ADDIS ABEBA UNIVERSITY COLLEGE OF HEALTH SCIENCE SCHOOL OF PUBLIC HEALTH

ETHIOPIA FIELD EPIDEMOLOGY TRAINING PROGRAMME (EFETP)

COMPILED BODY OF WORKS IN FIELD EPIDEMIOLOGY

BY

IBRAHIM ADEM

Submitted to the School of Graduate Studies of Addis Ababa University for the degree of Master of Public Health in Field Epidemiology

June 2015 Addis Abeba

Addis Ababa University, College of Health Sciences, School of Public Health

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Examiner

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Examiner

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List of Abbreviations

AAU	Addis Ababa University
AFI	Acute febrile illness
ANC	Anti natal care
ART	Anti- Retroviral-Therapy
AWD	Acute watery diarrhea
BSC	Bachelor of Science
CI	Confidence interval
CSF	Cerebro spinal fluid
CFR	case fatality rate
CSA	Central Statistics Agency
CBN	Community based nutrition
CDC	Center of disease control and Prevention
DD	Diarrheal disease
EIS	Enzyme immunoassay
EFELTP	Ethiopian Field Epidemiology & Laboratory Training Program
EHI	Ethiopia Health Institution
EOS	Expanded outreach strategy
EPHA	Ethiopian Public Health Association
EPI	Expand program on Immunization
ENHS	Environmental health Science
EWS	Early warning system
FGM/C	Female Genital Mutilation /Cutting
HMIS	health management information system
HC	Health Centers
HCT	HIV Counseling and Testing
HEW	Health extension workers
HF	Health facility
HH	House Hold
HIV	Human immune deficiency virus
HP	Health post

IDSR	Integrated Diseases Surveillance and Response
IP	intestinal parasite
ITN	Impregnated treated net
LRTI	Lower respiratory tract infection
OPD	Outpatient department
OTP	Outpatient Therapeutic Program
PNC	Postnatal care
PTP	Pulmonary Tuberculosis
PITC	Provider Initiated Testing and Counseling
PMTCT	Prevention of Mother-to-Child Transmission
RHB	Regional Health Bureau
SAM	Severe Acute Malnutrition
TBA	Traditional birth attendants
TB	Tuberculosis
TFP	Therapeutic Feeding Program

TFU	Therapeutic Feeding Unit
TRHB	Tigray Regional Health Bureau
ULD	Unknown Liver Diseases
UNICEF	United Nations Children Fund
URTI	Upper respiratory tract infection
UTI	Urinary tract infection
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

Executive summary

The Ethiopia field epidemiology program is a two years service program in field epidemiology adapted from United States center for disease control and prevention (CDC) epidemic intelligence service (EIS) program. The program is designed to assist the ministry of health in building or strengthen health system by recruiting and promising health workers and building their competence through on the job mentorship and training. The program has two main components a class room -teaching component (25%) and practical attachment or field placement component (75%).

A suspected measles outbreak was reported from Ofla Woreda to Tigray regional health bureau on January 2014. In the community -based on surveillance system the outbreak was suspected measles outbreak, not confirmed and no death. The surveillance system was provided rapid response and control during of the outbreaks. Our results indicate that the affected age groups cases which 38% > 15 yrs. The highest measles case was among age groups greater than 15 yrs. The individuals who have travel history areas with active measles outbreak cases were strong association for risk of measles infection. The risk of exposure is likely to be higher for individuals because of the overcrowding in house hold level. The community has knowledge about mode of transmission of measles. The risk of transmission for susceptible is low and measles transmission were also protective of disease.

Another suspected measles outbreak was reported from Alamata Woreda from January, 2014. Our results indicate that highest cases were most affected in those age group >15 yrs. The highest measles case was among age groups <1 yr and >15 yrs. Vaccinated individuals previously for measles was at low risk of acquiring the diseases. The individuals who have knowledge about mode of transmission of measles were the risk of transmission for susceptible was low and protective. The risk of exposure is likely to be higher for individuals because of the overcrowding in house hold level.

The surveillance system evaluation of malaria and measles was conducts to assess its usefulness to detect outbreaks and to estimate the magnitude of morbidity and mortality of disease in the area. Special attention required for the improvements such as: - in describe data analysis by person, place and time, in trend analysis, in completeness and timeliness reporting, in feedback and preparedness of bulletins and disseminated of findings, in communication technologies, in training will be conducted for all epidemic prone disease, in human resources, in supervision, emergency budget allocating and quality of reporting, analysis and feedback of daily and weekly surveillance.

Over all there was a few dysentery cases in the region compare with other similar studies. So main finding results indicates the strong of health service system and available of strong environmental

sanitation and hygiene. Many infection diseases including dysentery are associated with contaminated water and food is a major cause of morbidity and mortality worldwide. Encourage of exclusive breast feeding , Hand washing, improve the environmental sanitation and protect microbiological quality and to reduce the potential health risk of water to this house hold, intervention strategies is needed that is easy to use, effective, affordable, functional and sustainable. Many different water collection and storage systems have been developed and evaluated in the laboratory and under field conditions. In addition a Varity of physical and chemical treatment methods to improve the microbiological quality of water are available.

Malaria was the top ten leading causes of morbidity in Chifra Woreda in 2012. Access to safe water supply was 48% and the latrine coverage was 23%. A total of students enrolled in 2011/2012 males greater than females in Secondary school and Improve safe water supply and increase latrine coverage and utilization. In addition to this Deployed human resources and strengthen the surveillance system and routine immunizations and reporting and documentation of data. In all health posts provides of electricity service. Distribution and provision of ITN to prevent the pastoral community from malaria.

The livelihoods of Afar communities have been affected by recurrent drought, and associated health and nutrition emergencies. Belg non-food humanitarian need assessment was conducted in all zones in 15 selected woredas by Afar national regional state government in collaboration with concerned Federal Ministries and partner organizations.

The overall goal of the assessments is to achieve the greatest possible reduction of mortality in children less than five years of age. Among the top five causes of morbidity Pneumonia, Diarrhea, Malaria, Acute upper Respiratory tract infections and pneumonia are the top five causes of morbidity in fewer than five cases in most of the woredas. The top five causes of morbidity in above five years are Malaria, Diarrhea, URTI, UTI and AFI. Number of malaria7826 cases in the 15 woreda in the past five months from January to May 2013.

The potential risk factors for the occurrence of public health emergencies include low latrine coverage and utilization, shortage of safe water, interrupted river, lack of preparedness and response capacity in some woredas and no fund is allocated for preparedness activities in all assessed woredas. Also there were low LLINs, IRS and SIA coverage in most of the woredas. The plan encompasses activities such as provision of drugs and medical supplies, items for early detection and reporting, prevention of the spread of the outbreak, nutrition, preparedness and training.

Chapter I. Outbreak investigations

Measles outbreak in Ofla woreda, Southern zone, Tigray region, Ethiopia, 2014

1. **Introduction**

Globally Measles is one of the most contagious diseases known to man and often occurs in explosive epidemics. However, as a result of its associated immunosuppressant, measles can lead to lethal complications, such as pneumonia, croup and diarrhea. Measles can also lead to lifelong disabilities, including blindness, brain damage, and deafness. Measles is one of the most infectious human diseases and can cause serious illness, lifelong complications and death. Prior to the availability of measles vaccine, measles infected over 90% of children before they reached 15 years of age. These infections were estimated to cause more than two million deaths and between 15 000 and 60 000 cases of blindness annually worldwide. By contrast to measles, rubella infections cause a relatively mild disease for children. The highly effective, safe and relatively inexpensive measles and rubella containing vaccines protect individuals from infection and their widespread use can completely stop the spread of the viruses in populations that achieve and maintain high levels of immunity. Countries began using measles vaccines in the 1960s and immediately identified their use as highly cost effective.

In some developing countries, case-fatality rates for measles among young children may still reach 5–6%. In industrialized countries, approximately 10–30% of measles cases require hospitalization and one in a thousand of these cases among children results in death from measles complications. Improving measles vaccination coverage and reducing measles-related deaths is a global imperative, particularly as it relates to the United Nation‘s Millennium Development Goal 4(MDG4), which aims to reduce the overall number of deaths among children by two-thirds between 1990 and 2015 *(5)*. The United Nations selected routine measles vaccination coverage as an indicator of progress towards MDG4, given the potential of measles vaccination to reduce child mortality and because it serves as an indicator of access to child health services. The infectiousness of measles easily leads to global spread and even countries that eliminated their indigenous transmission remain vulnerable to outbreaks from importations. This is exemplified in the WHO Region of the Americas, which successfully eliminated all indigenoustrans mission of measles viruses in 2002 and rubella viruses in 2009. The Region is currently seeking to verify the successful elimination of both diseases.

Africa Measles is one of the communicable diseases still causing preventable mortality and morbidity in the country.

In 2001, countries in the World Health Organization (WHO) African Region began accelerated measles control activities to reduce measles deaths by half by 2005 compared to the estimated number of measles deaths in 1999. Implementation of the recommended strategies led to a 75% reduction in estimated measles mortality in the African Region by 2005. Following this progress, in 2006 the African Region adopted a goal to achieve 90% measles mortality reduction by 2010 compared with the estimate for 2000. By 2008 in the African Region, reported measles cases decreased 93% and estimated measles mortality decreased 92% compared with 2000.The strategies include improving routine vaccination coverage, providing a second opportunity for measles vaccination through supplementary immunization activities (SIAs), improving measles-case management, and establishing case-based measles surveillance.

Ethiopia since 2002, Ethiopia adopted these regional goals and strategies and has been taking important steps to control measles. The Africa Region as well as Ethiopia is working towards measles elimination by 2020:

The national immunization programmed was established in the 1980s, and currently delivers service through static and outreach sites nationwide. The current routine immunization schedules recommend a dose of measles vaccination at 9 months of age. The WHO, UNICEF coverage estimates for measles in 2009 measles SIAs was conducted in Tigray and Gambela targeting 773,910 and 62,504 children aged6-59 months and achieved coverage of 85.6 % and 92.4% respectively. Tigray: - Central zone, East zone, South zone and Mekele town attained coverage ranging from 56% to 87% which lowered the regional coverage to 85.6%. Afar region had measles and polio integrated campaigns in July 2009 where the administrative coverage for Zone 3 and 4 indicated a coverage of 88% and 87% respectively where as the RCS coverage indicated 95 % for Zone 3 and 93% for Zone vaccination for Ethiopia also indicate an increase from 37% in 2000 to around 80% in 2010.

2. Literature review

Measles is the risk of transmission in the disaster-affected population is dependent on the baseline vaccination coverage rates among the affected population, and in particular among children aged <15 years. Crowded living conditions, as is common among people displaced by natural disasters, facilitate transmission and necessitate even higher immunization coverage levels to prevent outbreaks (*19*). A measles outbreak in the Philippines in 1991 among people displaced by the eruption of Mt. Pinatubo involved

More than 18 000 cases (*20*). In Aceh following the tsunami, a cluster of measles involving 35 cases occurred in Aceh Utara district, and continuing sporadic cases were common despite mass vaccination campaigns (*16*). Sporadic cases and clusters of measles (>400 clinical cases in the six months following the earthquake) also occurred in Pakistan following the 2005 South Asia earthquake (*21*). (WHO, 2006)

The most literature review were in developing countries with a high level of infection, infants below the age of 12 months are at high risk for measles virus (MV) infection.

The contact rate also has large impact on the spread of a disease through a population. The higher the rates of contact, the more rapid the spread of the disease, that the contact rate has large impact on the spread of the disease through population. (Senait Kebede', ^{2003}-2007).

Measles outbreaks are still among the common epidemics contributing *to* high mortality and morbidity in Sub-Saharan Africa, especially among children with malnutrition. (Sambe Dale^{92}, 2003-2007).

In 1999, of approximately 871,000 deaths from measles worldwide, 61% occurred in sub-Saharan Africa. In 2004, of the 1,590 districts under case-based surveillance, 80 (5%) reported outbreaks of measles. In 2005, 47 (2.5%) districts reported outbreaks out of 1,850. In 2006, 178 (6%) of 2,923 districts reported outbreaks, which spanned across 29 countries. The most affected countries were: DRC (62,933 cases/868 deaths), Nigeria (2,919 cases/18 deaths), Ethiopia (1,665 cases/0 deaths) and Tanzania (I, 606 cases/8 deaths). (Allarangar Yokouide' 2003-2007)

The age groups most affected were children aged <5 years, children aged 5-9 years, and persons aged 20-29 years. Finally, editors concluded that low vaccination coverage in Venezuela and deficiencies in surveillance contributed to the outbreak (Ismail Hamdi, 2004)

The outbreaks in Africa over the same time period represent a widespread resurgence of measles that affected 28 countries in sub-Saharan Africa, with more than 250 000 reported measles cases and more than 1500 reported measles-associated deaths (WHO, 2012)

Measles is an acute infection of the *virus, is spread through* close respiratory contact with contagious air droplets. Infected persons can transmit the disease to susceptible hosts even before the appearance of the measles rash. Life-long immunity is acquired after measles infection. The case fatality rate in developing countries is generally in the range of 1 to 5%, but may be as high as 25% in populations with high levels of malnutrition and poor access to health care. People who recover from measles are immune for the rest of their lives (control of communicable disease)

Overcrowding increases the risk of secondary infection, which increases the severity of disease in all age groups and immunization services interrupt the delivery of measles vaccine to children. General lack of awareness about measles within the community results in failing to and the spread of disease to others ;(control of communicable disease)

All unvaccinated persons are at risk of developing measles, but the risk of death is highest among children between the age of six months and five years. Immunization non-responders, poor vaccination Practices, malnutrition, chronic vitamin A deficiency, and (control of communicable disease)

3 .Objectives

3.1 General objective

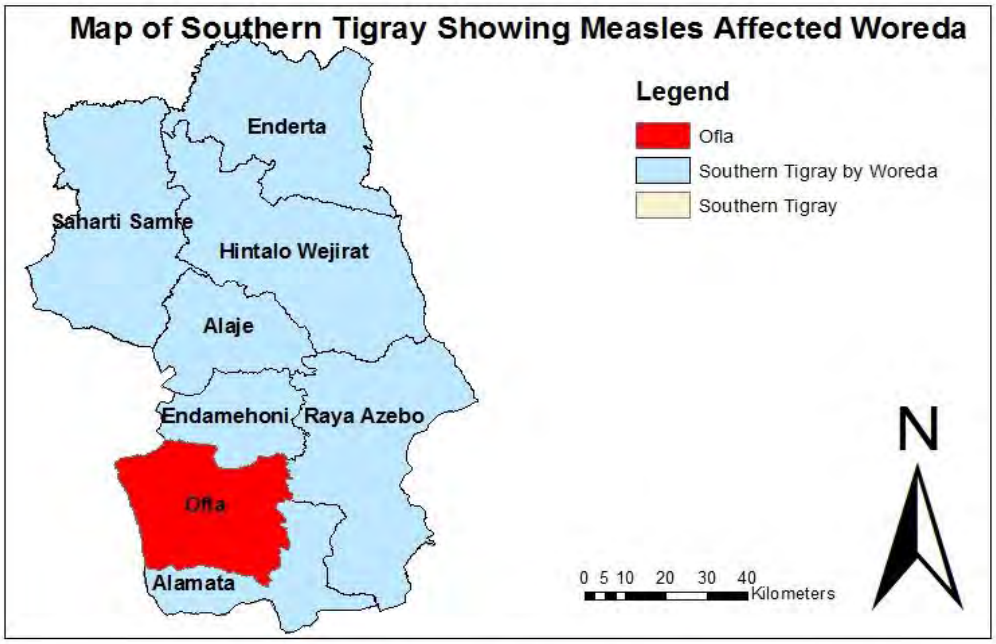
- To verify the existence of outbreak, describe the outbreak and make recommendation for control measures.

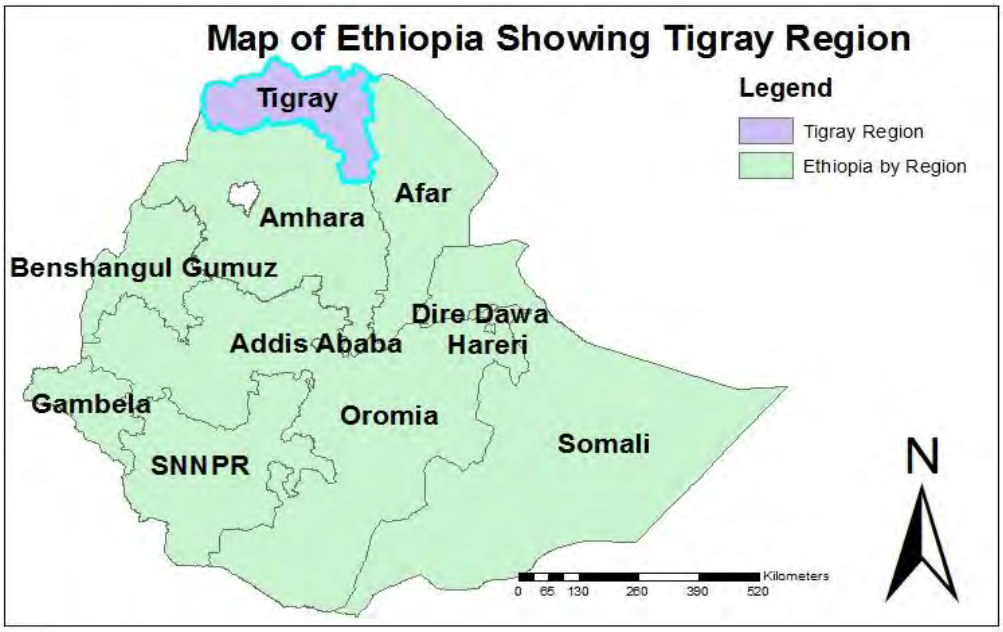
3.2 Specific objective

- To verify and suspected the existence of outbreak
- To describe the disease pattern by place, person and time
- To formulate possible suggestion and recommendation for control measures

4 .Methods

4.1 Study area - Ofla Woreda, Tigray region, Ethiopia, 2014.





Map 1: Map of Tigray region showing Ofla Woreda, 2014

4.2 Study population - 34 measles cases selected from the study population three kebeles were selected during Study period of Ofla woreda, Tigray region, Ethiopia, in 2014

4.3 Study period -we conducted the case -control study on February 26- 28, 2014

4.4 Study design - I conducted descriptive and case -control study for 34 measles cases and case -control study for 17 cases and 51 controls

4.5 Case definition -

- Suspected case of measles**:**

  • A person with fever and maculopapular rash (i.e. non-vesicular) and one of the following: cough or coryza (runny nose) or conjunctivitis (red eyes).

- Confirmed case of measles**:**

  • Measles IgM positive in blood

- Epidemiologically linked case of measles:

  • A person with signs and symptoms consistent with measles who was in contact with a laboratory confirmed case 7-18 days before the onset of symptoms

4.6 **Data collection** - The 17 measles cases and unmatched controls were interviewed (by questionnaire) . The data gathered in these forms included socio - demographic and vaccination history, clinical features signs and symptoms, history of travel and contact with other suspected measles cases

4.7 Data analysis - A computerized data was based on completed questionnaires and the data were analyzed using Epi. Info. I used for descriptive tables and charts, and odds ratio (OR) statistics for data analysis.

The blood sample collected from 8 measles cases and were sent to EPHI .The results of lab tests of was the presence of measles-specific IgM antibodies positive 2 cases

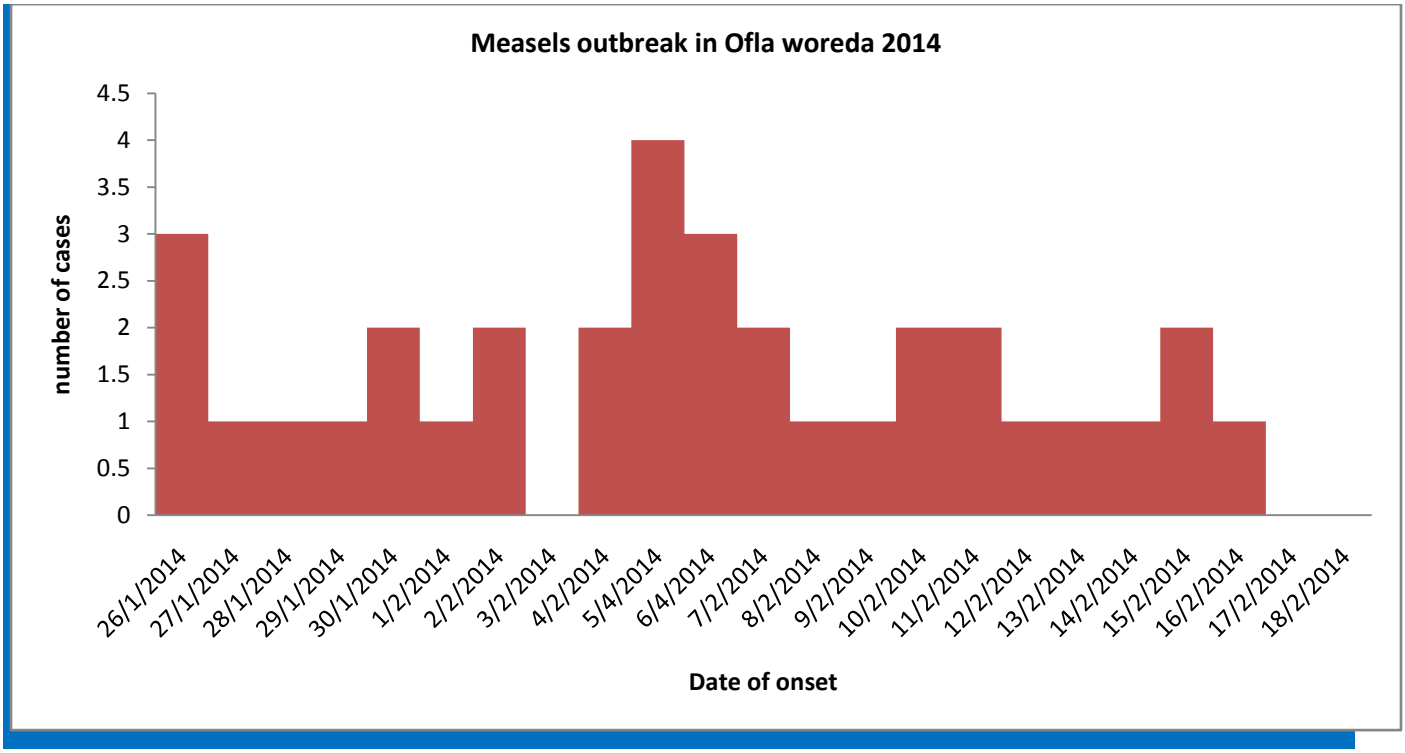
5 .Results

Descriptive analysis

The study was conducted in Ofla Woreda among the three affected kebeles and we identified 34 measles cases in Ofla Woreda Between 26 January to 8 February, 2014 .Out of 34 cases. I interviewed 17 (50 %)cases were conducted by analytic case- control study. The majority of measles cases found in the Sesela kebele. The incidence was highest in age-groups greater than 15 yrs. Vaccination status was

reported for 55 of the cases (68%) and of these 25 (22%) were unvaccinated. Measles sample specimens were sent to EPHI laboratory. From 8 samples tested 2 were positive for measles specific IgM

