



The Ethiopian Public Health Institute



Third Phase Post Meningitis Campaign Vaccination Coverage Survey, Eastern Ethiopia, 2015



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Contents

Foreword	Error! Bookmark not defined.
List of Acronyms	IV
List of Tables	V
List of Figures	V
Executive Summary	VI
1. Background and Rationale	1
1.1. Background	1
1.2. Justification for the survey	2
2. Survey Objectives	2
2.1. General Objective	2
2.2. Specific objectives	2
3. Materials and Methods.....	3
3.1. Study Design and Population.....	3
3.2. Sample size and sampling procedures.....	3
3.3. Data collection tools and procedures	4
3.4. Recruitment, training and supervision of interviewers	4
3.5. Survey organization and Institutional framework.....	5
3.6. Data Quality assurance.....	5
3.7. Data management, analysis and reporting	6
4. Results.....	7
4.1. Meningitis vaccination coverage	7
4.2. The availability of vaccination card during the survey by region.....	11
4.3. Reasons for no Card among Vaccinated Respondents.....	12
4.4. Primary Source of Information about the Men-A Campaign.....	12
4.5. Reasons for not receiving vaccination Men A conjugate vaccine	14
4.6. Side effects following Men A vaccination.....	14
5. References.....	19
6. Annexes.....	20
6.1. Annex-1: Data collection tools	20
6.2. Annex- 2: Key findings of Qualitative Part	22

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List of Acronyms

AEFI	Adverse Effects Following Immunization
CHV	Community Health Volunteer
CI	Confidence Interval
CSA	Central Statistical Agency
EA	Enumeration Area
EPHI	Ethiopian Public Health Institute
FMOH	Federal Ministry of Health
HDA	Health Development Army
HEW	Health Extension Worker
LB	Lower Bound
PHEM	Public Health Emergency Management
PPS	Propability Prpoportional to Size
SNNPR	South Nations, Nationalities and Peoples' Region
SSA	Sub-Saharan Africa
TWG	Technical Working Group
UB	Upper Bound
UNICEF	United Nations Children's Emergency Fund
WHO	World Health Organization

List of Tables

Table 1: Summary of sampled individuals by region, sex and age(3 rd phase Men A, Eastern Ethiopia 2015).....	10
Table 2: Men A coverage survey national and regional level estimate, 3 rd phase Men A, Eastern Ethiopia 2015	11
Table 3: Age specific meningitis vaccination coverage by region, 3 rd phase Men A, Eastern Ethiopia 2015	13
Table 4: The availability of vaccination card during the survey by region, 3 rd phase Men A, Eastern Ethiopia 2015	15
Table 5: Respondents primary source of information about the Men-A campaign, 3 rd phase Men A, Eastern Ethiopia 2015	18
Table 6: Main reasons for non-vaccination Men-A conjugate vaccine during the campaign, 3 rd phase Men A, Eastern Ethiopia 2015.....	20
Table 7: Side effects experienced following vaccination during the Men-A campaign, 3 rd phase Men A, Eastern Ethiopia 2015.....	21

List of Figures

Figure 1 Percentages of individuals 1-29 years who received Men A vaccination during the campaign by source of information, Eastern Ethiopia 2015----- Error!
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Figure 2 Sex specific Men-A vaccination Coverage by region, Eastern Ethiopia, 2015-----Error!
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Figure 3 Reasons for no card among vaccinated respondents with no card, Eastern Ethiopia, 2015.-----Error!
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Executive Summary

Background: Meningococcal meningitis is a bacterial form of meningitis, a serious infection of the meninges (brain membrane). It can cause severe brain damage and is fatal in 50 % of cases if untreated. *Neisseria meningitidis* is a Gram-negative diplococcal bacterium with 8 serotypes - A, B, C, X, Y, Z, 29-E and W135. Contamination through person-to-person by direct contact with respiratory droplets of infected people is the most frequent[1][2][3]. Meningococcal disease remains a significant public- health issue globally, with infections occurring both endemically and epidemically in developed and developing countries[1]. It has a global epidemiology but sub Saharan Africa bears the highest burden of the disease, designated the African Meningitis belt or “Lapeyssonnie’s belt”[3]. In the Americas, Europe, and Australia, sero groups B and C are the most common, while sero group A causes the majority of disease in Africa and Asia.

Introduction of Vaccine against Meningococcal disease plays a crucial role in addressing the public health consequences of Meningitis outbreak. Men AfriVac is a new conjugate vaccine against *Neisseria meningitidis* sero group A developed for the African “meningitis belt”. Ethiopia is one of the African countries affected by Meningococcal outbreak. Based on the 2012 outbreak risk assessment, the country is classified into three levels as high, medium and low, where the Western part is at high risk, Southern and Central at medium and the Eastern part as low. Based on these risk levels, the country is introducing the Men-A conjugate vaccine in three phases over three years period (2013-2015). The third phase of the Men-A vaccination campaign was conducted from October 15th–November 10th2015[4][5].

Objectives:To determine the coverage and major barriers of Men-A mass immunization for the third phase in low risk for meningococcal disease of twenty seven zones from the six regions and one city administration of Ethiopia, 2015.

Methodology: Descriptive cross sectional study design was conducted using a two stage cluster sample technique in the selected zones of six regional states and one city administration. The study was conducted in Eastern part of the country where there was a relatively low risk of meningitis outbreak immediately after the mass campaign activities. The campaigns were provided to the targeted individuals between 1 and 29 years of age in the selected areas with the intention to cover about 15 Million target population. All individuals in this age group at the time of data collection were considered as the study population. The study population was further divided into two sub groups as children aged 1-14 years and adult population in 15-29 age groups. All the eligible residents in the household were listed and one among them was systematically selected for the interview.

Result: Overall Men A-vaccination coverage for Eastern parts of the country targeted for the campaign was found to be 92.9% with a 95% CI of [92%, 93.8%], where the coverage reported by history and documented by card were 24.2% and 68.5%, respectively. The survey revealed that there was a low card retention rate in all regions; being 68.5% with a 95% confidence interval of [66.9%, 70.1%]. There is also a high regional variation regarding card retention rate among study participants with ranges from 47.5% in Dire Dawa to 77.4% in Somalia. Among

those vaccinated, the major reason reported for no vaccination card were loss/misplacement of the card after received. Based on reported data, health workers (including health extension workers), Public crier and school/students were found to be the main source of information about the meningitis vaccination campaign with percentages 31.4%, 23.3% and 15.5% among vaccinated individuals, respectively. The respondents reported that service inavailability when they visited (22.8%) and didn't know about the campaign (15.8%) and too busy during the time of campaign (15.8%) as the main reasons for non-vaccination.

Conclusion and recommendation: This third phase Men-A vaccination campaign coverage is relatively high with an overall estimate of 92.9%. Thus, the findings revealed that the success of mass campaign conferring the coverage closer to the target set. Of those who received vaccination, in Harari region (75%) substantial proportion of respondents had shown vaccination card during the survey, while in Dire Dawa only 47.5% of the respondents have card to verify their Men-A vaccination status from documented records. In all regions, the coverage of younger age group 1-14 years was relatively high and this could give a confidence for the protection of relatively high risk groups against meningococcal disease. Health workers (including health extension workers), public crier, school/students and Kebele leader/administration played a leading role in mobilizing the community. And for future campaigns, attentions should be given in planning, organization, and implementation of issues in relation to logistic arrangements.

1. Background and Rationale

1.1. Background

Meningococcal meningitis is a bacterial form of meningitis, a serious infection of the meninges (brain membrane). It can cause severe brain damage and is fatal in 50 % of cases if untreated. [6] Meningococcal disease is a contagious bacterial disease caused by *Neisseria meningitidis*. *Neisseria meningitidis* is a Gram-negative diplococcal bacterium with 8 serotypes - A, B, C, X, Y, Z, 29-E and W135. These sero groups are differentiated by the capsular polysaccharide antigens. *Neisseria meningitidis* inhabits the mucosa membrane of the nose and throat where it usually causes no harm and up to 5 -10% of the population may be asymptomatic carriers. The carriers are crucial to the spread of the disease as most cases are acquired through exposure to asymptomatic carriers. Contamination through person-to-person by direct contact with respiratory droplets of infected people is the most frequent[1][2][3]. The incidence and case-fatality rates for bacterial meningitis vary by region, country, pathogen, and age group. Without treatment, the case-fatality rate can be as high as 70%, and one in five survivors of bacterial meningitis may be left with permanent sequelae including hearing loss, neurologic disability, or loss of a limb[7].

