refrigerator
	# of HF with all type of antigen
	# of HF with all types of Syringe
	# of HF with appropriate sitting area
	# of health facility with tap water with in their compound
Compliance	Proportion of children appropriately registered from July 9, 2013 to July 8, 2014
	# of HFs with T ^o monitored refrigerator twice per day from Apr. 9 to July 8, 2014
	# of HFs with immunization day based on guideline
	# of HFs cleaned before service provision

	# of HFs with providers who communicate easily
	Proportion of caregivers with health message by HWs
	Proportion of child immunized with DPT-HepB-Hib1
	Proportion of child immunized with MCV
	Proportion of child immunized with DPT-HepB-Hib3
	# of HFs with dropout rate < 10%
	# of HFs with immunization timely report
	# of HFs with updated immunization chart
	# of HFs with last two quarter supervision
Acceptability/caregivers Satisfaction	# of caregivers satisfied with availability of service based on previous appointment
	# of caregivers satisfied with convenience of immunization post to their home
	# of caregivers satisfied with convenience of immunization service to working hour
	# of caregivers satisfied with availability of provider at working time
	# of caregivers satisfied with time spent in waiting room
	# of caregivers satisfied with the friendliness/politeness of the provider
	# of caregivers satisfied with the competence/knowledge of the provider
	# of caregivers satisfied with cleanness of the room
	# of caregivers satisfied with the day of immunization
	# of caregivers satisfied with overall service provided

To determine the determinant of caregiver’s satisfaction on service provided

Dependent variables

- Caregivers satisfaction on overall service provided
- Caregivers satisfaction on competence/knowledge of providers
- Caregivers satisfaction on convenience of immunization service to working hour

Independent variables

Health system related

- Distance from caregivers home to immunization center
- Time spent in waiting room
- Provision of health message
- Convenience of working day
- Convenience of working hour
- Service provision based on previous appointment

Caregivers related

- Demographic factors

- Age
- Sex
- Socio- economic factors
 - Educational level
 - Occupation
 - Place of resident
 - Religion and ethnicity

5.7. Population and sampling

5.7.1. Source population

Source populations were all health facilities found in woreda, under-one year children that were served in sampled health facilities, and all health workers, documents and registrations in sampled health facilities.

5.7.2. Study population

The study population include caregivers, sampled HPs, HCs, program documents and registrations, and HWs that work on immunization units.

5.7.3. Study unit and unit of analysis

Study unit: Are the actual data source of the evaluation include caregivers, health workers, registration books, charts, immunization program coordinator and room of cold chain and immunization unit.

Unit of analysis

- The primary unit of analysis were caregivers, vaccinated children, health workers, and cold chain and immunization units.
- Secondary unit of analysis were health centers and health posts
- The final unit of analysis was Godere woreda child immunization program

5.7.4. Sample size determination

Evaluation research always conducted in a social context. In most program evaluation, cannot involve all of the people might like to involve. Instead, must try to obtain a representative sample of such people to measure what intend to measure(32). Accordingly:

Sample size for Health facility

- Two HCs and nine HPs, total of eleven HFs

Sample size for Document and Records review

- Record review include all child immunization registers from July 9, 2013 to July 8, 2014 and temperature-monitoring charts in cold chain room from Apr. 9 to July 8, 2014 in all sampled HCs and HPs.
- Document review include reviewing 2013/2014 program plan and achievement report at woreda health office, and in all sampled health posts and health centers.

Sample size for Observation

- For provider and caregiver interaction observation: Twenty-two health care provider and caregiver interactions.
- For cold chain and immunization unit observation: Nine HPs and two HCs cold chain and immunization units.

Sample size for Interview

- For health worker: Two focal persons of immunization service provision in two HCs, nine HEWs, and immunization program coordinator, total twelve HWs.
- For caregivers exit interview: All caregivers that come to sampled HFs for child immunization service in the study period, total of 189 caregivers.

5.7.5. Sampling Procedure

Sampling procedure for HFs: Health facilities in woreda classified according to their level of immunization service performance into two and we selected eleven HFs in both category randomly proportional to the number of HFs with in. Diagrammatical representation of sampling procedure was as follow:

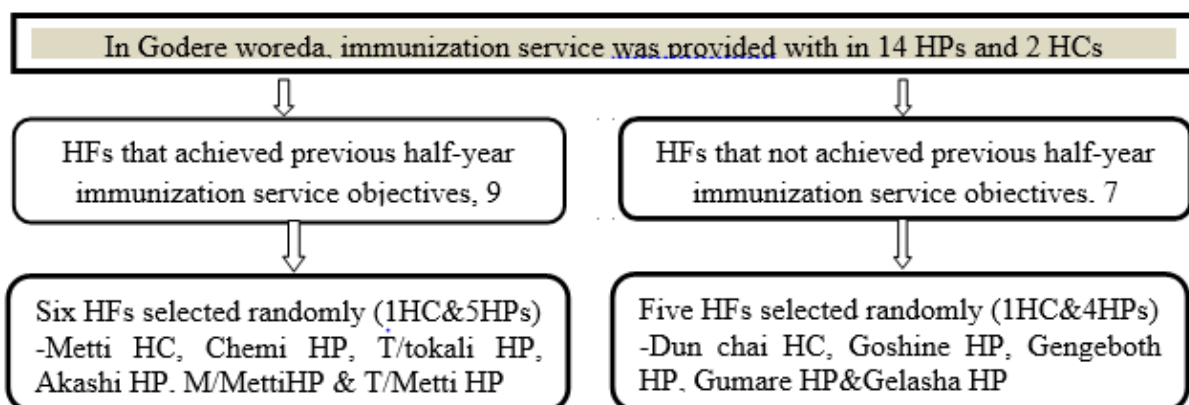


Figure 3: Diagrammatic representation of sampling technique of HFs for immunization program evaluation at Godere woreda, 2014.

For observation of health care provider and caregiver interaction: The first two consecutive caregivers with health care provider interaction in each sampled health facilities selected purposively

For HEWs interview, in each sampled health post one-health extension worker selected by simple random sampling procedure, lottery method

In woreda health office and sampled health centers, focal persons selected purposively

5.7.6. Inclusion and Exclusion criteria

Inclusion criteria: All caregivers come with child to center of immunization for immunization service were included. Health workers who assigned in health facility as immunization coordinator/focal person and HEWs that work in health posts were included in the study.

Exclusion criteria: Caregivers that had not the ability to listen and understand or that had age bellow eighteen years old were excluded from the interview.

5.8. Data collection

5.8.1. The data Collection methods

In order to address the evaluation question we used both qualitative and quantitative data collection techniques. However, the method that favored in some branches of the social science is qualitative and interpretive, but that does not mean the different form of data are mutually exclusive. Case study research, in particular, favors the use of multiple data sources and methods of analysis(41).

The data collection methods for qualitative and quantitative technique used were:

- Document and record review
- Observation
- In-depth interview and
- Survey

5.8.2. The data collection tools

Checklist: Adapted from WHO-2003 immunization program evaluation checklist

Semi structured questioner: The tool for in-depth interview developed after assessment of program by checklist

Structured questioner: The tool for survey adapted from WHO-2000 standard satisfaction questionnaire with little modification to do caregivers satisfaction survey. This tool was

translated into Majang and Amharic language, and to back, it was translated to English to validate its consistency.

The tool was pre-tested on one health facility that was not included with in the sample, Kabo health post on 7% (13) of the sample size. During pre-test, we checked sequential problem, understandability and clarity of questions, and then modified accordingly.

5.8.3. Data collectors

We employed four nurses and health officers as the data collector and two nurses as supervisor from non-governmental organization that have related experience after two day training about how to use data collection tool, how interact with and protect the right and interest of respondents. For supervisors, we were provided orientation in addition to two day training with data collectors about how to supervise.

The data collectors and supervisors were participated during pre-test, which was necessary to them to get adaptation and experience.

In-depth interview with key informants was carry out by principal evaluator.

5.8.4. Data collection fieldwork

Satisfaction survey on caregivers at health facilities conducted face to face, and not agreed caregivers replaced by immediate caregivers and then continued the interview. During data collection, data collectors strictly followed by supervisors.

5.9. Data Management and Analysis

5.9.1. Data Cleaning

The collected data were edited and checked their completeness, and validity of answers provided to each question at the end of each data collection session.

5.9.2. Data entry

Quantitative data coded and interred into EpiData and exported to SPSS window version 16. Qualitative data changed in to fair note, then arranged and written up in each thematic area.

5.9.3. Data analysis

Quantitative data that interred to spss16, analyzed in terms of mean and standard deviation. By using principal factor method, a single eigenvector was develop for ten satisfaction measures that have 5-point Likers scales using score 1 as simple mean of rating, then we used single measure to those approximately have equal loading i.e. variables that had eigenvalue > 1 explain others. We have transform Likers scale in to nominal (satisfied and dissatisfied) to

do bivariate (unadjusted OR) and multivariate (AOR) analysis for caregiver satisfaction at 95% CI to determine factors that contribute to caregiver satisfaction.

Qualitative data analyzed by using Within-case analysis technique. Detailed case study were prepared for each HCs and HPs and performed matching similar health posts/health centers to identify possible reason for difference and matching different health posts/health centers to identify possible reason for similarity. Finally based on the finding of each HC and HP, we prepared final case report.

The analysis of quality within/of program was done by using judgmental value to determine the quality of program

5.10. Matrix of analysis and judgment

Clearly, we cannot measure the “quality” of service/program, unless we have something. Criteria and standards are the tool by which the quality of care is measured and dictated(29). A criteria-referenced test is an objective test in which a pre-set cut-off score indicate acceptable/unacceptable performance. It is a measure against carefully written objective for a specific program. The interest is determining whether variables meet the desired minimum standard, not in how rank against one another, and the primary concern is measuring, reporting, and analyzing program performance as it relate to the instructional objective and used to dictate the overall quality of intervention(42).