Figure 1. Epidemic curve of measles outbreak in Ofla woreda, 2014

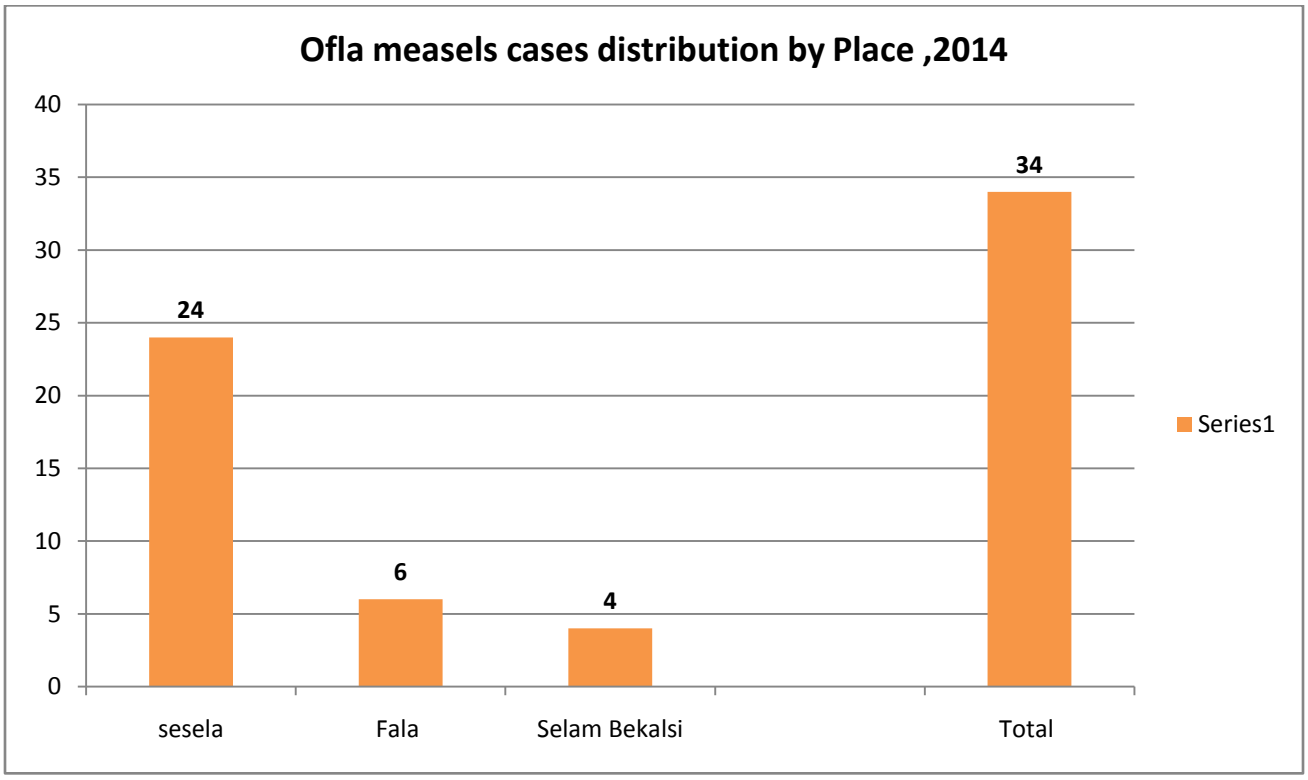


The index case of date of onset was on the January 26/2014 and there was a high pick of cases on January 27th and 6th of February 2014. From 26 January to February 8, 2014 34 measles cases were notified to Tigray regional health bureau. Odds ratio of developed complication of measles were notified in 2014

Figure 2. Measles cases distribution by age group in Ofla Woreda, Tigray, Ethiopia 2014

Measles outbreak cases distribution on age group from total 34 cases which 7(41%) less than 1 yr, from age one -five 1 (20%), age group from one -four yrs 6 (17%) and age group five - fifteen yrs 8 (23%) and age group greater than fifteen yrs 13 (38%) . The highest measles case was among age groups greater than fifteen. The mean age of the cases was 14 and the median age is 7 .The case fatality rate of all yrs 0.

Figure 3. Ofla measles cases distribution by Place, 2014



Measles outbreak cases distribution by place from total 34 cases which of 24(70%) at Sesela kebele. The highest cases were among three kebeles in Sesela Kebeles.

Table 1. Odds ratios, for risk factor to measles 95 confidence intervals, and P-values of the risk factors found to be associated with measles on statistical significance analyses, measles outbreaks of Ofla woreda, Tigray, Ethiopia, 2014.

S.NO	Risk factor	OR	Association	CI	P. value	Statistical significance
1	Any travel history 7-8 days to areas with active measles cases before onset of symptoms	4	Strong association	1.02-17.01	0.03	Statistically Significance
2	Knowledge of mode of transmission for measles	0.21	Protective	0.06-0.7	0.008	Statistically significance
3	Knowledge measles vaccine preventable for measles infection	0.31	Protective	0.01-5.3	0.39	Statistically insignificance

The measles outbreak in Ofla woreda based on case -control study analyses I found that is the 17 cases and 51 controls. Their clinical feature, risk factor and causative factor were calculated odds ratio and compared to those of association and statistically significance of study.

6 .Outbreak control measure and Management of cases

A suspected measles outbreak was diagnosis and reported to Tigray, regional health bureau. Then the measure given in alert protocol for measles, namely prevention of overcrowding and mode of transmission of measles infection and monitoring, assess and finding new cases to prevent and control magnitude and severity of measles outbreak infection.

The measles cases were managed by supportive treatment (Antibiotics, TTC, ORS, and Vitamin A, and anti pain). The health professionals delivered Health Education for Communities.

All other forms of notifications, such Cases contacted and interviewed about clinical history including onset dates of different signs and symptoms. Epidemiological links to probable are and a travel history is taken.

7 .Discussion

This descriptive study was conducted in response to the outbreak and that the highest age group of measles outbreak cases was >15(38%).

Case -control study was conducted and the result shows individuals have travel history areas with active measles cases odds ratio 4.00 (95% CI 1.02 -17.01) this result shows individuals who have travel history 4 times the risk of measles than among individuals who do not have travel history. This finding supports other studies. Measles is a highly contagious virus spread by contact with an infected person through coughing and sneezing.

The individuals who have knowledge of mode of transmission of measles infection OR 0.21 this odds ratio shows that individuals who have knowledge of transmission for measles is protective from measles infection those individuals who do not have knowledge mode of transmission of measles, (95% CI o.o6 - o.7), p. value 0.008 this result shows statistically significance between those individuals who have knowledge of transmission and protecting acquiring for measles infection. The finding support other studies measles is extremely contagious and the potential spread of measles is a serious health concern .In addition as an airborne disease, measles is spread through the air. As an airborne disease, measles is spread through the air.

The individuals who have the knowledge of measles vaccine prevent measles infection, the odds ratio 0.31 this odds ratio result shows the person have knowledge about measles vaccine thus the risk of measles infection among have knowledge of vaccines 0.31 time the risk individuals who do not have knowledge of measles vaccine (95% CI 0.01 -5.3). This finding compare with others Measles can be prevented through immunization measles is preventable through immunization with the measles vaccine and also the vaccine elicits an immune response necessary to provide protection, without causing clinical disease

.8 .Conclusions

In this study the number of measles cases reported in the community -based on surveillance was no serious measles outbreak cases and no death. The surveillance system was provided rapid response and control during of the outbreaks.

Our results indicate that the affected age groups cases which thirteen eight percent greater than fifteen yrs .The highest measles case was among age groups greater than fifteen yrs. The individuals who have travel history areas with active measles outbreak cases were strong association for risk of measles infection. The risk of exposure is likely to be higher for individuals because of the overcrowding in house hold level. The community have knowledge about mode of transmission of measles so the risk of transmission for susceptible is low and measles transmission were also protective of disease.

The communities who have knowledge about vaccine preventable diseases and this awareness come from different awareness of health education.

9 .**Recommendation**

- Strengthen routine immunization services
- Increase health educational opportunities for communities
- Strengthen Surveillance system and awareness for communities to prevent measles infection and treat complications of measles
- Strengthen Supportive supervision regularly
- Strengthen the coordination of epidemic detection and response at all level
- Deployed human resources at all level
- Conducting surveillance training for health workers at all level

10 **.Reference**

1. WHO. Response to measles outbreaks in measles mortality rate reduction settings immunization, vaccines and Biological, March 2009

2. Edgord ,Ernst ,MD ,PHD ,FMOLSCI ,FRCPED Anthroposophy a risk factor for non complication with measles immunization , the pediatric infectious disease Journal Volume 30 November 3 to March 2011

3. FMOH. Health Sector Development Programme IV 2010/11 – 2014/15 final draft version 19 .October 2010.

4. FMOH, USAIDS, UNICEF, UKAIDS, CDC, EPHI, UNFPA. Ethiopia demographic and health survey 2010.

5. WHO, UNICEF Measles outbreak response in Zimbabwe, March, 2010

6. WHO. World health statistics .2010.

7. CR Sudfeld and Nahalsey. Measles Case Fatality Ratio in India: A Review of Community Based Studies .2009.

8 Ismail Hamdi Kara1, Ali Ceylan2, Hamit Acemoglu. Measles epidemics in Turkey and developing countries review of the literature . 2004.

9. FMOH, WHO, UNICEF. Ethiopian National expand programme on immunization compressive multi-year plan 2011-2015, Addis Abeba, Ethiopia, December 2010.

10. Senait Kebede', Sambe Dale, Allarangar Yokouide, Wondimagegnehu Alemu Trends of major disease outbreak in the African region, 2003-2007.

11. FMOH .Health Sector Development Programme IV Annual Performance Report EFY 2006 (2013/1

12 . FMOH. Ethiopia national expanded programme on immunization compressive multi -year plan 2011 - 2015. Addis Ababa December, 2010

13. WHO Communicable diseases following natural disasters Risk assessment and priority interventions, 2006

14. O. Okonko **.**The role of vaccines in elimination and global eradication of measles: Nigeria.23 July, 2009.

Chapter II. Outbreak investigations

Measles outbreak in Alamata woreda, Southern Zone ,Tigray ,Ethiopia ,January 2014

1. Introduction

Measles is an acute highly infectious viral illness caught through direct contact with an infected person or through the air by way of droplets from coughs or sneezes. Symptoms include fever, like symptoms, fatigue, conjunctivitis and a distinctive red-brown rash. The most common complications of measles infection are otitismedia (9% of cases), diarrhoea (8%), pneumonia (1%) and convulsions (0.5%). Other rarer complications include encephalitis

Measles infection can be prevented by a highly effective and safe vaccine that is part of the Measles, Mumps and Rubella (MMR) immunization. Although global incidence has been significantly reduced through vaccination, measles remains an important public health problem. This disease remains the leading vaccine-preventable killer of children worldwide, and is estimated to have caused 614 000 global deaths in 2002 with 50% of these occurring in sub-Saharan Africa [1]. The persistence of measles in many African countries indicates the need to further investigate the dynamics of measles epidemics in these areas as well as our approach to epidemic control. On declaring a measles epidemic, the question of whether to conduct a mass campaign is almost always raised. The current World Health Organization (WHO)recommendations [2], based on a literature review of measles outbreaks from 1963 to1995 [3], emphasize case management rather than mass vaccination interventions. This is for two main reasons: (1) measles spreads too rapidly within urban areas to allow sufficient time for implementation of a mass vaccination campaign; and (2) as a result of the lost time, the number of prevented cases is low, and thus the resulting cost per prevented case is high [2, 3]. The recommendations conclude that there is insufficient evidence either for demonstrating the positive impact of a reactive vaccination campaign or the usefulness of such a strategy [2]. The WHO recommendations suggest that reactive vaccination campaigns, if implemented, should focus only on areas where infection has not yet occurred, institution.

The National Immunization Programmed was established in the 1980s, and currently delivers service through static and outreach sites nationwide. The current routine immunization schedules recommend a dose of measles vaccination at 9 months of age. The WHO UNICEF coverage estimates for measles vIn 2009 measles SIAs was conducted in Tigray and Gambela targeting 773,910 and 62,504 children aged6-59 months and achieved a coverage of 85.6 % and 92.4% respectively. Tigray: Central zone, East zone, South zone and Mekele town attained coverage ranging from 56% to 87% which lowered the regional

coverage to 85.6%. Afar region had measles and polio integerated campaigns in July 2009 where the administrative coverage for Zone 3 and 4 indicated coverage of 88% and 87% respectively where as the RCS coverage indicated 95 % for Zone 3 and 93% for Zoneaccination for Ethiopia also indicate an increase from 37% in 2000 to around 80% in 2010.

2. Literature review

Measles is the risk of transmission in the disaster-affected population is dependent on the baseline vaccination coverage rates among the affected population, and in particular among children aged <15 years. Crowded living conditions, as is common among people displaced by natural disasters, facilitate transmission and necessitate even higher immunization coverage levels to prevent outbreaks (*19*). A measles outbreak in the Philippines in 1991 among people displaced by the eruption of Mt. Pinatubo involved

More than 18 000 cases (*20*). In Aceh following the tsunami, a cluster of measles involving 35 cases occurred in Aceh Utara district, and continuing sporadic cases were common despite mass vaccination campaigns (*16*). Sporadic cases and clusters of measles (>400 clinical cases in the six months following the earthquake) also occurred in Pakistan following the 2005 South Asia earthquake (*21*). (WHO, 2006)

Measles outbreaks are still among the common epidemics contributing *to* high mortality and morbidity in Sub-Saharan Africa, especially among children with malnutrition. (Senait Kebede', Sambe, 2003-2007)

A total of 8247 measles cases and 218 measles attributed deaths occurred in the studies (CFR=2.64%). The mean CFR was 4.27% with a range of 0.00-31.25% and the median was 1.63 (Q1=0.00 and Q3=5.06). (**C**r Sudfeld and Na hales 2009)

The contact rate also has large impact on the spread of a disease through a population. The higher the rates of contact, the more rapid the spread of the disease, that the contact rate has large impact on the spread of the disease through population. (Wondimagegnehu Alemu 2003-2007)

In 1999, of approximately 871,000 deaths from measles worldwide, 61% occurred in sub-Saharan Africa. In 2004, of the 1,590 districts under case-based surveillance, 80 (5%) reported outbreaks of measles. In 2005, 47 (2.5%) districts reported outbreaks out of 1,850. In 2006, 178 (6%) of 2,923 districts reported outbreaks, which spanned across 29 countries. The most affected countries were: DRC

(62,933 cases/868 deaths), Nigeria (2,919 cases/18 deaths), Ethiopia (1,665 cases/0 deaths) and Tanzania (I, 606 cases/8 deaths). (Allarangar Yokouide, 2003-2007)

The age groups most affected were children aged <5 years, children aged 5-9 years, and persons aged 20-29 years. Finally, editors concluded that low vaccination coverage in Venezuela and deficiencies in surveillance contributed to the outbreak (Ismail Hamdi, 2004)

The outbreaks in Europe contributed to a rise in the global number of reported cases from 7499 in 2009 to 30 625 in 2010, with most cases and outbreaks occurring in western European countries. The outbreaks in Africa over the same time period represent a widespread resurgence of measles that affected 28 countries in sub-Saharan Africa, with more than 250 000 reported measles cases and more than 1500 reported measles-associated deaths (WHO, 2012)

Overcrowding increases the risk of secondary infection, which increases the severity of disease in all age groups and immunization services interrupt the delivery of measles vaccine to children. General lack of awareness about measles within the community results in failing to and the spread of disease to others ;(control of communicable disease)

All unvaccinated persons are at risk of developing measles, but the risk of death is highest among children between the age of six months and five years. Immunization non-responders, poor vaccination Practices, malnutrition, chronic vitamin A deficiency, and (control of communicable disease)

3. Objective

3.1General: -

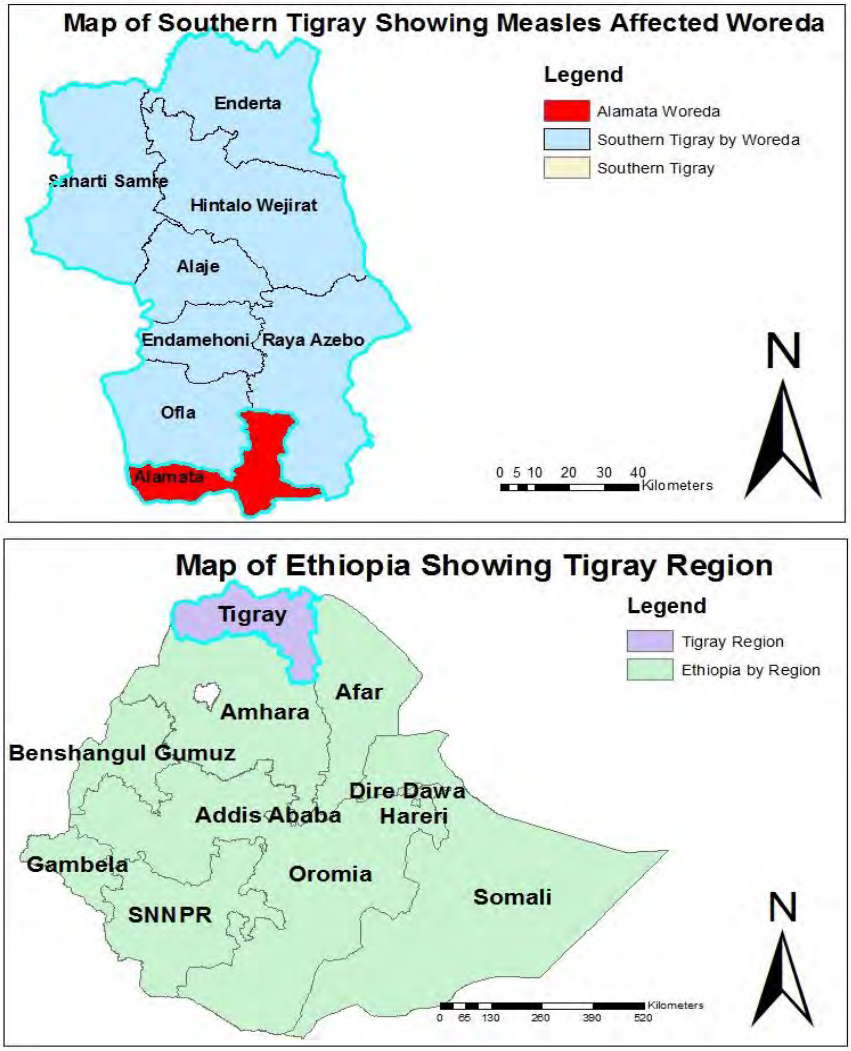
- To verify the existence of outbreak, describe the outbreak and make recommendation for control measures

3. 2 Specific: -

- To verify and confirm the existence of outbreak.
- To describe the disease pattern by place person and time
- To formulate possible suggestion and recommendation for control measures

4. Methods

4.1 Study area -Alamata Woreda, Tigray region, Ethiopia, 2014



Map1: Map of Tigray region showing Alamata Woreda, 2014

4.2 Study population - 45 measles outbreak cases selected from the study population 5 kebeles were selected during Study period of Alamata woreda, Tigray region, Ethiopia, in 2014

4.3 Study period - the conduct case - control study began on January 10/01/2014 until February 12/02/2012 .

4.4 Study design - we conducted descriptive and case -control study for 45 measles cases and case - control study for 20 cases and 60 controls

4.5 Case definition

- **Suspected case of measles:**

  • A person with fever and maculopapular rash (i.e. non-vesicular) and one of the following: cough or coryza (runny nose) or conjunctivitis (red eyes)
- **Confirmed case of measles:**
  • Measles IgM positive in blood
- **Epidemiologically linked case of measles:**

  A person with signs and symptoms consistent with measles who was in contact with a laboratory confirmed case 7-18 days before the onset of symptoms

4.6 Data collection - The 20 measles cases and unmatched controls were interviewed (by questionnaire). The data gathered in these forms included socio - demographic and vaccination history, clinical features signs and symptoms, history of travel and contact with other suspected measles cases

4.7 Data analysis - . A computerized data was based on completed questionnaires and the data were analyzed using Epi. Info. We used descriptive charts and case -control odds ratio (OR) statistics for data analysis.

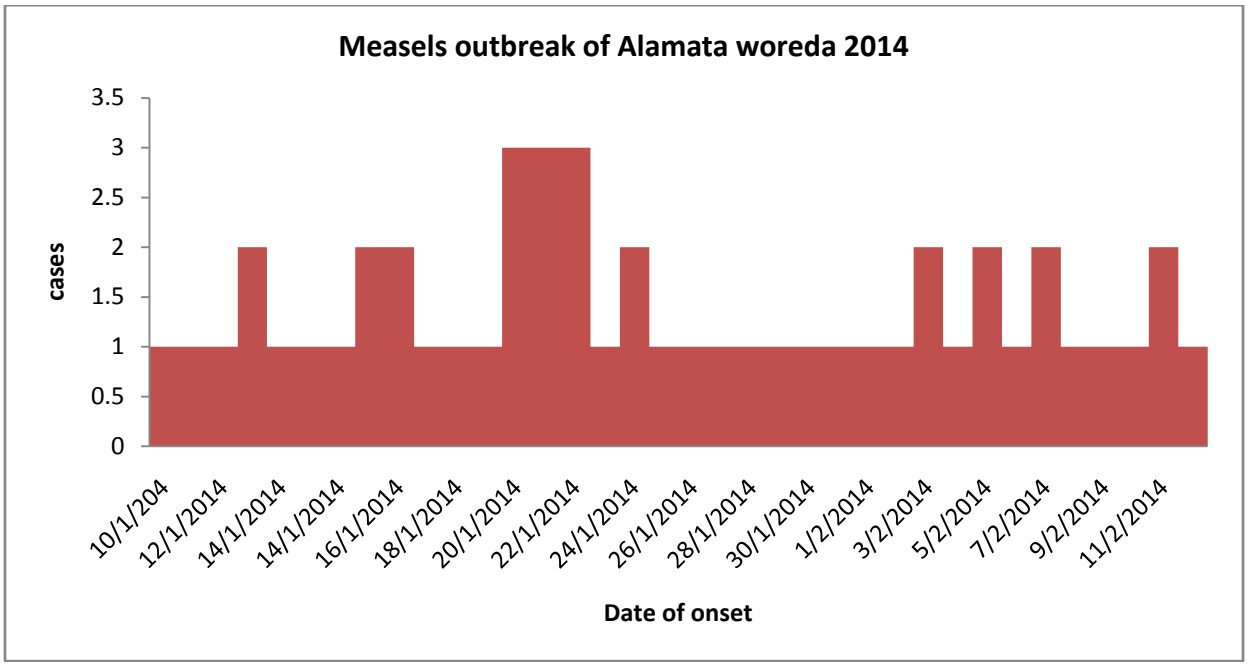
The blood sample collected from 5 cases and was sent to EPHI. The results of lab tests of was the 4 presence of measles-specific IgM antibodies in serum from cases

5 .Results

A total 45 suspected measles cases of which 20 (44 **%)** conducted case -control study were interviewed .The case-control study began on January 10, 2014 and continued until January 12, 2014. cases and their unmatched controls were interviewed (by questionnaire) approximately. From first week of January, 2014 measles Cases have been notified from Woreda health office reported to regional health bureau. After a suspected measles cases notified to Woreda health office the Rapid response team collected the outbreak Health data received from the Hospital, Health center, health post and communities. The hospitalization (admitted cases was 11(24%), the outpatient cases was 34(75%) and no deaths.