Meningococcal disease remains a significant public- health issue globally, with infections occurring both endemically and epidemically in developed and developing countries[1]. It has a global epidemiology but sub Saharan Africa bears the highest burden of the disease, designated the African Meningitis belt or “Lapeyssonnie’s belt”[3]. The worldwide distribution of sero groups of *N. meningitidis* is variable. In the Americas, Europe, and Australia, sero groups B and C are the most common, while sero group A causes the majority of disease in Africa and Asia. Located in the Eastern horn of Africa, Ethiopia is also endemic for bacterial meningitis with frequent meningococcal epidemics occurring every few years particularly in the dry season from December to June[4][8]. For effective management of the epidemic, World Health Organization designed the 3-pillar strategy for epidemic meningitis control such as surveillance, treatment and care and vaccination[6].

Introduction of Vaccine against Meningococcal disease plays a crucial role in addressing the public health consequences of Meningitis outbreak. Men AfriVac is a new conjugate vaccine against *Neisseria meningitidis* sero group A developed for the African “meningitis belt”. Ethiopia is one of the African countries affected by Meningococcal outbreak. Based on the 2012 outbreak risk assessment, the country is classified into three levels as high, medium and low, where the Western part is at high risk, Southern and Central at medium and the Eastern part as low. Based on these risk levels, the country introduced the Men-A conjugate vaccine in three phases over three years period (2013-2015). The first phase of the Men-A vaccination campaign was conducted from 17th - 26th of October 2013 which covered the high risk areas of the western part of the country and the second phase was conducted in November 2014 which covered the medium risk areas of the southern and central part of the country. The first and second phase of Post Men AfriVac Vaccination Campaign Survey was conducted after the completion of the vaccination campaign. Finally the third phase of the Men-A vaccination campaign was

conducted at low risk zones, which are the eastern parts of the country on November, 2015 [4][5]. This part of the country included 3 zones of Tigray, 5 zones of Afar, 4 zones of Amhara, 2 zones of Oromia, 9 zones of Somali, the whole Harari region and Dire Dawa city administration.

1.2. Justification for the survey

According to the reports received through active surveillance by the Public Health Emergency Management of Ethiopian Public Health Institute, there is an increased number of suspected meningitis cases in some parts of the country and considerable proportions of suspected cases tested positive for meningococcal meningitis [5]. As part of rapid national response to increased risk of the diseases, FMOH in collaboration with WHO and other partners is planning to provide a series of mass campaign in different parts of the country organized phase by phase based on their risk level. Vaccination coverage estimates are essential to monitor the performance of immunisation programmes and take action to improve them. In resource-poor (limited) settings like Ethiopia, administrative estimates of vaccination coverage, reached by dividing the number of people vaccinated by the population in the target age group, are often biased due to inaccurate population figures and incomplete reporting. Thus; sample surveys are frequently employed to establish more accurate estimates. Ultimately the purpose of this survey was to provide the estimated coverage for the third phase of immunization campaign conducted in Eastern parts of the country. In addition, the coverage survey planned to provide an important platform to gather some programmatic information on the communities as awareness, channel of social mobilization and challenges to access immunization services which are found to be highly instrumental for planning future campaigns and establish evidence for further improvements.

2. Survey Objectives

2.1. General Objective

To determine Men-A mass vaccination coverage survey of third phase conducted in twenty seven low risk Zones selected from the eastern parts of Ethiopia 2015.

2.2. Specific objectives

- To estimate the coverage of third phase Men-A vaccination survey by sub-region and age group
- To identify the subgroups of the population unvaccinated during the third phase mass vaccination campaign
- To identify the main reasons for non vaccination during the third phase mass campaign
- To determine the major modes of social mobilization and channel of communication used during the campaign
- To estimate the proportion of AEFI reported against Meningococcal Meningitis A vaccination among the target population
- To identify and document strengths and weaknesses in the organization of the mass vaccination campaign against Meningococcal Meningitis A for future improvements

3. Materials and Methods

3.1. Study Design and Population

Descriptive cross sectional study design was conducted using a two stage cluster sample technique in the selected zones of six regional states (Tigray, Afar, Amhara, Oromia, Somalia and Harari) and one city administration (Dire dawa) was employed. The study was conducted in Eastern part of the country where there was a relatively low risk of meningitis outbreak immediately after the mass campaign activities. The campaigns were provided to the targeted individuals between 1 and 29 years of age in the selected areas with the intention to cover about 15 Million target population. All individuals in this age group at the time of data collection were considered as the study population. The study population was further divided into two sub groups as children aged 1-14 years and adult population in 15-29 age groups. All the eligible residents in the household were listed and one among them was systematically selected for the interview.

3.2. Sample size and sampling procedures

In the first stage sampling 162 clusters from each of the six regions and one city administration were selected using probability proportional to size (PPS) method. A cluster was enumeration area as defined by the Central Statistical Agency (CSA) and in this study clusters (EA's) constituted a primary sampling unit [9]. As a sampling frame the lists of enumeration areas (EAs) based on 2007 Ethiopian Housing and population census were used and sampling was done in collaboration with experts from CSA. The survey team were expected to identify the assigned cluster using an EA map and prepared a complete list of all villages within the boundary of EA. Finally, the team drafted a map of the selected cluster, divided it into smaller sectors according to existing divisions (streets, rivers, etc), and selected one sector/village using lottery method to prepare a fresh list of each and every household in the locality. Any substitution of EAs was communicated by the survey team and it required advance approval of the TWG; if it was reasonably justified that a cluster is inaccessible and local reports indicate the cluster was not accessed during the campaign.

In the second stage target households were randomly selected from the list of households according to systematic random sampling technique. Once the first household is randomly identified, every (N^{th}) house were visited based on an interval defined as the number of households in the village divided by the number of households required to evaluate ten targeted individuals for each age group. Overall around 3252 individuals were evaluated from the the 27 zones of eastern part of the country, which are identified as a low risk zone.

The sample size for the study was determined using a single proportion formula that gives a precise coverage estimate of vaccination against Meningitis. The parameters used for sample size determination were; the prevalence for immunization coverage, confidence level (CI), margin of error (d) and the power of study. It is based on the assumption that there will be a 10% contingency for the non response rate and a design effect of 2.0 to account for use cluster

sampling. The sample size is calculated for the two age groups (1-14) and (15-29) to come up the total sample size of 3252.

Adding 10% contingency for non-response rate and round up to the next higher whole number about 1492 individuals were sampled from each age group. It is predetermined to cover a total of 162 clusters and 10 individuals per cluster for each age category considering the resource and precision of coverage estimate.

Prevalence based on Phase-II coverage (P)	94%
$Z_{\alpha/2}$	1.96
Z_{β}	80%
Acceptable margin of error (d)	0.024
Design effect (Deff)	2.0
Anticipated non-response rate	10%
Sample for one sub-group of target population	1492
Sample for the two sub-group of target population	2984
10% Conteningency for non-response	269
Overall sample rounding up	3252

3.3. Data collection tools and procedures

After preparation of definitive questionnaires in English, the questionnaire was loaded onto tablet computers, which were used during interviews to ask questions and also record responses (computer assisted personal interviewing–CAPI). The questionnaire consists of variables for socio-demographic, sources of information about the campaign, individual's status of immunization, reasons for non-vaccination and adverse events following immunization. In order to explore the reasons for non-vaccination, main sources of information and appropriate channels of social mobilization for the qualitative data was collected using a key informant interview guide. Experienced data collectors were recruited to conduct the interview with a target respondent identified in the selected households. The major sources of data were individual respondents and in the case of children less than 12 years of age parents/caretakers were asked to provide information on the immunization history of the child. They also observed immunization card where available to verify the information provided.