- ▶ Based on these facts, stakeholders with principal evaluator prepared cut-off points for each indicator, dimension, and overall quality of program.
- ▶ The overall weight distributed to three dimensions proportionally based on the number of indicator with in each dimension

Finally, to make evaluative judgment on the quality in child immunization program, the sum of the achieved value in each dimension were compared with overall quality judgmental criteria then we decided on overall quality of immunization program. Quality judgment criteria to each dimension presented on the following table:

Table 3: Overall quality judgmental analysis matrix of child immunization program at Godere woreda, 2014

Dimensions	Indicat or no.	Value given(x)	Value achieved(y)	Percentage achieved	Quality judgment criteria
Availability	9	26	y	$y/x * 100$	>85% excellent, 75-85% v. good 60-75% good, 45-60% fair, <45% poor
Compliance	13	39	y	$y /x * 100$	>85% excellent, 75-85% v. good 60-75% good, 45-60% fair, <45% poor
Acceptability /caregiver satisfaction	12	35	y	$y /x * 100$	>85% excellent, 75-85% v. good 60-75% good, 45-60% fair, <45% poor
Total	34	100	y	$y /x * 100$	>85% excellent, 75-85% v. good 60-75% good, 45-60% fair, <45% poor

5.11. Ethical issue

This evaluation was conducted after the evaluation plan presented to ethical committee. Before evaluation was conduct, an official support letter obtained from Jimma University ethical review committee to get official recognition and support from the relevant organizations and departments. Moreover, support letter obtained from the woreda health office and distributed to the concerned organizations and communities, and provided to the data collectors in order to show for those who want to assure recognition. Additionally data collector during data collection to participant explained that they had a full right not to be involved in the study. Confidentiality of participants ascertained by no data disclosed without their full willingness.

5.12. Evaluation result dissemination

The finding of the evaluation communicated to the stakeholders by preparing one-day meeting session through discussion about the major strength and weakness of the program according to the end-results of evaluation. Finally planned to provide hard copy to health institution, Jimma University department of health planning and management, monitoring and evaluation unit, and concerned governmental and nongovernmental office where it is needed.

Chapter six: Result

6.1. Availability dimension

The study was conducted in two health centers (Dunchai and Metti health center) and nine health posts. All of studied health facilities were provided child immunization service in either outreach or static service based on the schedule they prepared. Static service provided in both health centers one day per week and outreach service provided one's per month in each outreach site, especially in health posts.

Availability of antigen was one of the indicators in availability dimension. According to this study, all type of antigens were not available for 21days in all studied HFs starting from august first week of 2013 and also Rote vaccine was not available for 2 months starting from December first week of 2013. The reason of not available was due to absence of antigens in regional stock.

Standard registration book for old antigens was available in the nine health posts and two health centers but registration book that present in all health facilities were not considered the newly introduced antigens (PCV and Rotarix). The reason not available for newly introduced antigens was as immunization program coordinator response, *“The regional health office couldn't provide us registration book for newly introduced vaccine, and woreda have not the mandate of preparing registration book, due to this we provided un-standardized registration book to each health facility to register PCV and Rotarix service”*

Guideline of immunization in practice was available in both studied health centers and five health posts; however, there was no in four-health posts at service provision area. As health workers response, all health posts had provided immunization in practice guideline but the reason of not available in working area, due to it taken by health workers to their home.

Safety box for onsite disposing of syringe used in all studied health facilities. However, incinerator that important for final disposal of syringes and other wastes was only available in two health centers and four health posts, the remaining had not, due to that there were accumulation of filled safety boxes in each health posts that had not incinerator. Nevertheless, according to woreda health office immunization program coordinator response, even if they have no capacity to construct incinerators, temporarily they plan to collect filled safety boxes from health posts to dispose at near health facilities that had incinerator.

Most of health facilities had at least one trained immunization service provider except Chemi, Gellesha and Goshine health posts. According to the response of key informant, previously trained providers leave out health facilities permanently, and to fill the gap these health facilities were filled by newly graduated health workers.

Four health posts had not refrigerator. Functional refrigerators found only in Metti and Dunchai health centers, and Gellesha health post; however non-functional refrigerators, due to they need maintaining and lack of kerosene, were available in five health posts.

In all health posts and health centers, they had enough amount of syringe in all type, diluent and dropper throughout the year.

In two health centers and five health posts there were area for immunization service provision with sitting chairs and tables for both providers and caregivers. The remaining health posts were had not area for immunization service provision with sitting chairs and tables for both providers and caregivers. Health extension workers were used this room only to do office work and they were provide immunization service under large shade.

In all health facilities, there was no water with in their compound. In the two health centers to minimize water problem they make avail water by daily labourer from river in the morning session. Summary result of availability of immunization service presented in the following table:

Table 4: Summary of availability of technical and human resources of immunization program evaluation at Godere woreda, 2014

Health facility name	Trained provider	Standard reg. book	Table and chair	Guideline	Water	Waste disposal	Syringe all type	Antigen all type	Immunization monitoring	Refrigerator	
										Functional	Non functional
M/Metti	yes	yes	yes	yes	no	yes	yes	yes	yes	no	yes
T/Metti	yes	yes	yes	yes	no	yes	yes	yes	no	no	yes
T/Tokalli	yes	yes	no	no	no	no	yes	yes	no	no	yes
G/both	yes	yes	no	yes	no	no	yes	yes	no	no	no
Dunchai HC	yes	yes	yes	yes	no	yes	yes	yes	no	yes	no
Akashi	yes	yes	no	no	no	no	yes	yes	no	no	no

Chemi	no	yes	yes	no	no	no	yes	yes	no	no	no	
Goshine	no	yes	yes	yes	no	yes	yes	yes	no	no	yes	
Gellesha	no	yes	yes	yes	no	yes	yes	yes	no	yes	no	
Metti HC	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	no	
Gumare HP	yes	yes	no	no	no	no	yes	yes	no	no	yes	
Total available	In no.	8	11	7	7	0	6	11	11	2	3	5
	In %	73	100	64	64	0	55	100	100	18	27	45

6.1.1. Availability dimension level of achievement

Availability dimension quality compared with judgmental criteria was good. Quality of each indicators and the average presented in the following table:

Table 5: Availability dimension level of implementation of immunization program compared with judgmental criteria at Godere woreda, 2014

Indicators	Expected in number	Observed	Weight	Results	Result in %	Achievement level
#of HF with at least one trained providers	11	8	3	2.18	72.7	Good
#of HFs with immunization in practice guideline	11	7	2	1.27	63.6	Good
#of HFs with standard registration books	11	11	2	2	100	Excellent
#of HFs with appropriate waste disposal according to national EPI guideline(Safety box → Incinerator)	11	6	3	1.64	54.5	Fair
#of HFs with functional refrigerator	11	3	4	1.1	27	poor
#of HFs with necessary antigens in last year	11	11	4	4	100	Excellent
#of HFs with necessary syringes in last year	11	11	3	3	100	Excellent
#of HFs with sitting area for care giver & provider	11	7	3	1.9	63.6	Good
# of HFs with tap water in their compound	11	0	2	0	0	Poor
Over all availability of service	99	69	26	18.89	72.6	Good

NB: >85% Excellent, 75-85% V. good, 60-75% Good, 45-60% Fair, <45% Poor

6.2. Compliance dimension

In the studied health facilities, Starting from July 9/2013 – July 8 /2014 immunization service provided to 527 children. Accordingly, all registrations of immunized children in this period were reviewed in each health facilities to determine the appropriateness of registration. From the total registered children 33% (174) were not register weather their registration date or birth date or both registration date and birth date.

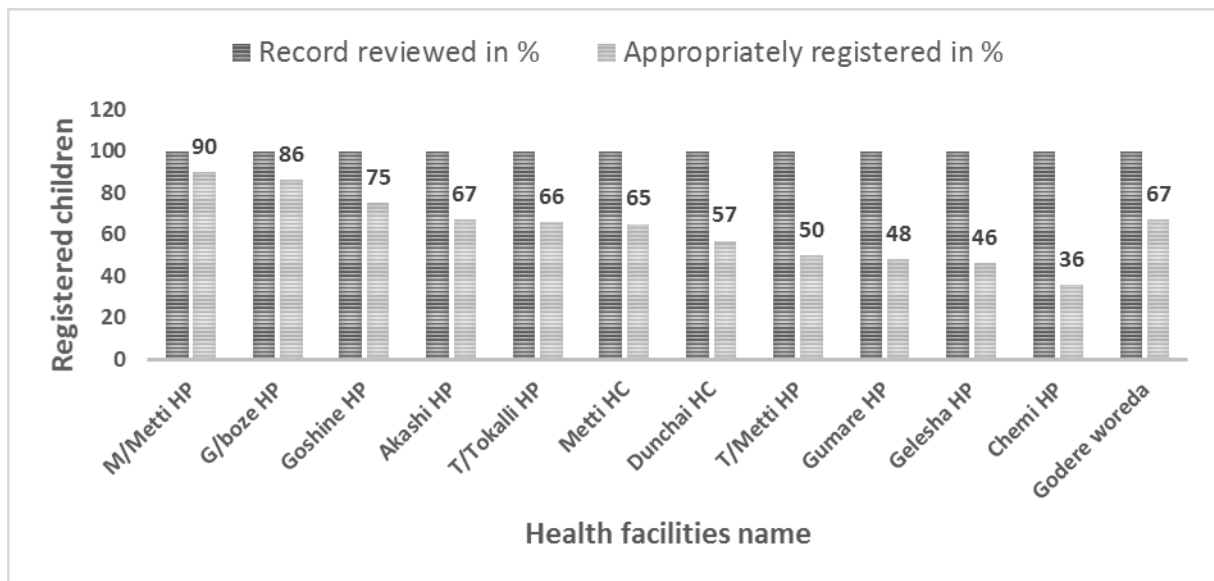


Figure 4: Diagrammatic representation of HF's registration appropriateness of immunized child, at Godere woreda, 2014

Monitoring refrigerator two times per day is important to determine the potency of vaccine. However, from the three HF's that had functional refrigerator only Metti health center refrigerator appropriately monitored two times per-day and it was within the range (0°C-8°C) in previous quarter but the refrigerator that found in Dunchai health center and Gellesha health post never been monitored at all, all over the year. The reason of not monitored, as health workers response, the charts that important for monitoring was not available in addition to absence of living house to health worker with in compound to monitor refrigerator at the weekend.

In the studied health facilities, 887 under-one year children were eligible for immunization service. According to the finding of this study, from the total eligible children 59% (527) were received the first dose of DPT-HepB-Hib vaccine and 47% (417) were received the third dose of DPT-HepB-Hib vaccine and 38% (340) were received MCV. From the total eligible,

32% (287) were complete the recommended vaccines and out of fully vaccinated children 88% (252) were complete their vaccination before one year.