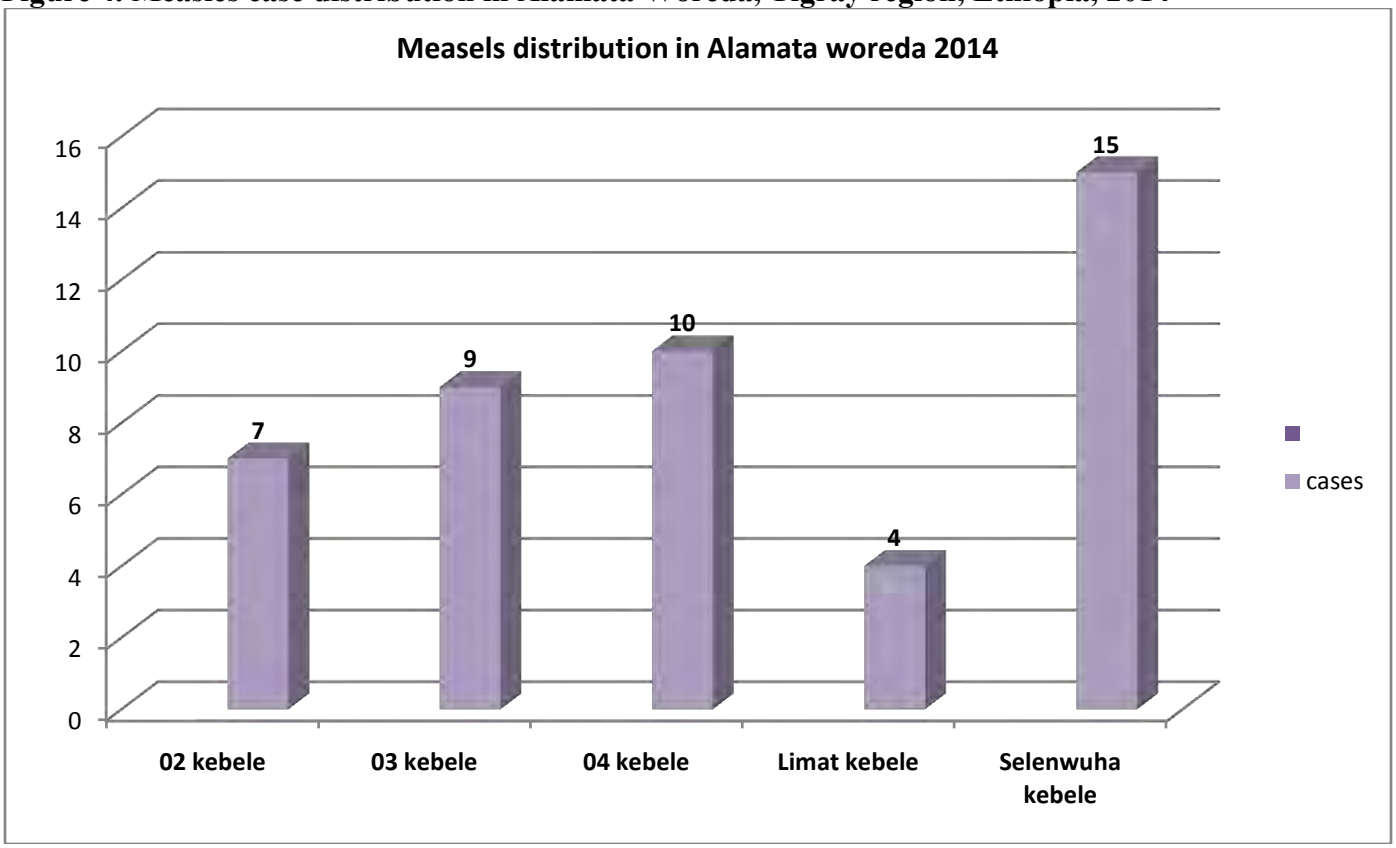
Out of 5 blood samples sent to the central laboratory, 4 testes were positive for IgM specific antibody.

Figure 3. Epidemic curve of measles outbreak in Alamata woreda, Tigray region, Ethiopia, 2014



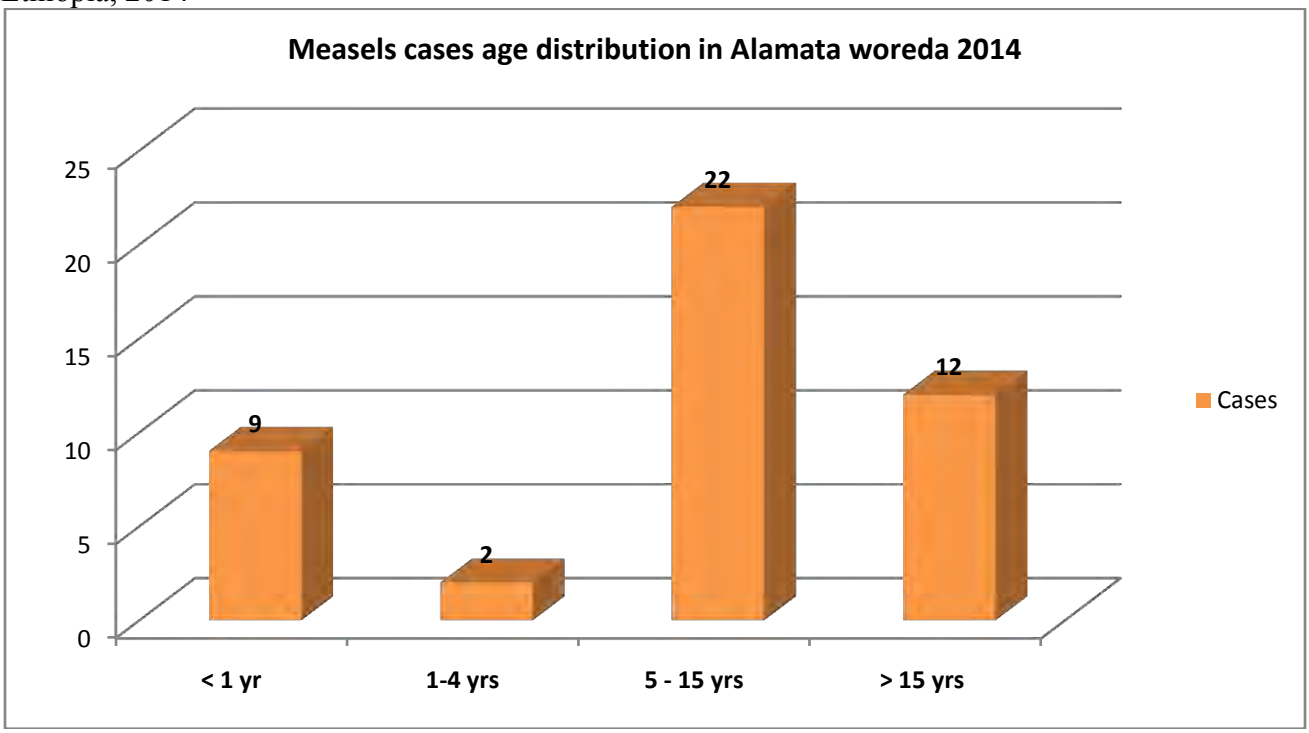
The index case was seen on January 10/01/2014 in Alamata woreda and until February 12/02/2014, there was a high pick cases were seen on January 20-22 2014. From the total 45 suspected measles cases.

Figure 4. Measles case distribution in Alamata Woreda, Tigray region, Ethiopia, 2014



Measles outbreak started on January 10/01/2014 up to February 12/02/2014 in Alamata woreda, .A total measles cases were 45 measles cases. Out of 45 cases 20 cases was conducted case -control study by using interviewed questioners. The highest cases were in Selenwuha Kebeles 15 (33%).

Figure 5. Measles case distribution by age group in Alamata woreda, Southern zone, Tigray region, Ethiopia, 2014



A total of 45 measles cases were notified from the outbreak. Out of 45 cases -control study conducted 20 cases interviewed. The highest cases were most frequently in those aged 5-15 years22 (49 %). The mean age of measles cases was 9.46 and the median is 16. There case fatality rate was zero. Out of 5 blood samples sent to the EPHI, then 4 tests were positive for IgM specific.

Table 2. Odds ratios, for risk factor to measles 95% confidence level and P-values of the risk factors found to be associated with measles on statistical significance analyses, measles outbreak in Alamata woreda, Tigray, Ethiopia, 2014.

SN	Risk factor	OR	CI	P. Value	Statistically significance
1	Knowledge on mode of transmission of measles	0.48	0.17-1.3	0.16	Statistically insignificancy
2	Vaccination Status	0.39	0.14-1.06	0.79	Statistically significance
3	Measles Vaccine preventable measles infection	0.25	0.03-1.6	0.99	Statistically insignificancy

Table 2. The measles outbreak in Alamata woreda based on case -control study analyses we found that risk factor and causative factor were calculated odds ratio and compared to those of association and statistically significance of study.

6 .Outbreak control measures and Management of cases

A Confirmed measles outbreak was diagnosis and reported to Tigray, regional health bureau. Then the measure given in alert protocol for measles, namely prevention of overcrowding and mode of transmission of measles infection and monitoring, assess and finding new cases to prevent and control magnitude and severity of measles outbreak infection. 5 blood samples sent to the EPHI and 4 tests were positive for IgM specific.

The measles cases were managed by supportive treatment (Antibiotics, TTC, ORS, and Vitamin A and anti pain). The health professionals delivered Health Education for Communities.

All other forms of notifications, such Cases contacted and interviewed about clinical history including onset dates of different signs and symptoms, epidemiological links to probable are and a travel history is taken.

7. Discussion

In discussion the finding of measles outbreak cases and the results of this case -control study. That there are of total 45 measles cases, 20 measles cases were interviewed. The individuals who vaccinated status for measles are OR 0.39 (95 % CI 00.17- 1.3) in this study result OR protective the individuals who vaccinated protective from measles. This study compare with others reported cases of measles declined rapidly after the 1989– 1991. This decline was due primarily to intensive efforts to vaccination.

The age groups results shows that the age group 5-15 yrs are highest (49 %) comparable in terms of measles infected of 45 cases. This finding similar with other studies the age groups most affected were children aged <5 years, children aged 5-9 years and persons aged 20-29 years. Finally editors concluded that low vaccination coverage in Venezuela and deficiencies in surveillance contributed to the outbreak (Ismail Hamdi Kara1, Ali Ceylan2, Hamit Acemoglu32004)

The individuals who have knowledge for measles vaccine preventable for measles infection OR 0.25 that individuals who have knowledge about vaccine protective from risk of measles infection for measles infection than individuals who have not knowledge of measles vaccine. CI 95% 0.30-3.2 this result shows statistically insignificance relationship between who know about measles vaccine prevent measles infection and measles vaccine

This study compare with in 1999–2000, an outbreak of measles infection was reported in the Netherlands. In total, 3292 children were infected, of whom, 94% were not vaccinated; 100 of those children were not vaccinated because their parents had refused immunization for vaccine beliefs. Of the total respondents, 87% had not received measles vaccine and also this finding compare with others measles can be prevented through immunization measles is preventable through immunization with the measles vaccine and also the vaccine elicits an immune response necessary to provide protection, without causing clinical disease.

The individuals who have knowledge of mode of transmission of measles OR 0.48 (protective). This study shows that the individuals who have knowledge about mode of transmission of measles protective the risk among of measles infection and the 95% CI 0.17 -1.3, this result shows statistically insignificance who have knowledge of mode of transmission of measles and measles infection. This finding support other studies measles is extremely contagious and the potential spread of measles is a serious health concern. In addition As an airborne disease, measles is spread through the air and also

compare with other studies overcrowding increases the risk of secondary infection, which increases the severity of disease in all age groups and immunization services interrupt the delivery of measles vaccine to children. General lack of awareness about measles within the community results in failing to and the spread of disease to others ;(control of communicable disease)

8 .Conclusion

In this study the number of measles cases reported in the community -based on surveillance system .The suspected measles outbreak control during of the outbreak period our results indicate that the notifications cases were most frequently in those aged fifteen years forty-nine when from total cases were highest cases seen in those aged fifteen yrs. The highest measles case was among age groups under one yr and greater fifteen yrs. Vaccinated individuals previously for measles are at low risk of acquiring the diseases and the community have knowledge about mode of transmission of measles so the risk of transmission for susceptible is low and measles transmission were also protective of disease. The risk of exposure is likely to be higher for individuals because of the overcrowding in house hold level. The most of community using modern medicine to prevent complication of measles. The communities who have knowledge about vaccine preventable diseases and this awareness learned from health education program.

9. Recommendations

- Strengthen routine immunization services
- Increase health educational opportunities for communities
- Strengthen Surveillance system and awareness for communities to prevent and treat complications of measles
- Strengthen Supportive supervision regularly
- Strengthen the coordination of epidemic detection and response at all level
- Deployed human resources at all level
- Conducting surveillance training for health workers at all level

10. Reference

1. WHO. Response to measles outbreaks in measles mortality rate reduction settings immunization, vaccines and Biological, March 2009

2. Edgord ,Ernst ,MD ,PHD ,FMOLSCI ,FRCPED Anthroposophy a risk factor for non complication with measles immunization , the pediatric infectious disease Journal Volume 30 November 3 to March 2011

3. FMOH. Health Sector Development Programme IV 2010/11 – 2014/15 final draft version 19 .October 2010.

4. FMOH, USAIDS, UNICEF, UKAIDS, CDC, EPHI, UNFPA. Ethiopia demographic and health survey 2010.

5. WHO, UNICEF Measles outbreak response in Zimbabwe, March, 2010

6. WHO. World health statistics .2010.

7. CR Sudfeld and Nahalsey. Measles Case Fatality Ratio in India: A Review of Community Based Studies .2009.

8 Ismail Hamdi Kara1, Ali Ceylan2, Hamit Acemoglu. Measles epidemics in Turkey and developing countries review of the literature. 2004.

9. FMOH, WHO, UNICEF. Ethiopian National expand programme on immunization compressive multi-year plan 2011-2015, Addis Abeba, Ethiopia, December 2010.

10. Senait Kebede', Sambe Dale, Allarangar Yokouide, Wondimagegnehu Alemu Trends of major disease outbreak in the African region, 2003-2007.

11. FMOH .Health Sector Development Programme IV Annual Performance Report EFY 2006 (2013/1

12. FMOH. Ethiopia national expanded programme on immunization compressive multi -year plan 2011 - 2015. Addis Ababa December, 2010

13. WHO Communicable diseases following natural disasters Risk assessment and priority interventions, 2006

14. O. Okonko **.**The role of vaccines in elimination and global eradication of measles: Nigeria.23 July, 2009.

Chapter III. Surveillance system evaluation in Afar region, May 2012

1. Introduction

Public health surveillance is the ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event for use in public health action to reduce morbidity and mortality and to improve health. A well functioning disease surveillance system is critical to the health system in providing evidence-based information for planning, implementation, monitoring and evaluation of public health intervention programs. Effective communicable disease surveillance systems are one of the basic strategies of the national disease prevention and control. In most developing countries, surveillance systems of communicable diseases are often weak which is neither reported nor analyzed on time though the burden of communicable disease remains major public health concern (most common causes of death, disability and illness in the African Region).

During the 48th session of the World Health Organization Regional Committee for Africa, held in Harare in September 1998, Member States adopted the Integrated Disease Surveillance (IDS) as a regional strategy for early detection for timely and efficacious response and action to priority communicable diseases. In 1996, as part of the response to the growing public health problem with Communicable diseases, Ethiopia introduced an integrated disease surveillance and response (IDSR) strategy focusing on 17 priority diseases and also adopted the world health organization‘s IDSR strategy in 1998. Since 2008 the FMoH launched a reform and restructuring of the health sector in to different core Processes, and in particular the disease surveillance and response with the concept of Business process Reengineering (BPR). This helps the surveillance of priority disease to be a dependable system as Public Health Emergency management (PHEM) center. Currently there are 20 high priority diseases in regard to public importance, potential to epidemic, international concern and diseases under eradication and elimination under surveillance. Surveillance system evaluation answers questions like does the system met its objective? Is it useful for action takers and policy makers? And what measures could improve performance and productivity of the surveillance system and the program(s) that it supports? Malaria, typhoid fever, and measles are among the 20 disease under surveillance. There are the public concerns of the Afar region.

Rationale of the study

The primary purpose of surveillance system are ongoing collection of data on health status and risk factors of disease in a population and to analyze, interpret, utilize and communicate the data in a manner that will lead health care providers and officials to prevent and control of disease. Therefore evaluating public health surveillance systems is to ensure that problems of public health importance are being monitored efficiently and effectively. Public health surveillance systems should be evaluated periodically, and the evaluation should include recommendations for improving quality, efficiency, and usefulness. The goal of these guidelines is to organize the evaluation of a public health surveillance system. Evaluation of a public health surveillance system focuses on how well the system operates to meet its purpose and objectives.

Malaria, measles and typhoid fever is a major public health concern and also epidemic prone diseases in Ethiopia as well in Afar region in which most parts of its population is at risk to malaria and also outbreak of measles .in addition to this due to the remoteness of the area and low environmental sanitation and safe water coverage typhoid fever is endemic disease. The data generated from surveillance evaluation will be important to understand gaps, suggest possible intervention and also help to improve public health decision making.

2. Objective

2.1 General objective:

- To evaluate of the existing surveillance system of malaria, measles and typhoid and other surveillance priority disease fever in 4 district, 6 facilities, Afar regional health bureau.

2.2 Specific objective:

- To investigate the implementation of core surveillance activities notify able diseases reporting system in respect to case detection, registration, confirmation, reporting, epidemic preparedness and response.
- To assess supportive activities of surveillance system such as supervision, staff training, information feedback, equipment and financial support.
- To see the status of surveillance system attributes like sensitivity, simplicity, positive predictive value, flexibility, completeness, timeliness, acceptability, representativeness, acceptability and specificity
- To describe constraints and challenges faced in the process of implementation
- To draw recommendations for further improvement

3. Methods

3.1 Study area: this surveillance system evaluation was conducted in Afar region which had a total of afar regional health bureau, 4 districts, 1hospital, 1 health center and 3 health posts and regional laboratory**.**

3.2 Study period: I conducted the study from May 3/09/2005 – 25/9/2005

3.2 Study population: The population of all evaluated woredas such as Samara logya, Dubti, Aysaita and Afambo were my study population.

3.4 Study unit: This evaluation was included 6 governmental health facilities, 4 district health offices, 1hospital, 1health center, 1 regional laboratory, 3 health posts and afar regional health bureau

3.5 Data collection methods: Two weekly (malaria) and measles reportable disease were considered in the evaluation of the system. Data were collected and documented about:

- Performance of the core activities of surveillance system of the district which includes case definitions, case detection, registration, reporting, data analysis, interpretation, dissemination and epidemic preparedness and response
- Supportive activities of the surveillance system in regard to supervision, staff training, information feedback, equipment (communication materials) and financial support were assessed.
- Status of surveillance system attributes (sensitivity, positive predictive value, Timeliness, completeness, simplicity, data quality, flexibility, usefulness, and acceptability) were evaluated

  These data was collected used by WHO and CDC tools which are designed for the assessment of national communicable disease surveillance system.
- Posted flow charts of the surveillance system, graphs, tables, trends of the selected diseases, availability of surveillance guidelines, standard case definition were observed.
- Records of registration book, feedback reports of surveillance, weekly and immediately reports of surveillance in the past 3 months, line lists of outbreak investigation were reviewed
- Health professionals, focal persons of PHEM at regional, district and at health facility level, stake holders of districts at various levels were interviewed. Semi- structured and structured questioner were used to collect data at the different levels of health facility and health office.

4. Result

The main goal of conducting public health surveillance is to assess the health status of a population ,establish public health priorities and reduce the burden of disease in a population by making appropriate public health activities. Total cases reported in 2004, 40% were confirmed cases of malaria and there is no death. Measles total reported of 42 cases were reported. Out of the reported cases Measles suspected cases were 33(78%) and 9(21%) were measles confirmed cases and no death. Regional health bureau, 4 distracts Woredas offices, 1 hospital, 1 health center and 3 health post have surveillance manual and also have measles, NNT, AFB manuals in ARHB, districts and health facilities.

Hospital and health center were using clinical registration of HMIS but health posts no using HMIS registration. The case definition for all epidemic surveillance priority disease are available in the ARHB, distracts and health facilities of surveillance

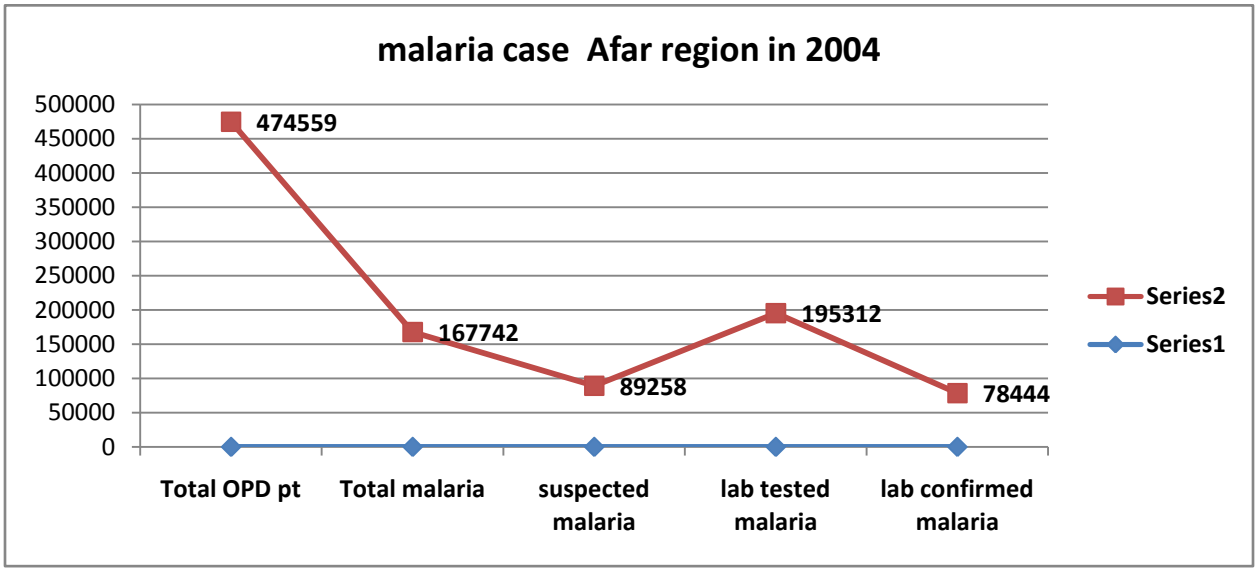
Dubti hospital had a capacity to specimen collect blood, sputum, stool, CSF and health center had a capacity to specimen collect sputum, stool, blood but no CSF.

Health posts has no a capacity to collect specimen sputum, stool, CSF except blood specimen collect. The ARHB, distracts, hospitals and health center surveillance officers were able to sample collection capacity. The specimen collecting materials and cold chain materials were available and adequate in health facilities and transport from lower level to high level. In RHB, distracts and all facilities using and available of surveillance report formats.

