

ADDIS ABABA UNIVERSITY  
SCHOOL OF GRADUATES STUDIES

ASSESSMENT OF QUALITY OF EXPANDED PROGRAM ON  
IMMUNIZATION IN OROMIA ZONE OF AMHARA REGION

BY

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THESIS SUBMITTED TO THE SCHOOL OF GRADUATE  
STUDIES, ADDIS ABABA UNIVERSITY IN PARTIAL  
FULLFILLMENT FOR THE DEGREE OF MASTERS IN  
PUBLIC HEALTH

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JUNE 2006  
ADDIS ABABA

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## ACKNOWLEDGEMENTS

First and for most, I would like to express my deepest appreciation to my advisor Ato Ababi Zergaw for his invaluable guide and unreserved help throughout the work of this project.

I would like to thank S/R Mitike Molla for guiding me in entry and analysis of the data.

My sincere thanks go to the Oromia zone health desk for allowing me to study in the zone and for providing me with the support during my data collection.

I am grateful to all the study participants for their full cooperation during my study.

My debt of gratitude goes to my wife Aberash Kassahun for her continuous support and encouragements along with taking care of our children throughout my study.

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## **ACRONYMS**

BCG - Bacillus Callmete Guerin

DPT - Diphtheria - Pertussis - Tetanus

EPI - Expanded Program on Immunization

MOH - Ministry of Health

UNICEF - United Nations Children's Fund

VVM - Vaccine Vial Monitoring

WHO - World Health Organization

## SUMMARY

One of the goals of global program on immunization for the last two decades has been to reach all children of the world with vaccination services. Though the program aimed to reach all children of the world, around three million children still die each year from vaccine preventable disease. These deaths mostly occur in developing countries where health systems may be weak and less able to cope with an overwhelming set of health problem. Moreover, in previous time much of the attention was given to increase the EPI coverage, but now the expanded program on immunization (EPI) is placing emphasis on the quality of the services and a review of existing literature strongly suggests that the quality of service provided is an important determinant of acceptance and compliance with the service.

In Ethiopia, some of the important factors that impede progress towards the achievement of the expected EPI coverage are; poor staff motivation, infrequent in-services training and inadequate supervision, and most EPI service evaluation focused on achievements of coverage and give less regard to the quality of services. Therefore, this health service based cross-sectional descriptive study was carried out to assess the quality of EPI service in Oromia Zone of Amhara National Regional State. Health institutions were selected based on simple random sampling technique and level of client satisfaction was assessed by interviewing mothers /caretakers at the exit site of the selected health institutions after taken the immunization service. Data from the health

institutions were taken by Observing cold chain system, interview with immunization service providers and inventory of logistics. The result showed that 422 (93.7%) of mothers/ caretakers were satisfied with the quality of the services. Out of the nine selected health institutions, three (33.3%) had no refrigerator, all service providers working in the selected health institutions have adequate knowledge on immunization activities, and most health institutions were not supervised for the last 6 months.

Adjusted Odds ratio results from multiple logistic regression for mothers /care takers satisfaction suggested that waiting time, history of facing problem after taking vaccination and discussion with health workers during immunization sessions were found to be significant determinants of mothers'/care takers satisfaction towards EPI services.

Generally, the quality of EPI service in the study area was found to be good but for a generalization to be made, further studies has to be made with large sample size at regional and national level to assess the quality of the programme

## 1. INTRODUCTION

Immunization is the most cost effective intervention in public health and it is one of the indicators of development in most developing countries namely, tuberculosis, measles, poliomyelitis, diphtheria and whooping cough. And therefore, the expanded program on immunization (EPI) was launched in 1974 as a global program for the control of vaccine preventable diseases (1). Though the program aimed to reach all children of the world, around three million children still die each year from vaccine preventable diseases (2). These deaths mostly occur in developing countries where health systems may be weak and less able to cope with an overwhelming set of health problem (3). Moreover, in the previous time much of the attention was given to increase the EPI coverage, but now the expanded program on immunization is placing emphasis on the quality of the service (2). And a review of existing literature strongly suggests that the quality of service provided is an important determinants of acceptance and compliance with service. Quality of immunization service delivery is the suitability for providing the program in reliable manner, which is indicated by its components such as information and education, vaccine storage and handling and record keeping. With this regard, WHO also conducted a serious of field surveys in order to obtain understanding of typical procedures for the receipt, storage, distribution, handling and administration of vaccines (4). Quality of immunization is also assessed by its coverage, drop-out rate, completeness and timelines of report, availability of cold chain equipment, and human skill (5).

A study done in Zimbabwe showed that poor coverage was related to the poor quality of EPI service (specifically to invalid doses and missed opportunities) (6). In 1980 the Ethiopian government established the expanded programme on Immunization, which was tasked with increasing vaccination coverage against the six childhood killer disease by 10% each year to reach 100% coverage by 1990 but, this programme goal has large remained unrealized. Despite the high prevalence of vaccine preventable disease in the country, immunization coverage rates stagnated and remained very low for many years. In most woreda of Ethiopia the important weakness that impede immunization program to achieve expected goals are found to be insufficient out reach services, poor staff motivation, infrequent in-service training and inadequate supervision, insufficient communication between health staff and community members, inadequate monitoring systems at all levels and lack of community participation due to lack of awareness and absence of social mobilization (7). In the country most EPI evaluations have focused on population coverage, and there has been less effort given in the assessment of the quality of immunization services provision. similarly, In Oromia Zone of Amhara region the quality of EPI service was not assessed and therefore, the objective of this study was to asses the quality of EPI service with emphasis on mothers/care takers satisfaction which might fill the gap of knowledge that prevails at present and the finding will help the zonal health department and other organizations working in EPI for their service delivery strategies in the studied area.

## **2. LITERATURE REVIEW**

Quality of health care is defined as having at least three dimensions. Which include structure, process and outcome (8). In the health care, purpose of quality assessment is to improve the effectiveness of programs and quality assessment will show not only the outcomes or accomplishment of services and programs in relation to standards but it may also suggest points of difficulty; so that efforts can be focused on the weak link in the chain of service provision (9). A study done in rural Nepal showed that immunization coverage is three to four times higher among families who are nearest to health post with high quality health service than among those who have poor quality health posts (10).

### **2.1 STRUCTURE/SERVICE INPUT**

To give quality immunization service; cold chain equipments (refrigerators, cold box, vaccine carrier, thermometer), vehicles, seat, waiting areas protected from both rain and sun, separate room for immunization, vaccines and syringes with needle should be available. However a study conducted in Punjab showed that during survey in urban areas all the facilities except few run by local bodies were without refrigerator and there were shortage of disposable syringes and needles (11). A study done in west Gojam, Ethiopia, showed that reusable syringes and needles were reported to be inadequate and were used for more than a year in most health institutions and in some used for about two years. As a result, needles were observed to be blunt and hooked (12),

so this may cause injury to the site of injection. Even though some government clinics reported delay in per diem payment, no study discussed the issue of per-diem as a source of EPI service staff de-motivation (13). Moreover, regarding the other quality influencing factor, it is believed that each district or service area should develop appropriate strategies to ensure that all children are reached by immunization service. This will require increasing community involvement in the vaccination program and increasing accessibility of services (1)

## **2.2 SERVICE PROCESS**

Immunization service shall be provided at all static unit and qualified health workers should carry out each immunization session. These requirements should apply for both static and out reach sessions. A study conducted in Dhaka city, Bangladesh revealed that at each of the 13 clinics, among workers who are giving immunization all but three indicated that they had received on the job training on immunization as well (14). A study done in west Gojam showed that out of 50 service provider thirty -four (68%) service providers were trained in peripheral level EPI training, two (4%) in mid level EPI training, 10 (20%) in cold chain management, and nine (18%) in motorcycle riding. Most of those who had the training in one or other acknowledged that the training was sufficient to enable them to perform their duties effectively (12)

The other factor in the service process of the EPI is, identifying contraindication for immunization. Though, there are few contraindications to the EPI vaccines, the risk of delaying a vaccination because of current illness is that the child may

not return back and resulted in lost opportunity (1). Therefore, mothers/care takers should be educated properly about immunization. The study done in Cameron showed that maternal education is decisive to immunization status of the child (15) and a study done in Jimma showed that 71% of those mothers were told not to bring their child for immunization when the child gets sick (16). Another study showed that few service providers have correctly identified the contraindication (12). In addition, immunization injections are only safe when the correct vaccine is properly administered with sterile equipment and subsequently safely disposed. On the other hand, unsafe injection can result in infectious and non infectious complications (17). So, the need for safe injection is very critical for the success of immunization program and the auto disable (AD) syringe is recommended for all children to be immunized because if it automatically locks and becomes unusable after delivering a single dose of vaccine, this ensures that every injection is given with new sterile syringe and needle and prevents the dangerous particles of reusing syringe and needle (5). Because, so many needles and syringes are reused without proper sterility it is estimated that one - third of all injections( the majority not immunizations)are unsafe and that over 12 million cases of hepatitis B and C and over 100,000 HIV cases are caused every year by non-sterile injections. Many health workers also develop hepatitis B and occasionally HIV through needle stick injuries (18).