3.4. Recruitment, training and supervision of interviewers

About fourty data collectors and six field supervisors were recruited based on their qualification and previous experience: MSc/BSc in health or related fields for supervisors and a minimum of Diploma level in health or statistics for data collectors. In both cases a rich experience of quantitative data collection in similar survey and good understanding of research undertaking were a prerequisite to be considered for the positions. In the recruitment process field staff due

attention was given to knowledge of local languages at their respective region of interest. The data collectors and supervisors were provided with an extensive training on the objectives and methodology of the survey, data collection tools and data collection and supervision techniques. The training was provided by regional coordinators and technical working group (TWG) members who have a sound understanding of data collection instruments and survey methodology. The training had of both theoretical and practical sessions to enhance hands on experience of data collector and supervisors before the actual data collection.

3.5. Survey organization and Institutional framework

Survey data collection was conducted by 18 teams composed of two interviewers each and six supervisors were assigned for three teams working in geographically adjacent clusters. Each data collection team and field supervisor was equipped with their own vehicles. The supervisor was responsible for the data collection team. There were four regional coordinators responsible for research teams deployed three to six adjacent Zones. The regional coordinators assisted the teams with logistical and organizational matters and supervised the teams' progress and compliance with survey procedures. Finally, TWG provided overall guidance and follow-up of the implementation status of the survey and monitored the progress and quality of data collection.

Considering the sample size, the estimated time for individual household interview and for logistics reasons; each team was assigned seven to ten clusters and responsible to conduct twenty individual interviews per cluster in the selected households. Teams were deployed in each regional states and assignment of supervisors and coordinators were based on survey routes and geographically feasible for supervision and coordination.

The Federal Ministry of Health (FMoH) and the Ethiopian Public Health Institute (EPHI) are the main implementers of the Post Men A immunization Coverage Survey, 2015. WHO has given technical guidance and support with other members of the survey TWG. The TWG were responsible to approve the final content of the questionnaires, to ensure the survey is effectively planned and implemented and to monitor regularly all technical aspects of the survey. EPHI furnished the necessary office space for the survey operations, including sufficient space for the data processing operation such as data entry, cleaning and analysis.

3.6. Data Quality assurance

The first step to assure the data quality is availing of qualified and well equipped survey staff so well qualified and experienced data collectors and supervisors were recruited. Apart from extensive training of data collectors, strict supervision of data collection process using regional coordinators and field level supervisors the following methods were employed to assure the data quality

- All questionnaires in tablets were checked by the supervisor to ensure all questionnaires are completed before leaving the cluster
- 10% random spot check and validation of questionnaires in tablets of every cluster.

- A schedule of clusters to be assessed was shared in advance to allow for supportive supervision visit of the task force members, if necessary.
- Data cleaning was done at central level.

3.7. Data management, analysis and reporting

For the data cleaning and merging that was sent from the field directly through Internet File Streaming System (IFSS); one technical assistant at central level recruited, thoroughly trained to clean and merge the data that had been sent from the field directly. The data cleaning was done in daily based when data reaches the center. Data cleaning included the checking of range, structure and a selected set of checks for internal consistency. All errors detected during machine editing were corrected. All data management and analysis were done using CSPro programming. Then, the data analysis was done using STATA. The results were presented using descriptive statistical methods; with frequency distribution tables, percentages and graphs of coverage estimate. In addition to phase estimate the coverage was produced for different population subgroup and parts of regions covered by the survey.

4. Results

4.1. Meningitis vaccination coverage

This post campaign vaccination coverage survey was conducted from November 23-December 18/2015 in six regions and one city administration which are classified as low risk area for occurrence of meningococcal meningitis and situated in Eastern part of the country. Because meningococcal disease is most common in infants, adolescents and young adults, the vaccination campaign targeted individuals aged 1-29 years which is approximately 65% of the total population[10]. Thus, the post meningitis vaccination coverage survey considered individuals in this age category. The study participants grouped into two age groups with equal number of participants which is, 1612 from individuals of age category (1 to 14) and 1612 from (15 to 29) years of age. More than half the study participants (54.5%) were females.

Table 1: Summary of sampled individuals by region, sex and age (3rd phase Men A, Eastern Ethiopia, 2015)

Region	Sex	Age of individuals at the time of the survey (age 1-29)		Total
		1-14	15-29	
		N	N	N
Tigray(part of the region)	Male	80	60	140
	Female	100	120	220
	Total	180	180	360
Afar(part of the region)	Male	78	67	145
	Female	62	74	136
	Total	140	141	281
Amhara(part of the region)	Male	278	240	518
	Female	275	316	591
	Total	553	556	1109
Oromia(part of the region)	Male	193	152	345
	Female	197	233	430
	Total	390	385	775
Somalia	Male	150	115	265
	Female	139	175	314
	Total	289	290	579
Harari	Male	15	7	22
	Female	5	13	18
	Total	20	20	40
Dire Dawa	Male	18	15	33
	Female	22	25	47
	Total	40	40	80
National(Eastern Ethiopia)	Male	812	656	1468
	Female	800	956	1756
	Total	1612	1612	3224

According to the findings, overall Men-A vaccination coverage for Eastern parts of the country targeted for the campaign was found to be 92.9 % with a 95% CI of [92, 93.8], where the coverage reported by history and documented by card were 24.2 % and 68.5% respectively.

Since the study conducted partly in some regions located in Eastern Ethiopia, regional coverage was estimated for Somalia, Harari and Diredawa, while for the remaining four regions only part of the region is covered by the campaign/survey.

The study revealed a sort of regional variation of MenA vaccination coverage in Eastern part of Ethiopia. Accordingly, the highest coverage was reported for parts of Tigray,96.7% with [94.8%,98.5%] CI and where as parts of Afar regions had a relatively lowest coverage of 87.5% with a 95% CI of [83.7%-91.4%].

Among the individuals reported to have vaccinated, those who had vaccination card showed variation across regions. For instance, the largest report was from Somalia about 77.4% had the vaccination card during the survey while in Dire Dawa about 47.5%% of respondents had the vaccination card with them.

Table 2: Men A coverage survey national and regional estimate, (3rd phase Men A, Eastern Ethiopia, 2015)

Region	Men A Campaign Coverage	Standard error	95% Confidence Interval	
	%		LB (%)	UB (%)
Tigray (part of the region)	96.7	0.9	94.8	98.5
Afar (part of the region)	87.5	2.0	83.7	91.4
Amhara (part of the region)	90.1	0.9	88.3	91.8
Oromia (part of the region)	96.0	0.7	94.6	97.4
Somalia	94.8	0.9	93.0	96.6
Harari	92.5	4.2	84.2	100.8
Dire Dawa	91.3	3.2	85.0	97.5
National (Eastern Ethiopia)	92.9	0.5	92.0	93.8

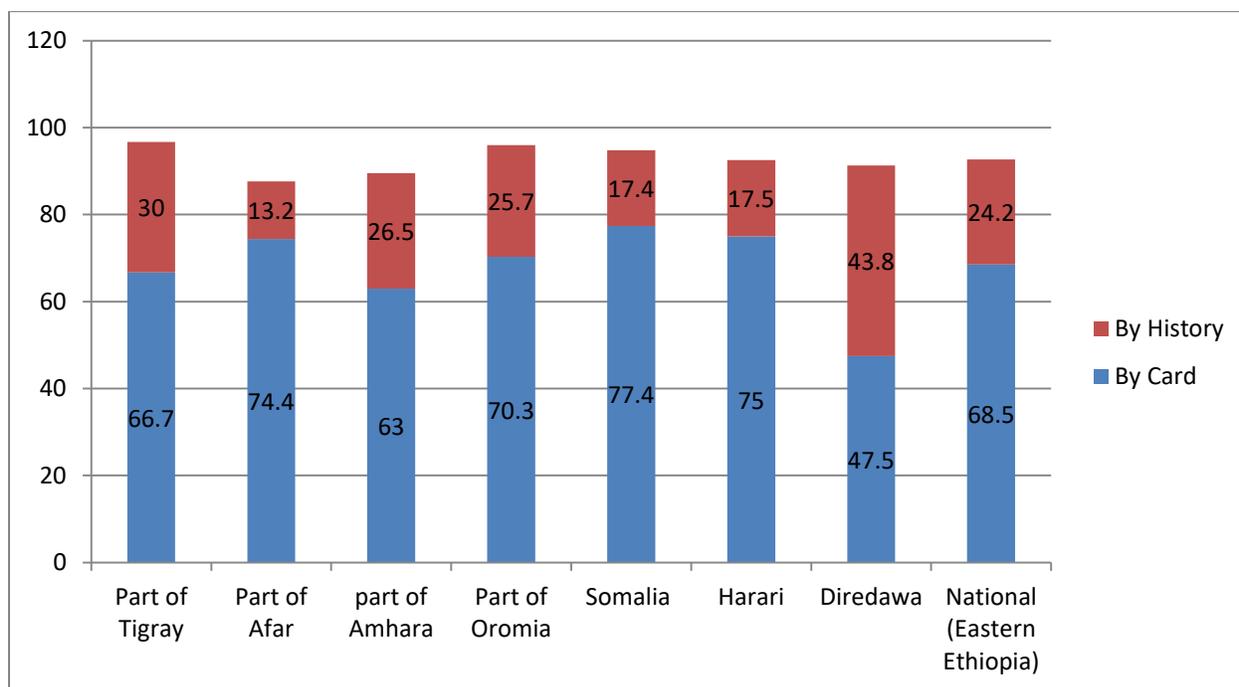


Figure 1 Percentages of individuals 1-29 years who received Men A vaccination during the campaign by source of information, Eastern Ethiopia 2015