The reporting system from health post to woreda, from woreda to region by telephone but from region to EPHI data reported by email. Except Dubti hospitals not all distracts and health facilities describe data by person, place, time, trend analysis and epidemic threshold in priority disease. No outbreak in all districts with in past 6 months and has plan for epidemic preparedness and responses and no shortage of emergency drug and supplies in districts and facilities. There was no in all districts no budget allocated for epidemics response but district have epidemic committee and rapid response team. There was no feedback and bulletin preparation and dissemination in RHB, hospitals, districts and health center. Surveillance focal persons are trained on surveillance disease from districts, health facilities and region.

Resources were available electricity, vehicles, motorcycles, computer, printers, megaphone and LCD in RHB, hospital, districts and health center and in all health posts available resources were electricity, flip chart, posters, megaphone, however no vehicles, motorcycle, LCD, computer ,printer.

Figure1showingmalariacasesin Afarregionin, 2011



A total of 474559 OPD cases were reported in, 2004. Of the malaria cases reported 167742 (35%) and no deaths were in 2004. Suspected malaria were 89258, laboratory tested 195312 and confirmed malaria 78444(40 %) were and there is no death. A total of 474559 OPD cases were reported in, 2004. Of the malaria cases reported 167742 (35%) and no deaths were in, 2004.

Figure 2. Showing measles cases in Afar region in, 2004.

Total of 42 measles cases were reported in 2004, in Afar region. Out of 33(78%) were suspected measles cases and 9(21%) confirmed cases and with no deaths. Among reported cases Aowsi zone, reported 1 confirmed and 3 suspected cases; Kilbati zone, 3 confirmed and 6 suspected cases, Gabi zone, reported 3 confirmed and 11suapected cases, Fanti zone, reported 2 confirmed and 8 suspected cases and Hari zone , reported 0 confirmed and 5 suspected cases.

Result and discussion Regional laboratory

. The national surveillance manual was present and the facility had 11 rooms and availability of electricity and running water at facility. In other hand it had emergency generator to a backup power source in case of power failure and it had refrigerator, telephone, computers and sanitary material all were available at facility level. Telephone was the main mode of reporting but no E-mail and fax. The manpower (human resources) of the facility are 3 BSC degree and 4 diploma and the training had conducted only in malaria, but no provided training been conducted in other epidemic prone disease. For data reporting, it had report were send timely and completely and submitted to higher level monthly , regional level was sure about the availability of surveillance forms in all levels and reporting forms was present at regional Laboratory.

At regional laboratory test performed that malaria, Hepatitis B and Typhoid fever was the only disease that can be diagnosed and confirmed by regional laboratory. For meningitis G-stain only were performed not performed other testes such as no cell count, no latex agglutination, no identification test, no A-M susceptibility. None of these laboratories could test for poliomyelitis (AFP), measles, viral hemorrhagic fever, AWD and Yellow fever.

There were had strong specimens collection, labeling, handling, reporting procedures and good quality control procedures and programs.

Assessment of surveillance attributes

1) Usefulness

The surveillance system is useful to detect outbreaks, to estimate morbidity and mortality and to assess the effect of prevention and control program.

The Afar regional health bureau and Dubti hospital are using the system for monitoring and detect outbreak and trends of potential public health importance but the districts and health facilities not using the system of monitoring and detect trends analysis. The Afar regional health bureau and assessed districts and facilities reported using that they identified events of public health importance result in contact with infection control program. The region, districts and facilities are detected of disease in timely manner and inform appropriate and effective public health response determine the distribution and spread of disease and provide data to evaluate and control measure

2) **Simplicity**

The Afar regional health bureau, districts and facilities were using reported that by the system of program structure simple and possible, no difficult to get data and Afar regional health bureau are using chart describing the follow of data in the regional health bureau and case definition of all epidemic prone disease easy for case detection by all level health professional.

3) **Flexibility**

The current reporting formats be used for other health events (disease) without much difficult and format will be difficult to implement and no new health related events change in case definition and in electronic data interchange can be easily integrated with other systems .

4**) Data quality**

The Afar regional health bureau are using complete and valid data , data transfer work well by email and all districts and facilities were sending data by telephone rather than using transfer data by email

5) Acceptability

All focal persons, surveillance staffs and organizations are willing to participate in surveillance system activities reporting districts and facilities accept and well engaged to the surveillance activities and implementing the surveillance system .but no feedback and dissemination of the analysis data back to reporting districts and facilities

6) **Representativeness**

The health service coverage of Afar region is 75% and all the region total population are under surveillance. The Afar regional health bureau are accurately describes the occurrence of health related events and distribution in the population including by person, place and time. In other hand no describe data in districts and facilities

7) **Timeliness:**

Timeliness of reporting system in Afar regional health bureau were 42% but in districts and health facilities are no sent report on time and no trend analysis done and outbreaks notified timely and no affect timeliness by laboratory test and the Afar regional health bureau were use automated email alerts notifications about data in the system were timely but the districts and facilities were not use by email.

8) **Stability**

There is no lack of resources that interrupt the surveillance system and no delay or prevent necessary public health action and districts no budget for surveillance and also had low manpower by these reason affected the stability. The assessed districts and facilities were limited in ability to do analysis and reporting data

9) **Completeness**

At regional level are not completeness of reporting was 50% and received from districts and facilities in weekly report from all expected reporting facilities

10**) Sensitivity** 46% of laboratory confirmed malaria in 2004 and has the ability to detect outbreaks and monitor changes in the number of cases over time.

11) **Predictive Positive value (PVP):** The PPV case definition the detected of clinical or laboratory confirmed malaria reported cases were 35 %

6/ Conclusion

The surveillance system of malaria and measles is usefulness to detect outbreaks and to estimate the magnitude of morbidity and mortality of disease in the area Special attention required for the improvements in describe data analysis by person, place and time, in trend analysis, in completeness and timeliness reporting, in feedback and preparedness of bulletins and disseminated of findings, in communication technologies, in training will be conducted for all epidemic prone disease, in human resources, in supervision, emergency budget allocating and quality of reporting, analysis and feedback of daily and weekly surveillance.

7/ Recommendation

- surveillance data should be analysis routinely and the information interpreted for use in public health action
- The data should be analyzed and described by person, place and time At all districts and health facilities
- Budget are allocated for epidemic response
- Appropriate feedback give to district from ARHB and from districts to facilities
- using communication technologies at districts and facilities by email
- The regional laboratory deployed the manpower in different profession pathologist, microbiologist and parasitologist, stastician.
- The training will conduct for all epidemic prone disease
- The lab test will perform all regional capacity requirement diagnosis and confirmation at regional laboratory level
- Conduct joint supportive supervision will quarterly to strengthening the completeness and timeliness of surveillance data report

9/ Reference

1. CDC. Updated Guidelines for Evaluating Public Health Surveillance Systems. Recommendations from the Guidelines Working Group. July 27, 2001

2) FMOH, EPHI guideline on measles surveillance and outbreak management 3rd Edition Addis Ababa Ethiopia. January 2012.

3) European union. Surveillance of communicable disease in the long term strategy. 2008-2013.

4) FMOH, EPHI, AAU, EPHA, CDC Ethiopia Field Epidemiology Training Program Resident Manual. Addis Ababa, Ethiopia .September 2012.

5. Institution Ethiopia Health and Nutrition Research Public Health Emergency Management. Guidelines. Addis Ababa, Ethiopia. February 2012.

6. FMOH. Health Sector Development Programme IV 2010/11 – 2014/15 final draft version 19 .October 2010.

7. FMOH, WHO, UNICEF. Ethiopian National expand programme on immunization compressive multi-year plan 2011-2015, Addis Abeba, Ethiopia, December 2010.

8. WHO. World health statistics .2010.

9. FMOH, USAIDS, UNICEF, UKAIDS, CDC, EPHI, UNFPA. Ethiopia demographic and health survey 2010.

10. FMOH .National malaria third edition Addis Abeba, January, 2012.

Chapter IV.

Description of dysentery diarrhea infection in Tigray region, Ethiopia, from 2000-2004

1. Introduction

Globally, diarrhea is the third largest cause of morbidity and the sixth largest cause of mortality among population of all ages. A ten-year review of the global problem of diarrheal disease has shown that there are 1 billion episodes and 3 million deaths occurring each year among under-five children. It is one of the leading causes of morbidity and mortality in developing countries, especially among children under the age of five. Diarrheal disease continues to be leading cause of morbidity and mortality worldwide, and is ranked fourth as a cause of death and second as a cause of years of productive life lost due to premature mortality and disability. Several of the common gastrointestinal infections characterized by diarrhea include cholera, shigellosis, salmonellosis, campylobacter enteritis, Escherichia coli infections, yersenosis, gardiasis, cryptosporosis, and viral gastroenteropathy.

Diarrheal disease outbreaks are common in overcrowded communities and in developing countries where poor hygiene, unsanitary conditions and unsafe water supplies are present and such living conditions create an environment in which diarrheal pathogens are easily transmitted. Refugees, internally displaced persons and children are at high risk. The most common ways of transmission in such outbreaks are food and water-borne via fecal–oral route. Transmission of diarrheal pathogens through the food supply is a major problem both in the developing world and in the United States, where 400-600documented food-borne outbreaks and millions of cases are estimated to occur each year. (4)Shigellosis is the most common cause of outbreak of bloody diarrhea worldwide with secondary infection rates as high as 40% in the household and case fatality rate of 15-20%. Outbreaks may result in large scale mortality as occurred in an outbreak of *Shigella dysenteriae* type 1(Sd1) which caused very high fatality of 20,000 in one month among Rwandan refugees in Zaire in 1994

In Africa, a child experiences five episodes of diarrhea per year, and 800,000 children die each year from diarrhea related dehydration. A more recent estimate indicated the two-week period prevalence of diarrhea in under-five children is about 30.6% and 17.7% Shigellosis, also known as bacillary dysentery, is an acute infectious enteritis of human and subhuman primates caused by bacteria of the genus *Shigella*. Disease can result from infection with any one of four known shigella species, but only *Sh. dysenteriae* type 1 (1 or Shiga‘s bacillus) is known to cause outbreaks of epidemic proportions. For

reasons not entirely understood, Shiga‘s bacillus eventually goes from playing a minor role in the cause of shigellosis to suddenly and dramatically becoming the dominant factor in massive dysentery epidemics.

Dysentery epidemics exacerbate the already important burden of endemic shigellosis in developing countries. An estimated 140 million cases and 576,000 deaths occur annually due to shigella infection in children under five years of age worldwide. Diarrhoea results in dehydration – the rapid loss of body fluids and important salts required for proper control of body functions. Children are highly susceptible to dehydration if they have diarrhoea, even after only one day; they can quickly die if the fluid losses continuous and cannot be replaced by drinking fluids. A sign of some degree of dehydration in a child with diarrhoea is if it seems restless and irritable (easily upset), and drinks eagerly if offered fluids. Diarrheal disease in Ethiopia is also one of the major causes of morbidity and mortality for children under the age of five. It is estimated that 230,000 under five children die due to diarrhea and an average of five episodes of diarrhea occur per child per year (Damte et al., 2008). Poor personal and domestic hygiene, unsanitary excreta disposal, unsafe and inadequate water supply and malnutrition are the major risk factors among others (G.Mitikie, 2001).

Health service records and community based surveys in the past years indicate that diarrheal diseases are major causes of morbidity and mortality in Ethiopia (ERCS, 2010). It is the fourth leading causes of child mortality in the country followed by Pneumonia, Neonatal conditions and Malaria respectively. According to the report of FMoH, About 472,000 Ethiopian children die each year before their fifth birthday of which 20% is attributed by diarrhea (FMoH, 2005). Its prevalence is mainly caused by access to safe water, sanitation and hygiene problems. Only 55% of the general population has access to safe water and that percentage drops to 35% for those in rural areas. This lack of access to safe water and adequate sanitation increases the morbidity and mortality from diarrheal disease (ERCS, 2010).

In 2006, Over 100,000 cases and 1,200 deaths were reported in the country (WHO, 2008). According to the report of WHO (2007), that comprised from august to October, 6 out of regions and Addis Ababa City were affected by acute watery diarrhea (AWD).

The affected regions were Oromiya, Southern Nations Nationalities and People's Region (SNNPR), Amhara, Afar, Tigray and Somali. 129 districts were affected in the 6 regions and 6 sub-cities in Addis Ababa. There were 2,040 cases and 43 deaths reported as of 30September 2007.There were 5,823 cases in August 2007.There were also a continuity of reporting by the aforementioned 6 regions and Addis Ababa City for AWD cases (WHO, 2007). A study carried out in 2008 also revealed that the two-week period prevalence of diarrhea in under-five children was about 30.6% and 17.7% in Ethiopia and Oromia region, respectively (Girma et al., 2008). According to the report of FMoH in 2009, acute watery diarrhea (AWD) cases had rapidly increased from July to August 2009 and a total of 11,667 cases with many deaths in these regions were reported from 35 districts in the outbreak of this disease in Addis Ababa in the same year resulted in 15 deaths from persons close to 1,000 as a result of contaminated drinking water (Desalegn, 2009).

Comprehensive surveillance data on laboratory confirmed cases of Shigellosis is limited in Ethiopia (5, 6). However, bloody diarrhea can be used as an indicator of shigellosis cases. From the year 2006 to 2008a mean of 75,531 outpatient cases of bloody diarrhea were reported per year (approximately 98/100,000persons per year); the mean number of admission was1901 patients and 72 deaths per year by the surveillance system of the government. Addis Ababa reported the highest mean rate of 204 cases/100,000population per year in this period (11-13).There are also some reports of Shigellosis outbreaks in the country. In 2005/06, there was a report of a bloody diarrhea outbreak in Southern Nations Nationalities Peoples Region (SNNPR) with a total of 209cases and 1 death (9). In December 2008, 566 suspected and confirmed cases of shigellosis were reported in an outbreak in Jimma City (14). From the limited data available, *S. Flexner* and *S. dysenteriae*comprise over 80 % of total shigellae isolates, and the prevalence of *S. Flexner* alone from isolates has been reported to be vary from 50% to 70% and in some studies as high as 99% (5, 15, 16). In March 2010, Addis Ababa University (AAU) Technology Campus. reported occurrence of an outbreak of diarrheal illness among students, unusual to the Campus Clinic (17).This study was conducted to identify the causative agents and source of diarrhea outbreak reported from the technology campuses of AAU, (March 2010.)

3 .Lireture review

Diarrhea disease outbreaks can occur following contamination of drinking-water, and have been reported following flooding and related displacement. An outbreak of diarrheal disease post flooding in Bangladesh in 2004 involved more than 17 000 cases, with the isolation of *Vibrato cholera* (O1 Ogawa and O1 Inaba) and enterotoxigenic *Escherichia coli.* A large (>16 000 cases) cholera epidemic (O1 Ogawa) in West Bengal in 1998 was attributed to preceding floods (*6*), and floods in Mozambique in January–March 2000 led to an increase in the incidence of diarrhoea. (WHO, 2006).

The risk of diarrheal disease outbreaks following natural disasters is higher in developing than in developed countries (*8*). In Aceh Province, Indonesia, a rapid health assessment performed in the town of Calang two weeks after the December 2004 tsunami found that 100% of the survivors drank from unprotected wells, and that 85% of residents reported diarrhoea in the previous two weeks (*9*). In Muzaffarabad, Pakistan, following the 2005 earthquake, an outbreak of acute watery diarrhoea occurred in an unplanned, poorly-equipped camp of 1800 persons. The outbreak involved over 750 cases, mostly adults and was controlled following the provision of adequate water and sanitation facilities (*10*). In the United States, diarrheal illness was noted following hurricanes Allison (*11*) and Katrina (*12–14*), and norovirus, *Salmonella*, and toxigenic and nontoxigenic *V. cholera* were confirmed among Katrina evacuees.(WHO ,2006)

From this study we identified the risk factors of diarrhea to be irregular hand-washing and no hand-washing, unsafe storage of food for later use, irregular kitchen cleaning, infrequent cleaning/emptying of storage container before refilling it with fresh water and irregular latrine cleaning, latrine-sharing among more than 5 people. Improving hygienic practice in the community through education. (Bui Viet Hung2006)

Breastfeeding has the potential of preventing 13% under-five deaths in developing countries. Presents a summary of studies reporting effect of breastfeeding on diarrhea morbidity or mortality. A pooled analysis of six studies from developing countries (Brazil, The Gambia, Ghana, Pakistan, the Philippines, and Senegal) documented a significant reduction in diarrhea related mortality with breastfeeding. (DHEERAJ SHAH, 2012)

The benefits of breastfeeding are greater when it is exclusive. In a study from, partial or no breastfeeding was associated with a 3.94-fold higher risk of deaths attributable to diarrhea in comparison to exclusive breastfeeding. In the). Hand washing ***g*** as pathogens causing diarrheal diseases are mostly transmitted through the face-oral route, hand washing is proposed as an important prevention strategy of hand washing reduced diarrheal illness (RR 0·63, 95% CI 0·52–0·77; 11 studies). (DHEERAJ SHAH, 2012

Poor hand washing practices and inadequate hand washing facilities with shortages of water and soap for the may have also contributed to contamination of food items. The association of illness with the shortage of water might mean that kitchen utensils were under-washed or washed with contaminated water stored in the kitchen tank. (Adamu Addissie, MD, MPH, MA6 2010)

Vaccination In a recent systematic review of randomized controlled trials [56], available rotavirus vaccines were efficacious in reducing rotavirus-specific diarrhea by 72-73% at one year and 62-67% at two years following the vaccination. The efficacy in preventing severe rotaviral diarrhea was greater (80-93% at one year and 84-89% at two years) (Dherje Shah ,2012)

Hygiene interventions are valuable because behavior modification is necessary in order to ensure sustainability of sanitation and water interventions and inhibit transmission of disease58. Adequate sanitation and safe drinking water, increased research in the effectiveness of interventions must be done, and sequentially more interventions must be implemented. addressed: improving access to drinking water and adequate sanitation, improving management of wastewater and using water in agriculture more efficiently58 (Diana Paddilla,2012)

Food may become contaminated by infected food handlers who don‘t wash their hands with soap after using the bathroom. Vegetables can become contaminated if they are harvested from a field with sewage in it (4). Shigelloses infections can then be acquired by drinking, swimming in or playing with the contaminated water (Mer‘Awi Aragaw, 2010)

Equipment were old and not well cleaned, food handling and storage techniques were inadequate and refuse disposal practices were poor; workers reported a shortage of soap and detergent in their working areas and the latrine. Running water was not always available in the food preparation areas (Zegeye Hailemariam, DVM ,2010)

The hand washing facilities are not functional and dirty. This makes the latrines unsafe. Overall, of the interviewed students in the case control study, 66.2% (45/68) reported that there is no functional hand washing facility in the latrine area in the dormitories. Besides, 39% (27/68) of them do not always wash their hands with soap (Richard Luce ,2010)

3) **Objective**

2.1*General*

To understand the magnitude of dysentery and describe the distribution of cases by person, place and time in the region in past years.

2.2 Specific

- To summarize the trends of the disease and to see its current situation
- To describe with respect to person ,place and time
- To evaluate control and prevention measures
- To generate base line information for further assessment

4) **Methods**

A surveillance analysis for dysentery was conducted on secondary data by reviewing case based surveillance reports of people with suspected dysentery diarrheal line lists of secondary data and reports. Besides, (to this) HMIS reports was reviewed to compare and contrast with reports in the PHEM department from July 2003-June 2004 after collection of those data statistical soft ware of Eip info version 7 will be used to analyze the data EC. After collection of those data statistical soft ware of Eip info version 7 0r excel will be used to analyze the data

5. Result

Table 3: Sex distribution on dysentery diarrhea in Tigray region, Ethiopia, 2012

Male	28307
Female	19699
Total	48006

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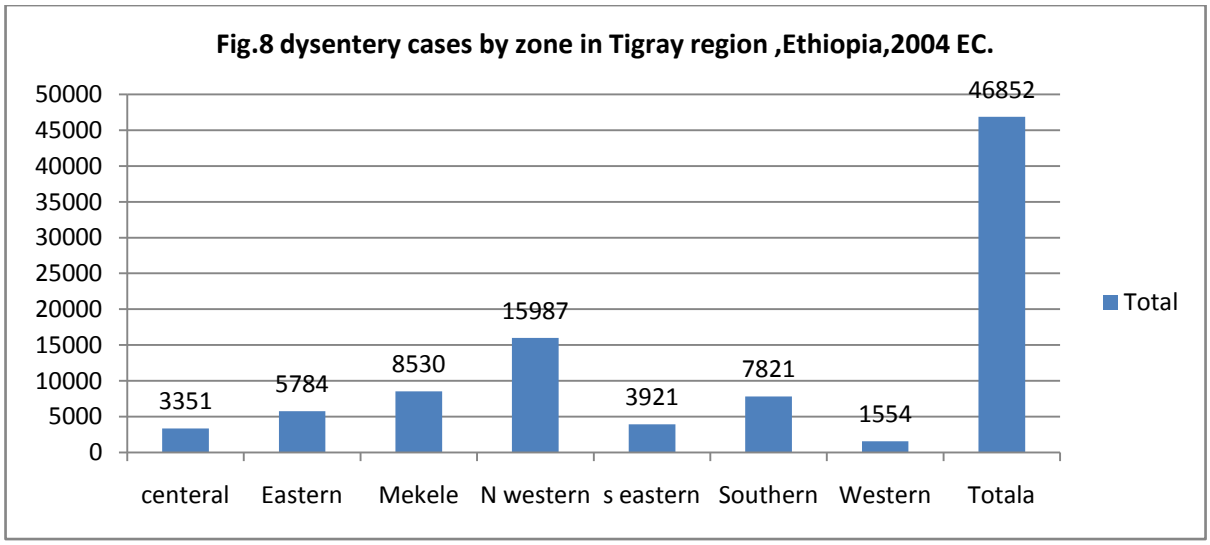
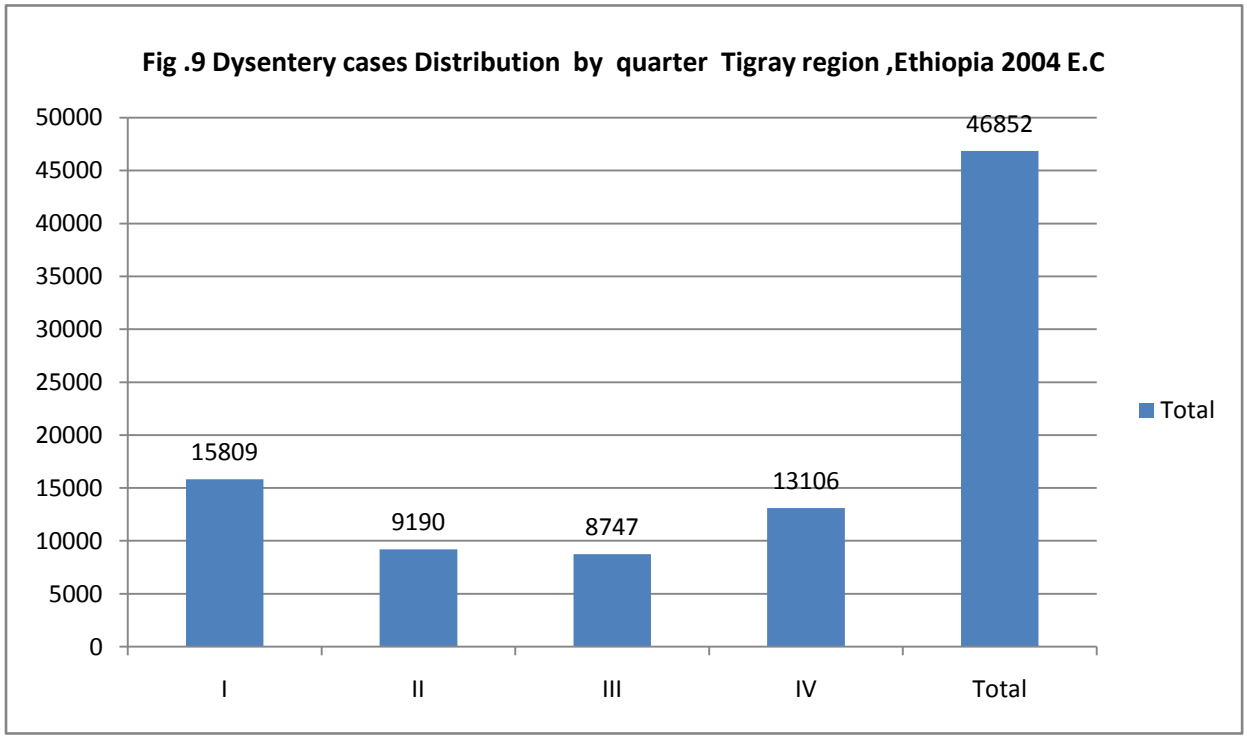
Of the 46852 (0.9%) are infected by dysentery in Tigray, Ethiopia, from july 2003 ,EC through Sene 2004, 28307 (60 %) are among dysentery cases male and 19699 (40%) are infected cases Females



those from a total of all dysentery cases 46852 (0.95%) in Tigray region out of which 3351 (7%) Central zone, Eastern zone 5784(12%), Mekele zone 8530(18%), N western zone 15987(34%), Southeastern zone 3921(8%), Southern zone 3921(8%), Southern zone 7821 (16%), and western zone