Another quality determinant factor is the reporting and monitoring of services. A study conducted in southern regions of Ethiopia indicated that all health institution report immunization activity to the higher level on monthly basis. They use the national EPI reporting formats. Summary of EPI activities is also included in the MCH formats as well. Though all used the same formats, the quality of recording varies among the health institutions. All health institutions reported that they receive feedback pertaining to their routine reports in one way or another.

Vaccine wastage control is the other most important quality determinant factor. The World Health Organization reports over 50% vaccine wastage around the world. Despite the availability of many tools for reducing such wastage, high wastage rate are still occurring in some countries. It is also important to know the type of vaccine wastage. A high wastage rate attributable to opening a multi-dose vial for a small session in order to avoid missed opportunities is more acceptable than wastage attributable to freezing or expiry date. However, it should be noted that higher vaccine wastage is expected with freeze-dried vaccine since they must be discarded within six hours of opening; whereas liquid vaccine can be used in subsequent sessions for up to 4 weeks (19).

In the service process of the EPI missed opportunities for immunization are also important factors and it was reported that only 20% of the African children at risk to diseases preventable by immunization are currently protected, of the unprotected an estimated 30% to 50% have contact with health facilities coverage

can be significantly increased if full use is made of all current contact between eligible population and health system (20). Giving health education, timely mobilization, identifying mothers not complying with immunization, and educating at individual level are important strategies to raise the awareness of mothers on immunization and decrease defaulting among illiterate mothers in urban and rural areas(21). A study done in Addis Ababa showed that, of the 982 children who visited the selected health institution during the study periods, 406 (41%) were found to be either not up-to-date for immunization or not immunized at all (22). Similarly, once vaccination services become accessible, efforts should be made to increase community motivation and to ensure that children complete the immunization series. But the study done in Jimma town showed that out of the total 376 children, 201 (53.5%) were defaulters (16).

Another most important quality influencing factor is the management of the cold chain. All vaccines are sensitive biological substance and lose their potency, i.e. their ability to give protection against disease, with time. Once potency is lost it cannot be regained or restored. In some cases heat exposure leading to loss of potency may also cause the vaccine to become more reactogenic (6). Although effectiveness of the cold chain has not been widely evaluated in many developing countries including Ethiopia a study done in two rural and one urban administrative area indicated that there were real weakness in cold chain system in Ethiopia, which could compromise the potency of the vaccines and general quality of the immunization service (24). A study done in Canada

showed that up to 13% of vaccines were exposed to freezing during distribution and storage (25). Generally cold chain consists of a series of storage and transport links, all designed to keep vaccines within an acceptable range until it reaches the users (26).

### **2.3 SERVICE OUTCOME**

In this study, no attempt was made to measure all dimensions of quality of service outcome rather attention is restricted to client satisfaction. Along with other measure of quality, significant attention has been devoted towards the measurement of patient satisfaction (9). Client satisfaction is an integral component of health service. The effectiveness of health care is determined to some degree by consumer's satisfaction with service provided. A satisfied client is more likely to comply with medical treatment prescribed or service provided. Client satisfaction with the services and perceived quality tend to influence utilization of service as well as compliance with practitioner recommendation (27). Poor quality service, with its resulting consumer satisfaction increases dropout rate and underutilization (28). The study conducted in rural Bangladesh showed that the most powerful predictor for client satisfaction was provider behavior, especially respect, politeness and reduction in waiting time (29). Another study done in West Gojam showed that 98% of mothers were satisfied with the service provided (12). To summarize, quality of EPI depends on many factors that influence the services. So this study tried to assess the services based on the given components of quality.

### 3. OBJECTIVES

#### **General objective:**

The general objective of the study was to assess the quality of EPI service in Oromia Zone of the Amhara Regional State.

#### **The specific objectives of the study were:**

1. To describe mothers'/caretakers' satisfaction with the EPI services they receive for their children.
2. To assess the status of cold chain management system in the selected health institutions.
3. To assess availability of logistics and other supplies for the EPI services.
4. To assess health worker's knowledge and practice in the EPI services.

## 4. METHODOLOGY

### 4.1 Study Area

The study was conducted in Oromia Zone of Amhara National Regional State. The Zone has a total population of 559,902 and under one year children are estimated to be 19,188. Administratively, the Zone is divided in to five districts and the capital city of the Zone Kemisse, is located 325 km away from Addis Ababa to the north. In the Zone there are 6 health centers and 60 health posts. Under these institutions there are 31 static and 187 outreach immunization sites. The potential health service coverage in the Zone is about 54% (30)

### 4.2 Study design

Health institutions based cross-sectional descriptive survey was the design of the study and summarized in the table below.

#### Summary of the study design

<b>Objective</b>	<b>Study population</b>	<b>Method of data collection</b>
To describe client satisfaction	Mothers/caretakers	Exit interview
To assess status of cold chain	Health institutions	Check list
To assess availability of logistics and other supplies	Health institutions	Check list
To assess health workers knowledge and practice	EPI coordinators	Interview

### 4.3 Source and study population

The source populations were the total population of Oromia Zone in Amhara National Regional State. The study populations were mothers /caretakers with under two year old child visiting the selected health facility during data collection period and one EPI coordinator from each selected health facilities.

#### **Inclusion & exclusion criteria for mothers/caretakers**

**A. Inclusion criteria:** - Mothers /caretakers who had children age less than two years and visited one of the selected health facilities during the study period.

**B. Exclusion criteria:** - Those mothers /caretakers who brought their children to the selected health facilities for emergency reason, because they might not be cooperative to participate in the study.

### 4.4. Sample size determination

Sample size was determined by using sample size determination procedure.

Significance level	95%
Degree of error	4%
Satisfaction level (p)	80%

$$n = \frac{Z_{\alpha/2}^2 \cdot P(1-P)}{d^2}$$
$$n = \frac{(1.96)^2 \cdot (0.8)(0.2)}{(0.04)^2} = 385$$

With 20% contingency for non-response the total sample size was 462

#### **4.5 Sampling procedures**

Based on DPT<sub>3</sub> coverage, health centers and health posts were classified in to three categories: high coverage, medium coverage and low coverage health institutions. Those who have DPT<sub>3</sub> coverage greater than 85% were classified as high coverage, and those with 70-85% and less than 70% DPT<sub>3</sub> coverage were classified as medium and low coverage health institutions respectively. One health center and two health posts were randomly selected from each DPT<sub>3</sub> coverage category. Accordingly 3 health center and 6 health posts were included in the study. Those mothers /caretakers with under two years of child who visited the selected health facilities during the data collection period were recruited as a study subject and interviewed.

#### **4.6 Data collection procedures**

EPI supervision checklist for health facilities in Ethiopia which was prepared by WHO and Ministry Of Health was used to collect data through observation regarding cold chain equipment, client-provider interaction and administration of vaccine. This instrument has been on use by both organizations, WHO and MOH. Hence, it is reasonably valid and at the same time reliable. One EPI coordinator from each selected health facilities was interviewed about the service and interviewer administered structured questionnaire was used to collect data from mothers /caretakers. The questionnaire was first prepared in English and translated into Amharic then translated back to English to observe consistency of the variables under question. Six female students who had completed high

school education were hired as interviewer and one nurse was hired as supervisor. Before conducting the main study, training for data collectors and supervisors was given for 3 days. Pre test was carried out on 20 study subjects in one of unstudied health posts. Some questions like those that age of the child “in months” was reworded to “years” for easy understanding, and on average monthly income the choice “I don’t know” for those who were unable to estimate was included. Then the data was collected for 29 days from the selected health institutions from January 2, 2006 to February 10, 2006.