Age distribution among respondents who took Men-A vaccination

The survey includes respondents from 1-29 age groups who were eligible to take the vaccine. Table 3 presents the distribution of age, which is categorized by three age groups (1-5, 6-14 and 15-29 years), by region. The national coverage of the age groups from 15-29 years shows a lesser coverage (89%; 95% CI: [88, 91]) when compared with other age groups. There is no big gap in coverage between age groups 1-5 and 6-14 years. The coverage with age distribution varies remarkably across regions. Tigray has similarly a highest coverage in all age groups and also the highest (96.7%; 95% CI: [94.8%, 98.5%]) coverage among other regions. Harari exhibits 100% vaccination coverage among the age group of 6-14 years and also a highest (95%; 95% CI: [85, 105]) coverage under the age groups of 15-29 years among all the surveyed regions. Relatively, the coverage of the age groups under 1-5 years is highest in Dire-Dawa which is 100% compared with regions.

Table 3: Age specific meningitis vaccination coverage by region(3rd phase Men A, Eastern Ethiopia, 2015)

Region		Age of individuals/respondents at the time of Survey(age 1-14)			Total
		1-5	6-14	15-29	
Tigray(part of the region)	Coverage (%)	99	100	94	96.7
	95(%) CI	[96,101]	-	[90,97]	[94.8,98.5]
	S.E	1	0	2	0.9

Region		Age of individuals/respondents at the time of Survey(age 1-14)			Total
		1-5	6-14	15-29	
Afar(part of the region)	Coverage (%)	95	95	80	87.5
	95(%) CI	[90,100]	[90,101]	[74,87]	[83.7,91.4]
	S.E	2	3	3	2.0
Amhara(part of the region)	Coverage (%)	92	97	85	90.1
	95(%) CI	[88,96]	[95,98]	[82,88]	[88.3,91.8]
	S.E	2	1	2	0.9
Oromia(part of the region)	Coverage (%)	98	98	94	96.0
	95(%) CI	[95,100]	[96,100]	[92,97]	[94.6,97.4]
	S.E	1	1	1	0.7
Somalia	Coverage (%)	98	96	92	94.8
	95(%) CI	[96,100]	[92,99]	[89,95]	[93.0,96.6]
	S.E	1	2	2	0.9
Harari	Coverage (%)	80	100	95	92.5
	95(%) CI	[54,106]	-	[85,105]	[84.2,100.8]
	S.E	13	0	5	4.2
Dire Dawa	Coverage (%)	100	96	85	91.3
	95(%) CI	-	[89,103]	[74,96]	[85.0,97.5]
	S.E	0	4	6	3.2
National(Eastern Ethiopia)	Coverage (%)	96	97	89	92.9
	95(%) CI	[95,97]	[96,98]	[88,91]	[92.0,93.8]
	S.E	1	1	1	0.5

Men-A vaccination Coverage by Sex and Region

Figure presents the distribution of Men-A vaccine coverage by sex and region among the study participants. The figure revealed that there is no clear variation between male and female respondents across the regions. In Eastern Ethiopia the coverage of males slightly greater than females and little variations in coverage observed in some of the regions; for instance in Tigray, Afar, Amhara, Somalia and Dire-Dawa vaccination coverage for male was slightly higher than female counterparts. On the other hand, in Oromia and Harari region coverage for females is higher as compared to males.

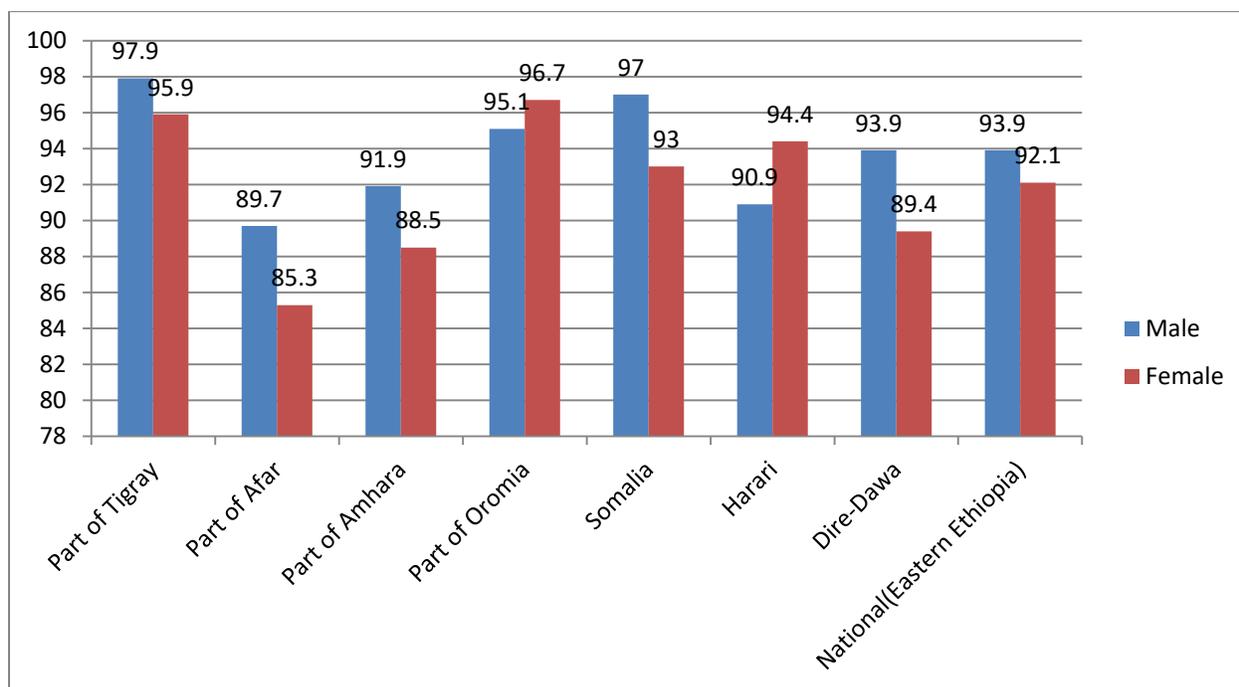


Figure 2 Sex specific Men-A vaccination Coverage by region, Eastern Ethiopia, 2015

4.2. The availability of vaccination card during the survey by region

The survey revealed that there was a low card retention rate in all regions; so that, the national rate is 68.5% with a 95% confidence interval of [66.9%, 70.1%] (Table 4). There is also a regional variation regarding to card retention habit. Hence, it ranges from 47.5% in Dire-Dawa to 77.4% in Somalia. Though a highest coverage is recorded in Tigray, card retention habit is still lower. Table 4 presents the contribution of each region regarding to card availability. Regions like Somalia, Harari and Afar have relatively high card retention habit in the 2015 Men-A vaccination campaign. In contrary, regions like Dire-Dawa, Amhara and Tigray have lower card retention habit.