1554 (3%) were infected cases .most cases hihgest from N western zone of in Tigray region, Ethiopia,



2004 EC.

From all dysentery cases 15809 (%) quareter one, 9190 (%) quarter two, 8747(%) quarter three and 13106(%) quarter four

6. Discussion

From those total about dysentery cases affected in the region this cases compare with prviovos lireture review study ten times below previous study. Dysentery diarrhea is the second most written about contagious disease in this sample. Two of the article found deal with prevention; while one focuses on treatment for diarrhea 7.7% Seven point seven percent of total deaths in Africa are caused by diarrhea and its related fatalities (Reuters Foundation, 2006). Diarrhea is a symptom of infection from bacterial, viral and parasitic organisms primarily spread through contamination of water and food. Most deaths result from dehydration and children are at far higher risk then adults (Black, 2003). Most treatments include the oral re-hydration and can be a low cost effective therapy. The most recent study on diarrhea comes from a refugee camp in Sudan (Walden, 2005). High rates of diarrhea were reported. A massive

Disinfectant campaign for all water storage containers was launched in the camp as a result. The rates of diarrhea dropped rapidly and significantly, as testimony to the disinfection campaign. This study therefore showed a cost-effective way to combat diarrhea effectively if the main water supply itself is not fund to be at fault. A study done in Malawi refugees also look at the water source for risk of diarrhea (Roberts, 2003). Different intervention techniques were attempted and it was concluded that water chlorination is the cheapest and most effective way to reduce contamination because refugees did not like to use specifically designed water storage containers to fit the same purpose. The dysentery cases affected in different zones the highest affected two zones N western zone and Mekele zone. This result compare with other studies Amebic dysentery, also known as amoebiasis, is a common disease of the developing world and is caused by *Entoameba histolytica*, a one-celled parasite. The World Health Organization estimates that 50 million cases of colitis and liver abscess and 100,000 deaths result from infection by this organism annually (World Health Organization, 1995). Most of the infections occur in the developing nations of Central and South America, Africa, and Asia .Microbial adhesion is often a first step during infections leading to overt disease. Total of dysentery cases distribution among by quarter highest case and magnitude of the disease is highly reported at quarter one and quarter four. .The Seasonal changes appear to be factors leading to the increase in the number of cases during certain periods of the quarter. In Tigray region, Ethiopia, for example, dysentery cases highest have been occurring during the rainy season—a higher number of cases occur from July through September 2004 EC. The environmental factors that lead to seasonal transmission. It may be that peaks during the rainy season may be related to increased contamination of water supplies, seasonal worsening of nutritional status, or increased susceptibility to infection Various routes for human infection with *E. coli* O157:H7 were reviewed in a recent article on the epidemiology of outbreaks of this bacterium in the U.S. (1982–2002) (*291*). Studies in Canada and France demonstrated that the incidence of HUS and VTEC infection in humans is correlated with indicators of cattle density (*165; 343*). *E. coli* O157:H7 in ruminant feces may be directly ingested by persons interacting or working with animals. Fecal material may contaminate meat during slaughter, may enter lakes or drinking water sources by action of rain or wind, and may be deposited on fruits and vegetables inadvertently or by use of manure for fertilization. In addition, some animals may transport these bacteria from a fecal source to drinking water or foods.

7 .Conclusion

Over all there is a few dysentery cases in the region compare with other similar studies. So main finding results indicates the strong present health service system and available of strong environmental sanitation and hygiene. Many infection diseases including dysentery are associated with fecal contaminated water and food is a major cause of morbidity and mortality worldwide. Encourage of exclusive breast feeding, hand washing, improve the environmental sanitation, Rota virus vaccination and protect microbiological quality and to reduce the potential health risk of water to this house hold, intervention strategies is needed that is easy to use, effective, affordable, functional and sustainable. Many different water collection and storage systems have been developed and evaluated in the laboratory and under field conditions. In addition a Varity of physical and chemical treatment methods to improve the microbiological quality of water are available.

8. Limitations of the study

Surveillance data from HMIS departments are we received only 1year data, 2004 EC. For this reason it is difficult to show disease trends between different years.

9. Recommendations

- Strengthen of Environmental sanitation and appropriate use of latrine
- Providing education for community, prevention and transmission strategies
- Encouraging of exclusive breast feeding
- Promotion hand washing practice at all level
- Increasing access of safe water coverage and latrine coverage at all level
- The water and sanitation infrastructures should be maintained
- Strengthen of assessing the water sanitation and hygiene intervention at all level
- Improved food hygiene and sanitation
- Strengthen regular supervision and inspection

10. Reference

1. Girma Regassa, BSc, MSc, Wondwossen Birke, BSc, MSc, Bishaw Deboch , BSc, MSc, Tefera Belachew, MD,MSc,DLSHTM Environmental determinant of diarrhea amoung under-five children in Nekemte , western Ethiopia .2008.

2. Mer'Awi Aragaw, MD, MPH, Tilahun Tafese, BSc, MPH, Zayeda Beyene, BSc, MPH, Zegeye Hailemariam, DVM, MPH, Aklilu Azaze, MD , Richard Luce, DVM, MPhil, Adamu Addissie, MD, MPH, MA , Shigellosis outbreak at Addis Abeba University , March -April. 2010.

3) Diana Padilla Arizona State University, USA the Effectiveness Of Water, Hygiene, and Sanitation Interventions In Lowering Diarrheal Morbidity Across The Globe: A Systematic Review and Qualitative Analysis of Relevant Primary Literature , 2012.

4. FMOH. USAIDS, UNICEF, UKAIDS, CDC, EPHI, UNFPA. Ethiopia demographic and health survey 2010

5) Bui Viet Hung. the most common causes of and risk factors for diarrhea among children less than five years of age, Hanoi, Northern Vietnam, 2008.

6. Muluneh Endalew . Exploring the prevalence of diarrheal disease using data mining technology (a case of TikurAnbesa hospital) and, June, 2011.

7. FMOH. Health Sector Development Programme IV 2010/11 – 2014/15 final draft version 19 .October 2010.

8. Claudine Cobra, M.D. David A. Sack, M the Control of Epidemic Dysentery in Africa. September 1996.

9. FMOH, WHO, UNICEF. Ethiopian National expand programme on immunization compressive multi-year plan 2011-2015, Addis Abeba, Ethiopia, December 2010.

Chapter V.

Health profile report Health profile Assessment of Chifra woreda, Afar region, Ethiopia, 2013

1. Introduction

Health profile is a presentation and discussion of health related of data important, health indicators to describe the health and sociological factors in geographical area under discussion. Currently, the concept of health as defined by the World Health Organization (WHO) is ~~–a~~ state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Taking this perspective, one moves beyond disease absence as defining health status to one that incorporates the complex perceptions about health and health conditions. Health Profiles are about the health of people and about the conditions in which they live. It is essential tool for change and thus must be an integral part of local decision-making and strategic planning processes. The preparation of profiles provides a lively, scientifically based account of health in the district; it can stimulate public interest and political commitment; and it can identify targets for the future and monitor progress towards them.

The health profile description highlights several important aspects of public health data. Data will be collected, analyzed and disseminated for decisions on the best information available. Demographic, Infrastructure of the district, socio-economic, vital statistics and other data will be collected and that will help us to address important public health problems and to facilitate effective public health action. District health data are important for advocacy, program planning, implementation and evaluation of health care including, most importantly, the district level.

The purpose of this assessment is to assess and describe the chifra woreda in Afar region health profile which will be help for understanding of the health profile and use it to address the current gaps for program planning, priority setting and intervention.

Rationale of the Study

- Health profile are designed to give an easily accessible snapshot picture of the community‘s health and describing health profile is helpful to understand the current health of population and of the many aspects of the community‘s life that influence it

2. Objective

2.1 General objective

- To asses and understand the current health and health indicators of chifra woreda

2.2 Specific objective

- To summarize health information relevant to the woreda
- To identify health problems of the woreda
- To assess and describe health related issues about health status and health indicators
- To identify problems for priority setting
- To assess health determinants of the woreda
- identify suggested areas for action to improve health
- Inform the public ,professionals and policy makers about matters that affect health

3. Methods

3.1 Study area -Chifra Woreda, Afar region

3.2 Study period- April 7-11, 2013

3.3 Study design - Cross-sectional study

3.4 **Study unit** - Woreda health office and other woreda sector offices

3.5 **Data collected method**

- Different health profiles was assessed
- Reviewed available documents in Health offices, Finance office, Agriculture office, Education office
- Reviewed of publications and literature about the area
- Interviewed and discussed with concerned health office heads, experts, professionals and personal observation (optional)
- Different instruments like checklists and structured and semi structured questionnaire was used as tools for data collection from various governmental organizations such as woreda health office, health facilities, education sector, Agriculture sector, district water resource office, district electric power authority and district political administration office

3.6 **Data analysis** - The data was done using Microsoft excel. Hence by using tables, graphs and charts were used.

4) Result

5.1 Geography and Climate

Chifra district which is located 172km far from samara and 576 from Addis Abeba is one among 8 district of Aowsi zone of Afar. It has 20 kebele .Chifra is one of the woreda located in Afar region which has an area of 3333 Sq km2,latitude of 8 o49 – 14o30 North, longitude of 39o34 _ 42o28 East in the plateau that stretches at the range of 650 - 980 meters of altitude above sea level. The climate varies seasonally between with rainfall and from August -October, cool months November -January, February -March minimum rainfall, hottest months from May to July to months with an overall average minimum and maximum temperature 20^{0C} and 40^{oc}, respectively and total average rainfall range of 555 mm/year. Most of the woreda area accounts lowland which is Kola. It has 20 kebeles. The district has total population of 105623 which is according to 2007 national census. The Chifra district office is surrounded by Ewa woreda in North, Adar woreda in south, Mile woreda in east, Harbu and Bistima woreda in west, Bati woreda southeast and Awra and Dubti woreda in northeast part.

5.2 Administrative and political structure

Chifra has 19 rural and 1 urban kebeles with all in Administration town. All the sector offices are working in collaboration

5.3 Demographic Information

Chifra woreda has a total population of 105,623 with males 59149 (56 %) and females 46474(44%) sex distribution of on the 2004 estimation of population; from those under one year 3063 (2.9%), under five 10897, women child bearing age 20068 (19%) and pregnant women are 16.31(8%). From the total population segment 96378 (91%) lives in Rural and 9245 (8.7%) lives in urban

Table. 4 Estimated population size of Chifra woreda, afar region, Ethiopia, 2012

S NO	Name of Kebeles	Males	Females	Population size
1	Chifra 01	-	-	9712
2	Anderkalo	-	-	7372
3	Jara	-	-	6784
4	Gurale	-	-	6896
5	Askoma	-	-	6068
6	Wanaba	-	-	5950
7	Tabay	-	-	5528
8	Afumma	-	-	5314
9	Marrolle	-	-	5296
10	Amule	-	-	5213
11	Garriro	-	-	5189
12	Adar	-	-	5751
13	Samsum	-	-	4489
14	Tagri	-	-	4452
15	Chifra zuria	-	-	4144
16	Dergera	-	-	4117
17	Wama	-	-	3840
18	Mesgidu	-	-	3795
19	Meglala	-	-	3655
20	Yiqalu	-	-	3061

5.6 Health status

Chifra woreda has 2 health centers and 22 health posts; with ratio of 1:52811 HC: population (national standard 1:25:000) and 1: 5000, 22 health posts 22: 4801 population ratio and with the ratio no physician, Health officer 1:35207, clinical Nurse 1:5559, Midwifery nurse 1:26405 pharmacy technician 1: 17603, Laboratory technician 1:35207, HEW 1: 2854, TBA 1: 782 to population ratio.

Table 5. Ratio of health facility and professional to population in Chifra woreda, Afar region, Ethiopia, 2012.

SN	Human resource and type of facilities	Number of facilities or Human resources	Population ratio	
1	Health officer	3	3:35207	
2	BSC nurse degree	2		
3	Pharmacy technician	6	6:17603	
4	Nurse Diploma	17	19:5559	
5	Midwifery diploma	4	4:4260.5	
6	Laboratory technician	3	3:35207	
7	Health extension	37	37:2854	
8	Trained birth attendants	135	135:782	
9	HMIS experts	2	2:52811	
10	Health centers	2	2:52811	
11	Health posts	22	22:4801	

Table 6. Top ten leading causes of outpatient visits in Chifra Woreda, Afar region, Ethiopia, 2012

S no	Disease	Number cases
1	Malaria	7752
2	Intestinal parasite	3663
3	Pneumonia	1756
4	Acute upper respiratory infection	1599
5	Truma	1067
6	otitismedia	928
7	UTI	512
8	Unspecified infection of skin and subcutaneous	488
9	PUD	315
10	Typhoid	128

Malaria was top among the list of top ten leading causes of outpatient visits of morbidity in 2012, 7752(7.3%).

Table 7. MCH and EPI service in Chifra woreda, Afar region, Ethiopia, 2012

Description	Number	Remark
ANC coverage	394	
PNC coverage	52	
BCG coverage	32	
Measles vaccine	833	
OPV	32	
Penta 1	2176	
Penta 2		Data not available
Penta 3	1464	
Contraceptive prevalence	183	
TT2 for pregnant	--	Data not available
TT2 for non pregnant	--	Data not available

Table 8. Environmental sanitation and availability of safe drinking Water in Chifra Woreda, Afar region, Ethiopia, 2012

Description	Percent %
Latrine coverage	23 %
Number of house hold with latrine	4410
Save water supply coverage	48%
Number of kebeles accessed to safe water supply	50%

Although latrine was constructed in most of households 4410 ; the water sources were available in 50% of kebeles with potable and safe water supply and the remaining 50% kebeles not water supply.

Malaria: - malaria is endemic throughout the year and increase rainy season with and all areas are Malarious and total number of cases 7752 (7.3%). No data was found malaria admitted cases and deaths as most of the health facility.

HIV/AIDS: - A total of tested for HIV 3011, in 2012. Out of which 606 for VCT, 2097 for PICT, 388 for PMTCT, Out of which tested for HIV 631 patients are on ART in, 2012.

Tuberculosis/leprosy

A total of screened for tuberculosis 51. Out of which 35 (68%) for smear positive and 16 for smear negative. 2 for treatment completion rate, 1 for defaulter and 19 cure rate achieved. Extra pulmonary TB was 34 clients. All the TB patients were tested for HIV and out of which 5 positive for HIV. 8 leprosy cases were found in 2012.

5.9 Nutrition intervention

Chifra woreda has 12 outreach therapeutic sites and 12 therapeutic supplementary food sites area of food intervention programs is established.

5.5 Education

Chifra Woreda has a total of 35 schools, from those 34 primary and 1 secondary schools. Which are a total of 488 students enrolled in 2012 out of which females account 24% and males 66% Secondary school enrolled? A total of 223, out of which 71% male and 29% were female. A total of elementary

school students 225 .out of which 24% were females and 66% males. A total 15 teachers was found. In addition to Chifra woreda has 12 Medebegna (Afaregna) alternative schools.

A total of 35 schools in Chifra Woreda out of which seven(20%) schools have access to water safe supply. Latrine coverage was 12. All the schools (elementary and 2 high schools) have Anti HIV/AIDS clubs.

5.6 Income of Chifra woreda there are civil servants, merchants, livestock cattle, camels, goats, sheeps the main income of communities.

5.7 Electricity utilize service

In two health centers available electricity service, However 22 health posts are not available electricity service.

5.8 Health service expenditure and financing

Chifra woreda allocated annual budget to health sector 16%. There are NGOs who support the woreda health office in different way of founds and technical support such as ; I- TECH gives technical (mentoring) support on ART and training on HIV /AIDS and TB / HIV programs, WHO gives training to on surveillance and EPI programs. AMREF provides training on EPI and Nutrition, UNICEF provides training on EPI and MCH and save the children provides on nutrition program and MCH

5.9 Disaster natural and manmade

- There was no any disaster (natural and manmade) and outbreak was not occurred in the last one years.

6) *Limitation*

- There was no vital statics report at health facilities as well as district health office. And there are no data top admissions and deaths in adult and pediatrics.

6) Discussion

Chifra Woreda had no accesses electric power in 22 health posts. In chifra woreda needs additional human resources such as; 1 physician deployed in health center, professional environmental health science professional, degree midwifery, diploma nurse in all health posts to enhance health service coverage, utilization, to improve of environmental sanitation and to prevention communicable disease and improve the health service delivery system. Malaria is the ten top leading causes of morbidity in 2012 and number of causes 7754 cases even though showed 7% in 2012. Malaria is during rainy seasons increase number of cases because the rainy season risk for malaria epidemic areas. Intestinal parasite is

the second causes of outpatient visit (morbidity). Improve safe water supply and environmental condition provision of ITN to prevent the community from malaria.

7. Conclusion

Malaria was the top ten leading causes of morbidity in Chifra Woreda in 2012. Access to safe water supply forty-eight percent and the latrine coverage twenty-three percent. A total of students enrolled in 2011/2012 males greater than females in Secondary school and Improve safe water supply and increase latrine coverage and utilization. In addition to this Deployed human resources and strengthen the surveillance system and routine immunizations and reporting and documentation of data. In all health posts provides of electricity service. Distribution and provision of ITN to prevent the pastoral community from malaria.

8. Recommendations

- Deployed human resources in health sectors
- Strengthen the surveillance system and surveillance system attributes
- Strengthen the routine immunizations
- Strengthen the documentation and reporting
- Improve and increase safe water supply and latrine coverage
- Prevention and control vector breeding sites
- Promotion of ITN utilization
- Strengthen health education at community level

9) **Reference**

1. Solomon, Asnakew Feleke, Chalachew Misganaw Alemayehu, Hawult Taye Adane, Assessment of the level and associated factors with knowledge and practice of Diabetes Mellitus among Diabetic Patients attending at FelegeHiwot Hospital, Northwest ,Ethiopia . 2012.

2. FMOH. Health Sector Development Program III. Annual Performance Report, 2002 EFY (2009/10)

3. FMOH. Health sector development program IV, 2010/11-2014/15.Final draft. October 2010.

4. FMOH. Health Sector Development Programme IV 2010/11 – 2014/15 final draft version 19 .October 2010.

5. WHO. World health statistics .2010.

6. FMOH, USAIDS, UNICEF, UKAIDS, CDC, EPHI, UNFPA. Ethiopia demographic and health survey 2010

7. Abebe Bekele, Mengistu Kefale, Mekonnen Tadesse Preliminary Assessment of the Implementation of the Health Services Extension Program. In Southern Ethiopia .2008.

8. Federal Ministry of Health. Health Sector Development Program IV .2010/11 – 2014/15...

9. Belesti Melesse Asrese *Health Information Systems in Ethiopia* .2011.

10. Federal Ministry of Health. Health Extension Program in Ethiopia Profile and Education Center. Addis Ababa, Ethiopia. June 2007.

Chapter VI . ABSTRACTS

6.1. Abstract of scientific presentation of measles outbreak in Ofla woreda, Tigray region, Ethiopia, 2014.

Author, Ibrahim Adem
Name: Ethiopia FETP
Title -Measles outbreak in Ofla woreda, Tigray region, Ethiopia, 2014.

Abstract

1. Background

The World Health Organization estimates that almost 1 million measles-related deaths occur each year with over 85 percent of deaths in Africa and Asia.

2. Methods -A case -control study was conducted in Ofla Woreda, Tigray Region, Ethiopia, from February 26-28, 2014. Thirty four measles cases were reported and 17 cases and 51 controls were interviewed. Case definition was a person with fever, maculopapular rash and cough, coryza, or conjunctivitis. The data were analyzed using Epi. Info and Microsoft Excel. Objectives to verify the existence of outbreak describe the outbreak and make recommendation for control measures.

3. Result

Prevalence was highest among age 0-1 years old and people greater than 15 years old. Those travel history to areas with active measles cases had an increase risk of contracting measles (OR 4.0) (95% CI 1.02 -17.01). People with knowledge about the mode of transmission of measles -had less chance of becoming infected [OR 0.21, (95% CI o.o6 -o.7)]. Ten of the 17 cases had vaccination history .Of eight samples tested two were positive for measles specific IgM.

4 .Conclusion

No deaths during this outbreak were reported. The most affected age groups among measles cases were <1 yr and >15 years. Meaning that public health efforts should focus on increasing vaccination rates.

Key words: Measles outbreak in, Ethiopia.

Word count: 246

6.2. Abstract of scientific presentation of measles outbreak in Alamata woreda, Tigray region, Ethiopia, 2014.

Author, Ibrahim Adem

Name: Ethiopia FETP

Title -Measles outbreak in Alamata woreda, Tigray region, Ethiopia, 2014.

Abstract

1. Background: The World Health Organization estimates that almost 1 million measles-related deaths occur each year. With over 85 percent of deaths in Africa and Asia.

2. Methods: A case -control study was conducted in Alamata Woreda, Tigray Region, Ethiopia from January -10 to February 12, 2014. 45 measles cases were reported and 20 cases and 60 controls were interviewed. Case definition was a person with fever, maculopapular rash, and cough, coryza, or conjunctivitis. The data were analyzed using Epi. Info and MS Excel. Objectives to verify the existence of outbreak, describe the outbreak and recommendation for control measures.

3. Result: The prevalence was highest cases were among age 5-15 years old (49 %). 4 samples were positive for IgM specific. People with knowledge about the mode of transmission of measles -had less chance of becoming infected [OR 0.48, (95% CI 0.17. The vaccinated individuals for measles were OR 0.39 (95 % CI 00.17- 1.3) Protective.