#### **4.7 Data quality control**

Thorough training of data collectors and supervisors was under taken. The principal investigator and the supervisor made day to day on site supervision during the whole period of data collection. Data quality control during data entry was done by double entry to epi-info 6 computer software.

#### **4.8 Data processing and analysis**

Data entry, cleaning and analysis was done using epi-info 6 statistical package. Numbers and proportions were used to describe findings and tables were used to display relevant findings of the study. In addition, multiple logistic regression analysis was used to identify significant findings.

#### **4.9. Variables of the study**

Independent variables: - Education, Religion, Marital status, Occupation, Age, Income, Service provider’s behavior, Access to health service, Previous history of

problem after taking vaccination, Waiting time and discussion with health worker .

Dependent variable:- Mothers' /care takers satisfaction on the EPI service.

#### **4.10. Ethical consideration**

A letter of ethical clearance was obtained from Addis Ababa University, Faculty of Medicine, Department of Community Health Ethical clearance committee. Response to the survey was anonymous. Written consent was taken from Zonal Health Department. Additionally an informed verbal consent was obtained from each study subjects. To ensure confidentiality of respondents their name was not indicated on the questionnaires and to avoid mothers/caretakers bias, interviews were made individually at the exit sites of health facilities.

## **5. RESULTS**

A total of 462 mothers /caretakers were enrolled in the exit interview. Nine health workers were included in the interview aimed at assessing their knowledge and practice about the services.

### **5.1 Socio demographic characteristics**

Socio demographic characteristic of the 462 mothers (table 1) showed that the age of mothers' ranged from 15 to 39 years. Ninety eight percent of mothers were married while 79.9% were not educated, 88.5% of the mothers were Muslim by religion,60.8% were Oromo in ethnicity and 90.5% were housewife by occupation.

**Table 1: Socio demographic characteristics of mothers /caretakers (n=462) of children under 2 years of age in Oromia zone, 2005**

Variable	Number	Percent
<b>1. Age in year</b>		
15 - 20	48	10.4%
21- 35	379	82.1%
36 - 39	35	7.5%
Total	462	100%
<b>2. Educational Status</b>		
Illiterate	369	79.9%
Literacy education	6	1.3%
1 - 6 Grade	63	13.6%
7 - 12	15	3.2%
> 12 grade	9	1.9%
Total	462	100%
<b>3. Religion</b>		
Orthodox Christian	43	9.3%
Protestant	10	2.2%
Muslim	409	88.5%
Total	462	100%
<b>4. Ethnicity</b>		
Amhara	159	34.4%
Oromo	281	60.8%
Argoba	18	3.9%
Other	4	0.9%
Total	462	100%
<b>5. Occupation</b>		
Government employee	26	5.6%
Private employee	4	0.9%
Merchant	13	2.8%
House wife	418	90.5%
Other	1	0.2%
Total	462	100%
<b>6. Marital Status</b>		
Married	454	97.8%
Single	5	1.3%
Divorced	1	0.2%
Widowed	2	0.4%
Total	462	100%

Mothers were asked to name six vaccine preventable diseases they know. Out of 462 mothers/caretakers, 305 (66.2%) could mention 1 to 3 vaccine preventable

diseases, 113 (24.5%) could not mention any of the six EPI target vaccine preventable diseases and only 15 (3.2%) of the mothers /care takers were able to mention all the six EPI target diseases (Table 6).

**Table 2: distribution of mothers /caretakers by number of vaccine preventable diseases mentioned Oromia zone, Amhara Region 2005.**

<b>Number of diseases Correctly mentioned</b>	<b>Number of mothers /caretakers</b>	<b>Percent</b>
0	113	24.5%
1	71	15.4%
2	135	29.2%
3	100	21.6%
4	16	3.5%
5	12	2.6%
6	15	3.2%
Total	462	100%

## **5.2 Status of cold chain**

In one out of nine selected health institutions refrigerator was not available and in two of the nine health institutions refrigerator was not functional, so on the immunization day service providers transport vaccines from nearest health institutions where functional refrigerator is available. Functional vaccine carriers and cold boxes were available in all studied health institutions. The source of power for refrigerators was electricity and kerosene (Table 3). No shortage of kerosene was reported from all studied health institutions.

**Table 3 Source of power for refrigerators in health institutions of Oromia zone  
Amhara Region 2005**

<b>Source of power</b>	<b>Number of health institutions</b>	<b>Percent</b>
24 hours electricity supply	4	44.4%
Generator	1	11.1%
Kerosene	4	44.4%
<b>Total</b>	<b>9</b>	<b>100%</b>

### **5.3 Availability of logistic and other supplies**

Four health institutions have motor cycle and only one health post has a bicycle. In all studied health institutions no shortage of vaccines, reporting formats, ice packs, vaccine carrier, cold box, needle and syringes were reported. On inspection all cold box and vaccine carriers were in good condition. Concerning per-diem five out of nine health workers had responded that they got their allowance every 3 months but four of them reported every 6 months. Regarding satisfaction related to per-diem none of them was satisfied in terms of the amount of money given for allowance.

#### **5.4 Health workers knowledge and practice**

In four health institutions, immunization was provided by senior nurses, four with front line health workers and one with junior midwife nurse. But only three of them were trained on low level EPI training after they graduated from respective training school.

All the service providers had knowledge on the dose for each antigen, route of administration, recommended age of vaccination and the interval between successive sessions. All the service providers knew the recommended temperature for storage of vaccine.

All the service providers know that vaccine should be taken out and be kept either in cold box or transported to other health institution where there is no power supply. One out reach service was observed and vaccine carrier was kept in the shadow and also adequate amount of ice packs was used to protect the vaccine during transportation. Seven (77.8%) service providers knew the main contraindications accepted by WHO. Seven (77.8%) health institutions use open dose vial policy but two (22.2%) health institutions discard DPT vaccine on the day of opening, which leads to increase vaccine wastage rate. All the service providers didn't reuse needle and syringe, didn't separate needles from syringes after use, also they did not recap needles and they all burn used syringes after filling in the safety box.

All the health institutions had EPI monitoring chart for all antigens. Only five health institutions have monitored dropout rate monthly. Drop out rate for DPT3

was 23.1% and for measles was 38.1% and only two of the health institutions monitored vaccine wastage rate. Four health institutions had defaulter tracing mechanism either by health worker or community health workers. Only three of the health institutions had been supervised for the last 5 months, out of them two got feed back. Two health institutions had regular EPI performance assessment with “Kebele” leaders but none of them had explored the degree of user’s satisfaction for EPI. Six of the health institution had review meeting with “Woreda” health office.

All the interviewed service providers reported that they screen children under 2 years of age who come to their health institutions whether they are immunized or not. But during the study period out of 462 children who visited the health institutions, 12 (3%) did not receive their vaccine eligible for the day. Of those who did not received vaccine 5 (42%) were sick and their mothers refused and 3 (25%) were not told to vaccinate their children but 4(33%) did not have vaccination card and their mothers reported that the child did not finished the vaccine but card was lost.

### **5.5 Mothers /caretakers satisfaction**

Four hundred thirty five (96.2%) of the mothers said they were satisfied with the reception of the health worker (Table 4). Since twelve (3%) of 462 mothers /caretakers did not receive vaccine during the study period, they were not asked for their satisfaction with the reception of health workers.

**Table 4 Reasons for client satisfaction with reception of health workers in Oromia zone, Amhara regional state 2005**

<b>Variable</b>	<b>Number</b>	<b>Percent</b>
▪ Way of greetings	78	17.9%
▪ Concern of mothers problem	253	58.2%
▪ Getting information	104	23.9%
Total	435	100%
<b>Reasons for not satisfying</b>		
▪ Health workers were hurry	7	46.7%
▪ No concern for mothers/ caretakers problem	6	40.0%
▪ No Advice given	2	13.3%
Total	<b>15</b>	<b>100%</b>

422 (93.7%) of mothers /care takers were satisfied with the services provided to them. /Table 5/ summarizes the characteristics of service that satisfied the clients.