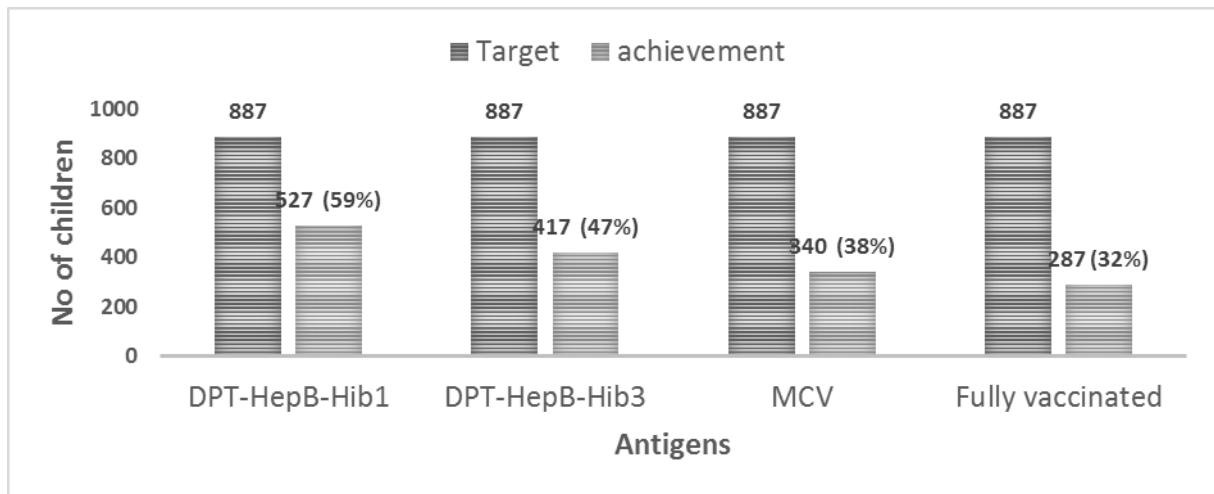


Figure 5: Diagrammatic representation of immunization service achievement at Godere woreda, 2014

Dropout rate between the first and third dose of DPT-HepB-Hib vaccine is one of the measure of program continuity and presence of follow up. According to this study finding, the dropout rate between the first and third dose of DPT-HepB-Hib vaccine in average was 20.8%. Dropout rate different from HF to HF range from highest 31.5 % in Chemi HP to lowest 10.6% in T/Tokalli HP.

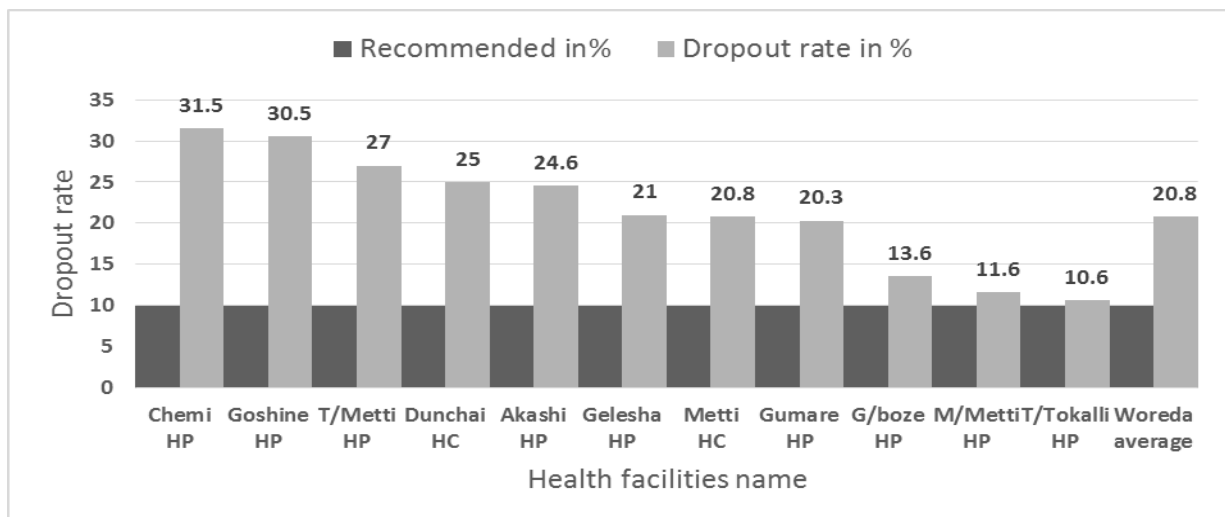


Figure 6: Diagrammatic representation of HF's dropout rate at Godere woreda, 2014

Monitoring immunized child by using immunization-monitoring chart important to reducing defaulted children from vaccination. However, among the study health facilities, only Metti health center and M/Metti health post monitor immunized child but other health facilities

were not monitor. The major reason of not monitoring immunized child was no follow up mechanism to trace the defaulted children, lack of skill how to fill monitoring chart, absence of monitoring chart and service provider's negligence.

Supportive supervision is necessary to share knowledge to reduce perpetrating mistake before occurring. However, in the last year third and fourth quarter, 2006 EC none of health posts and health centers supervised by woreda or regional health office but woreda health office and the two health centers immunization units supervised quarterly by non-governmental organizations, CORE-GROP, CHAI and WHO regional office. The reason for health facilities not supervised by woreda health office and health centers, as response of Woreda health office coordinator, there was no material resource that necessary to do supportive supervision but it may not be a reason, there might be negligence

In case of achievement report submission, all health facilities except Dunchai health center sent report in timely manner in the previous month, May 2014. The reason why Dunchai health center was not sent report on time, health center was found in remote area and there was no transportation to submit report on time.

In Metti and Dunchai health center, as we had seen during immunization service provision in the first day of data collection both health center were not cleaned before service provision started, however, in the next day of the data collection (after a week) Metti health center was cleaned and Dunchai health center was not. The reason why was in Dunchai health center, both cleaners were not working due to annual and sick live. In Metti health center the reason not cleaned in the first day of data collection, cleaners were became late and cannot clean before service provision started. All health posts had cleaned before service provision.

Exception of two health centers that provide static service every Thursday, all health posts are not provide immunization service based on guideline, every 28 day. The reason of not provided in recommended day was presence of unplanned program especially polio and EOS campaigns and different training, it disturb overall health facilities routine activities.

In seven health-posts, immunization service providers were easily communicate with caregivers with the local language, however, in Chemi and Goshine health posts we had seen difficulty in communication and understanding between providers and caregivers. The reason why, service providers did not know and speak local language. In case of health centers there was no difficulty in communication and easily understand each other.

6.2.1. Compliance dimension level of achievement

Compliance dimension quality compared with judgmental criteria was fair. Quality of each indicators and the average presented in the following table:

Table 6: Compliance dimension level of implementation of immunization program compared with judgmental criteria at Godere woreda, 2014

Indicators	Expected	Observed	Weight	Result	Result in %	Achievement level
Proportion of child appropriately registered since July 9, 2013 to July 8, 2014	1	0.67	4	2.68	67	Good
# of HFs with refrigerator T° monitored 2 times per day	3	1	2	0.67	33	Poor
# of HFs with the day of immunization based on guide line, every 28 day	11	2	2	0.36	18	Poor
# of immunization units cleaned and prepared before service provision	11	10	4	3.64	91	Excellent
Proportion of service providers who communicate easily	1	0.82	3	2.45	82	V. good
Proportion of caregivers health message provided by HWs	1	0.41	2	0.82	41	Poor
Proportion of child immunized with DPT-HepB-Hib1	.85	0.59	4	2.8	69	Good
Proportion of child immunized with MCV	.80	0.38	3	1.42	47.5	Fair
Proportion of child immunized with DPT-HepB-Hib3	.80	0.47	4	2.35	58.7	Fair
# of HFs with dropout rate < 10%	11	0	3	0	0	Poor
# of HFs with immunization timely report in the last month, June	11	10	4	3.64	91	Excellent
# of HFs with updated immunization chart, registered every month 2006 EC	11	2	2	0.36	18	Poor
# of HFs with 2006 EC last two quarters supervision report (quarter 3&4)	11	0	2	0	0	Poor
Content/conformity quality with guidelines			39	21.2	54.3	Fair

NB: >85% Excellent, 75-85% V. good, 60-75% Good, 45-60% Fair, <45% Poor

6.3. Result on Satisfaction survey

6.3.1. Socio demographic information

The interview conducted in 189 caregivers in two health centers and nine health posts after they interact with child immunization service. According to this study, the mean age of caregivers was 25.73 year with standard deviation ± 6.45 . From the total respondents 82 % (153) were females. Educational level of majority of respondents were illiterate 47.1% (89) and elementary 25.5% (49) and 75.4% (140) of caregivers were live in rural and the remaining 24.6% (47) in urban. Moreover, other information presented in the following table:

Table 7: Socio demographic information of child caregivers during vaccination at Godere woreda, 2014

Variables		No	Percent
Age N=186	15-24 years	88	47.3
	25-34 years	78	41.9
	35-45 years	16	8.6
	>45 years	4	2.2
Sex N=188	Male	33	17.4
	Female	153	82
Educational status N=189	Illiterate	89	47.1
	Read and write	43	22.8
	Elementary (Grade 7 & 8)	49	25.9
	Secondary and above (grade 9 & above)	8	4.2
Employment N=189	Government	28	14.8
	Self	161	85.2
Government employed N=28	Manager	5	17.9
	Professional	1	3.6
	Technician and associated professional	7	25
	Cleaner and helpers	15	53.6
Self employed N=160	Mixed crop and animal producer	108	67.5
	Street and related sales and service worker	26	16.2
	Handicraft worker	15	9.4
	Daily laborer	11	6.9
Place of residence N=187	Urban	47	24.6
	Rural	140	75.4
Religion	Muslim	44	23.7
	Orthodox	50	26.9
	Protestant	70	37.6

N=186	Catholic	22	11.8
Ethnicity	Majang	58	30.7
	Amara	27	14.3
	Kaffa	27	14.3
	Oromo	32	16.9
	Tigre	15	7.9
N=189	Others*Sheka, Gurage, Sheko, Minit*	30	15.9

6.3.2. Health system related information

From the finding of survey conducted in two health centers and nine health posts, the mean traveling time of caregivers was 19.86 minutes with standard deviation of ± 12.9 . The mean waiting time to get immunization service was 15 minutes with standard deviation of ± 11.1 . Most of caregivers not take the service based on previous appointment, from the total only 47.1% (88) were take service based on previous appointment and the remaining 52.9% (100) were not. The reason why, 63.3% (63) were due to absence of service on the day of appointment and the remaining 36.7% (37) were due to personal problem. Moreover, other health system related information presented in the following table:

Table 8: Health system related information of child caregivers during vaccination at Godere woreda, 2014

Measurements		No	Percent
Distance traveled in minute N=188	≤ 30 minutes	137	72.9
	> 30 minutes	51	27.1
Waiting time in minute N=188	≤ 30 minutes	155	82.4
	> 30 minutes	33	17.6
Working hour convenient N=189	Yes	163	86.2
	No	26	13.8
Working day convenient N=189	Yes	161	85.2
	No	28	14.8
Service taken based on previous appointment, N=188	Yes	88	47.1
	No	100	52.9
Caregivers that take health message during immunization, N=186	Yes	75	40.3
	No	111	59.1
Health facilities with trained provider N=11	Yes	8	72.7
	No	3	27.3

6.3.3. Caregiver satisfaction on service provided

In order to measure delivery quality of service in caregiver perspective we used ten satisfaction items with five point likers scales using score 1 as simple mean of rating. Reliability of each items determined individually by Scale if item deleted test, accordingly, the test result of all items had coefficient more than 0.4, and collectively items reliability was tested and had Cronbach's Alpha value 0.731. It is within the range of recommended alpha value, greater than 0.7. To reduce acquiescence response bias, we arrange the items with equal number of negative and positive statements.