In this study the number of measles cases reported and highest measles case was among age groups under one yr and greater fifteen yrs. Vaccinated individuals and individuals have knowledge about mode of transmission of measles are at low risk and susceptible.

Key words: Measles outbreak in, Ethiopia

Word count: 255

6.3. Abstract for scientific presentation dysentery diarrhea in Tigray region, Ethiopia, 2013.

Authors Ibrahim Adem

Name FETP: Ethiopia FETP

Title Description of dysentery infection in Tigray, Ethiopia, 2013.

Abstract Text

1) **Background**

Globally diarrhea is the third largest cause of morbidity and the sixth largest cause of mortality among population of all ages. One billion episodes and three million deaths occurring each year among under-five children.

2) **Methods:** A surveillance analysis for dysentery will be conducted on secondary data by reviewing case based surveillance report of people with suspected dysentery. After collection of those data Microsoft Excel will be used to analyze the data.

3**) Results**

Of the, 46852 (0.9%) are infected by dysentery in Tigray, Ethiopia, from July, 2003EC through June 2004 EC, 28307 (60 %) are among dysentery cases Male and 19699 (42%) were Females. Those from a total of all dysentery cases 46852 (0.95%)in Tigray region out of which 3351 (7%) central zone, eastern zone 5784(12%) ,Mekele zone 8530(18%), N western zone 15987(34%) ,Southeastern zone 3921(8%) ,Southern zone 3921(8%), Southern zone 7821 (16%) and Western zone 1554 (3%) are infected cases .most cases hihgest from N western zone of in Tigray region, Ethiopia, 2004 EC. In addition the distribution of dysentery cases 15809 (%) quareter one, 9190 (%) quarter two, 8747(%) quarter three, and 13106(%) quarter four.

4) Conclusion

Over all there is a low dysentery cases in the region the present surveillance data analysis shows and the way forward to improve environmental sanitation and prevent food and water contamination.

Keywords: Description of dysentery infection in Tigray, Ethiopia, 2004.

Word count: 275

Chapter VII. Scientific Manuscript
Measles outbreak in Ofla woreda, Southern zone, Tigray region, Ethiopia, 2014

1. Introduction

Globally Measles is one of the most contagious diseases known to man and often occurs in explosive epidemics. It usually does not kill children directly; however, as a result of its associated immunosuppressant, measles can lead to lethal complications, such as pneumonia, croup and diarrhea. Measles can also lead to lifelong disabilities, including blindness, brain damage, and deafness. Measles is one of the most infectious human diseases and can cause serious illness, lifelong complications and death. Prior to the availability of measles vaccine, measles infected over 90% of children before they reached 15 years of age. These infections were estimated to cause more than two million deaths and between 15 000 and 60 000 cases of blindness annually worldwide. By contrast to measles, rubella infections cause a relatively mild disease for children. The highly effective, safe and relatively inexpensive measles- and rubella-containing vaccines protect individuals from infection, and their widespread use can completely stop the spread of the viruses in populations that achieve and maintain high levels of immunity. Countries began using measles vaccines in the 1960s and immediately identified their use as highly cost effective.

In some developing countries, case-fatality rates for measles among young children may still reach 5–6%. In industrialized countries, approximately 10–30% of measles cases require hospitalization, and one in a thousand of these cases among children results in death from measles complications. Improving measles vaccination coverage and reducing measles-related deaths is a global imperative, particularly as it relates to the United Nation‘s Millennium Development Goal 4(MDG4), which aims to reduce the overall number of deaths among children by two-thirds between 1990 and 2015 *(5)*. The infectiousness of measles easily leads to global spread, and even countries that eliminated their indigenous transmission remain vulnerable to outbreaks from importations. This is exemplified in the WHO region of the Americas, which successfully eliminated all indigenoustrans mission of measles viruses in 2002 and rubella viruses in 2009. The region is currently seeking to verify the successful elimination of both diseases.

Africa Measles is one of the communicable diseases still causing preventable mortality and morbidity in the country.

In 2001, countries in the World Health Organization (WHO) African Region began accelerated measles control activities to reduce measles deaths by half by 2005 compared to the estimated number of measles deaths in 1999. Implementation of the recommended strategies led to a 75% reduction in estimated measles mortality in the African region by 2005. Following this progress, in 2006 the African region adopted a goal to achieve 90% measles mortality reduction by 2010 compared with the estimate for 2000. By 2008 in the African region, reported measles cases decreased 93% and estimated measles mortality decreased 92% compared with 2000. The strategies include improving routine vaccination coverage, providing a second opportunity for measles vaccination through supplementary immunization activities (SIAs), improving measles-case management and establishing case-based measles surveillance.

Ethiopia since 2002, Ethiopia adopted these regional goals and strategies and has been taking important steps to control measles. The Africa region as well as Ethiopia is working towards measles elimination by 2020: Measles elimination by 2020: A strategy for the African region, 61st regional Committee meeting 2011).

The National Immunization Programmed was established in the 1980s, and currently delivers service through static and outreach sites nationwide. The current routine immunization schedules recommend a dose of measles vaccination at 9 months of age. The WHO UNICEF coverage estimates for measles vaccination for Ethiopia also indicate an increase from 37% in 2000 to around 80% in 2010.

2 .Objectives

2.1 General objective

- To verify the existence of outbreak, describe the outbreak and make recommendation for control measures.

2.2 Specific objective

- To verify and confirm the existence of outbreak.
- To describe the disease pattern by place person and time
- To formulate possible suggestion and recommendation for control measures

3 .**Methods**

-Study population - 34 measles cases selected from the study population three kebeles were selected during Study period of Ofla woreda, Tigray region in, 2014.

-Study period -we conducted the case -control study on February 26- 28, 2014.

-Study area - This measles outbreak was occurred in Ofla woreda, in Tigray region, Ethiopia.

-Study design - we conducted descriptive and case -control study for 34 measles cases and case - control study for 17 cases and 51 controls

-Case definition -

- **Suspected case of measles:**

• A person with fever **and** maculopapular rash (i.e. non-vesicular) **and** one of the following: cough or coryza (runny nose) or conjunctivitis (red eyes).

- **Confirmed case of measles:**

• Measles IgM positive in blood

- **Epidemiologically linked case of measles:**

• A person with signs and symptoms consistent with measles who was in contact with a laboratory confirmed case 7-18 days before the onset of symptoms

-**Data collection** - The 17 measles cases and unmatched controls were interviewed (by questionnaire). The data gathered in these forms included socio - demographic and vaccination history, clinical features signs and symptoms, history of travel and contact with other suspected measles cases.

-Data analysis - A computerized data was based on completed questionnaires and the data were analyzed using Epi. Info .We used descriptive tables and charts and odds ratio (OR) statistics for data analysis.

The blood sample collected from 8 cases and was sent to EPHI. The results of lab tests of were the presence of measles-specific IgM antibodies in serum from cases.

4 .Results

Studied 34 measles cases, of which I interviewed 17 (50 %) cases and conducted case- control study. The majority of notified cases were found in the Sesela kebele. Incidence was highest in age-groups greater than 15 yrs. Vaccination status was reported for 55 of the cases (68%) and of these 25 (22%) were unvaccinated. Measles sample specimens were sent to EPHI laboratory. From 8 samples tested 2 were positive for measles specific IgM.

6 .Discussion

The individuals have travel history areas with active measles cases odds ratio 4 (95% CI 1.02 -17.01) this result shows individuals who have travel history. 4 times the risk of measles than among individuals who do not have travel history. The CI has not statistically significance this finding support other studies Measles is a highly contagious virus spread by contact with an infected person through coughing and sneezing. The individuals who have knowledge of mode of transmission of measles infection OR 0.21. This result shows that individuals who have knowledge of transmission for measles is protective rather than individuals who do not have knowledge mode of transmission of measles, (95% CI o.o6 -o.7), p. value 0.008 this result shows statistically significance between those individuals who have knowledge of transmission and protecting acquiring for measles infection. The finding support other studies measles is extremely contagious and the potential spread of measles is a serious health concern. In addition as an airborne disease, measles is spread through the air. As an airborne disease, measles is spread through the air.

The person of have the knowledge of measles vaccine prevent measles infection, the odds ratio 0.31 this odds ratio result shows thus the risk of measles infection among have knowledge of vaccines 0.31 time the risk individuals who do not have knowledge of measles vaccine (95% CI 0.01 -5.3) there was no statistically significance. This finding compare with others Measles can be prevented through immunization measles is preventable through immunization with the measles vaccine and also the vaccine elicits an immune response necessary to provide protection, without causing clinical disease (6)**.**

7. Conclusions

In this study the number of measles cases reported in the community -based on surveillance was no many cases and no death. The surveillance system was rapid response and control during of the outbreaks. Our results indicate that the age group cases which 7(41%) less than 1 yr and greater than fifteen yrs 7(41%). The highest measles case was among age groups under 1 yr and greater 15 yrs. Vaccinated individuals previously for measles are at low risk of acquiring the diseases and the community have knowledge about mode of transmission of measles so the risk of Transmission for susceptible is low and measles transmission were also protective of disease. The risk of exposure is likely to be higher for individuals because of the overcrowding in house hold level. The most

community using modern medicine to prevent complication of measles. The communities who have knowledge about vaccine preventable diseases and this awareness come from.

8. Recommendation

- Strengthen routine immunization services
- Increase health educational opportunities for communities
- Strengthen Surveillance system and awareness for communities to prevent and treat complications of measles

Chapter VIII.

Disaster report Belg assessment report of health and Nutrition in Afar region, Ethiopia, JULY, 2013.

-1) Introduction

Afar National Regional State is located in the northeast part of the country. Administratively, the Region is divided in to five zones, 32 woredas, 2 town administration and 404 kebeles. According to 2007 CSA the total number of the region‘s population is 1,411,092; of which 92% are pastoralists and 8% agro-pastoralists. Afar region is affected with recurrent drought. Besides, access to food and nutrition, water supply and sanitation, financial income, and health services are inadequate. The major health risks in the region are Malaria, Measles, Meningitis and Diarrhea

2) Objectives

2.1 GENERAL **OBJECTIVES**

- To assess the impact of last Sugum on health and nutritional status and health service performance

2.2 SPECIFIC OBJECTIVE

- To assess the coordination for public health emergencies
- To assess the top five causes of morbidity in the Afar region
- To asses cases and deaths of epidemic prone disease(AWD, Malaria, Measles, Meningitis)
- To assess the presence of the ongoing outbreak in the region
- To assess the regional preparedness for Epidemic situations
- To assess the presence of risk factors for epidemics
- To suggest possible recommendation based on the findings

3) Methods

The woredas are selected prior to the assessment, may be based on previous vulnerability to the draught, outbreaks and other natural and manmade disaster hazard problems. Designed questionnaire are prepared for regional and woreda level to be interviewed by the team members from different agencies. The respondents were woreda health office head or professional working in the woreda health office.

4) Executive Summary

The livelihoods of Afar communities have been affected by recurrent drought, and associated health and nutrition emergencies and have resulted in sufferings and loss of life. Belg (Sugum) non-food humanitarian need assessment was conducted in all zones in 15 selected woredas by Afar National regional state government in collaboration with concerned Federal Ministries and partner organizations.

The overall goal of the assessments is to achieve the greatest possible reduction of mortality in children less than five years of age. To achieve this goal, the capacity of the service providers at Health centers, Hospitals and especially health post and community level needs to be strengthened so that they can properly assess, classify and manage common adult and childhood illnesses (pneumonia, malaria, diarrhea and severe acute malnutrition) Availability of drugs (anti malaria, antibiotics different emergency medical kits and therapeutic supplies and equipment to be maintained.

Among the top five causes of morbidity Pneumonia, Diarrhea, Malaria, Acute upper Respiratory tract infections and pneumonia are the top five causes of morbidity in fewer than five cases in most of the woredas. The top five causes of morbidity in above five years are Malaria, Diarrhea, URTI, UTI and AFI. Number of malaria7826 cases in the 15 woreda in the past five months from January to May, 2013 were the major diseases in the region. The potential risk factors for the occurrence of public health emergencies include low latrine coverage and utilization, shortage of water, interrupted river, lack of preparedness and response capacity in some woredas and no fund is allocated budget for preparedness activities in all assessed woredas. Also there is low LLINs, IRS and SIA coverage in most of the woredas was low and not conducted, Analysis of the occurrence and distribution of epidemic prone diseases and associated potential risk factors in different Woredas during the last six months, there is the likelihood of the occurrence of public health and nutrition emergencies such as outbreaks of AWD, Measles, malaria, AFI and SAM in hot spot Woredas Concerning preparedness and response capacity of the region and Woredas. It was found to be limited such as Lack of contingency budget, critical shortage

of emergency drugs and medical supplies. Also there was weak public health emergency preparedness and response plans. The plan encompasses activities such as provision of drugs and medical supplies, items for early detection and reporting, prevention of the spread of the outbreak, nutrition, preparedness and capacity building.

A total of 61,019661.32 Birr is required to respond to anticipated emergency problem. For drug and supplies procurement 16, 996190.49Birr, to strengthen surveillance system and capacity building 15238672 Birr and nutrition drug and supplies 9522560.49 Birr. Regional Summary of Budget requirement for Health and Nutrition

Table 9: Summary of Budget in Belg assessment Afar region, Ethiopia, 2013.

S/N	Item	Budget in Birr	Remark
1	**AWD response**	**1,941,181**	
2	**Malaria**	**365,907**	
3	**Measles**	**383,382**	
4	**Meningitis**	**4,783,160**	
5	**Nutrition drug and supplies**	9522560.49	
6	**TFP**	**28784798.83**	
7	**Capacity Building**	**15238672**	
	Total	**61019661.32 Birr**	

Table 10. The Selected woredas for assessment are in Afar region, Ethiopia, 2013.

SN	Zone	Woreda
1	Zone one	Elidar ,Kori ,Mile
2	Zone two	Abala,Erebti,Barahle ,Afdera
3	Zone three	Gewane ,Argoba
4	Zone four	Golina ,Yalo, Awra
5	Zone Five	Samarobi,Dawe, Dalifage

Socio demographic Profile

In this assessment 15 woredas from 5 zones were assessed, namely zone one Elidaar, Kori, Mile Zone two, Abala, Barahle, Afdera, Erebti, zone three Gewani, Argoba, Zone four Awra, Golina, Yalo & zone five, Dawe, Dalifage & Samarobi with a total population of 675895**.** From these male 331189 (49) and female 344706, under five year children 110847, women of reproductive age 149373 (15-49years), 23656 pregnant women 9463 are lactating women.

5) Assessment findings

-Coordination

As sixty four percent of the woredas have the preparedness multi sectoral public health emergency management (PHEM) coordination forum. However, in some woredas Sixty six percent no functional multi sectoral public health emergency management (PHEM) coordination forum PHEM in Abala, Afdera, Eribti, Yalo and Dalifage. Hence; zone one, zone three and zone five have PHE preparedness plan or accessible emergency response fund. On other hand zone two and zone four do not have accessible emergency response and no fund is allocated budget for preparedness activities in all assessed woredas.

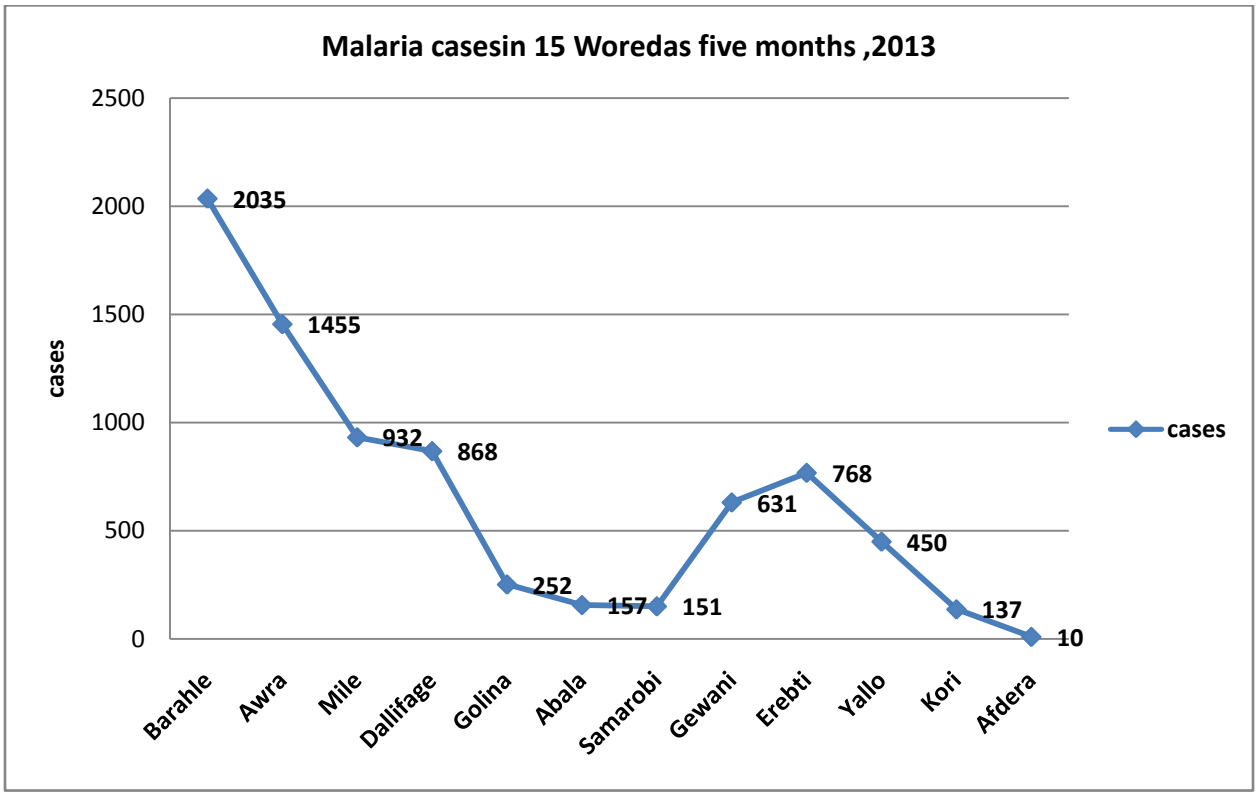
Top five Causes of Morbidity

Pneumonia, Diarrhea, Malaria, Acute upper Respiratory tract infections are the five top causes of morbidity in fewer than five cases in most of the woredas. The top five causes of morbidity in above five years are Malaria, Diarrhea, URTI, UTI and AFI. Number of malaria cases in the 15 woreda in the past five months from January to May 2013

Morbidity and mortality

Malaria is the leading cause of morbidity in 5 zones and the suspected measles cases in Gewane woreda 9 cases, 16 cases in Argoba from this 4 cases were confirmed and 4 cases in Afdera woreda were reported. 7826 malaria causes reported from 15 from January to May, 2013.

Figure 12 Number of malaria cases in the 15 woredas, in the past five months, 2013



Report on Outbreaks

There was no outbreak in 14 woredas except Argoba woredas measles outbreak was reported 16 cases and from those cases 4 cases were confirmed measles IgM antibody from January to May, 2013.

Availability of emergency drugs and supplies in woredas

In most woredas no anti malarial drugs available and no fund allocated for emergency rapid response by woreda health office and no new malaria guidelines distributed in two of assessed woredas namely Kori and Afdera. No IRS coverage in all woredas, in 2013.

Tables 11:- Availability of emergency drug and supply in 15 woredas Afar region, Ethiopia, 2013

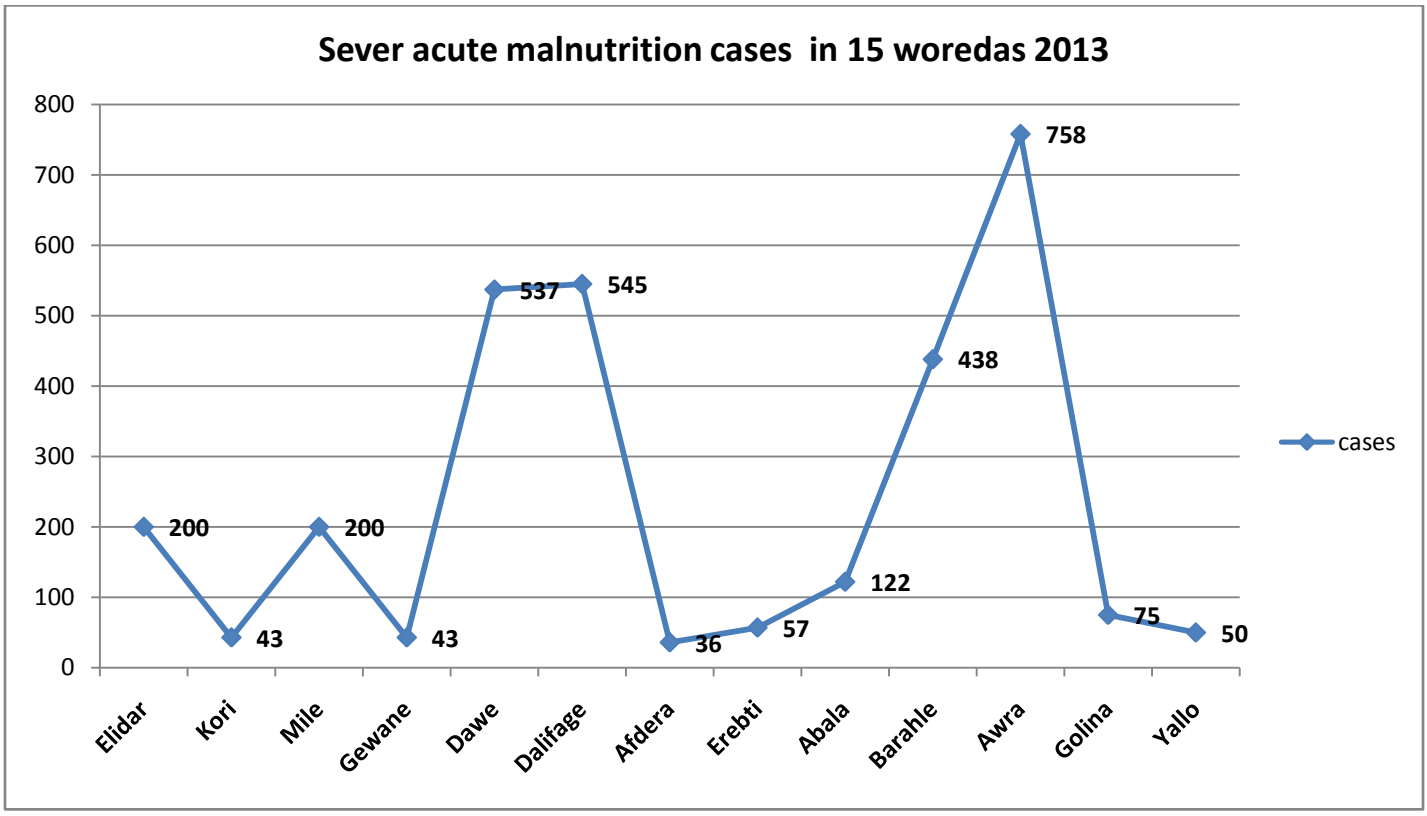
Sr. no	Drugs	No. of district with no drugs and supply	%
	Ringer lactate for AWD	4	26
	ORS	5	33
	Doxycycline for AWD	6	40
	Syringe and gloves for AWD	9	60
	Amoxicilline sups	7	46
	TTC eye ointment for measles	7	46
	Vit A	8	53
	Coartem	10	66
	CTC kit for AWD	11	73
.	RDT for malaria	12	80
.	Artesunate(rectal) for malaria	12	80
.	Artesunate(injection)	12	80
.	Artemtheter IM	15	100
.	Quinine(po)	8	53
.	Quinine (IV)	12	80
.	Chloroquine	7	46
.	Ceftriaxone for meningitis	13	86
.	RDT for meningitis	15	100
.	LP set for meningitis	15	100
.	Clinical delivery kit part A	12	80
.	Clinical delivery kit part B drugs	8	53
.	MVA set	8	53

-Risk factors for epidemics to occur:-
Almost all of the assessed woredas are in high risk for the most epidemic prone diseases like Malaria, Measles, AWD, 66 **%** 0f woreda Health workers not trained on new malaria guideline, **46 %** 0f AWD control guideline not distributed to health facility.
-Nutrition- According to the data from the visited Woreda health offices, from January to May, a total of 2416 SAM cases are registered & reported by Elidar (205 cases), Kori (not available), Mile(200 cases), Gewane (43 cases, Argoba (no found cases) Samarobi (no found data), Dawe (537 cases), Dalifage (545 cases), Afdera (36 cases), Erebti (57 cases), Abala (122 cases), Barahle (438 cases), Awra (158 cases), Golina 75 cases), Yalo (50 cases).