**Table 5 Reasons for satisfaction of mothers /caretakers on immunization service in Oromia Zone, Amhara Region 2005**

Variable	Number	Percent
▪ Availability of chair/bench	2	0.5%
▪ Waiting time to get services	175	41.4%
▪ Technical skill of service provider	46	10.9%
▪ Cleanliness of worker	2	0.5%
▪ Weighing child and advice on growth of child	95	22.6%
▪ Child screened for illness	72	17.1%
▪ Vaccine preventable diseases have decreased	30	7.1
Total	422	100%

Twenty eight (6%) of mothers complained that their children faced health problem after taking vaccination in the past, out of these, 24 (85.7) had fever and 4 (14.7%) had abscess on the site of injection. One hundred eighty five (41.1%) of the mothers said they have discussed with the service provider about immunization. /Table 6 summarizes the topic of discussion with the service provider/.

**Table 6 Reported topic of discussion with the service provider in Oromia zone, Amhara region 2005**

Variable	Number	Percent
▪ What immunization is	1	0.5%
▪ Type of disease preventable by immunization	45	24.3%
▪ When, how and where vaccines, are given	90	48.6%
▪ Advice on side effect and contraindication of immunization	3	1.6%
▪ Appointment of next session	46	24.9%
Total	185	100.0%

## Access to service

Four hundred eighteen (92.9%) of mothers said the service was convenient to them. (Table 7 summaries the characteristics of the service that made the mothers convenient)

**Table 7**Characterstics of service that made mothers/caretakers convenient

Variables	Number	Percent
▪ Opening hours	59	14.1%
▪ Waiting time	206	49.3%
▪ Distance travel	153	36.6%
Total	418	100%

Out of 462 mothers /caretakers, 28 (6%) of the mothers /caretakers said there is other vaccination center near to them apart from the health institution. /Table 8 summarized the reason of preferring the health institution/

**Table 8** Reason of preferring the health institution by mothers /caretakers, in Oromia zone, Amhara region 2005

Variable	Number	Percent
▪ To get quality service	8	28.6%
▪ Preferred providers are here	20	71.4%
Total	28	100%

The study in relation to accessibility of service revealed that 177 (39.3%) of mothers /caretakers could reach the vaccination site within 15 minutes and 166 (36%) of them reach with in 20 to 39 minutes but 107 (23.8) said that they took

more than 1 hour to reach the vaccination site. Concerning average time spent by mothers at health institutions, 397 (89.2%) of mothers said their average waiting time to get the service was less than one hour. Thirty six (8.1%) said one to two hours, 4 (0.9%) greater than two hours but 8 (1.8%) of them couldn't estimate the waiting time. Forty five (9.7%) of the mothers / caretakers reported they returned home with out immunizing their children in previous appointments, which could increase defaulter rate because the child might not come again.

In the computation of simple odds ratio waiting time and discussion with health workers were found to be important predictors of clients satisfaction (table 9).

Table9: Association between client satisfaction and predictor variables (Simple odds ratio)

Variable	Crude OR(95%CI)
Waiting time < 1 hour 1-2 hour	1.00 0.157 (0.069,0.358)
Discussion with Health worker Yes No	1.00 0.357(0.142,0.898)
Problem After vaccination Yes No	1.00 2.847 (0.915,8.865)
Education level Illiterate Attended literacy education Grade 1-6 Grade 7-12	1.00 0.664 (0.146,3.014) 0.008 (0.000,4.7 E+10) 0.948 (0.71,5.252)

But in multiple logistic regressions waiting time, discussion with health workers and problem after previous vaccination were found to be significant determinants of client satisfaction (table 10). Thus the previous problem after taking vaccination was confounded by variables controlled in multiple logistic regression.

Table10: Association between client satisfaction and predictor variables (Multiple logistic regressions)

Variable	Crude OR(95%CI)
Waiting time < 1 hour 1-2 hour	1.00 0.15 (0.64,0.351)
Discussion with Health worker Yes No	1.00 0.299(0.113,0.790)
Problem After vaccination Yes No	1.00 3.658(1.081,12.3780)
Education level Illiterate Attended literacy education Grade 1-6 Grade 7-12	1.00 0.654(0.128,3.348) 0.011(0.00,2.7E+10) 0.840(0.134,5.247)

## 6. DISCUSSION

This study has described the characteristics of quality of EPI service input, service process and service outcome (with the exception of coverage and effectiveness) for immunization service of Oromia zone of Amhara Region. The result indicated that out of all mothers / caretakers who participated in the study, only 15 (3.2%) could mention all the six vaccine preventable diseases. Similarly the study done in Jimma showed that only 30 (8%) could mention all the six vaccine preventable disease (16), this is probably in the study area only 185 (41.1%) of mothers / caretakers were discussed with service providers.

In the study area three (33.3%) of health institutions didn't have refrigerator but the study done in Soddo and Cheha woredas of Gurage zone showed that at least one or more refrigerator was available in all health institutions (24). So there should be at least one refrigerator in each health institution of Oromia zone in Amhara region. Otherwise during transportation of vaccine from the health institutions where refrigerator is available there might be cold chain breakage and vaccine potency will be lost.

In the study area vaccines were stored in the refrigerator properly. On the contrary the study done on cold chain status at immunization centers in Ethiopia showed that vaccine storage in the refrigerator was observed to be improper in 47 (74%) of the institution (13) and the study done in Canada showed that 13% of vaccines were exposed to freezing during distribution and storage(25), similarly the study done in two rural and one urban administrative area indicated that

there were area weakness in cold chain system in Ethiopia which could compromise the potency of the vaccines and general quality of immunization service(24). The providers of immunization service were knowledgeable, friendly and give technically appropriate service. During the study period the equipment, vaccine and other supplies were adequate but the study in west Gojam showed that there were one or more episode of vaccine stock out report (12). In order to have sustainable service these supplies should be accessible with out interruption for the health institution. Despite of the availability of many tools for reducing vaccine wastage, in studied area 2(22%)of the health institutions discard DPT vaccine the day of opening, but liquid vaccines can be used in subsequent sessions up to four weeks provided that cold chain is not broken(19). Concerning per-diem, all health providers were not paid timely and all were dissatisfied with the amount of money they were earning, similarly, the study done in Sodo and Chaha woredas of Gurage Zone showed that there was a delay in perdiem payment in government clinics(13).

Once the vaccination service becomes accessible, efforts should be made to increase community motivation and to ensure that children complete the immunization service. In the study area only two of the health institution had regular EPI performance assessment with “kebele” leaders and only four health institutions had defaulter tracing mechanism either by health worker or community health workers and the drop out rate for DPT<sub>3</sub> and measles were 23.1% and 38.1% respectively which is almost similar to the study done in Jimma

town, south western Ethiopia (16). The rate of missed opportunities for promoting or providing immunization in this study was 3% which was not as high as the study done in Jimma town 28.8% (16), 15% in west Gojam (12), 44% in Dhaka city, Bangladesh (14). Concerning the average time spent by mothers to get immunization services at health institution, 397 (89.2%) of mothers said their average waiting time to get the services was less than one hour. 40 (9%) said greater than one hour. The result of this study was almost similar to the study done in Jimma town, south western Ethiopia which was 25% stayed for less than 30 minutes while 11.1% said for more than one hour (16).

Access to immunization service was measured in terms of travel time from client's village to the health institution. Regarding access to immunization services 177 (39.3%) of mothers /caretakers could reach the immunization site within 15 minutes and 166 (36.9%) could reach within 20 to 30 minutes. The result of this study was almost similar to the study done in Jimma town which was 35.4% of mothers could reach the vaccination site within 15 minutes and 49.2% of them could reach 15 to 30 minutes(16). 422 (93.7%) of caretakers were satisfied with immunization services. Out of them 175 (41.3%) were satisfied by the fairness waiting time and 30 (7.1%) were reported that vaccine preventable disease have decreased. Similarly a study done in west Gojam showed that 98% of the mothers were satisfied with the service. Of them 47 (23%) were by the timelines of the services and 301 (53%) were satisfied by the effectiveness the vaccine (12) .

Determining factors for client satisfaction were explored using logistic regression analysis. Accordingly, clients who had waited the services for 1-2 hour were 1.15 times more unsatisfied than those who had waited for less than 1 hour. Similarly, clients who had not faced problems like fever and injection abscess after vaccination were about 3.658 times more satisfied than those who did face the problem and those who did not discuss with health workers were 1.299 times more unsatisfied than those who discussed with health workers. .