Most of caregivers were very satisfied on the variable convenience of immunization post to their home. Accordingly, 34.9%(66) were very satisfied, 28%(53) were satisfied, 21.2%(40) were dissatisfied, 8.5%(16) were very dissatisfied and 7.4%(14) were undecided with the mean of 3.6 and ± 1.37 SD.

The level of caregivers satisfaction on the variable availability of providers at working time 42.9% (81) were satisfied, 28.6% (54) were very satisfied, 15.9% (30) were dissatisfied, 10.1% (19) were undecided and 2.6% (5) were very dissatisfied with the mean of 3.79 and ± 1.10 SD.

Most of caregivers were very satisfied and satisfied on the variable friendliness/politeness of the providers. Accordingly, 53% (90) were satisfied, 39% (67) were very satisfied, 5.3% (9) were dissatisfied and 2.4% (4) were very dissatisfied with the mean of 4.12 and ± 0.85 SD.

On the variable, competence/knowledge of the providers most of caregivers were very satisfied, accordingly, 52% (98) very satisfied, 36.5% (69) were satisfied, 7.4% (14) were undecided, 3.7% (7) were dissatisfied and 0.5% (1) was very dissatisfied with the mean of 4.35 and ± 0.87 SD.

Many of caregivers were dissatisfied on the variable availability of service based on previous appointment. Accordingly, 24.9% (47) were dissatisfied, 17.5% (33) were very dissatisfied 7.4% (14) were undecided 16.4% (31) were satisfied and 33.9% (64) were very satisfied with the mean of 3.24 and ± 1.55 SD.

The level of caregivers satisfaction on the variable availability of convenience of immunization service to working hours 44.1% (83) were satisfied, 22.3% (42) were very satisfied, 18.6% (35) were dissatisfied, 10.1% (19) were undecided and 4.8% (9) were very dissatisfied with the mean of 3.61 and ± 1.16 SD.

The level of caregivers satisfaction on the variable of time spent in waiting room 31.9% (60) were satisfied, 27.7% (52) were very satisfied, 14.9% (28) were dissatisfied, 14.4% (27) were undecided and 11.2% (21) were very dissatisfied with the mean of 3.50 and ± 1.33 SD.

Most of, 41%(77) caregivers not decided on cleanness of the vaccination room, however, 27.7(52) were satisfied, 15.4% (29) were dissatisfied, 12.2% (23) were very satisfied and 3.7% (7) were very dissatisfied with the mean of 3.29 and ± 0.99 SD.

On the variable, satisfaction on overall service provided most of caregivers were satisfied and very satisfied. Accordingly, 37.6% (71) were satisfied, 20.6% (39) were very satisfied, 20.6% (39) were undecided, 19% (36) were dissatisfied and 2.1% (4) were very dissatisfied with the mean of 3.56 and ± 1.08 SD.

Summary of caregiver satisfaction on service provided

Table 9: Level of caregiver satisfaction on each satisfaction measuring items of immunization service provided at Godere woreda, 2014

Satisfaction on the item	V. dissatisfied (1)	Dissatisfied (2)	Undecided (3)	Satisfied (4)	V. satisfied (5)	Mean	SD
Convenience of immunization post to caregivers home	8.5%(16)	21.2%(40)	7.4%(14)	28%(53)	34.9%(66)	3.60	± 1.37
Availability of provider at working time	2.6%(5)	15.9%(30)	10.1%(19)	42.9%(81)	28.6%(54)	3.79	± 1.10
Friendliness/politeness of the provider	2.4%(4)	5.3%(9)	0(0)	53%(90)	39%(67)	4.12	± 0.85
Competence of the providers	0.5%(1)	3.7%(7)	7.4%(14)	36.5%(69)	51.9%(98)	4.35	± 0.82
Day of immunization	9.5%(18)	12.2%(23)	5.3%(10)	33.3%(63)	39.7%(75)	3.81	± 1.33
Availability of service based on previous appointment	17.5%(33)	24.9%(47)	7.4%(14)	16.4%(31)	33.9%(64)	3.24	± 1.55
Convenience of immunization service to working hour	4.8%(9)	18.6%(35)	10.1%(19)	44.1%(83)	22.3%(42)	3.61	± 1.16
Time spent in waiting room	11.2%(21)	14.9%(28)	14.4%(27)	31.9%(60)	27.7%(52)	3.50	± 1.33
Cleanness of the vaccination room	3.7%(7)	15.4%(29)	41%(77)	27.7%(52)	12.2%(23)	3.29	± 0.99
Overall service provided	2.1%(4)	19%(36)	20.6%(39)	37.6%(71)	20.6%(39)	3.56	± 1.08
Total	6.7% (127)	15.6% (294)	12.3% (233)	34.6% (653)	30.7% (580)	3.67	

6.3.4. Forming satisfaction sub measurement

6.3.4.1. Factor analysis

The reliability of factor analysis is depends on sample size. The adequacy of sample size determined by Kaiser-Meyer-Olkin (KMO) test. KMO value close to one indicate that factor analysis is useful and less than 0.5 factor analysis probably will not appropriate, sample size is not adequate(43). In this study KMO value was 0.731 and Bartlett test was significant that deserve the presence of relationship between items. Determinants of correlation matrix was 0.117, if it is 0.00001, there is evidence of multicollinearity and singularity. The above tests indicate that factor analysis could perform and it was useful.

6.3.4.2. Factor extraction

The factors that explain other or factors that have correlation to most of factor determined by Kaiser-Guttman rule, rule of greater than one. Accordingly, three components that had value greater than one were identified. The relationship between variables is determined by factor loading. Factor loading greater than 0.4 indicate the item are related to factor/component or less than 0.3 has no association, it will be discarded and make its unique factor (43). In this study, all variables had more than 0.3 factor loading and none of items were form unique factor. When we rotate the items by Varimax procedure, factor/component one explain item 1, 2, 6, 8, and 10, factor/component two explain item, 3, 4 and 9 and factor/component three explain item 5 and 7. Rotated factor loading of each satisfaction item presented in the following table:

Table 10: Representation of rotated factor loading of each satisfaction item on immunization service provided, Godere woreda 2014

Rotated Component Matrix ^a				
S/N	Items	Component/factor		
		1	2	3
1	Satisfied with the convenience of immunization post to your home	.757		
2	Satisfied with the availability of provider at working time	.741		
3	Satisfied with the friendliness/politeness of the providers		.807	
4	Satisfied with the competence/knowledge of the providers		.783	
5	Satisfied with day of immunization			.854
6	Satisfied with the availability of service based on previous appoint	.340		
7	Satisfied with the convenience of immunization service to working hour			.758
8	Satisfied with the time spent in waiting room	.789		
9	Satisfied with cleanness of the vaccination room		.467	

10	Satisfied with overall service provided	.706		
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 4 iterations.				

Each component/factor represented by one of the items that has correlation or same variable loading. Accordingly component/factor one represented by satisfaction on overall service provided, component/factor two represent by competence of provider and component/factor three represented by satisfaction on convenience of immunization service to working hour. Collectively, the three components/factors explain 69% of variance.

6.3.5. Transformation of ordinal scale to nominal scale

The three components/factors that extracted by factor analysis were dichotomized into satisfied and dissatisfied by using demarcation threshold (highest score - lowest score/2) + lowest score to do further analysis. Accordingly, very satisfied (5) and satisfied (4) recoded in to satisfied-group and very dissatisfied (1) and dissatisfied (2) in to dissatisfied-group. The distribution was presented in the following table as follow:

Table 11: Level of caregiver satisfaction on each satisfaction measuring items of immunization service provided at Godere woreda, 2014

S/n	Satisfaction on the items	Unsatisfied	Undecided	Satisfied	% (Sum)
1	The convenience of immunization service to working hour	23.5% (44)	10 % (19)	66.5% (125)	100% (188)
2	The competence/knowledge of the providers	4.2% (8)	7.4% (14)	88.4% (167)	100% (189)
3	Overall service provided	21% (40)	20.7% (39)	58.3% (110)	100% (189)

6.3.6. Factors that may affect caregiver satisfaction

The factors that had association in bivariate (Unadjusted OR) analysis were eligible for multivariate (AOR) analysis. The effect of factors on caregiver satisfaction on overall quality of immunization service provided presented in the following table:

Table 12: The effect of factors on caregiver satisfaction on overall immunization service provided at Godere woreda, 2014

Measurements		Satisfaction				Bivariate (un-adjusted)		Multivariate (adjusted)	
		Satisfied		dissatisfied		OR with 95%CI	P	AOR with 95%CI	P
		No	%	No	%				
Age	15-24 years	55	75	18	25	1	.532	---	---
	25-34 years	42	72	16	28	1.16 (.53,2.55)	.704	---	---
	35-45 years	9	69	4	31	1.36 (.37,4.94)	.643	---	---
	>45 years	1	33	2	67	6.11 (.52,71.44)	.149	---	---
Sex	Male	19	76	6	24	1		---	---
	Female	91	73	33	27	1.59 (.55,4.57)	.389	---	---
Educational status	Illiterate	57	77	17	23	1		---	---
	Read and write	27	84	5	16	.62 (.20,1.86)	.395	---	---
	Elementary(grade 7&8)	22	58	16	42	2.44 (1.05,5.65)	.038	---	---
	Secondary and above	4	67	2	33	1.67 (.28,9.96)	.570	---	---
Employment	Government	13	68	6	32	1		---	---
	Self	97	74	34	26	.76(.27,2.15)	.605	---	---
Government employed	Manager	2	100	0	0	1		---	---
	Technician and associated professional	5	71	2	29	6.46(001)	.999	---	---
	Cleaner and helper	6	60	4	40	1.08(001)	.999	---	---
Self employed	Crop and animal producer	70	75	23	25	1	.124	---	---
	Street and related sales and service worker	13	76	4	24	.94(.28,3.16)	.916	---	---
	Handicraft worker	9	69	4	31	1.35 (0.38,4.81)	.641	---	---
	Daily laborers	5	62	3	38	1.83(0.40,8.24)	.433	---	---
Place of residence	Rural	104	87	15	23	1		1	
	Urban	5	16	25	84	34.67(11.51,44.38)	.001	7.34(5.39,37.04)	.001
6. Religion	Muslim	20	62	12	38	1		---	---
	Orthodox	29	67	14	33	.80 (.31,2.10)	.657	---	---
	Protestant	45	79	12	21	.44 (0.17,1.16)	.097	---	---
	Catholic	13	87	2	13	.26(0.05,1.34)	.106	---	---
Ethnicity	Majang	36	82	8	18	1		---	---