Table 4: The availability of vaccination card during the survey by region(3rd phase Men A, Eastern Ethiopia, 2015)

Region	Card retention rate	Standard error	95% Confidence Interval	
	%		LB (%)	UB (%)
Tigray (part of the region)	66.7	2.5	61.8	71.5
Afar (part of the region)	74.4	2.6	69.3	79.5
Amhara (part of the region)	63.0	1.5	60.2	65.9
Oromia (part of the region)	70.3	1.6	67.1	73.5
Somalia	77.4	1.7	74.0	80.8
Harari	75.0	6.9	61.4	88.6
Dire Dawa	47.5	5.6	36.5	58.5
National (Eastern Ethiopia)	68.5	0.8	66.9	70.1

4.3. Reasons for no Card among Vaccinated Respondents

To verify the vaccination status of those who respond that they were vaccinated for Men A, the respondents were asked to show vaccination card during the survey. And among those who reported they had vaccinated for Meningitis during the campaign but no vaccination card, the respondents were asked their reasons for not having vaccination card. The major reason reported for no vaccination card was they lost/misplaced the card after received it which is the reason for 89% of the respondents. About 6% reported that they didn't receive card during the campaign and about 5% don't remember whether they received it or not. Even though, card lost/misplaced is the main reason for all regions, it is higher in Dire Dawa, Somalia and Amhara regions with 97.1%, 92.1%, and 90.8% respectively. In Dire Dawa, almost all (97.1%) of respondents reported that their main reason for their no vaccination card was they lost/ misplaced the card after they received it. Figure 3 briefly presents the Reasons for no card among the vaccinated respondents both nationally and regionally for meningitis vaccination campaign.

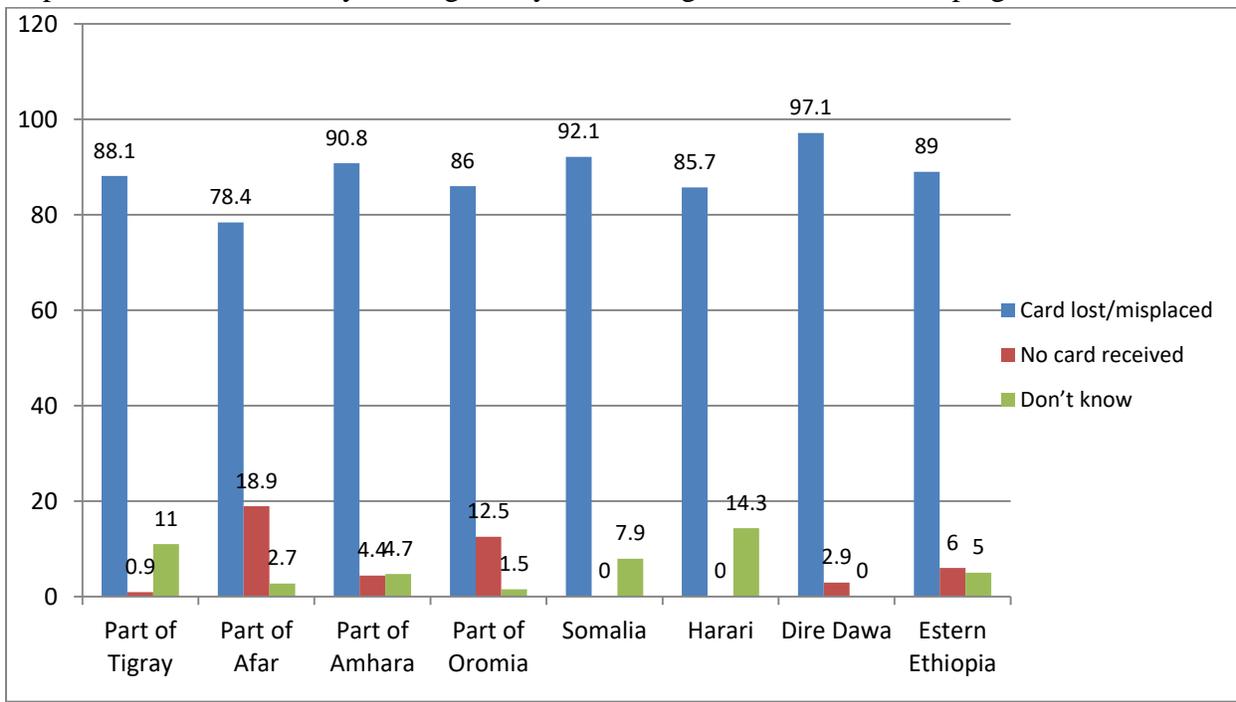


Figure 3 Reasons for no card among vaccinated respondents with no card, Eastern Ethiopia, 2015.

4.4. Primary Source of Information about the Men-A Campaign

It is believed that community mobilization is an important means of delivering immunization services especially during campaigns. Table 5 describes the primary source of information about the Men A campaign. Based on reported data, health workers (including health extension workers), public crier, school/students and Kebele leader/administration were found to be the main source of information about the meningitis vaccination campaign with informing about 31.4%, 23.3%, 15.5 and 14.4% of those who were vaccinated respectively. The role of public criers is higher in Harari, Somalia and Dire Dawa in disseminating information (85%, 64.1%

and 50% respectively). A community mobilization activity done by health professionals is higher in Amhara, Tigray and Afar which is (39%, 38.4% and 34.9% respectively). In Amhara, Dire Dawa and Tigray School/students were found to be the significant source of information with informing about 25.9%, 22.5% and 15.6% of those who were vaccinated respectively.

Table 5: Primary source of information about the Men A campaign(3rd phase Men A, Ethiopia, 2015)

Region	Public criterion (Health professionals, HEWs)	School/student	Army or Community Health Volunteer	Kebele leader or administration	Religious leader Family, friend, neighbors	Radio	TV	Other		
	%	%	%	%	%	%	%	%		
Tigray (part of the region)	11.7	38.4	15.6	14.2	13.6	0.3	3.9	0.3	1.1	0.8
Afar (part of the region)	12.8	34.9	6.4	3.2	24.2	1.1	13.2	0.0	2.1	2.1
Amhara (part of the region)	8.5	39.0	25.9	3.3	13.5	0.1	3.4	0.8	0.7	4.9
Oromia (part of the region)	16.5	33.8	10.3	13.3	19.9	0.4	2.5	2.3	0.0	1.0
Somalia	64.1	13.3	7.3	1.6	6.9	0.0	5.7	0.2	0.7	0.3
Harari	85.0	7.5	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dire Dawa	50.0	8.8	22.5	2.5	2.5	0.0	3.8	0.0	8.8	1.2
National (Eastern Ethiopia)	23.3	31.4	15.5	6.6	14.4	0.3	4.5	0.9	0.9	2.3

4.5. Reasons for not receiving Men A conjugate vaccine

Simple access to immunization services does not necessarily translate into uptake of services. Key determinants of the success of vaccination efforts are health workers' attitudes, aspects of service delivering system, adequate supply of vaccines, and caregivers' basic knowledge about immunization especially for children and fears of side effects.

Table 6 describes the percentage of main reason for not vaccinated. Among the total of 3,224 (individuals between age 1-14 were 1, 612 and Age 15-29 were 1, 612) interviewed, 229 (7.1%) were not immunized (as at survey date). The respondents reported that, their main reasons why they had not received the immunization are; 22.8% of them reported that the service was not available during their visit, 15.8% mentioned that they did not have information about the campaign, 15.8% reported the distance problem, 14.5% said too busy to be vaccinated, 12.3% said due to fear of the side effect. Details of regional variation indicated in table 6 below.

Table 6: Main reasons for non-vaccination Men A conjugate vaccine during the campaign (3rd phase Men A, Ethiopia, 2015)

Region	did not know about campaign	Too far	Too busy	Went, no service available	Don't need men-A vaccination	Fear of side effects	Individual get sick	Pregnant	Other
	%	%	%	%	%	%	%	%	%
Tigray (part of the region)	16.7	16.7	33.3	16.7	0.0	8.3	0.0	0.0	8.3
Afar (part of the region)	0.0	17.1	5.7	51.4	0.0	8.6	2.9	11.4	2.9
Amhara (part of the region)	21.8	21.8	15.5	12.7	1.8	10.9	3.6	1.8	10.0
Oromia (part of the region)	19.4	0.0	3.2	25.8	9.7	19.4	3.2	3.2	16.1
Somalia	10.0	13.3	16.7	30.0	0.0	16.7	6.7	3.3	3.3
Harari	0.0	0.0	33.3	0.0	0.0	33.3	0.0	33.3	0.0
Dire Dawa	14.3	0.0	42.9	14.3	0.0	0.0	14.3	0.0	14.3
National (Eastern Ethiopia)	15.8	15.8	14.5	22.8	2.2	12.3	3.9	3.9	8.8

4.6. Side effects following Men A vaccination

People who receive vaccines may not experience any side effects at all. However, some notice that some pain with flushing and swelling on the site where the vaccine was injected. These side effects, which can last from one to three days, are common to most injectable drugs and vaccines. On the survey, individuals included on the sample were interviewed about their experience on the side effect following vaccination. Based on the result, 6.3% of the respondents

reported red swelling at injection site, 3.3% reported fever, and 2.6% reported headache. Others rare side effects and regional variations indicated in table 7 below.