In general this study revealed that, the providers of immunization service are knowledgeable and give technically appropriate immunization. During the study period vaccine and other supplies are sufficient in the studied health institution sterility procedures are being followed and cold chain requirements are being met but there is shortage of refrigerator defaulter tracing is not done properly and there is no regular supervision of the health institution by higher level.

## **7. STRENGTH AND LIMITATIONS OF THE STUDY**

### **Strength of the study**

- It is the first study to assess the quality of EPI service in the area, so that the local bodies may use it to improve the quality of the service.
- Observation of client-provider interaction and cold chain assessment was done by one person to avoid inter observer bias.
- Interview of the mothers /care takers were made at the exit site of the health institution, so as to keep privacy and they can express their feeling openly.

### **Limitation of the study**

- Since the study was institution based, previously dissatisfied care takers might not come to the same health institution. So that the number of dissatisfied client could be decreased.
- In the checklist some important equipment like vaccine cold chain monitor card, freeze indicators and stopwatch monitors were not mentioned.

## 8. CONCLUSION AND RECOMMENDATIONS

This study has shown that the quality of EPI service in the study area is good and this was evidenced by:

1. Service providers are knowledgeable in giving appropriate immunization service.
2. Cold chain requirements are being met.
3. Four hundred twenty two (93.7%) of mothers/caretakers were satisfied with the immunization service.

However there is room for improvement. To improve the quality of EPI service in the studied area:

1. Defaulter tracing should be done regularly.
2. Per-diem should be given timely for the service providers.
3. Waiting time should be kept as short as possible.
4. Avoiding technical problems that can arise after injection particularly that of abscess, as this might also expose the child to other infectious diseases. Besides, teaching clients on minor and self limiting side effects of vaccination like fever.
5. While this study has given an insight to the quality services of EPI in the area, further studies has to be made with larger sample size at regional and national level for a generalization to be made.

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## **Annex 1: Operational Definition**

**Quality of EPI service:-** Health institutions having a trained service provider with all vaccine and other supplies are in stock. Cold chain and sterility techniques are kept. Timely defaulter tracing and no missed opportunity is occurred and when clients are satisfied with the service given to them.

**Missed opportunities:-** When an eligible child visited the selected health facility and does not receive any or all of the vaccine for which he/she is eligible.

**Supplies and logistics:-** Items necessary for vaccination that includes transport, cold chain equipment, syringe and needles and formats for reporting, seat and vaccine in the study facility.

**Knowledge and practice:-** The skill and the information that the service provider has regarding storage, handling and administration of vaccine.

**Waste management:-** The way of disposing used syringes and needle in the safety box.

**Vaccine wastage rate:-** Is the proportion of vaccine supplied, but not administered to children.

**Injection Safety:-** Using one needle and syringe injection policy, needles /syringes should be auto-disabling and used injection equipment should be burnt.

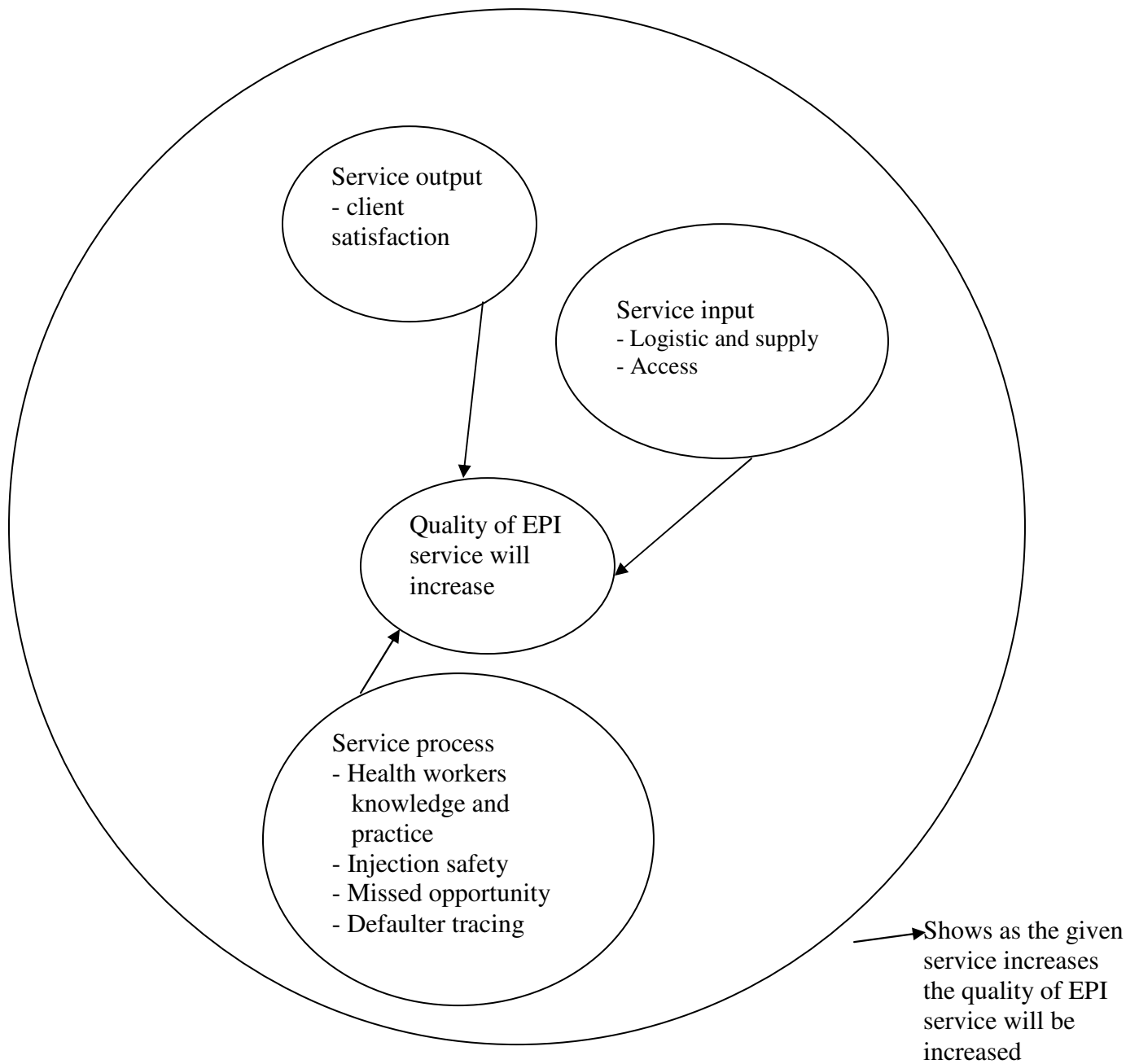
**Cold chain:-** A system of people and equipment, which ensures that the vaccine reaches to children kept at the correct temperature.

**Dropout:-** A child who failed to return for subsequent doses for which he/she is eligible.

**Contraindication:-** Any condition or disease, which makes immunization in advisable or undesirable.

**Vaccine Stock out:-** The absence of any one of the six vaccines at any time in the health institution.

**Annex 2 conceptual frame work for components of quality of EPI services.**



### **Annex 3: survey question**

#### **SURVEY ON EPI**

I am from the Department of community health, faculty of medicine, Addis Ababa University. The purpose of this study is to conduct an assessment of the quality of EPI services in Oromia zone. All the information collected in this study will be kept confidential and will not be made available to any body else except for researchers directly involved in the study.

Aggregate figures without mentioning the name of the interviewee will be reported for consumption of the local planning and general advocacy. Please be assured that this discussion is strictly confidential and that your name is not recorded. May I now continue with the questions?