	Amara	13	65	7	35	2.42 (.73,8.01)	.147	---	---
	Kaffa	12	60	8	40	3.00 (.92,9.74)	.068	---	---
	Oromo	23	77	7	23	1.37 (.44,4.29)	.589	---	---
	Tigre	9	75	3	25	1.50 (.33,6.82)	.600	---	---
	Other	17	71	7	29	1.853(.577,5.952)	.300	---	---
Distance travel	<=30 minute	87	78	25	22	1		---	---
	>30 minute	22	59	15	41	2.373(1.074,5.243)	.033	---	---
Waiting time	<=30 minute	102	81	24	19	1		1	
	>30 minute	7	30	16	70	9.71 (3.60,26.23)	.001	4.36 (1.08, 17.59)	.039
Working hour convenient	Yes	100	76	32	24	1		---	---
	No	10	55	8	45	2.50 (.91,6.87)	.076	---	---
Working day convenient	Yes	97	76	31	24	1		---	---
	No	13	59	9	41	2.16 (.84,5.55)	.107	---	---
Service taken based on appointment	Yes	59	88	8	22	1		1	
	No	51	61	32	39	4.63(1.96,10.94)	.001	3.30 (1.10, 9.86)	.033
Caregivers that take health message	Yes	47	81	11	19	1		---	---
	No	61	68	29	32	1.10 (.91,4.41)	.086	---	---

According to bivariate (unadjusted OR) and multivariate (AOR) analysis, one socio demographic variable, place of residence of respondent, and two health system related variables, time spent at waiting area and service provision based on previous appointment had significant association with caregiver satisfaction on overall service provided. The relationship between satisfaction on overall service provided and affecting variables shown in the following graph:



Figure 7: Diagrammatic representation of satisfaction on overall service provided and affecting variables, immunization program evaluation at Godere woreda, 2014.

According to multivariate analysis, place of residence had strong association ($p=0.001$) with caregiver satisfaction on overall service provided. Out of the total satisfied respondents 95.4% (104) were live in rural and 4.6% (5) were live in urban. From the total dissatisfied care givers 37.5% (15) were live in rural and the remaining 62.5% (25) were live in urban. Rural dwellers more satisfied than urban dwellers on overall service provided. The chance of being dissatisfied who live in urban were 7 times higher compared to those live in rural (AOR = 7.34, 95%CI = 5.39, 37.04).

Waiting time has association ($p = .039$) with satisfaction on overall immunization service provided. Out of the total satisfied respondents 93.6% (102) were wait less than 30 minutes to get service and 6.4% (7) were wait greater than 30 minutes to get service. From the total dissatisfied care givers 60% (24) were wait less than 30 minutes to get service and 40%(16) were wait greater than 30 minutes to get service. Caregiver's satisfaction level increase when waiting time decrease. Caregivers who wait more than 30 minutes to get the service have probability of 4 times being dissatisfied compared to those caregivers waiting less than 30 minutes (AOR = 4.36, 95% CI=1.08, 17.59).

Service provision based on previous appointment was among the factors that affect caregiver satisfaction on overall service provided ($P=.033$). Out of the total satisfied respondents, 53.6% (59) were service taken based on previous appointment and 46.4% (51) were not on previous appointment. Out of total dissatisfied respondents 20% (8) were take the service based on previous appointment and 80% (32) were not on previous appointment. Caregiver's satisfaction level increase when service was provided based on previous appointment. The likelihood of being dissatisfied during the service was not provided based on previous appointment three times more compared to those who take service based on previous appointment (AOR = 3.30, 95%CI = 1.10, 9.86).

Multivariate analysis show that the variables; age, sex, religion, ethnicity, distance travelled to get service, educational and employment status of caregivers had no association with caregiver satisfaction on overall services provided. Moreover, none of variables had significant association with satisfaction on competence of provider and convenience of immunization service to working hour.

6.3.7. Acceptability dimension level of achievement

Acceptability dimension/caregivers satisfaction quality compared with judgmental criteria was very good. Quality of each indicators and the average presented in the following table:

Table 13: Acceptability dimension /caregivers satisfaction level of implementation of immunization program compared with judgment criteria at Godere woreda, 2014

Satisfaction on the item	Expected satisfied in no.	Observed	Weight	Result	Result in %	Quality level
Availability of service based on previous appointment	143	119	4	3.33	83	V. good
Convenience of immunization post to caregivers home	143	135	4	3.8	94.4	Excellent
Convenience of immunization service to work hour	143	157	4	4	100	Excellent
Availability of provider at working time	143	167	3	3	100	Excellent
Time spent in waiting room	143	138	3	2.9	96.5	Excellent
Friendliness/politeness of the provider	143	95	4	2.66	66.4	Good
Competence/knowledge of the provider	143	125	3	2.6	87.4	Excellent
Cleanness of the room	143	112	3	2.35	78.3	V. good
Immunization day appropriateness in the community	143	75	3	1.6	52.4	Fair
Overall service provided	143	110	4	3	76.9	V. good
Delivery quality in caregivers perspective			35	29.24	83.53	V. good

NB: >85% Excellent, 75-85% V. good, 60-75% Good, 45-60% Fair, <45% Poor

Summary of quality of dimensions

Table 14: Overall Quality of immunization program, evaluation at Godere woreda, 2014

Dimensions	Intend to measure	Indicators no.	Value given	Value achieved	Percentage achieved	Quality level
Availability	Availability of service	9	26	18.89	72.6	Good
Compliance	Content quality	13	39	21.19	54.3	Fair
Acceptability/satisfaction	Delivery quality	10	35	29.24	83.5	V. good
Total	Program quality	32	100	69.32	69.32	Good

NB: >85% Excellent, 75-85% V. good, 60-75% Good, 45-60% Fair, <45% Poor

Chapter seven: Discussion

7.1. Availability dimension

Over all availability of trained provider, according to judgmental value, was good. From the total studied health facilities 27% (3) were had no trained provider on immunization service provision. The reason why health workers were not trained was due to previously trained providers were leave off health facility permanently, and to fill the gap they were replaced by newly graduated ones. Finding of this study has similarity to study conducted in Ghana 30% and Thailand 20% of health care workers that work in the unit not trained(18, 19). However, the national immunization guideline recommend that service must provide by trained health care worker in each health facility (8).

Availability of functional refrigerator, according to judgmental value, was poor. From eleven-studied HFs, eight of them had refrigerator, but functional refrigerators were found only in three health facilities, Metti and Dunchai HCs and Gellesha HP. In five HFs there was un-functional refrigerator due to absence of kerosene and maintenance. To store vaccine with appropriate range (2⁰C-8⁰C) of temperature and to give static immunization service, functional refrigerator is necessary in all health facilities. FMOH with the support of GAVI, make avail the opportunity of having cold chain equipment and maintenance cluster of two to three health facilities and if health facility is found far from other must provide individually(9). However, according to this study 73% (8) of studied health facilities had not functional refrigerator. These result so far low to compare with Algea woreda that all health posts that live in woreda had functional refrigerator(9). The difference was perhaps due to absence of maintenance personal, spare part and budget for kerosene in the studied woreda.

According to national EPI guideline, necessary supplies for immunization service provision must fulfil without interruption throughout the year(8). However, there was no registration book for newly introduced vaccine in all health facility and there occur three weeks interruption of all vaccine and two months of Rota vaccine. These findings were so far low compared to Algea woreda immunization program that vaccine stock out was not occur thorough out the year and Sekota Zuriya woreda immunization program that experience of three day DPT-HepB-Hib vaccine stock out in a year(9). The deference occur between studies may be due to presence of motivated experts in the area.

7.2. Compliance dimension

Immunization performance was different from HF to HF in the woreda. DPT-HepB-Hib1 was one of the measure of access in immunization, and it reaches 59% of the target. The coverage of DPT-HepB-Hib3 and MCV vaccine were 47% and 38% respectively. Fully vaccinated children account that 32% of the total targeted children. However, World health organization recommended coverage, 90% of DPT-HepB-Hib3 and MCV nationally and 80% of DPT3 and MCV in all district (1). In this case, none of antigens coverage were meet world health organization requirement (1). These achievements were comparable with Kombolcha district achievement of DPT-HepB-Hib1, DPT-HepB-Hib3 and MCV coverage's of 73.8% (512), 33.1% (230) and 40.3% (280) respectively (20). Accordingly, Godere woreda had better achievement in DPT-HepB-Hib3 and MCV except DPT-HepB-Hib1 achievement.

Dropout rate between the first and third dose is the measure of sustainability of immunization program. Dropout rate is the percentage of children who received the first dose of DPT-HepB-Hib3 but did not receive the third dose of vaccine. According to this study, health facilities average dropout rate was 20.8%. This study is comparable to 2012 Ethiopian national immunization survey finding; national dropout rate, 25.6%(10). However, WHO and FMOH in NEPI guideline recommend that dropout rate between first and third dose of DPT-HepB-Hib vaccine less than 10% (1, 2). In this case, none of health facilities in the study area meets WHO recommended dropout rate, less than 10%. Presence of high dropout of children were most probably due to absence of monitoring mechanism of immunized children.

7.3. Acceptability dimension /caregiver satisfaction

According to the data, the mean of most of caregivers' satisfaction level on most of items lie between undecided and satisfied, I.t, between 3 and 4 likers' value. However, on the items friendliness/politeness of the providers and the competence/knowledge of the providers, mean caregivers satisfaction level lie between satisfied and very satisfied I.t, between 4 and 5 likers' value. The average score of overall caregivers' satisfaction based on judgmental analysis matrix was 83.53%. It was good achievement and success for program.

Caregivers satisfaction on immunization service provided affected by place of residence of respondent, time spent at waiting area and service provision based on previous appointment.