Table 12:-Severe Acute Malnutrition (SAM) cases in the 15 woredas Afar region, Ethiopia, 2013

S NO	Woredas	SAM New cases	OTP site
1	Elidar	205	13
2	Kori	Data not available	15
3	Mile	200	8
4	Gewane	43	---
5	Argoba	Data not available	9
6	Samarobi	Data not available	5
7	Dawe	537	8
8	Dalifage	545	---
9	Afdera	36	5
10	Erebti	57	8
11	Abala	122	12
12	Barahle	438	10
13	Awra	158	5
14	Golina	75	12
15	Yalo	50	6

Figure 14: Number of SAM cases in the 15 woredas in the past five months, 2013



6) Recommendations

- Establish and strengthen PHEM forum at all Woreda level
- There should be allocated fund (budget) for emergency preparedness and response
- Drugs for emergency management must be available at all level
- All woreda should improve recording and reporting system and strengthen the documentation at all levels.
- Organization of TFP report with other monthly reports of health and strengthen the reporting system at all level.
- Ensure close and regular monitoring by all partners and share the updates of the situations in the regional coordination forums
- Prioritize identification and targeting of 6-17 months age group for both TSFP and CMAM programs
- Maintain TSF programs based population and facility based monitoring indicators, adequate resources (food commodities, anthropometric equipment‘s and well trained staffs) to address
- Child health day approach and using such days to screen for malnourished children in need of selective feeding when they are brought in for immunization and other health services
- Strengthen the preventive and curative health services at all woredas

Table: 13: Items for disaster assessment for 15 Woredas Afar region, Ethiopia, 2013

S/N	Items	Unit	Quantity	Unit cost in birr	Total Cost in birr	Remark
	AWD					
1	Examination glove, large, Latex	Packs of 100	128	96.54	12357	
2	ORS, each in sachet, box of 100 sachet	Box of 100	906	300	271800	
3	Ringer lactate solution 500 ml of 20 bag	carton of 20	7895	517.8	4088031	
4	Doxycycline Tin of 1000	Tin of 1000	8	660	5280	
5	Amoxicillin suspension	Bottle	334	8.00	2672	
6	CTC Kit	Kit	12		Donation	
	Sub Total				**438,0140**	
	Malaria					
1	Coartem of 100 strip	Box	17342	15	260130	
2	Paracetmol 500mg, tin of 1000 tab	Tin	1734	61	105774	
3	Chloroquine po 1000 Tin	Tin	700	Donation	2300	
4	Quinine po 1000	Tin	700	20	2300	
5	Quinine Iv vial	100 Box	700	552	386400	
	Sub Total				**755,304**	
	Measles					
1	Ampicillin 500mg capsule box of 50x10	Box	575	216.03	124217.25	
2	Amoxicillin 500mg capsule box of 50x10	Box	575	216.03	124217.25	
3	TTC Ointment	Tube	95845	3	287535	
	Sub Total				535,969.5	
	Meningitis					
1	Ceftriaxone 0.5gm injection	Vial	302349	7.91	18580.59	
2	Crystalline pencillin	Vial	14000			
3	Oily CAF of 100 Vial	Box	302349	20	6046980	
					606,5560.6	
	Dysentery					
1	ORS, each in sachet, box of 100 sachet	Box of 100	2800	105.9	2816520	
2	Ringer lactate solution 500 ml of 20 bag	560 cartone	560	185.85	104076	
					292,0596	
	Typhoid					
1	Ciprofloxacin 500mg strip	2800 box	Box	72	201600	
2	Amoxicillin 500mg	700 box	557	216.03	120328.71	
3	Cotrimoxazole 960 mg strip	1000 box	8400box	156	1310400	
4	Cotrimoxazole syrup	Botlle	334	10.50	3507	
	Sub Total				1,635827.7	
	Grand Total				16,293398	

Table 14:-number Population of in need of humanitarian assistance of health in 15 Woredas, Afar region, Ethiopia, 2013.

Activities	woreda	Estimated number of beneficiaries	Responsible body	Estimated cost	Source of fund
Strengthening and training of PHEM coordination forum	All	2465976	RHB Woreda H/office		
Training of health workers on management of SAM	All	2465976	RHB Woreda H/office		
Intensify health education to increase awareness on prevention and control of epidemic diseases using multiple media	All	2465976	RHB Woreda H/office		
Renovation/Rehabilitation of Destructed health institutions(Teru H.C)	All	2465976	RHB Woreda H/office		
Measles outbreak prevention and response	All	2465976	RHB Woreda H/office		
Malaria outbreak prevention and response	All	2465976	RHB Woreda H/office		
Training of health workers on AWD prevention & case management	All	233426	RHB Woreda H/office		
		15029282			

Table 15 : Summary Requirements/Need Operational Cost in 15 Woredas, Afar region, Ethiopia, 2013.

S/N	Activity	Unit cost	Total cost	Remark
1	Training and capacity building TOT on AWD prevention and control Per-diem for trainer Hall rent Transport Stationary Refreshment Per-diem for supportive staff	 214.50 500 600 50 200 214.5	 36465 2000 9000 1700 27200 5362.5	 5 days*214.50 birr * 34 person 4 days 15 person*600 travel cost 34 participants 4 days*34 participant* 200 birr 5 * 214.5* 5 days
	Total		81727.5	
2	Woreda PHEM training on surveillance Per-diem for trainer Hall rent Transport cost Stationary Refreshment Per-diem for supportive staff	 214.5 500 600 50 200 214.5	 85800 2500 24000 2000 8000 5362.5	 10 days*214.14birr * 40 person 10 days 40person*600 travel cost 40 participants 5 days*40 participant* 200 birr 5 * 214.5* 5 days
	Total		127662.5	
	Grand Total		209390	

Table 16: Nutritional supply, drugs and material need requirement in belg assessment in 15 Woredas, Afar region, Ethiopia, 2013

Product	UNIT	Total Expected beneficiaries for six month	Qty for 200 children per month	unit cost	total cost
F75	Tons	613	0.1858	65,289.52	**37180.88**
F100	Tons	613	0.3540	55,200.29	59892.86
ReSoMal	Tons	613	0.35	50,283.88	53943.03
RUTF	Tons	9,875	2	5,184.00	511920
	Sub-Total				**614386.77**
MUAC tape	Pac-50	8756	98.75	240	1037586
Salter scale 25kg x 100g	Unit	8756	99	1,632.00	7073447.04
TFP multi chart	Unit	8756	2469	1.36	147006.24
OTP card	Unit	8756	7689	0.68	228904.61
TFP registration book	Unit	8756	99	23.80	103154.44
Mattresses	Unit	613	13(for six month)	380.97	15179.75
Blankets	Unit	613	13(for six month)	155	6175.98
OTP Quick reference for HEWs	Unit	8756	330	25	361185
	Sub-Total				**8879799.06**
Amoxicillin 250 mg	pac-1000	8756	148	244.8	1586166.91
Benzyl benzoate 25%	Litre	8756	1234	49.98	2700145.51
Chlorhexadine 5%	Litre	8756	988	7.99	345604.57
Ferrous sulphate 200 mg (with 60 mg elemental iron)	pac-1000	8756	296	39.1	506692.21
Folic Acid 5 mg	pac-1000	8756	49	1,229.44	2637419.28
Gentian violet powder	25g	8756	199	24.48	213275.15
Mebendazole 100mg	pac-100	8756	988	29.12	1259575.12
Zinc oxide ointment 10%	500 g	8756	99	17	73681.74
Sub-Total					**9522560.49**
CSB	Tone	71,994	1,350	11,084.80	14,964480
Oil	Tone	71.994	203.96	21,217.00	4327419.3
Sub-Total					**19,290,613**
Grand Total					**24427560.26**

Chapter IX. HIV /AIDS Secondary data analysis Afar region, Ethiopia, January, 2009 - December, 2012.

1) Introduction

Human health worldwide is greatly affected by epidemics such as HIV/AIDS. The international community mobilized an unprecedented level of financial resources, with 15.9 billion US dollars made available in 2009. However, an additional US$ 10 billion would have been necessary to effectively fight HIV/AIDS globally.1 HIV/AIDS is, deservedly, a well recognized and important global challenge. However, like everything in a global context, it does not exist independently from other global challenges. Almost every major global challenge that the world is facing this century has some connection to HIV/AIDS. It is beyond the scope of this report to review them all; instead the focus is centered on some of the most relevant interlink ages between HIV/AIDS and other global challenges. The fight against the epidemic can only be successful if interlinking factors do not counteract and undermine the measures taken to tackle it. This report may therefore be helpful in assessing strategies and setting priorities in the fight against HIV/AIDS. Cumulatively, up to 50.6 million people worldwide suffer from HIV/AIDS:

About 34 million people were living with HIV/AIDS in 2010 (estimates range from 30.9 to 36.9 million). That is 0.5% of the world population. Most of these (68%) live in sub-Saharan Africa.2 HIV/AIDS affects mostly people in the economically productive age range, reducing the work-force and, in doing so, constraining development. The most affected group among those living The GBD concept, first published in 1996, constituted the most comprehensive and consistent set of estimates of mortality and morbidity yet produced (Murray & Lopez, 1996), and WHO now regularly develops GBD estimates at regional and global level for

A set of more than 135 causes of disease and injury (Mothers et al., 2002; WHO, 2002a). A GBD study aims to quantify the burden of premature mortality and disability for major diseases or disease groups, and uses a summary measure of population health, the DALY, to combine estimates of the years of life lost and years lived with disabilities. The data are also broken down by age, sex and region. WHO also supports NBD studies to obtain country-specific estimates for input to national policy? The national studies are based on the GBD concept and the data can be used in EBD assessments to estimate the contributions that environmental risk factors make to the overall disease burden. Over 30 countries are now undertaking NBD studies. Guidelines, software tools, and data for NBD studies are available from WHO (Mothers et al., 2001).

In the past twenty years, the AIDS crisis has had crippling effects on the health care systems of many countries in sub-Saharan Africa. On the supply side, the pandemic may have compromised the ability of health systems to deliver care, as health professionals fell ill, or chose to leave for less-risky work elsewhere. The increase in morbidity that accompanies HIV may also have changed the nature of care offered by clinics and hospitals, reinforced by health budgets that shifted resources toward AIDS and the vertical delivery of care for those infected with HIV (Lancet 1995, Jones et al. 2003, Colvin 2005, Easterly 2008). A recent World Bank evaluation (2009) also reports changes in its funding for health, nutrition and population programs (HNP) over the decade from 1997 to 2007, noting that –while the overall levels of lending in HNP have not changed much over the past decade, the composition of the portfolio has shifted rather dramatically toward communicable disease projects, particularly AIDS…" (Page 23). AIDS may also have affected the demand for health services, by placing a large tax on households' budgets. Prime-aged adults who fall ill may need to leave the labor force. Other family members may also find it necessary to change their work patterns, in order to care for the sick. These costs, together with the financial costs of covering illnesses associated with AIDS, can lead to _medical poverty traps' (McIntyre et al. 2006). These strains on health systems and households have taken their toll. In this paper, we document the impact of the AIDS crisis on non-AIDS related health services in fourteen subs-

Saharan African countries. Using multiple waves of Demographic and Health Surveys (DHS) for each country, we examine antenatal care, birth deliveries, and rates of immunization for children born between 1988 and 2005. We find deterioration in the delivery of nearly all of these dimensions of health care over this period. The most recent DHS survey for each country Ethiopia's population reached an estimated 73 million in mid-2005, and is expected to grow by over 2.0% annually through 2025. Ethiopia's population is young with 43% under the age of 15 years. Eighty-four percent of the population is rural. Ethiopia has a federal system with nine regions and two Administrative Councils (Addis Ababa and Dire Dawa). HIV was first detected in Ethiopia in stored sera collected in 1984 and the first two AIDS cases were reported in 1986. A National HIV/AIDS taskforce was established in 1985 and the National AIDS Control Program (NACP) was established at a Department level at the MOH in 1987. HIV/AIDS surveillance activities began in 1989. There are many factors that promote the spread of the disease including the presence of sexually transmitted infections, gender inequality, multiple sexual partners, prostitution, and men with disposable income, alcohol, unsafe blood transfusion, and transmission from infected mother to her fetus/child during pregnancy and

breast-feeding. Two medium-term prevention & control plans were designed and implemented in 1989 and 1996 respectively. The HIV/AIDS Policy was formulated by MOH and adopted by the Council of Ministers in 1998. This created an enabling environment for HIV/AIDS prevention and control. Significance of analysis this data -trend of hiv/aids prevalence /morbidity and mortality. Afar region -risk factor of pastoralist people Groups who live on the margins of society exist in every country, although they differ from place to place. One among the group of the society is the pastoral community. Over the past decade, HIV has emerged as one of the lead threats to the productive sectors of the economy (20). Pastoralism is the production systems in which 50% or more of gross household revenue comes directly or indirectly from livestock or livestock related activities (4). Three broad categories of pastoralist practice were identified, urban pastoralism, Sedentarised pastoralism and Nomadic pastoralist. Sedentarised and urbanized pastoralist have both sprung from the nomadic pastoralism in response to challenges pastoralist communities. Africa is a home to about 50% of the estimated 30-40 million paternalists worldwide, despite the perceived low potential of Arid and Semi-Arid Land (ASAL) areas, they account for 59% of all domestic ruminants in Africa (20). The pastoral areas of Ethiopia are generally endowed with enormous economic potentials, although these is yet undeveloped (21). Pastoralist communities are becoming integrated in to the mainstreaming economic system. Where as previously they produced only for subsistence and limited batter needs, pastoralist today is producing more and more for the market. More importantly the HIV/AIDS is links to the market, often through urbanized kin, are the basis for the establishment of social links that may culminate in sexual contact. Monitoring data within pastoral districts indicates HIV prevalence 5.56 (2003) from who had gone to health centers for other medical complaint and anti-natal care (20). DHS in 17 African countries shows that about one-third of married women are co-wives. Example in Tanzania, Uganda, Kenya and Zambia (28%, 34%, 23%, and 18%) of women are in a polygamous union respectively.

2) Objective

2.1 General objective

- To analysis secondary data of HIV/AIDS of Afar region from, 2009-2012.

2.2 Specific objectives

- To describe the distribution of HIV cases by person, place and time.
- To identify possible factors for HIV transmission in the region eg occupation ,Age
- To identify program related gaps in HIV/AIDS prevention and control

3) Methods

3.1 Study area --This HIV/AIDS Secondary data analysis will be conducted in Afar region, Ethiopia.

3.2 Study period --The study will be conducted from July 6/7/2013--15/7/2013.

3.3 Study design -- description and conducted cross -sectional study of on secondary data analysis of HIV/AIDS.

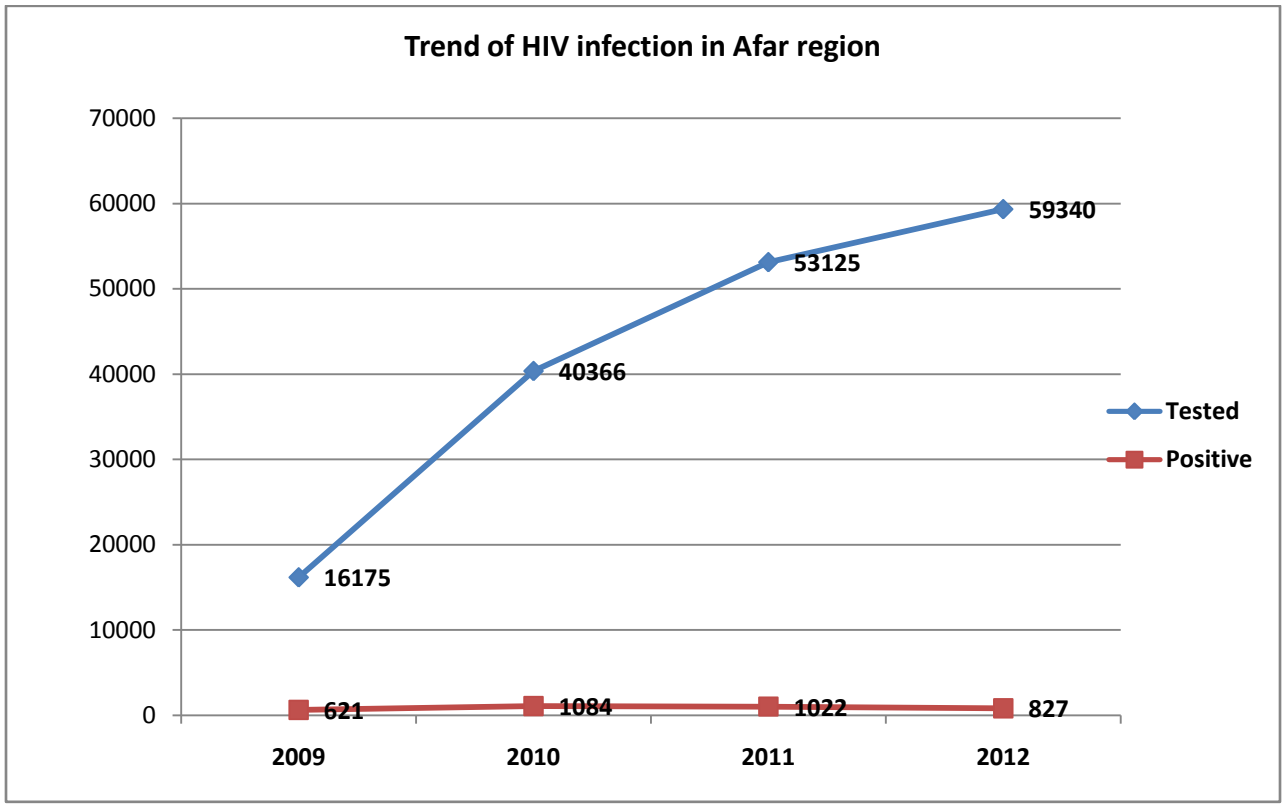
3.4 Data source -the data from I-TECH Ethiopia.

3.5 Data collection - the data collect from me- TECH Ethiopia regional data base.

3.6 Data analysis --the data analyzed in MS-excel and MS-word

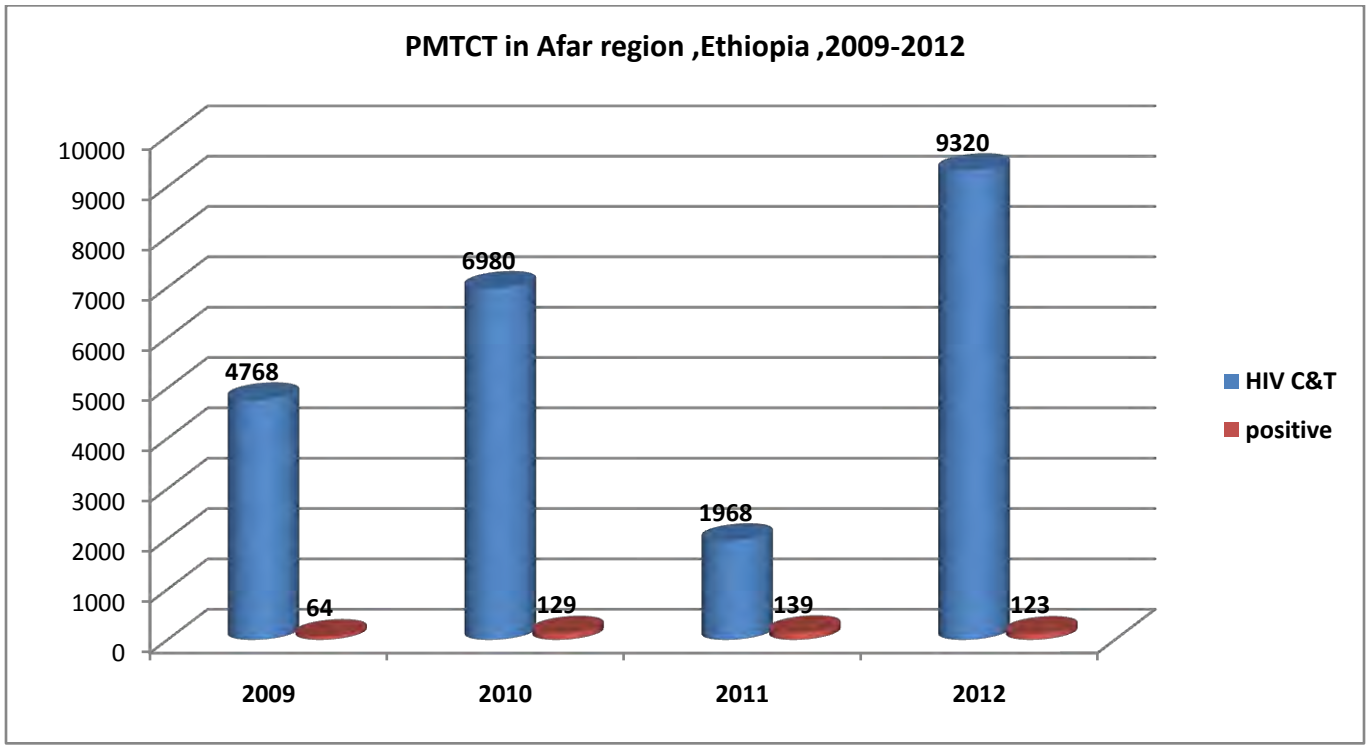
4. Result

Figure 12 .Trend of HIV/AIDS Infection Afar region, Ethiopia, 2009-2012



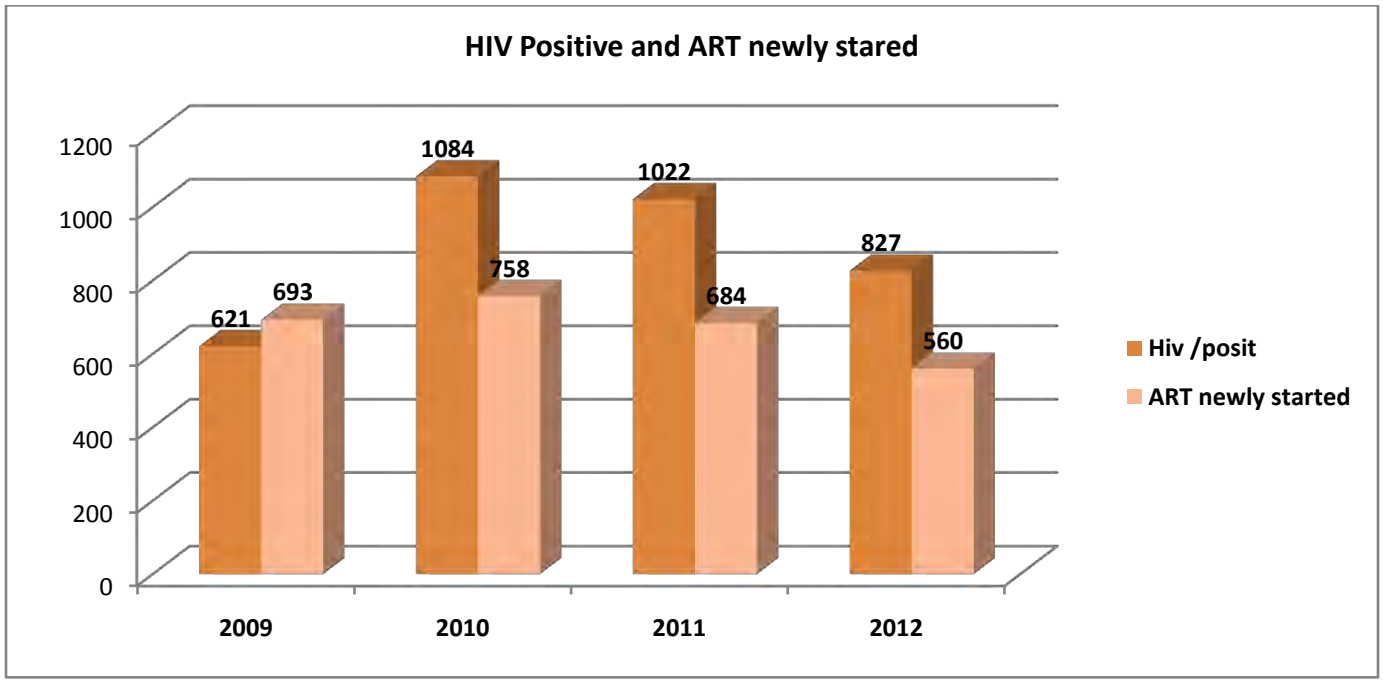
In 2009, number of HIV /AIDS counseling and tested individuals 16175, from those HIV positive 621 (3.85). In 2010, number of HIV tested persons was 40366 from those HIV positive 1084 (3%). In 2011, number of person HIV Counseling and tested were 53125 from those, HIV positive 1022 (2 %). In 2012 number of individuals counseling and tested for HIV 59340 from those HIV positive were 827 (1.4)