I appreciate your co-operation very much:

1. Is the EPI activity managed by trained personnel?
  - 1) Yes          2) No
  
2. If the answer for question no 1 is yes, the type of training is
 

1) Low level EPI training	1) Yes	2) No
2) Mid level EPI training	1) Yes	2) No
3) Cold chain maintenance	1) Yes	2) No
  
3. If the answer to above question is yes, do you think that the training you have?
 

Received is adequate to perform your activities

  - 1) Yes          2) No 3) No answer
  
4. Who is mainly in charge of EPI service in the health institution?
  - 1) Nurse
  - 2) Health assistant /Junior nurse
  - 3) Doctor
  - 4) Other, specify \_\_\_\_\_
  
5. Is there an updated EPI work plan including out reach?
  - 5) Yes
  - 6) 2) No
  
6. Is multi –dose vial policy in use?
  - 7) Yes
  - 8) 2) No
  
7. Is there defaulter tracing mechanism?
  - 1) Yes
  - 2) No

If yes specify \_\_\_\_\_
  
8. What are the main contraindications accepted by WHO to immunization
 

1. _____	3. _____
2. _____	4. _____

9. Does the health institution have transport facilities for out reach activities?

- 1) Yes 2) No

If yes, what is it? \_\_\_\_\_

10. What is the source of light for the institution?

- 1) 24 hours electric supply 2) Generator 3) Lamp 4) Other specify \_\_\_\_\_

11. Does EPI room has adequate table and chair?

- 1) Yes 2) No

Yes No

### EPI MONITORING TOOLS

12. Have the vaccination monitoring charts been used correctly? ---- ----

13. Is dropout rate monitored monthly? ---- ----

14. What is current dropout rate?

i) DPT,-DPT<sub>3</sub> \_\_\_\_\_ %

ii) DPT,- measles \_\_\_\_\_ %

15. Did supervisor visit this health facility in the last quarter? ---- ----

16. Are tally sheet properly used and same data recorded and reported? ---- ----

17. Was there any supervision feed back? ---- ----

18. Is there any regular performance assessment meeting in kebeles? ---- ----

19. Have you ever explored the degree of users' satisfaction for EPI ---- ----

### Vaccine and cold chain management

20. Is vaccine wastage monitored? ---- ----

If yes, compare wastage rate of

1. BCG \_\_\_\_\_ % 2. Measles \_\_\_\_\_ %

3. DPT \_\_\_\_\_ % 4. OPV \_\_\_\_\_ %

21. Is the expiry date and batch no of vaccine recorded? ---- ----

22. Do you record the refrigerator temperature twice daily including week ends? ---- ----

23. Has he refrigerator temperature been > 8°C and < 2°C been recorded in the last month? ---- ----

- |  |      |      |
|--|------|------|
| 24. Are there unnecessary materials placed on the top of the refrigerator? | ---- | ---- |
| 25. Are there sufficient ice packs in the freezing compartment?            | ---- | ---- |
| 26. Are there enough wicks and glasses?                                    | ---- | ---- |
| 27. Is there enough kerosene?  | ---- | ---- |
| (If there is no electric supply)   |      |      |

**SAFETY OF INJECTION**

- |  |      |      |
|--|------|------|
| 28. Do you reuse needle and syringe?   | ---- | ---- |
| 29. If the answer for question no 28 is yes, how do you sterilize it?                |      |      |
| _____  |      |      |
| 30. If the answer for question 29 is no, are there sufficient amount of AD syringes? | ---- | ---- |
| 31. Are safety boxes used for needles and syringes?                                  | ---- | ---- |
| 32. Is incinerator available and properly used?                                      | ---- | ---- |
| 33. Do you use one mixing syringe for one vial?                                      | ---- | ---- |
| 34. At the end of EPI sessions what do you do for filled safety boxes?               | ---- | ---- |

**SUPPORT FROM HIGHER LEVEL**

- |  |      |      |
|--|------|------|
| 35. Provision of vaccine                                 | ---- | ---- |
| 36. Provision of guidelines                              | ---- | ---- |
| 37. Review meeting                                       | ---- | ---- |
| 38. Do you have allowance for out reach service?         | ---- | ---- |
| 39 How often do you get your allowance?                  |      |      |
| 1. Monthly   |      |      |
| 2. Every 3 months  |      |      |
| 3. Every 6 months  |      |      |
| 4. Every year  |      |      |
| 40 Are you satisfied with the allowance you are getting? | ---- | ---- |

41 If the answer for question40 is no, does it have effect on your motivation of providing services? ---- ----

42 Are there here enough reporting formats? ---- ----

Observation

43. Are needles separated from syringes after use? ----- ----

44. Are needles recapped? ----- ----

45. Is single mixing syringe used for one vial? ----- ----

46. Are the vaccination schedules and contra indication explained? to the client? ----- ----

47. Is the immunization status of children checked every day? ----- ----

48. Current temperature reading of the refrigerator is. \_\_\_\_\_

49 Are the vaccines stored in proper compartment? ----- ----

50. Is there frozen DPT vaccines confirmed by shake test? ----- ----

51. Is there the vial with VVM that has reached discard point? ----- ----

52. Is vaccine balance sheet used? ----- ----

53. Is there vaccine that has exceed expiry date in the refrigerator? ----- ----

54. Is there vaccine vial without labels in the refrigerator? ----- ----

55. Are there BCG and measles vaccines reconstituted before 6 hours? ----- ----

56. Do the service provider use one syringe & needle for one child? ----- ----

57. Are the used tally sheets and reporting formats appropriately filled? ----- ----

58. Are the following equipment available?

- Vaccine carrier ----- ----

- Cold box ----- ----

- Weight scale ----- ----

59. Are all vaccines available in the health institution? ----- ----

60. If the answer to question 59 is no, which vaccine is not available?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

#### INTERVIEW FOR MOTHERS /CARE TAKERS OF < 2 YEARS CHILDREN

Good morning/ good afternoon. I would like to assess the immunization service in this institution and would be very much interested to find out your experience today. I would like to ask you a few questions about immunization service in this health institution and would be very great full if you could spend a few minutes answering questions related to the service. All information you give will be kept strictly confidential. Your participation is voluntary and you are not obliged to answer any questions you don't want to respond.

Do I have you your permission to continue?

Yes ----- N<sup>o</sup> -----

Name of health institution \_\_\_\_\_

Name or woreda \_\_\_\_\_

Code N<sup>o</sup> \_\_\_\_\_

Date of Interview \_\_\_\_\_

Signature of interviewer \_\_\_\_\_

### **SOCIO DEMIOGRAPHIC CHARACTERSTICS OF MOTHERS**

1. Age of mother/care taker in years \_\_\_\_\_
2. Marital status of the mother /care taker
  - 1) Married
  - 2) Single/never married
  - 3) Divorced
  - 4) Widowed
3. What is the age of child in year? \_\_\_\_\_
4. What is your education level?
  - 1) Illiterate
  - 2) attended literacy education
  - 3) From grade 1-6
  - 4) from grade 7-12
  - 5) 12<sup>+</sup>
5. What is your religion?
  - 1) Orthodox Christian
  - 2) Muslim
  - 3) Protestant
  - 4) other specify \_\_\_\_\_
6. What is your ethnic Origin?
  - 1) Amhara
  - 2) Oromo
  - 3) Argoba
  - 4) Other
7. What is your occupation?
  - 1) Government employee
  - 2) Private enterprise employee
  - 3) Merchant
  - 4) House wife

- 5) Student
- 6) Other \_\_\_\_\_

8. Ask only those married, what is your spouse's occupation?

- 1) Government employee
- 2) Private enterprise employee
- 3) Farmer
- 4) Merchant
- 5) Daily laborer
- 6) Other \_\_\_\_\_

9. What is the average monthly income of the household?

- 1) < 50      2) 50-200      3) 201-450      4) 451-800      5) > 800      6) don't know

10. Would you tell me the diseases that can be prevented by vaccination?

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_

11. Did your child face any health problem after taking vaccination?

- 1) Yes                      2) No                      3) I don't remember

12. If yes to question 11, would you tell me that? \_\_\_\_\_

\_\_\_\_\_

### **CLIENT SATISFACTION**

13. Are you satisfied with the way the health workers treated you?

- 1) Yes      2) No

14. If the answer to question 13 is yes, what characters of health worker satisfied you?

- 1. Way of greetings
- 2. Concern for your problem
- 3. Information given

4. Other specify \_\_\_\_\_
15. If the answer to question 13 is no, why not?
- 1) The health worker is rude.
  - 2) The health worker is in hurry
  - 3) Had shown no concern of my problem
  - 4) Didn't give any advice/information
  - 5) Other specify \_\_\_\_\_
16. Are you satisfied with immunization service?
- 1) Yes
  - 2) No
17. If the answer to question to 16 is yes, which services satisfied you?(You can have more than one answer)
- 1) Availability of chair/bench for sitting
  - 2) Waiting time was not long
  - 3) Technical skill of worker
  - 4) The cleanness of the worker
  - 5) Weighing then child and advise on growth and development of the child
  - 6) Screened the child for illness
  - 7) Vaccine preventable disease have decreased
18. If the answer is no to question 16, which service dissatisfied you?(You can have more than one answer)
- 1) Waiting time was long
  - 2) Child was not weighed and screened
  - 3) Absence of chair/bench for sitting
  - 4) Technical skill of service provider
  - 5) Child developed abscess
  - 6) Other (specify) \_\_\_\_\_

#### INFORMATION GIVEN

19. Did the health worker discuss about immunization with you?
- 1) Yes
  - 2) No
20. If yes to question 19, what did he/she discuss about immunization?