Table 7: Side effects experienced following vaccination during the Men A campaign (3rd phase Men A, Ethiopia, 2015)

Region	Headache	Fever	Red/swelling at injection site	Rash	Wheezing / difficulty breathing	Seizure, unconscious	Other
	%	%	%	%	%	%	%
Tigray (part of the region)	3.7	3.7	10.9	3.7	1.1	0.6	0.6
Afar (part of the region)	3.6	4.5	2.0	0.4	0.0	0.0	0.0
Amhara (part of the region)	1.0	1.8	10.7	0.0	0.1	0.2	0.5
Oromia (part of the region)	3.0	3.2	3.1	0.3	0.0	0.0	0.3
Somalia	2.4	2.7	1.1	0.9	0.7	0.0	0.2
Harari	2.7	5.4	0.0	2.7	0.0	0.0	0.0
Dire Dawa	12.3	21.9	16.4	0.0	8.2	0.0	0.0
National (Eastern Ethiopia)	2.6	3.3	6.3	0.7	0.5	0.1	0.3

5. Discussion

This third phase post meningitis campaign coverage survey was conducted following the mass immunization campaign and it is considered part of national response to the control of meningitis outbreak in the country. The overall estimated coverage of third phase post men A vaccination coverage is relatively high (92.9%), which is consistent with similar post vaccination evaluation surveys conducted in Mali a stratified cluster survey to obtain regional and age-group-specific vaccination coverage estimates which was 95.9% (74.3% with vaccination card, 21.6% by recall), and coverage in the thirteen regions of Burkina Faso ranged from 90.8% to 98.3%[11].

This finding is relatively higher than the finding from another study conducted in Nepal vaccination campaign directed at a high-risk target population of people aged 1-24 years with an overall coverage of 64%[12]. The mass vaccination coverage in Togo provided for target population of individuals older than six months of age and living in the Savanes region was also lower (67.3%) compared with the coverage achieved current findings, although initially they aimed to reach at least 80% of the target population[13].

The finding from the qualitative component of this study tried to highlight the reasons for achievements in vaccination coverage. Of which the monitoring and evaluation activity has been boldly pronounced in almost all regions. *“Logistic, monitoring and evaluation and task force committees were formed from these committee monitoring and evaluation was responsible to survey the non-vaccinated target population and bring them to be vaccinated, daily performance review with emphases to performance of hard to reach areas, frequent supportive supervision were among activities performed as monitoring and evaluation activities during the vaccination campaign”* (Refer Annex-2)

There had been marked variation in vaccination coverage across region and age groups of study population with the highest (96.7%) in Tigray region and lowest in Afar region which is 87.5%.

The coverage is also lower among respondents in the age group of 15-29 years. The result is consistent with Mali’s finding, with individuals in the same age had coverage of 93.4%; while it was 97.0% in children aged 2-5 years, and 97.4% in those aged 6-15 years[11]. This might be possibly explained by the fact that individuals in this age category were relatively difficult to mobilize and hardly possible to find them at home at the time of the vaccination.

According to the findings a number of reasons had been mention for not receiving vaccination during the campaign. The main reasons include: lack of information about the campaign, distance from vaccination site, getting busy with other commitments and having travelled out of the area during the campaign. Knowledge about these reasons may help to address planning or logistic challenges in organizing future vaccination activities.

The findings further highlighted the most important modes of community mobilization and effective channels of communication used for the campaign. Accordingly, health workers (including health extension workers), public crier, school/students and Kebele

leader/administration were found to be the main source of information about the meningitis vaccination campaign with informing about 31.4%, 23.3%, 15.5 and 14.4% of those who were vaccinated respectively. This is probably due to the fact that health extension workers had played a significant role in providing information to the community as they are much closer to the community members. It was also apparent that schools or students, kebele administration and health development army were the main actors in community mobilization for Men A vaccination campaign.

In this survey all vaccinated individuals were asked about the side effects following this vaccine. The findings suggested that red swelling at injection site (6.3%), reported fever (3.3%), and reported headache (2.6%) are the most commonly reported side effects by individuals vaccinated against meningococcal disease during the campaign. According to documented evidence from similar studies on adverse reactions following immunization, fever, headache, gastro-intestinal disorders and local reactions were the most commonly mentioned side effects with 2-7 cases per 100,000 vaccinated individuals[14].

6. Conclusions and Recommendations

6.1 Conclusions

This third phase Men-A vaccination campaign coverage is relatively high with an overall estimate of 92.9%. Of those who received vaccination, in Harariregion (75%) substantial proportion of respondents had shown vaccination card during the survey to validate the evidence of the data, while in Dire Dawa only 47.5% of the respondents have card to verify their Men-A vaccination status from documented records. Moreover, other regions have also a relatively low card retention rate. Apart from loss/misplacement of card as reasons provided for no vaccination card, a bout 6 % of respondents did not receive vaccination cards during the campaign. In all regions, the coverage of younger age group 1-14 years was relatively high and this could give a confidence for the protection of relatively high risk groups against meningococcal disease.

As the major sources information health workers (including health extension workers), public crier, school/students and Kebele leader/administration played a leading role in mobilizing the community about Men-A vaccination campaign. In contrary, among individuals who didn't receive Men A vaccination, most of the study participants (15.8 %) reported lack of information about the campaign as a reason for non-vaccination.

6.2 Recommendations

The coverage for third phase post Men-A campaign survey is relatively higher (92.9 %). Thus, it shows the success of mass campaign conferring the coverage closer to the target set. In planning, organization, and implantation of campaigns improving issues in relation to logistic arrangements are of great concern. Thus, the findings revealed that:

- There should be a well organized preparatory activities to ensure a continuous supply of vaccines, syringes, vaccination card and other inputs.
- Availing of adequate staff, required budget and transportation services were another key aspects of preparation for vaccination campaigns.
- All the supplies and equipments have to be in a stockpile ahead of time and should also be well managed in order to keep the quality of the campaign and improve the coverage.
- There should be a strong supportive supervision mechanisms put in place for the successful implementation of vaccination campaign.
- Awareness creation and advocacy efforts for community mobilization need to focus on existing government structures (health workforce and kebele administration) as well as community groups such as health development army.
- The importance of monitoring and evaluation activities in the course of campaign implementation should be strictly underlined in order to improve services quality and reach all the target population.

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8. Annexes

8.1. Annex-1: Data collection tools

Post Men A Vaccination Campaign Coverage Survey, phase 3

QI. Region: 1. Tigray 2. Afar 3. Amhara 4. Oromia 5. Somali 6. Harari 7. Diredawa
 QII. Zone : _____
 QIII Woreda: _____
 QIV. Kebele: _____
 QV. EA ID: [] [] [] [] _____
 QVI. HHID] [] [] [] [] [] _____
 QVII Age strata 1. 1-14 age strata 2. 15-29 age strata
 QVIII Date of interview _____
 PID] [] [] [] [] [] [] [] _____
 USER ID] [] [] [] [] [] _____