Waiting time to get service was one of variable that affect caregivers' satisfaction on overall service provided. From the total respondents that wait less than 30 minute 81.6% (102) were satisfied and 18.4%(24) dissatisfied on overall service provided. However, from the total respondents that wait greater than 30 minute 30%(7) were satisfied and 70%(16) were dissatisfied on overall service provided. This study has similarity with study conducted in Dominica republic as sighted by Favin, majority of respondent complain about prolonged waiting time(26). The study conducted in Bangladesh to study clients satisfaction level on service provided, Most of clients were satisfied on waiting time to get service, and only 28% were dissatisfied(23). The average waiting time of clients to get service was 15 minutes but in case of Bangladesh, it was 30 minutes but most of caregivers were satisfied on service provided. The difference may due to presence of good waiting area and BCC and IEC material to make themselves busy.

According to NEPI guideline, vaccines like OPV, PCV, DPT-HepB-Hib and Rotarix must appointed and provided every four month and MCV must appointed and provided at nine month of child. However, most of caregivers not received service based on previous appointment, from the total only 47.1% (88) were received service based on previous appointment and the remaining 52.9% (100) were not. The reason why, 63.3% (63) were due to absence of service on the day of appointment and the remaining 36.7% (37) were due to personal problem. Most of satisfied caregivers were take service based on previous appointment. From the total respondents that take service based on previous appointment 88% (59) were satisfied and 12% (8) were dissatisfied. Moreover, from the total respondents that did not take service based on previous appointment 61% (50) were satisfied and 39% (32) were dissatisfied on overall service provided.

Chapter eight: Conclusion and Recommendation

8.1. Conclusion

The overall quality of child immunization program determined based on the achievement of three dimensions, availability of resource to provide immunization service, compliance of immunization service with national immunization guideline and Acceptability of service in caregiver perspective measured in terms of satisfaction.

The achievement level of the availability dimension was good. Even if the achievement was good, there were shortage of some resources that necessary to immunization service provision. From the total health facilities, only 54.5% (6) of them had incinerator, 73% (8) of health facilities had not functional refrigerator, no registration book for newly introduced vaccine in all health facilities, and no health facilities with water with in their compound.

The achievement level of the Compliance dimension was fair. This area face many shortages and draw back. In all health facilities, there was no supervision in previous two quarters, quarter three and quarter four 2006 EC. There was no monitoring mechanism of immunized child in nine health facilities and dropout rate of all health facilities was more than WHO recommended, less than 10%. Because of poor achievement of some components, the quality of the dimension was fair. This was the lowest achievement compared to other two dimensions.

In the Acceptability dimension, very good achievement recorded. It had better achievement compared to others two dimensions. Caregivers satisfaction on immunization service provided affected by one socio demographic factor, place of residence and two health system related factors, service provision based of previous appointment and time spent at health facilities to get service.

The overall quality of child immunization program was determined based on the three dimensions achievement Score. Consequently, the quality of child immunization program at Godere woreda was good.

8.2. Recommendation

To service providers

Health care providers have great role in improvement of immunization program. According to this study, there were area of program that need to be improved by health care workers.

1. Health care worker strives to provide immunization services based on previous appointment.
2. Health care worker strives to monitor immunized child by using immunization-monitoring chart, which is important to reduce defaulted children from vaccination and at the same time increase the coverage of immunization.
3. Health care workers needs doing great endeavor to reduce the time spent by caregivers at health facilities during immunization session

To woreda health office

1. Woreda health office needs to create the mechanism to do health centers and health posts supervision and prepare monthly meeting session to evaluate the achievement of health facilities, to share knowledge and learn from good experience.
2. Woreda health office needs to facilitating and asking regional health office to avail immunization Registration books for newly introduced vaccine.

To regional health office

1. To do static service in each health facilities needs maintain un-functional refrigerators and make avail to those health facilities that had no
2. They have to make avail registration books for newly introduced antigens

8.3. Limitation of the evaluation

The presence of health workers and managers turn over in health facilities face us difficulty to get more rich information about the program weakness and strength and the problems and impetus for good or poor achievement that occur before.

Chapter nine: Meta-Evaluation

Good evaluation does not merely gather accurate evidences and reach to valid conclusions, and also produces results that are used to make a differences(32). Evaluation was meta-evaluated to ensure quality and credibility of findings. This means, meta-evaluation was done alongside the evaluation itself to make sure uncertainties identified and corrected during the planning, implementation and analysis of information of the evaluation. Meta-evaluation was done by taking account the 30 standards encompassed with in four attributes:

9.1. Utility

To insure the utility of evaluation we thoroughly identified and involved important stakeholders during evaluability assessment for indicator selection and included their interest necessary for program improvement. Moreover, we were make involved them in each stage of evaluation, we will report the result easily understandable way to the stakeholders, and we will present when it is necessary in timely manner.

9.2. Feasibility

“Feasibility standard recognize that evaluation usually are conducted in a natural, as opposed to laboratory, setting and consume valuable resources”(44). In order to fulfill the standard, case study strategy was used and it was operable in field setting with pre-determined resources that necessary to address the evaluation question and the needs of stakeholders.

9.3. Propriety

Propriety is about protection and respecting of the right of subject studied. This attribute addressed in ethical consideration part and in addition to that, before conducting evaluation the data collectors were trained to respect the decision of participant to be involve or not in the study

9.4. Accuracy

To maintain the accuracy standards; we reviewed appropriate child immunization program documents and records and we discussed with stakeholders to understand the program. Training was provided to the data collectors to collect valid, credible and reliable information with different data collection methods from defensible sources in order to prepare valuable judgment and feasible recommendations. The data were collected, organize and analyzed, and interpreted systematically in order to reduce miss understanding of the program.

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Annexes

Annex A: Consent Forms

Consent form for all child-immunization service providers and coordinator

Dear Sir/Madam

Good morning! My name is _____ and I am a member of evaluation team that evaluate quality in child immunization program at Godere woreda and the evaluation conduct with the collaboration of Jimma University. We are tending to conduct evaluation of quality in child immunization program in order to find the best practice and the weakness that need to improvement, and at the end, we will provide feedback that important for input to improve the quality of program. I am interested to ask you some questions to know the weakness and strength in program quality. To assure your confidentiality I am not record your name and individualize information what you give.

Please give me your willingness to continue; do you:

1. Agree
2. Not, agree

Data collector name: _____ Signature _____ date __/__/__

Supervisor name: _____ Signature _____ date __/__/__

Notes to the interviewer:

If the participant agrees to continue, acknowledge his/her decision and proceed with the interview. If s/he does not agree, respect his/her decision to decline and go to the next participant.

Consent form for caretakers

Dear Madam/Sir

Good morning! My name is _____ and I am a member of an evaluation team that evaluate quality in child immunization program at Godere woreda, and the evaluation executed in collaboration with Jimma University. As we understand the provision of quality immunization services increases caregivers' satisfaction. We proceed to conduct process evaluation of quality in the 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 I am not tending to record your name and individualize information what give me. If you are voluntary to participate, I am interested to ask some questions to know your satisfaction level on immunization services provided.

Please give me your willingness to continue; do you:

1. Agree
2. Not, agree

Data collector name: _____ Signature _____ Date __/__/__

Supervisor name: _____ Signature _____ Date __/__/__

Notes to the interviewer:

If the participant agrees to continue, acknowledge his/her decision and proceed with the interview. If s/he does not agree, respect his/her decision to decline and go to the next participant.

የመግባቢያ ሰነድ

የመግባቢያ ሰነድ ለእናቶች/ለተንከባካቢዎች

ክብርት/ክቡር -----

ጤና ይስጥልኝ! የኔ ስም -----ይባላል በጎደሬ ወረዳ በህፃናት ክትባት ፕሮግራም ላይ የክትባት ሂደት ከሚገመገሙ ቡድን አባላት መካከል አንዱ ነኝ። ግምገማው ከጅም ዩንቨርስቲ ጋር በትብብር የሚከናወን ነው። እንደሚታወቀው ጥራት ያለው የክትባት አገልግሎት መስጠት የተጠቃሚውን እርካታ ይጨምራል። እኛም አሁን ማከናወን ምንፈልገው ጥራት ያለው የክትባት አገልግሎት ከመሻት አኳያ በሂደቱ ውስጥ ያሉ ጥሩ ተሞክሮዎችንና ድክመቶችን ገምግሞ ለመለየት ነው። በመሆኑም ከናንተ ያገኘነውንና በዐይናችን ያየነውን የጥናት ውጤት አጠቃላይ አገልግሎቱን ለሚሰጡ አካላት በመስጠት የበለጠ ጥራቱ እንዲሻሻል ለማስቻል ነው። የእርሶን ሚስጥር ለመጠበቅ የእርሶን ስምና አጠቃላይ የሰጡኝን መረጃ ግለሰባዊ አድርጌ አልመዘግብም። ፈቃደኛ ከሆኑ የተወሰኑ ጥያቄዎችን በክትባት አገልግሎት ዙሪያ የእርሶን እርካታ በተመለከተ እጠይቆቻለሁ። እባክዎን ለመቀጠል ያስችለኝ ዘንድ ፈቃደኝነትዎን ይግለጹልኝ፤

- 1. ፍቃደኛ ነዎት
- 2. ፍቃደኛ አይደለሁም

ለመረጃ ሰብሳቢው ማስታወሻ

መግባቢያ ሰነዱ ተነቦ ተጠያቂው መረጃ ለመስጠት ፍቃደኛ ከሆነ ወደሚቀጥለው ገፅ ጥያቄውን ይቀጥሉ፤ ፍቃደኛ ካልሆኑ ለሚቀጥለው ተጠያቂ መግባቢያ ሰነዱን ያንብቡ።

የመረጃ ሰብሳቢው ስም ----- ፊርማ ----- ቀን -----

የሱፐርቫይዘሩ ስም ----- ፊርማ ----- ቀን -----

Annex B: Data Collection Tools

Data Collection Tools Used at Health Facilities

Name of health facility _____

Table 1: Caregivers/provider interaction observation checklist, evaluation of quality of EPI program in Godere Woreda, July 2014

S/N	Activities and conditions	Yes	No
1	Did the places, used for vaccination have the large shade or appropriate to vaccination?		
2	Did the provider wash hand with soap before administration?		
3	Did the provider correctly assess which vaccines infants are eligible?		
4	Did the provider use ice pack, vaccine carriers correctly?		
5	Did the provider correctly reconstitute the antigen with appropriate diluent as needed?		
6	Did the provider explain about antigens and diseases?		
8	While discussing with the caregivers, did the provider use clear language that caregivers understand (if possible local language)?		
9	Did the provider use safety box to dispose needle?		
10	Did the provider dispose of vials, plastics, swabs correctly?		
11	Did the provider gave information on side effects after immunization and discussed what caregivers should do about side effects?		
12	Did the provider avoid recapping needles?		
13	Was at the end of immunization session provider discard opened BCG & MCV?		