- 1) What immunization is?
  - 2) Types of disease preventable by immunization
  - 3) When, how and where vaccines are given
  - 4) Advice on side effect and contraindication of immunization.
  - 5) Appointment of the next session.
  - 6) Other specify \_\_\_\_\_
21. If yes to question 19, when was the information given?
- 1) During health education session
  - 2) During vaccination session
  - 3) Other specify \_\_\_\_\_
22. If the answer to question 19 is during immunization session, how satisfactory was the session?
- 1) Very satisfactory
  - 2) Satisfactory
  - 3) unsatisfactory
  - 4) other, specify \_\_\_\_\_
23. If the answer to question 19 is satisfactory or very satisfactory, what makes it so?
- 1) Allowed me to ask question
  - 2) The provider was easy to understand
  - 3) The provider was not in a hurry
  - 4) Other specify \_\_\_\_\_

### ACCESS TO SERVICE

24. Was the service convenient to you?
- 1) Yes
  - 2) No
  - 3) Don't know
25. If yes to question 24, what makes it convenient?
- 1) Opening hours
  - 2) Waiting time
  - 3) Distance travel
  - 4) other specify \_\_\_\_\_
26. A part from health institution, is there any vaccination center or out reach near your village?
- 1) Yes
  - 2) No
  - 3) I don't know
27. If yes to question 26, why did you come here?

- 1) Opening hours are convenient here
- 2) Better quality service
- 3) To get treatment
- 4) Prefer provider here
- 5) Other specify \_\_\_\_\_

28. Have you ever been returned home without getting vaccination during your appointment?

- 1) Yes
- 2) No

29. If yes to question 28, what was the reason for not getting vaccination?

- 1) Vaccine not available
- 2) Vaccinators were absent
- 3) Don't know
- 4) Other specify \_\_\_\_\_

30. How much minutes does it take to reach this health institution from your home?

\_\_\_\_\_

31. What is the average waiting time to get the service?

- 1) Less than one hour
- 2) One to two hour hours
- 3) Greater than two hours
- 4) Don't know

#### MISSED OPPORTUNITIES

32 Do you have immunization card of the child with you?

- 1) Yes
- 2) No

33. If yes to question 31 did the child receive all the vaccines for which he/she is eligible for today

- 1) Yes
- 2) no

34 If no to question 31, do you know any reason why you child did not receive the

immunization?

- 1) Was not told to vaccinate her child
- 2) Child was severely ill and health worker refused to vaccinate the child
- 3) Mother refused to get her child vaccinated because her child was ill.
- 4) Vaccine was not available
- 5) Other (specify) \_\_\_\_\_

35. If there is no immunization card at hand, do you know why the child has no immunization card?

- 1) Has finished immunization and the card is at home.
- 2) Has not finished but card was lost
- 3) Has finished but card was lost
- 4) Other (specify)

**በጤና ድርጅቶች ውስጥ ያለውን የክትባት አገልግሎት አሰጣጥ ለማወቅ የዘተጋጀ ቃለ መጠይቅ**

እንደምን አደሩ . . . . .

ይህ ቃለመጠይቅ የተዘጋጀው በጤና ድርጅቶች ውስጥ ያለውን የክትባት አገልግሎት አሰጣጥ ለማጥናት ነው።

እኔ ስሜ \_\_\_\_\_ይባላል፣ የመጣሁትም

በዚህ የጤና ድርጅት ውስጥ ያለውን የክትባት አገልግሎት አሰጣጥ ለማጥናት ነው። ስለዚህ ዛሬ በክትባት አገልግሎት ዙሪያ ያጋጠመዎትን በማቀርብልዎት መጠይቅ መሠረት ለመንገር ከእኔ ጋር ጥቂት ደቂቃዎች ቢያሳልፉ ደስተኛ ነኝ፣ የሚሰጡኝ መረጃ በሙሉ በሚስጥር የሚጠበቅ ሲሆን ስምዎን መግለጽ አያስፈልግም። የእርስዎም ተሳትፎ በፍላጎትዎ ላይ የተመሠረተ ነው። መመለስ የማይፈልጉትን ጥያቄ እንዲመልሱ አይገደዱም።

እንድቀጥል ፍቃደኛ ነዎት?

አዎ \_\_\_\_\_ አይደለሁም \_\_\_\_\_

- የጤና ድርጅቱ ስም \_\_\_\_\_

- የወረዳው ስም \_\_\_\_\_
- ቀን \_\_\_\_\_
- የቃለ መጠይቅ አድራጊው ፊርማ -----

1. የእናት /የተንከባካቢው/ እድሜ -----
2. የጋብቻ ሁኔታ \_\_\_\_\_
  1. ባለትዳር
  2. የተፋቱ
  3. ያላገቡ
  4. ባል/ሚስት የሞተባቸው
3. የህፃኑ እድሜ ስንት ነው? -----
4. የእናት /የተንከባካቢው/ የትምህርት ደረጃ \_\_\_\_\_
  1. ያልተማሩ
  2. መሠረተ ትምህርት
  3. ከ1-6ኛ ክፍል
  4. ከ7-12ኛ ክፍል
  5. ከ12ኛ በላይ
5. ሀይማኖትዎ ምንድነው? \_\_\_\_\_
  1. ኦርቶዶክስ ክርስቲያን
  2. ፕሮቴስታንት
  3. ሙስሊም
  4. ሌላ (ይገለጽ) -----
6. ብሔረሰብዎ ምንድነው? \_\_\_\_\_
  1. አማራ
  2. ኦሮሞ
  3. አርጎባ
  4. ሌላ (ይገለጽ) -----
7. ሥራዎ ምንድነው? \_\_\_\_\_
  1. የመንግስት ሠራተኛ
  2. የግል ድርጅት ተቀጣሪ
  3. ነጋዴ
  4. የቤት እመቤት
  5. ተማሪ
  6. ሌላ -----
8. ያገቡትን ብቻ የሚጠየቅ፣ የባለቤትዎ ሥራ ምንድነው? \_\_\_\_\_

- 1. የመንግሥት ሰራተኛ                      2. የግል ድርጅት ተቀጣሪ
- 3. ገበሬ    4. ነጋዴ
- 5. የቀን ሠራተኛ                              6. ሌላ -----

9. የቤተሰብዎ አማካኝ የወር ገቢ በብር ምን ያህል ነው? \_\_\_\_\_

- 1. < 50    2. 50-200    3. 201-450
- 4. 451-800    5. >800    6. አላውቅም

10. ክትባት ሊከላከላቸው የሚችሉትን በሽታዎች ሊነግሩኝ ይችላሉ? \_\_\_\_\_

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11. ልጅዎ ክትባት ከወሰደ በኋላ ያጋጠመው ችግር አለ? \_\_\_\_\_

- 1. አዎ                      2. የለም                      3. አላስታውስም

12. ለ11ኛው ጥያቄ መልስ «አዎን» ከሆነ፣ ያጋጠመዎን ችግር ሊነግሩኝ ይችላሉ? \_\_\_\_\_

13. በጤና ባለሙያዎቹ የክትባት አገልግሎት መስተንግዶ አሰጣጥ ረክተዋል? \_\_\_\_\_

- 1. በጣም ረክቻለሁ                      2. በመጠኑ ረክቻለሁ                      3. አላረኩኝም

14. በአገልግሎት አሰጣጣቸው ረክተው ከሆነ የትኛው የጤና ባለሙያ ባህሪዬ ነው » ያረካዎ? \_\_\_\_\_

- 1. ሰላምታ አሰጣጣቸው
- 2. ለችግርዎ ትኩረት መስጠታቸው
- 3. ትምህርት አሰጣጣቸው
- 4. ሌላ (ይግለጹ) -----

15. ለ13ኛው ጥያቄ መልስዎ «አላረካኝም» ከሆነ ምንድነው ያላረካዎ? \_\_\_\_\_

- 1. ጤና ባለሙያዎች ጨካኞች ናቸው
- 2. ጤና ባለሙያዎቹ በችኮላ ነበር የሚሰሩት
- 3. ለችግርዎ ትኩረት አለመስጠታቸው
- 4. ትምህርት/ ምክር አለመስጠታቸው
- 5. ሌላ (ይግለጹ) -----