ID	QUESTIONS		Skip	
Q1	Number of eligible person in the household , 1-14 or 15-29 years	Enter number		
Q2	Participant selected from random chart	Enter number		
Q3	Age of participant in completed years	In complete years		
Q4	Sex of participant	1=male; 2=Female		
Q5	Is the participant present at the time of data collection?	1= Yes 0= No		
Q6	Did the participant receive Men A vaccine during the campaign?	1= Vaccinated-Card seen 2= Vaccinated-by History 3=Not vaccinated 9= unknown	Q8 Q9 Q10	
Q7	[If vaccination card not found and participant vaccinated] Why do you not have Men A vaccination card?	1= No card received 2= Card lost / misplaced 9= Don't know		
Q8	[If vaccinated] Did the participant experience any side effects, following immunization [Indicate, '1' for all mentioned side-effects, only if mentioned by persons, and, '0' if not mentioned, do not prompt...]	Side effect	Yes	No
		Headache	1	0
		Fever	1	0
		Red/swelling at injection site	1	0
		Rash	1	0
		Wheezing / difficulty breathing	1	0
		Seizure, unconscious	1	0
Other	1	0		
Q9	[If participant not vaccinated] What is the main reason for non- vaccination (ONLY ONE RESPONSE IS POSSIBLE)	1. Not informed, did not know about campaign 2. Too far 3. Too busy 4. Went, no service available 5. Participant does not need MenA vaccination 6. Fear of side effects 7. participant ill 8. Pregnant		

		9. Other X. Child was vaccinated	
Q10	Have you ever heard of MenA vaccination Campaign	1=Yes 0= No	
Q111	What was the primary source of information about the occurrence of the campaign?	1. Public crier ^[SEP] 2. Health worker (<i>health professionals, HEWs</i>) 3. School/student 4. Health development Army or Community Health Volunteer 5. Kebele leader or administration 6. Religious leader ^[SEP] 7. Family, friend, neighbors 8. Radio ^[SEP] 9. TV 10. Other specify_____	

Sampling Summary

Talley	Households visited	Houses Visited with children 1-14y	Houses interviewed	Houses refused	Houses no one home
	O OOOOOOOO	O OOOOOOOO	O OOOOOOOO	O OOOOOOOO	O OOOOOOOO
	O OOOOOOOO	O OOOOOOOO		O OOOOOOOO	O OOOOOOOO
	O OOOOOOOO	O OOOOOOOO		O OOOOOOOO	O OOOOOOOO
	O OOOOOOOO	O OOOOOOOO		O OOOOOOOO	O OOOOOOOO
	O OOOOOOOO	O OOOOOOOO		O OOOOOOOO	O OOOOOOOO

	Number of children in household 1 to 14 years of age								
		1	2	3	4	5	6	7	8+
Household Number in Cluster	1	1	1	1	2	4	4	2	5
	2	1	2	2	3	5	5	3	6
	3	1	1	3	4	1	6	4	7
	4	1	2	1	1	2	1	5	8
	5	1	1	2	2	3	2	6	1
	6	1	2	3	3	4	3	7	2
	7	1	1	1	4	5	4	1	3
	8	1	2	2	1	1	5	2	4
	9	1	1	3	2	2	6	3	5
	10	1	2	1	3	3	1	4	6

To select the appropriate child/person in the house with multiple eligible children

- Identify the number of children between 1 and 14 years and individuals 15-29 who live in the household. Find this number on the top of the chart.
- Check to see what number house this is for interview (a number between 1 and 10). Find this number on the side of the chart
- Where the row and column intersect is the number child you should ask about (from youngest to oldest). This should be done if the child is present or not. For example, if the child is not present, but another eligible child is, you interview the selected child

Team Name/signature

Kebele signature

Supervisor review/signature

Remarks:

(If cluster replaced, reason for replacement, distance of cluster from original cluster. Also note if some children were taken from a neighboring areas and why

8.2. Annex- 2: Key findings of Qualitative Part

Qualitative result of Men A vaccination (Phase-III)

Introduction

The major focus of the qualitative study was to characterize planning, implementation and to identify key barriers/reasons, strength and weakness of Men A vaccination campaign. This qualitative analysis was made using the interview transcripts of focal persons/coordinators at Woreda level in different health units. In depth interview was made with 63 Woreda health office heads/ focal persons /coordinators/officers in different units. All transcripts were entered into open code version 4.02 software and thematic codes were created based on the objectives of each interviews and discussions. While reading and conceptualizing the transcripts, first line codes under each theme were created. For further elaboration, memos were developed and attached to codes and themes. The results are presented as follow based on the thematic areas of analysis.

1. Planning of Meningitis A Vaccination

Participants noted that the planning process of Men A vaccination campaign was mainly done by health workers from different level of health care delivery, with involvement of different stake holders/actors/partners in immunization service. Concerning the number and responsibility of participants involved in planning, the respondents reflected that, from each Woreda level, at least one EPI focal person involved in planning. In some woredas more than five persons were involved in planning. One participant said;

“in general, during development of the plan many person has been participated such as; community leaders , health professionals from different level, and head of woreda health office and health office case team heads. In our case, from woreda level seven individuals with different responsibilities like surveillance treatment case team, regulatory and MCH coordinators were involved in planning” (Male participant from Tigray region)

Another participant who was working as woreda MCH coordinator from Oromia region mentioned that;

“Seven persons were involved in planning from our woreda and they worked as Waste management’s committee, logistics management, mobilization committee, task force (supervision committee), facilitation committee, vaccination provider and health staff committee from different departments” (Male participant, aged 36 years)

Based on the interview transcript in some woreda one or two persons were involved in planning of Men A vaccination campaign; A participant from Kombolcha woreda said;

“Some staff members from the woreda health office have been participated in the planning phase of Men A. The numbers of the participants were two (2) and concerning

their responsibilities, one was EPI Focal person and the other was MCH focal person”
(Female participant, aged 26 years)

Participants mentioned specific issues included during planning. The major issues were, human resource (teaming), logistics and supplies, vaccination target groups, means of transportation, methods of community mobilization, cold chain management and waste management.

“During planning issues like orientation about Men A vaccination, how to perform cold chain management, how to form the team, what was the responsibility of the team members, the number of target group, transportation, Committees involved in the campaign and other were discussed” (Participant from Lasta Woreda, Amhara region)

Another participant from Tigray region explained as follows;

“In short, we included about transportation (car, motor), human resource that is number of teams, number of persons per team; in addition, we also include about drugs, tally sheet per team. Expected barriers and their solutions were also includes in our plan like how to get each other in areas with no network access, and inaccessible for car. These are the main issues” (participant from Tigray region).

Participant from Hudet woreda again noted that;

“Specific issues included in the plan include, the number of vaccine sites, eligible population, number of sub kebeles where sites will be settled, health posts available how to choose vaccinators and mobilization channel, and how to manage the budget , how to arrange free campaign” (participant from Somali region).

2. Implementation of Men A vaccination campaign

According to the interview transcripts, the most common mode of meningitis vaccination services provision site mentioned by the respondent was fixed vaccination site (mainly; schools, health posts, churches, mosques, kebele office) and rarely mobile vaccination by house to house for area which were remote and difficult to access and to identify those unable to take vaccine because of different reasons.

A participant from Goro Guto woreda mentioned that;

“The service was delivered to the community based on fixed vaccination site (schools, churches, etc.) preparation and sometimes home visiting was used to follow up those who missed the vaccination by using / visiting them to home to home; and identifying who was vaccinated and who did not by using a health development army” (Male participant, aged 27 years).

Another participant from Semen Mekele woreda was telling fixed vaccination site based on priority and he said by his own words as follows;

“First, we targeted schools as our center; for those grade one to three students, since their age is below nine we did not vaccinate them without parent’s permission; we assign their own day which was at the weekend in which, mother or father came together with them. But for students above grade , the school and health professional took responsibility and vaccinated them at school by using fixed vaccination sites; two days was assigned to complete school vaccination. Then once we complete vaccination for school students, the team moved to selected areas which is center of the kebele like mosque, church and kebele office because these are the main centers for the community” (participant from Tigray region).

Another provider from Dolo Addo woreda said;

“Fixed posts were our mode of vaccine provision. Regarding follow up of those who missed the vaccine in collaboration with the zonal coordinator every day at 5:00 o’clock we had lash assessment in the clusters (like; Bokolomayo, Suftu, Doloaddo...) every day in home to home bases and gave the report and then what ever challenge and some people who missed the vaccine were tried to be addressed in this manner” (participant from Somali region).

Based on the interview transcripts, channels used to mobilize community were: schools, town crier, through religious leaders (church), Health Development Army, posters, banners, and official letter. Several participants noted that the most effective information dissemination method they used was health development army (1 to 5 organization), using Microphones and schools.