Table 2: Documents and records review checklist, evaluation of quality of EPI program in Godere Woreda, July 2014

S/N	Activities and conditions	Yes	No
1	Total child immunized(DPT-HepB-Hib3) in 2006 EC: age < 1 year ____ age ≥1 year ____ Total ____		
2	Have a session plan for mobile / outreach in 2006 EC?		
3	Did they send monthly report of last month on recommended time?		
4	Is there immunization following up chart to control the coverage of the vaccination?		
5	Is the dropout rate between DPT-HepB-Hib1 and DPT-HepB-Hib3 less than 10%?		

Total number of children registered _____ appropriately registered _____ from July 9, 2013 to July 8, 2014

The number of planned immunization sessions (fixed sessions and outreach sessions) _____

Achieved _____ since the last 3 month

Was the temperature of the refrigerator recorded twice a day and did it remain between +2C and +8C from Apr. 9 to July 8, 2014? 1. Yes 2. No

Write reading of the current temperature: _____

Is the HC/HP attaining its coverage targets? Compare the current immunization coverage of the woreda to its annual coverage objectives.

Name of health facility _____

S/N	Administered antigens	Plan	Achievements
2	DPT-HepB-Hib1		
3	DPT-HepB-Hib3		
4	PCV1		
5	PCV3		
6	OPV1		
7	OPV3		
8	MCV		
9	Fully immunized		

Table 3: Observation checklist of immunization units', evaluation of quality of EPI program in Godere Woreda, July 2014

S/N	Activities and conditions	Yes	No
1	Did the immunization-monitoring chart was filled and plotted?		
2	Was a map of the catchment area has displayed in the unit?		
3	Is the map contains basic information about the population it serves: number of births annually, number of children less than one year of age, population of rural and urban areas by village?		
4	Were 2006 EC last two quarters supervision results available?		
5	Are sub-center and outreach schedules available on the wall?		
6	Did the room was cleaned and prepared before service provision start?		

Table 4: Observation checklist of cold chain units, evaluation of quality of EPI program in Godere Woreda, July 2014

S/N	Activities and conditions	Yes	No
1	Did the provider use vaccine carriers and cold box correctly?		
2	Does the fridge working, and kept appropriately?		

3	Are vaccine kept appropriately?		
4	Are the vaccines kept in the cold chain has debris or freeze?		
5	Does refrigerator temperature monitoring chart fill two times per day from Apr. 9 to July 8, 2014?		

Table 5: Availability check lists, evaluation of quality of EPI program in Godere Woreda, July 2014

S/N	Equipment, supplies and furniture's availability	Yes	No
1	Sitting area for caregivers		
2	Chair and table for health workers and caretakers		
3	Appropriate waste disposal system(safety box, plastic bag or bucket and incinerators)		
4	Up-to-date and complete immunization monitoring chart on the wall		
5	A map of local/catchment area		
6	Immunization card for a session		
7	Standard registration books		
8	Tally sheets for a session		
9	Syringe (0.05ml) for a session		
10	Syringe (0.5ml) for a session		
11	Syringe (2ml) for a session		
12	Syringe (5ml) for a session		
15	DPT-HepB-Hib antigen a session		
16	MCV for a session		
17	Cotton for a session		
18	PCV for a session		
19	Rotarix 1antigen for a session		
20	Diluents for a session		
21	Droppers for a session		
22	Plastic bag/bucket for a session		
23	Tap water		
24	Immunization guideline		

Data collector name: _____ Signature _____ Date __/__/__

Supervisor name: _____ Signature _____ Date __/__/__

Exit interview questions for caregivers

I. General information

1. Name of Health facility _____

II. Demographic information

1. Age of caregivers _____

2. Sex 1 Male 2 Female

III Socio-economic information

1. Educational status: 1. Illiterate 2 Read and write only

3. Elementary (grade 7&8) 4. Secondary and above (above 9th)

2. Employment: 1. Government 2. self

3. If you are government employ, in what occupation? 1. Manager 2. Professional

3. Technician and associate professional 4. Clerical support worker 5. Cleaner and helper

4. If you are self-employed in what occupation? 1. Mixed crop and animal producer

2. Street and related sales and service worker 3. Handicraft worker 4. Daily laborer

5. Place of residence 1 Urban 2 Rural

6. Religion 1. Muslim 2. Orthodox 3. Protestant 4. Catholic

7. Ethnicity 1. Majang 2. Amara 3. Kaffa 4. Oromo 5. Tigre 6. Other specify _____

IV Health system related information

1. How far is your home from immunization post? _____ (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

3. Have you get immunization service based on previous appointment?

1. Yes

2. No

4. If you not, why? 1. personal problem 2.un availability of service

5. Did provider tell you the use and side effect of the administered antigen?

1. Yes

2. No

V. Satisfaction related information

In this parts of questions we interested to know your level of satisfaction in immunization service provided, Please indicate your level of satisfaction with each of the following characteristics.

Table 6: Satisfaction questions for caregivers, evaluation of quality of EPI program in Godere Woreda, June 2014

S/n	measurements	Very dissatisfied(1)	Dissatisfied(2)	Undecided(3)	Satisfied(4)	Very satisfied(5)
1	How much are you not satisfied with the convenience of immunization post to your home?	1	2	3	4	5
2	How much are you not satisfied with the availability of provider at working time?	1	2	3	4	5
3	How much are you not satisfied with the friendliness/politeness of the providers?	1	2	3	4	5
4	How much are you not satisfied with the competence/knowledge of the providers?	1	2	3	4	5
5	How much are you not satisfied with day of immunization?	1	2	3	4	5

S/N	measurements	Very satisfied(5)	Satisfied(4)	Undecided(3)	Dissatisfied(2)	Very dissatisfied(1)
1	How much are you satisfied with the availability of service based on previous appointment?	5	4	3	2	1
2	How much are you satisfied with convenience of immunization service to working hours?	5	4	3	2	1
3	How much are you satisfied with the time spent in waiting room?	5	4	3	2	1
4	How much are you satisfied with cleanness of the vaccination room?	5	4	3	2	1
5	How much are you satisfied with overall service provided?	5	4	3	2	1

Do you have any other comments that you would like to share?

Data collector name: _____ Signature _____ Date __/__/__

Supervisor name: _____ Signature _____ Date __/__/__

ከተጠቃሚዎች መረጃ መሰብሰቢያ ቅጽ

የጤና ተቋሙ ስም _____

I. ዲሞግራፊክ መረጃ

1. የእናት ወይም የተንከባካቢ እድሜ -----
2. ልጅ 1. ወንድ 2. ሴት

II. ለሺዮ-ኢኮኖሚክ መረጃ

1. የትምህርት ደረጃ
 1. ማንበብና መጻፍ የማይችል
 2. ማንበብና መጻፍ የሚችል
 3. የመጀመሪያ ደረጃ (7ኛ ና 8ኛ)
 4. ሁለተኛ ደረጃና ከዚያ በላይ (ከ9ኛ በላይ)
2. የስራ ሁኔታ
 1. በመንግስት
 2. በግል
3. የመንግስት ስራተኛ ከሆኑ በየትኛው የስራ ዘርፍ እስተዳዳሪ
 2. ባለሙያ
 3. መለስተኛና ተባባሪ ባለሙያ
 4. የፅህፈት ባለሙያ
 5. የድጋፍና ፅዳት ስራተኛ
4. በግል የስራ ዘርፍ ላይ ከተሰማሩ
 1. ግብርና
 2. ነጋዴ
 3. የእደ ጥበብ ባለሙያ
 4. የጉልበት ስራተኛ
5. የመኖሪያ ስፍራ
 1. ገጠር
 2. ከተማ
6. የሚከተሉት የእምነት ዘርፍ
 1. ሙስሊም
 2. ኦርቶዶክስ
 3. ፕሮቴስታንት
 4. ካቶሊክ
7. ብሄር
 1. ማጃንግ
 2. አምሀራ
 3. ካፋ
 4. አሮሞ
 5. ትግሬ
 6. ሌላ ከሆነ ይጥቀሱ -----

III. የጤና አገልግሎት መረጃ

1. የከትባት አገልግሎት ማግኛ ቦታ ከቤቶ ያለው ርቀት በደቂቃ ስንት ይሆናል? -----
2. በከትባት አገልግሎት ማግኛ ቦታ ከትባቱን ለማግኘት ያባከኑት ጊዜ በደቂቃ ስንት ይሆናል? -----
3. ከትባት የሚሰጥበት ሰዐት ለዕርሶ ምቹና ተስማሚ ነው?
 1. አዎ
 2. አይደለም
4. ከትባት የሚሰጥበት ቀን ለዕርሶ ምቹና ተስማሚ ነው?
 1. አዎ
 2. አይደለም
5. የከትባት አገልግሎቱን ያገኙት ቀድሞ በተሰጡት ቀጠሮ መሰረተ ነው?
 1. አዎ
 2. አይደለም
6. አይደለም ካሉ ለምንድ ነው?
 1. በግል ችግር
 2. አገልግሎቱ ባለመኖሩ
7. ከትባት ለልጅ የሰጠው ሰው ስለሰጠው ከትባት ጥቅምና ጉዳት ነግሮታል?
 1. አዎ
 2. አልነገረኝም

V. የደምበኞች አገልግሎት ዕርካታን በተመለከተ

በክትባት አገልግሎቱ ያገኙትን የዕርካታ መጠን ለሚከተሉት ጥያቄዎች ያመልክቱ

ሰንጠረዥ 1፡ የደምበኞች አገልግሎት ዕርካታ መለኪያ ጥያቄ፡ የህፃናት ክትባት ፕሮግራም ግምገማ ጎደሬ ወረዳ 2006

ተ.ቁ.	መለኪያ	በጣም አልረከሁም(1)	አልረከሁም(2)	አልወስንም(3)	ረከቻለሁ(4)	በጣም ረከቻለሁ(5)
1	የክትባት ጣቢያው ከቤቶ ባለው ርቀት ምን ያህል አልረከም?	1	2	3	4	5
2	የክትባት አገልግሎቱ በሚሰጥበት ሰዓት በአገልግሎት ሰጪዎች መኖር ምን ያህል አልረከም?	1	2	3	4	5
3	በክትባት አገልግሎት ሰጪዎች ሰላምታ ወይም ቀረቤታ ምን ያህል አልረከም?	1	2	3	4	5
4	በክታቢዎች እውቀት ወይም ችሎታ ምን ያህል አልረከም?	1	2	3	4	5
5	የክትባት አገልግሎት በሚሰጥበት ቀን ምን ያህል አልረከም?	1	2	3	4	5
ተ.ቁ.	መለኪያ	በጣም ረከቻለሁ(5)	ረከቻለሁ(4)	አልወስንም(3)	አልረከሁም(2)	በጣም አልረከሁም(1)
1	የክትባት አገልግሎቱን ባለፈው ቀጠሮ መሰረት በማገኘት ምን ያህል ረከተዋል?	5	4	3	2	1
2	የክትባት አገልግሎት በሚሰጥበት ሰዓት ምን ያህል ረከተዋል?	5	4	3	2	1
3	በክትባት በአገልግሎት መሰጫ ቦታ ቆይታዎ ምን ያህል ረከተዋል?	5	4	3	2	1
4	በክትባት አገልግሎት መሰጫ ክፍሉ ጽዳት ምን ያህል ረከተዋል?	5	4	3	2	1
5	በአጠቃላይ በተሰጠው ክትባት አገልግሎት ምን ያህል ረከተዋል?	5	4	3	2	1

ለማጠቃለል፣ በአገልግሎት አሰጣጡ ላይ የሚያስተላልፉት መልክት ወይም አስተያየት ይኖርታል?