16. በክትባት አገልግሎት አሰጣጡ ረክተዋል? \_\_\_\_\_

- 1. አዎን                      2. አልረካሁም

17. ለ16ኛው ጥያቄ መልስዎ «አዎን» ከሆነ ምኑ ነው ያረካዎ (ከአንድ በላይ መልስ ሊኖርዎ ይችላል?) \_\_\_\_\_

- 1. በቂ መቀመጫ መኖሩ

- 2. ረጅም ሰዓት አለማስጠበቃቸው
- 3. የጤና ባለሙያዎቹ ችሎታቸው
- 4. የጤና ባለሙያዎቹ ንጽህና
- 5. የህፃናት ክብደት ከመዘኑ በኋላ ስለ እድገቱ ምክር መስጠታቸው
- 6. ለህፃኑ ምርመራ ማድረጋቸው
- 7. ክትባት ሊከላከላቸው የሚችለው በሽታዎች መቀነሳቸው

18. ለ16ኛው ጥያቄ መልስዎ «አልረካሁም» ከሆነ፣ ያላረካዎት ምንድነው? \_\_\_\_\_

(ከአንድ በላይ መልስ ሊኖርዎት ይችላል)

- 1. ለረጅም ሰዓት ማስጠበቃቸው
- 2. የህፃኑ ክብደት አለመለካቱና አለመመርመሩ
- 3. በቂ መቀመጫ አለመኖሩ
- 4. የጤና ባለሙያዎች ችሎታ
- 5. ህፃኑ ክትባት በወሰደበት ቦታ ላይ መቁሰሉ
- 6. ሌላ (ይገለጽ) -----

19. ከጤና ባለሙያው ጋር ስለ ክትባት ተወያይታችኋል? \_\_\_\_\_

- 1. አዎ
- 2. የለም

20. ለ19ኛው ጥያቄ መልስዎ «አዎን» ከሆነ ስለምን ነበር የተወያያቸውት? \_\_\_\_\_

(ከአንድ በላይ መልስ ሊኖርዎት ይችላል)

- 1. ክትባት ምን እንደሆነ
- 2. ክትባት ሊከላከላቸው የሚችለውን የበሽታዎች አይነት
- 3. የክትባት አገልግሎቱ መቼ፣ እንዴት እና የት እንደሚሰጥ
- 4. ስለክትባት የጎን ጠንቅ
- 5. ስለሚቀጥለው የቀጠሮ ጊዜ
- 6. ሌላ (ይገለጽ) -----

21. የ19ኛ ጥያቄ መልስዎ «አዎን» ከሆነ ትምህርቱ የተሰጠዎት መቼ ነበር? \_\_\_\_\_

- 1. በጤና ትምህርት ክፍለ ጊዜ
- 2. ክትባት ለህፃኑ በሚሰጥበት ጊዜ
- 3. ሌላ (ይገለጽ) -----

22. ትምህርቱ የተሰጠዎት ክትባት በሚሰጥበት ጊዜ ከሆነ ምን ያህል አርክቶዎታል? \_\_\_\_\_

- 1. በጣም
- 2. በቂ
- 3. በቂ አይደለም
- 4. ሌላ (ይገለጽ) -----

23. የተሰጠው ትምህርት በቂ ወይም በጣም በቂ ነው ካሉ ምክንያትዎ ምንድነው? \_\_\_\_\_

- 1. ጥያቄ እንደጠይቅ ረድቶኛል
- 2. አገልግሎት ሰጪው በቀላሉ (በሚገባኝ መንገድ) ነበር ያስረዳኝ
- 3. አገልግሎት ሰጪው እየቸኮለ አልነበረም

4. ሌላ (ይገለጽ) -----

24. የክትባት አገልግሎቱ አመቺ ነበር? \_\_\_\_\_

1. አዎን                      2. አይደለም                      3. አላውቅም

25. ለ24ኛው ጥያቄ መልስዎ «አዎን» ከሆነ ምን ነበር አመቺነቱ? \_\_\_\_\_

1. ክትባት በሚሰጥበት ወቅት  
2. አገልግሎቱን ለማግኘት የሚወስደው ጊዜ  
3. የቦታው እርቀት

4. ሌላ (ይገለጽ) -----

26. ከጤና ድርጅቱ ውጪ በአቅራቢያዎ የክትባት መስጫ ጣቢያ እንዳለ ያውቃሉ? \_\_\_\_\_

1. አዎን                      2. የለም                      3. አላውቅም

27. ለ26ኛው ጥያቄ መልሱ «አዎን» ከሆነ ለምን ወደዚህ መጡ? \_\_\_\_\_

1. ክትባት የሚጀመርበት ሰዓት አመቺ ስለሆነ  
2. የተሻለ አገልግሎት ስለሚሰጥ  
3. ህክምና ለማግኘት  
4. የምፈልጋቸውን የጤና ባለሙያዎች ለማግኘት

5. ሌላ (ይገለጽ) -----

28. በቀጠሮዎ እለት መጥተው ክትባት ሳያገኙ ተመልሰው ያውቃሉ? \_\_\_\_\_

1. አዎን                      2. አላውቅም

29. ለ28ኛው ጥያቄ መልስዎ «አዎን» ከሆነ ክትባት ያላገኙበት ምክንያት ምንድነው? \_\_\_\_\_

1. የክትባት መድሃኒቱ ስላልነበር                      2. የጤና ባለሙያዎቹ ስላልነበሩ  
3. አላውቅም                      4. ሌላ (ይገለጽ) -----

30. ከቤትዎ ወደ ጤና ድርጅቱ ለመድረስ ምን ያህል ሰዓት/ደቂቃ ይወስድብዎታል? \_\_\_\_\_

31. እዚህ ጤና ድርጅት ከደረሱ በኋላ ክትባቱን ለማግኘት ምን ያህል ጊዜ ወሰድብዎት? \_\_\_\_\_

1. ከ1 ሰዓት በታች                      2. ከ1 ሰዓት - 2 ሰዓት  
3. ከ 2 ሰዓት በላይ                      4. አላውቅም

32. የህፃኑን የክትባት ካርድ ይዘዋል? \_\_\_\_\_

1. አዎን                      2. አልያዝኩም

33. ለ31ኛው ጥያቄ መልስዎ «አዎን» ከሆነ ህፃኑ ዛሬ መከተብ የሚገባውን ክትባት ወስዷል? \_\_\_\_\_

1. አዎን                      2. አልወሰደም

34. ለ32ውኛ ጥያቄ መልስዎ «አልወሰደም» ከሆነ ምክንያቱ ምን ይሆን? \_\_\_\_\_

1. መከተብ እንደሚገባው ስላልተነገራቸው
2. ህፃኑ በጣም በመታመሙ የጤና ባለሙያዎቹ «መከተብ የለበትም» ስላሉ
3. ህፃኑ ስለታመመ እናትየዋ መከተብ የለበትም ስላሉ
4. የክትባት መድሃኒቱ ስለሌለ
5. ሌላ (ይገለጽ) \_\_\_\_\_

35. የክትባት ካርዱ በእጃቸው ከሌለ ምክንያቱ ምንድነው? \_\_\_\_\_

1. ክትባቱን በመጨረሱ ካርዱ እቤት አለ
2. ክትባቱን አልጨረሰም ካርዱ ግን ጠፍቷል
3. ክትባቱን ጨርሷል ካርዱ ግን ጠፍቷል
4. ሌላ (ይገለጽ) \_\_\_\_\_

**DECLARATION**

I, the undersigned, declare that this is my original work and has never been presented in this or any other university and that all the source material used for this thesis have been duly acknowledged.

Name \_\_\_\_\_

Signature \_\_\_\_\_

Place \_\_\_\_\_

Date of Submission \_\_\_\_\_

The thesis has been submitted for examination with my approval as a university with my approval as a university advisor.

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