Participant from Dessie town was explaining about community mobilization as follows;

“We have used different types of community mobilization techniques. First using microphones to mobilize kebele, Second different communication mass media in the area and third, different development armies ‘Aderejajet’ In addition we have also used different meeting opportunities to address the community. The most effective method of mobilization to address community were development armies and microphones and ‘Montarbo’, during the intra campaign survey” (participant from Amhara region).

Another participant who was EPI focal person from Oromia region mentioned that;

“In our case, Schools/students, Banners, TV, Radio, Women developmental army, 1:5 network system/community health developmental army, Microphone (town crier was used as channels to community mobilization during the campaign. Among these the most effective method was by using schools (students) and development armies”. (Male participant, aged 42 years).

Another participant who was MCH expert and EPI focal person explained similar thing as follows;

“What we have used to mobilize community was, fortunately, kebele leaders and HEW were came to this woreda for meeting and we gave them a mission to mobilize according to the structure they lead and areas like in Church, Market and to focusing on importance of the vaccine, Structure means one to five leaders and there are also group leader of thirty individuals so information was easily disseminated by using these structures. Other was we informed persons at church during holidays. We also use school directors to inform their respective students. The best methods were the information disseminated by school children and development armies” (Female participant from Tigray region).

According to interview transcripts, the participants described that, good supervision, timely distribution of supplies; transportation, effective community mobilization and support from stake holders were important enabling factors for the campaign. Participant from Amibara woreda said;

“Enabling factors in the campaign were, support related to human power and transport and supervision from regional health bureau, Save the children, WHO, Woreda administration and health office support were also important. Health professionals’ commitment was also highly appreciable. They travel for long times into inaccessible area. The communities supported us in different issues like camel for transport and it was highly appreciable” (Male participant, aged 29 years).

Another participant from Kurfa Chele Woreda said;

“Enablers to effective delivery of the mass campaign was that, highly committed community involvement and staff members, adequacy and timeliness supply of vaccine, monitoring and supportive supervision done by zonal level and from partners” (male participant, aged 34 years).

3. Monitoring and Evaluation of the Campaign

Committee establishment, random checking of households, performance assessment and daily report were issues addressed by participants as methods of monitoring and evaluation of the campaign.

“Logistic, monitoring and evaluation and task force committees were formed from these committee monitoring and evaluation was responsible to survey the non-vaccinated target population and bring them to be vaccinated ” (participant from Amhara region”.

Woreda EPI focal person from the same region added;

“There was checklist and each supervisor monitored 20 households randomly. In some kebeles the campaign were addressed effectively. On the other hand in some other kebeles we found missed households due to absentees following harvest season. But we managed it by conducting home to home vaccination. Generally, the campaign was 10

days so re-campaign was done to those kebeles In order to address the target group” (participant from Amhara region).

Another respondent from Tigray region was explaining how to monitor the progress by daily report as follows;

“in our woreda, we followed it by daily report; each team was expected to report daily and each kebele had daily plan that was how many should be vaccinated at one day and total target had been break down in to daily basis so we know how many individuals that a team should vaccinate at one day or at five days so if any team did not fulfill the expected target we inform them to move that got and to vaccinate the missed ones” (participant from Tigray region)

4. Strength and weakness of the campaign

Interviewed participants explained issues like commitment of staff, community participation, and support from different stake holders including WHO as strength of the campaign.

On the other hand, some participants noted weaknesses like, shortage of supplies (card, syringe, tally sheet etc), narrow time gap between training and campaign, Shortage of vehicle, arrangement of the campaign during harvesting time, delayed budget release, smaller number of projected target population than actual, shortage of man power, low per diem scale.

A participant who was EPI focal person from Oromia region focused mainly on staff commitment and community participation as strength of the campaign by saying;

“Very important strength of the campaign was highly committed staff members and community involvement because of effective mobilization in the mass campaign“(Male participant, aged 32 years)

According to one of the district EPI focal person from Harari region, adequate vaccine supplies and supportive supervision from different levels were strengths of the campaign in addition to staff commitment and community participation. He said;

“Highly committed community and staff members, involvement of woreda and kebele administrator, adequacy and timeliness supply of vaccine, Supportive supervision received from higher levels (regional health bureau level), were strengths of the campaign” (Male participant, aged 42 years).

In contrary some participants explained weakness of the campaign in relation to shortage of some supplies. Participant from Oromia region explained the concern as follows;

“We assessed overall organization of the camping in relation to man power, adequate and timeliness of the supply as well as logistic issues and we identified problems on adequate and timeliness of the supply especially, mixing syringe, AD syringe and service ID card which was weakness” (Male participant, aged 27 years).

Another participant from Amhara region explained different types of weaknesses of the campaign and he said;

“Weakness to effective delivery of mass vaccination during the campaign were, there was no time gap between training and campaign and the time period was not adequate for community mobilization, it was time of harvesting and difficult to get targets at home, shortage of supplies like tally sheet and mixing syringe. The other was perdium was not equal to first phase of Men A vaccination campaign and which discouraged workers” (Male participant from Amhara region).

Respondent from Tigray region mentioned transportation problem as major challenge and said;

“What I consider as challenge was we faced transport problem for some days during the campaign, because some of the woreda leaders were away from the woreda for experience sharing. Otherwise there were no other barriers” (Male participant from Tigray region).

According to some participants, shortage of man power and delayed budget release were considered as another weakness of the campaign. Participant from Oromia mentioned challenges as follows;

“The challenge was lack of health professionals in some clusters. The other was budget problem; It was not released on time. We did it with credit from other budgets” (Participant from Oromia region).

5. Barriers to Men A vaccination Coverage

Based on the interview transcripts different reasons for non vaccination (fear of side effect, fear of injection, misconceptions), movement of people from place to place and difficult topography and transportation were raised as barriers.

Interviewee from Oromia region said;

“In our case, reason for non-vaccinators like, fear of the injection, being busy during the mass vaccination since it was harvesting time and being not around during the campaign were barriers” (male participant, aged 38 years)

Misconception was another barrier in some areas. The participant from Somali region said;

“The age group focused only from 1-29, what is the reason for this age group only? Do you want us to not give birth because this is reproductive age and they thought that it as birth control method but we convinced them and they tried to take the vaccine and for the final two days every fixed sites was very busy”

According to interviewee from Tigray region, transportation problem was the main barrier during the campaign, and he said;

“Though, it did not interrupt our activities, what I consider as barrier is there was problem of transporting filled safety box from site to health center because, the car was transporting logistics in the morning but turn back immediately but the teams may stay the whole day there and face problem to carry all syringes, and others in to health center otherwise there was no other barriers” (participant from Tigray region). Similarly

“The major barriers to effective delivery of mass vaccination during the campaign were topography of the Woreda not accessible for transportation” (participant from Amhara region)

6. Suggestions for improving the Campaign for future

The participants made a number of suggestions for improving the campaign for future.

In this study, EPI focal persons or other persons who were knowledgeable about the campaign were asked for any comments and suggestions on the ways of improving the campaign in the future. These include: allocating adequate time for community mobilization and to perform other tasks, improving waste management and transportation mechanism, scheduling vaccination when targets are relatively free (not in harvesting time), releasing budget on time.

Participant from Amhara region suggested the issue as follows;

“During campaign preparedness there was no time everything was done in short period. So for future these should be done ahead of the campaign with enough time. The other thing that should be considered is the campaign should be given before or after the harvest season. Because we are forced to conduct re-campaign and home to home vaccination following absentees. In addition Planning was performed focusing the total population rather if these were done targeting the number of kebeles it would be effective to address the target population without team shortage. Finally, the campaign budget should be released prior to the campaign in order to conduct effective campaign” (participant from Amhara region)

Another participant from Tigray region said;

“What I suggest to improve in the future is, the resource should overview ahead of time, of course an action plan has made earlier, so when you divide logistics it is so good if it is based on the action plan made before in that, because, it neither harm nor benefited for any one, because, what we have faced in the past is there was shortage of cards so the professionals were bring from other neighbors, there was also shortage on syringes and we bring from other places so I recommend to improve these points” (Male participant from Tigray region).

Similarly, participant from Oromia region suggested that;

“I said before the budget issue should be released on time for the future. The other is transportation for safety boxes; Pick up cars need to be accessed for safety box collection & timely waste management system. If not, it is threat of health & environmental pollution” (Male participant, Aged 48 years).



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