የመረጃ ሰብሳቢው ስም ----- ፊርማ ----- ቀን -----

የሱፐርቫይዘሩ ስም ----- ፊርማ ----- ቀን -----

Wasiyeki Tenaa Tekuamee _____

I. Demographic factor

1. Emoos tjna mankiree meyii ees awoyaak _____
2. Pakatit 1, Moy 2 Peet

II. Socio-economic factors

1. Gtee taamariyongk
 1. Esgkuoletpeet aan betik 2. Esga Dusznee kipiajiaagak
 3. Seeji saki ai arnee sadisonk 4. Seeji saki ai arnee Erna
2. Tee ijagonk: 1. Meagisti 2. Giliyonk
3. Gn inii man gistiyonkung, bee arkiain won:
 1. Sumiken 2. Balemuya, 3. Baiemuyaa sd arkorsak
 4. Bale muyaa SS taptank 5. Seno kongyaigaiianik
4. Okon arkin ljag nokungi: 1. Gebeere 2. Nagjad
 3. Ljagen sgaegereekik 4. Isg IIadi wumnek
5. Saan beaiaink: 1. Kentec 2. Katame
6. Gtce ngadiyekongk: 1. Eslamee 2. Ortodox 3. Pentee/protestant 4. Katolik
7. Komoy: 1. Majang 2. Amaree 3. Donjen 4. Oromoy
 5. Tigitee 6. Okon lakecom in yangee _____

111. Health system related factors

1. Saan Laniaee kitibatik nakinoke yowerkanek dekikaa Egeerg? _____
2. Gistiyonkung kitibatik nakinoke yowerkanek dekikaa Egeerg? _____
3. Saan ga beek ee kitabatic Ina yang yo? 1. Yang 2. Kiyakaa
4. Bhengosee gabhadhe kitibatike sayitti neek yang? 1. Iyii 2. Moko

5. Tokongy kitibatike langir otee sakoo, konagaely? 1. Iyii 2. Moko
6. Okon tonun kee mokun nee ogut jiik? 1. Okun doatii 2. Ageligiloti tognu
7. Isee gabhe kitibat to mokak, nee ogutu tokongy see kitibatik rakotaneek tonu konang?
1. Iyii 2. Moko

V. Detee yakaa tokongy jogee ijabeerk

Ikamitak	Sapareet/p akatit	Gaytii jet (5)	Bayting(4)	Jotte(3)	Kitii gaye(2)	Kitii gaye jet(1)
1	San toydhidhek ngakinokee yowerkankee kinayakaa aeete eek?	5	4	3	2	1
2	Sayitisaato ydhidhek tokongy jogee ga bhik bhel nengk kiyakaa eete eek?	5	4	3	2	1
3	Tokangy jogee gabher to yetic yakaa mankiree wonkanengk yaa a eete eek?	5	4	3	2	1
4	Joppe gaa totidhik dhigiron mank olan yaa a eeta eek?	5	4	3	2	1
5	Tokangy to yee tongk bhengysa gabhedhek kiyyakaa a eete eek?	5	4	3	2	1

Ikamitak	Sapareet/pak atit	Gaytii jet (5)	Bayting(4)	Jotte(3)	Kitii gaye(2)	Kitii gaye jet(1)
1	Tokangy toyetinekik otee sinanked hoyuuk yanaa a e tee ek?	5	4	3	2	1
2	Tokangy toyetnekik sagabhedeksayitii yanaa te a ek?	5	4	3	2	1
3	Sadngy sinee igabdhee toka to yet on kuk bedhit nok yanaa a ete ek?	5	4	3	2	1
4	Sadi to ydhidhee bade neke menta nkanek yaa a ele ek?	5	4	3	2	1
5	Bangee nekee tokangy see to kangy see to yetonsky mentanko nek yaa a ete eek?	5	4	3	2	1

Pediyaa neka tokangy gabhee nekik range okan lakee waasiyeeng mankiree yobhing

Orpaa isee to lee wasiyeki _____ leeyu _____ dhong _____

Orpaa isee ikomtank _____ leeyu _____ dhong _____

Interview guide for immunization service providers

Name of Health facility _____

Number of workers that work in the unit _____

1. Is there trained health worker on immunization in this facility? If not, why?

2. Describe the adequacy of health workers involved in immunization in this facility

3. Are supplies and equipment adequate for a session? If not, why?

4. Where filled safety boxes or plastic bag or bucket disposed?

5. Are the immunization days done regularly every month? If not, why?

6. Are OPV1, PCV1 and DPT-HepB-Hib1 and third doses of each uptake is equal? If not, why?

7. Have you monthly meeting in woreda to review coverage and to share lessons learned? If not, why?

8. Do immunization sessions been cancelled because of insufficient supplies or any other reason in the last three month?

9. What are the general problems or factors related to immunization? What are the likelihood solutions?

10. Do you have any other comments that you would like to share?

Data collector name: _____ Signature _____ Date __/__/__

Supervisor name: _____ Signature _____ Date __/__/__

Data collection tools used at woreda health office

Name of Health office _____

Table 1: Documents and records review checklist, evaluation of quality of EPI program in Godere Woreda, June 2014

S/N	Activities and conditions	Yes	No
1	Total child immunized(DPT-HepB-Hib3) in 2006 EC: age < 1 year ____ age ≥1 year ____ Total ____		
2	Have a session plan of 2006 EC for mobile / outreach?		
3	Did they send monthly report of last month on recommended time?		
4	Is there chart for following up of the coverage rate of the vaccination?		
5	Is the dropout rate between DPT-HepB-Hib1 and DPT-HepB-Hib3 less than 10%?		

Total number of children registered _____ appropriately registered _____ from July 9, 2013 to July 8, 2014

The number of planned immunization sessions (fixed sessions and outreach sessions) _____

Achieved _____ since the last 3 month

Was the temperature of the refrigerator recorded twice a day and did it remain between +2C and +8C from Apr. 9 to July 8, 2014? 1. Yes 2. No

Write reading of current temperature: _____

Is the woreda attaining its coverage targets? Compare the current immunization coverage of the woreda to its annual coverage objectives.

Name of health office _____

S/N	Administered antigens	Plan	Achievements
1	DPT-HepB-Hib1		
2	DPT-HepB-Hib3		
3	PCV1		
4	PCV3		
5	OPV1		
6	OPV3		
7	MCV		
8	Fully immunized		

Table 2: Observation checklist of immunization units, evaluation of quality of EPI program in Godere Woreda, June 2014

S/N	Activities and conditions	Yes	No
1	Did immunization monitoring chart was filled and plotted?		
2	Is a map of the catchment area have displayed prominently at the health office?		
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 rural and urban areas by village?		
4	Were 2006 EC last two quarters supervision results available?		
5	Did vaccine reconstituted correctly just before the immunization session?		
6	Were sub-center and outreach schedules available on the wall?		

Table 3: Observation checklist of cold chain units, evaluation of quality of EPI program in Godere Woreda, June 2014

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 loose or dirty)		
5	Were all VVMs of antigens okay?		
6	Did the fridge working, and kept appropriately?		
7	Did the vaccines have kept appropriately?		
8	Did the vaccines have kept in the cold chain has debris or freeze?		
9	Did the vaccines, which are not expiry yet, used?		
10	Does refrigerator temperature monitoring chart had filled two times per day from Apr. 9 to July 8, 2014?		

Table 4: Availability checklist, evaluation of quality of EPI program in Godere Woreda, June 2014

S/N	Equipment, supplies and furniture's availability	Yes	No
1	Up-to-date and complete immunization monitoring chart on the wall		
2	A maps of woreda catchment		

3	Immunization card for one quarter		
4	Tally sheets for one quarter		
5	Syringe (0.05ml) for one quarter		
6	Syringe (0.5ml) for one quarter		
7	Syringe (2ml) for one quarter		
8	Syringe (5ml) for one quarter		
9	BCG for one quarter		
10	OPV for one quarter		
11	DPT-HepB-Hib for one quarter		
12	MCV for one quarter		
13	Cotton for one quarter		
14	PCV for one quarter		
15	Rotarix 1 for one quarter		
16	Diluents for one quarter		
17	Droppers for one quarter		
18	Plastic bag/bucket for one quarter		

Data collector name: _____ Signature _____ Date __/__/__

Supervisor name: _____ Signature _____ Date __/__/__

Interview guide at health office level

Name of Health office _____

Number of workers that work in the unit _____

1. Is there at least one trained health worker on immunization in in practice in this facility? If not, why? _____

2. Describe the adequacy of health workers involved in immunization activity in the woreda

3. Are supplies and equipment adequate for previous quarter? If not, why?

4. Do the achievement reports on immunization activities been received on time from all operational HFs in last three months? If not, why?

5. Are the immunization days done regular every month? If not, why?

6. Do monthly meeting held in woreda with health workers to review their coverage, and share lessons learned? If not, why?

7. Do immunization sessions been cancelled due to insufficient supplies or any other reason before?

8. What are the general problems or factors related to immunization? What are the likelihood solutions?

9. Do you have any other comments that you would like to share?

Data collector name: _____ Signature _____ Date __/__/__

Supervisor name: _____ Signature _____ Date __/__/__

Declaration

I, the undersigned, hereby declare that this thesis finding is my original work and has never been presented for any degree in Jimma University or any other institutions of higher learning in Ethiopia. I also declare the duly acknowledge of all material sources used by for this thesis work.

Name of student_____

Signature_____

Date_____

This thesis has been done under our supervision as a University advisor

Name of the first Advisor: _____

Signature_____

Date_____

Name of second Advisor: _____

Signature_____

Date_____

External (Internal) Examiner

Name of second Advisor: _____

Signature_____

Date_____

Name of Department Head_____

Sig_____

Date_____