Figure 13. Prevention Mather to child transmission from 2009- 2012 in Afar region, in Ethiopia



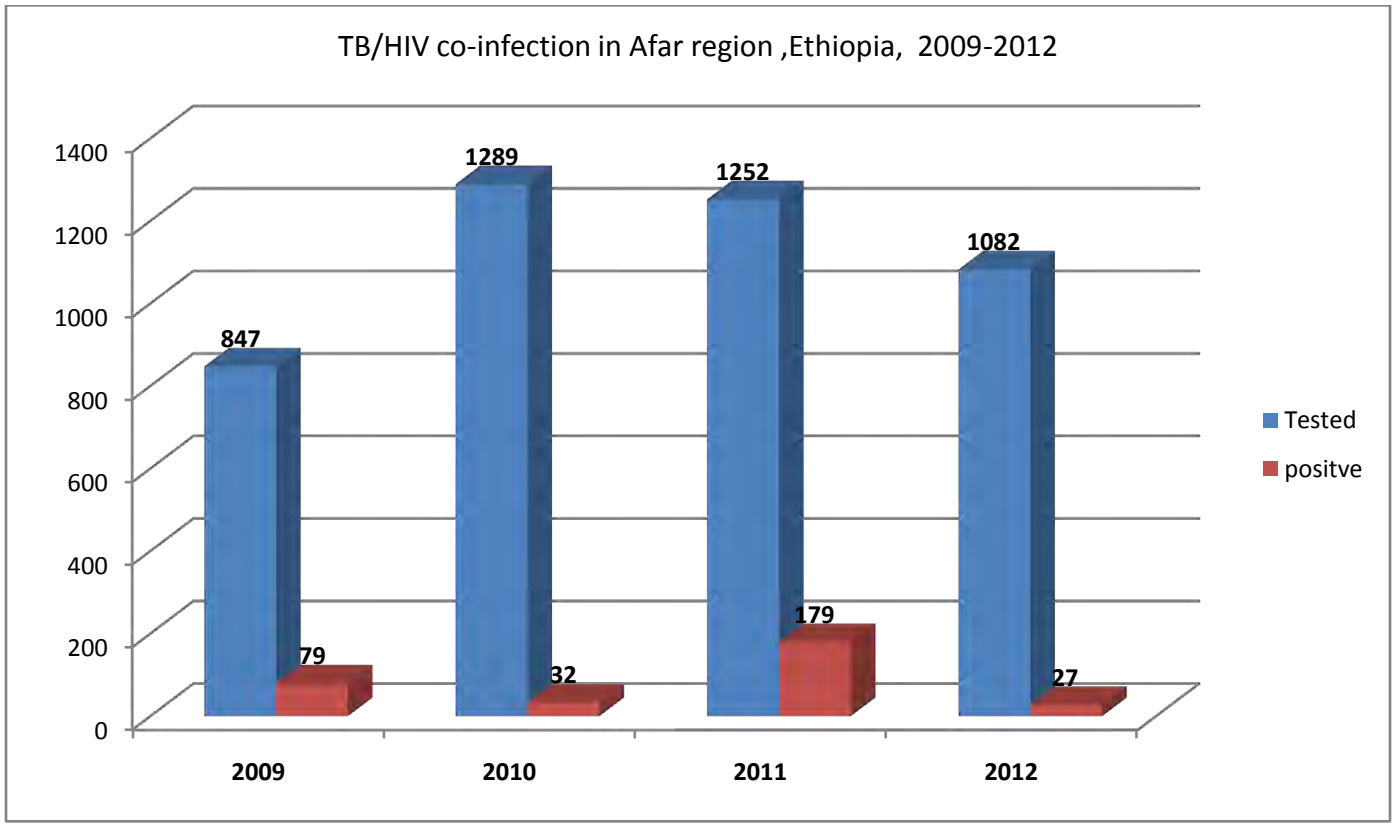
In 2009, pregnancy mothers counseling and testing for HIV /AIDS 4768 from those positive for HIV positive 64 (1.3%). In 2010, pregnancy mothers counseling and tested 6980, from those HIV positive 129 (1.8 %). In 2011, pregnancy mothers Counseling and Tested for HIV /AIDS 1968 from that HIV/AIDS Positive 139 (7.0 %). In 2012, pregnancy mothers Counseling and Tested for HIV/AIDS 9320 from those HIV positive cases were 123(1.3%).

Figure 14. Number of ART cases from 2009-2012 in Afar regions, Ethiopia.



In 2009, number of HIV Positive cases 621 and ART newly started 693(%%). In 2010, number of HIV positive cases were 1084 and ART newly started 758(%). In 2011 number of HIV positive cases were 1022 and ART newly started cases 684 (%). In 2012, number of HIV positive cases were 827 and ART newly started 560(%).

Figure 15. TB /HIV Counseling and Testing for HIV from 2009 -2012 in Afar region, Ethiopia.



In 2009, among TB patients counseling and testing for HIV were 847 and out of them positive for HIV were 79 (9.3 %). In 2010, among TB cases counseling and testing for HIV/AIDS were 1289 and positive cases for HIV, 32 (2.5 %).In 2011, TB cases counseling and testing for HIV were 1252 and positive for HIV were 179(14 %) . In 2012 TB cases counseling and testing for HIV were 1082 and positive for HIV were 27(2.5).

5 .Discussion

HCT in this study, in 2009, HIV prevalence rate are 3.8, in Afar region, this finding compare with other study HIV prevalence rate are 2.3% based on this study high prevalence rate in Afar region. In 2010, HIV prevalence rate are 3 in Afar region. This finding compare with HIV prevalence rate are 2.4 (single point estimate 2007) this study lower than the present finding in Afar region. In 2011, HIV prevalence rate are 7, in Afar region, this compare with other study HIV prevalence rate 2.3 % (Ethiopia integrated of FP,HIV/MNCH pr this compare with other study HIV prevalence 1.5 %(E- DHS 2011). The present study finding is high prevalence rate than previous study program, March, 2011). The present study finding is high prevalence rate

than previous study. In 2012, HIV prevalence rate are 1.4, in Afar region, this compare with. This compares with other study HIV prevalence 1.5 %(E- DHS 2011). The present study finding are high prevalence rate than previous study PMTCT -in this study, in 2009, pregnant women prevalence were 1.3 % in Afar region. This finding compare with other HIV prevalence rate are 1.1(in Nigeria 2009) .Based on this finding present study prevalence rate are higher than previous study. In 2010, the pregnant women prevalence was 1.8 % in Afar region. This finding compare with HIV prevalence rate 1.8 % .based on this result the present study similar with previous study (PEPFAR Ethiopia operational plan report, 2010). In 2011, the pregnant women prevalence rate was 7.0 % in Afar region. This finding compare with the national strategic plan for elimination of Mather to child transmission of HIV (e - MTCT of HIV) prevalence rate are 2.3 % based study the prevalence were high in Afar region. In 2012, the pregnant women prevalence rate were 1.3 in Afar region, this study finding compare with HIV prevalence rate among pregnant women 2.1 % based on this the present finding are low prevalence rate than in previous study (count down to zero elimination of new HIV infection 2015). TB/HIV co-infection among TB patients is well recognized as a major public health problem worldwide. In this study, in 2009, the prevalence of HIV co-infection among TB patients was 9 in Afar region compare with. In 2010, TB/HIV co-infection prevalence rate are 2.4 in Afar region, compare with this finding compare with the WHO reports that TB/HIV CO -infection prevalence rate 2.4 this study similar with present study finding in Afar region. In 2011, TB/HIV co-infection prevalence rate are 1.4 % in Afar region, compare with. In 2012, TB/HIV co-infection prevalence rate are 2.4 in Afar region. This finding compare with prevalence rate 19.7 % (TB/HIV co-infection M&E Ethiopia experience in Africa Mozambique 2013,).Based on this finding the present study lower than the previous study. In 2009,

6. Recommendation

1. Improve populations‘ access to prevention, care, and treatment services.
2. Access to ANC for pregnant women, counseling and testing among those accessing ANC and triple therapy for reduction of MTCT where it can be made available should be increased.
3. to increase VCT testing and counseling in all facility and community level
4. Increase ANC and institutional delivery counseling and testing
5. Increase STI cases counseling and testing for HIV
6. Increase TB/HIV counseling and testing for all TB clients
7. Strengthen health education for community level

5) Reference

1. Delius Asiimawe, Richard Kibombo, JohansMatisko, Makerere Institute of social research, study of the integration of family planning and VCT /PMTCT, ART programs in Uganda .December 2005.
2. Ethiopia HIV/AIDS prevention and control office (HAPCO), the global HIV/AIDS program the World Bank, HIV/AIDS in Ethiopia an epidemiological synthesis. April 2008.
3. UNAIDS .global report on the global AIDS epidemic 2012.
4. UNAIDS world aid days report strategy, 2011.
5. FMOH Uganda .Study of the integration of family planning and VCT /PMTCT, ART program in Uganda. December 2005.
6. Global health initiative USG Ethiopia program over view .Nov 2012.
7. FMOH .Country health profile of Ethiopia. 2012.
8. Elias Asfaw (BA,MSC ,EHNRI)Kora Tushune (BA,MSC ,)Bina Abydos (MD ,MSC) Pedro Paulo (PHD ,FIC ROUZE) Cost effectiveness analysis of PMTCT service delivery modalities in Addis Abeba . July 2012
9. FMOH .Ethiopian integration of FP/HIV /MNCH program, March .2011.
10. FMOH. Ethiopian operational plan report PEPFAR .2010.
11. FMOH. The national strategic plan for elimination of mother to child transmission of HIV. 2013-2015.
12. WHO. World health statistics .2010.
13. FMOH, USAID, UNICEF, CDC, UKAID, EPHI, UNFPA; Ethiopia demographic health survey .2011.

Chapter X. Epidemiological research proposal on Knowledge, attitude and practice on female genital mutilation in Afar region, 2014.

1. **Background**

Female Genital Mutilation (FGM) is also known as Female Genital Cutting (FGC) and is a term generally accepted for the traditional practices that entail removal of partial or all of the external genital of girls or women for no medically prescribed reasons. The question we have to ask ourselves is why is FGM persistently practiced? Tradition is the cover for most of the justifications endorsing the practice of FGM. Traditions cover all norms of our life and are not static and adapt to changes as the result of interaction with external influence.

2. Objectives

2.1 General objectives

- The overall objectives of this study are to assess the change post Law enactment in knowledge, attitude and practices (KAP) of the community towards FGM in the study area.

2.2 **Specific Objectives**

- To assess the current KAP of community regarding Female genital Mutilation
- To assess FGM Complications involved after undergoing the practice

3 .Methods

The researcher will use two approaches; - Qualitative approach for the purpose of discovering meanings and patterns and a Quantitative approach and the burden disease and magnitude of the FGM in Afar region

3.1 Study design

A cross -sectional design will be employed. A structured survey will be the main instrument for the quantitative section and in depth interviews for qualitative aspects of the study.

3.2 Sampling method

The researcher will employ probability simple random sampling design to select the respondents

3.3. Data collection technique

- To collect the necessary data questionnaires with (closed ended) questions will be used for structured interviews.

1. Questionnaires; Closed ended questionnaires will be administered to 384 people we will select 192 women and 192 men.
2. Interviewers will be provided training for one day about over all data collection techniques and FGM research objectives and the training provided by researchers.

3.4. Data analysis

Data will be analyzed both quantitatively and qualitatively. Whereas quantitatively data will be analyzed using EpiInfo to look at statistical significant and to display the data using tables, graphs and numbers.

1. Introduction

Female Genital Mutilation (FGM) is also known as Female Genital Cutting (FGC) and is a term generally accepted for the traditional practices that entail removal of partial or all of the external genital of girls or women for none medically prescribed reasons

FGM is not a recent phenomenon rather writing on the subjects suggest that FGM has been practiced in multiple countries for many years. Some evidence also indicate that slave traders acquired infibulated women or infibulated slaves because these women whose labor would be uninterrupted by child bearing could be sold for high prices (Deribsa 2010).

FGM is a common practice in many sub-Saharan Africa countries including Ethiopia. In Ethiopia data collected in the 2005 showed that most women aged 15-49 years have FGM is practiced in the local area (MTCHP, 2008).

In the same study it is reported that FGM declined over 5 years from 80% in 2000 to 74% in 2005. It was also emphasized that the communities greatly support the practice although it declined from 60% in 2005. This shows that a great effort is needed to reduce the magnitude of the practice (IBI).

In early 2000, it was estimated that more than 130 girls and women undergone FGM worldwide, and each year nearly 2 million girls are at risk .Even though FGM practiced in most Islamic countries, it is not exclusively Islamic practice. FGM is a cross-cultural and cross-religious ritual. In Africa and the Middle East it is performed by Islamic and Ethiopian Orthodox Christians and members holding various indigenous religions, Protestant and Catholics (MTHCP 2008).

2 .Statement of the problem

Female genital Mutilation is present in many developing nations of world including Ethiopia where it affects all most all ethnic groups regardless of their difference in religion. FGM is a significant issue in Ethiopia. In processes of mutilation all or most of external parts the female genital organ are removed depending on type of procedures:-

I. Excision of the prepuce, with or without excision of part of the clitoris

II. Excision of the clitoris with partial or total removal of the labia minora

III. Excision of part or all of the external genitalia and stitching/narrowing of the vaginal opening (infibulations)

IV. Practices including piercing, pricking and incising of the clitoris and/or labia, cauterization by burning of the clitoris and surrounding vaginal orifice or cutting of the vagina to cause bleeding or for the purposes of tightening or narrowing it.

The end result of FGM is an irreversible damage with scarification and losses of elasticity of these tissues. FGM is commonly practiced in Benshangule, Somali and Afar region; but some regions like Amhara, Southern nation, Gambela and Tigray do not practice FGM. FGM is one of the many harmful traditional practices widely occurring in the country according to the 2000. Demographic and Health Survey. [The prevalence of the practice is 80%].The survey indicated that there is wide spread supporting for the practice; with 60% of the women in the survey supporting the continuation of practice. Though reasons given for practice differ among ethnic groups, the main reasons are almost always tied to the marriage ability of young women. Those surveyed in 2000, DHS presented reason reasons such as tradition, religious requirement to protect virginity, to be accepted as a bride or to get husband, to decrease high sexual drive of women, to be admitted in to women hood and others. But none of the reasons named given either individually or together sufficient explanation for the fact that the practice of FGM continue to exist.

3. Rational for the study

Throughout history, culture and tradition haves been invoked to justify abhorrent and inhuman practices. Tradition covers the most enduring enemies of a woman‘s dignity and security and FGM is one of the harmful traditional practices that are widely practiced in different countries. The FGM operation which is painful by itself has immediate and long-term consequences on the health and psychology of women and children. The question we have to ask ourselves is why is FGM persistently practiced? Tradition is the cover for most of the justifications endorsing the practice of FGM. Traditions cover all norms of our life and are not static and adapt to changes as the result of interaction with external influence.

4 .Objective of the study

4.1 General Objectives

The overall objective of this study is to assess the change post low enactment in knowledge, attitude and practices (KAP) of the community towards FGM in the study area.

4.2 Specific Objectives

1. To assess the current knowledge, attitudes and practices of community regarding Female genital Mutilation
2. To identify the community awareness of female genital mutilation effects
3. To assess current of community awareness and the practice of FGM in the context of human rights of women and girls as well as child protection.
4. To assess FGM Complications involved after undergoing the practice.
5. The influence of culture on the continuation of practice -: this includes religious reviews, religious sects and what they think of practice and what they have done to stop it.
6. To assess the role of Government and non-government bodies towards minimizing female genital mutilation

5. Significance of the study

This research work will have the following significances.

1. The research paper will show the degree of the problem and community attitude toward FGM in the region identify the previously made attempts to address the problem by community, government and different organizations.

2. The research paper can be used as source of information and reference by those who are interested to develop their knowledge, attitude and practices on female genital mutilation.

A The problems associated with female genital mutilation

B The attitude of society regarding female genital mutilation

C Factors influencing society attitudes

6 .Scope of the study

The research will be conducted on KAP of community towards female genital mutilation in afar regional state, in Zone 3 and zone 1. From Zone 3 we have select Amibara woreda and from Zone 1 we have select Chifra woreda and from each woreda we will select two kebeles to sample from. From this sampling population in Afar region 384 samples of respondents will be selected to assess the KAP towards female genital mutilation from community. We decision selected woredas by using simple random sampling method and 384 of sample people from total population 1500000 calculate by 95% [confidence interval, 5% sample error and 50% expected probability of variable interest (proportion)].

7. Methods

7.1 Research approach

The researcher will use two approaches. Qualitative approach for the purpose of discovering meanings and patterns and a quantitative approach and the burden disease and magnitude of the FGM in Afar region

7.2 Study design

A cross-sectional design will be employed; the researcher will employee .a structured survey for the quantitative section and in depth interviews for qualitative aspects of the study.

7.3 Sampling design

The researcher will be employ probability simple random sampling design to select the respondents. This design is selected because of the following reasons. Each number of populations that has an equal chance of being included in the sample and it involves the selection of a sample from population based on chance.

7.4 Data collection technique

To collect the necessary data questionnaires with (closed ended) questions will be used for structured interviews.

3. Questionnaires: closed ended questionnaires will be administered to 384 will be select respondents of 192 women and 192 men from community and for women respondents will be interviewed by females and men respondents will be interviewed by males.
4. Interviewers will be provided training for one day about the over all of data collection techniques and FGM research objectives and the training provided by researchers.

7.5 Data analysis

Data will be analyzed both quantitatively and qualitatively. Qualitatively by using grounded theory technique. Whereas quantitatively data will be analyzed by using EpiInfo to look at statistical significant and to display the data using tables, graphs and numbers.

8. Expected of outcomes

Knowledge, attitude and practice of how to prevent Female genital mutilation from region and societies

8. Reference

1. Ms .Berhane RAS -work .executives director inter African committee on traditional Female genital mutilation (FGM), traditional practice affecting the health of women and children Addis Abeba, Ethiopia, 21 May 2009.

2. Karhu Rose Kerubo Female genital mutilation effects on women and young girls, thesis autumn ,diaconia ,university of applied sciences, diak south, Jarvenpaa unit, degree program social services ,bachelor of social services (us) 2010.

3. (RN,RM , F pcert, national child trust antenatal teachers) Nurse practitioners specializing in sexual health in primary care ,sexual health on call(SHOC) FGM, a hand book of professionals, edited by malamarijaria.

4. Nursing student's scientific methods III, bachelors thesis course 17, 15hp, spring semester in KAP to words, in FGM in Ghana 2011.

5) UNFPA and UNICEF joint evaluation program on FGM /Cutting (FGM/C) accelerating change. May 2012.

6. FMOH, USAID, UNICEF, CDC, EPHI, UKAID, UNFPA Ethiopian demographic and health survey .2011.

9 .Budget breakdown for FGM research participants

No	participants	Number of person	Number of days	Total Perdiem
1	Investigator and assist investigator	2	15x400	12000
2	Data collectors	16	10x400	64000
3	Woreda health office	2	3x400	2400
4	Women affairs	2	3x400	2400
5	Religious leader	1	3x400	1200
6	Kebele chair man	1	3x400	1200
7	Community facilitator	2	3x400	2400
8	Subtotal			**85600**
9	Contingency			**8500**
10	Total			**94100**

10. Cost break down for stationary and rental car

NO	item	quantity	Unit price	Cost in birr
1	**stationery**			
2	**paper**	2 desta paper	150	300
3	**pen**	20 pieces	3	60
4	**pencil**	20 pieces	1	20
5	**notebook**	20 pieces	15	300
6	**Other materials**			
7	**CD**	3 pieces	20	60
8	Photocopy questionnaires	**1000**	1.50	1500
	Rental car	**1**	1500 x15	22500
	Bag	20	200	4000
	Subtotal			**28740**
	Contingency			**2800**
	Total			**31540**

- **Summary of budget breakdown**

  1. For total Perdiem 94100

  2. for stationary and rental car 31540

  3. Total 125640

11 .Time schedule breakdown

Activities	December	March	March	April
Proposal development	7-16/2014			
Data collection		01/03/2014-18 /03/2014		
Data processing and analysis			24/03/2014-31/03/2014	
Interpretation and report writing				01/04/2014-15/04/2014

-Annex

I. Back ground information of FGM questioners

1. Sex----------.

2. Age----------.

3. Level of education----------.

4 .Address_____

5. What is your religion----------?

6. Marital status

A. single B. Married C. Widowed D. Divorced

7. Occupation

A. Student B. Daily labor C. Merchant D. Office work E. Unemployed F. Other specify ----------
----------.

II. knowledge section questioners of FGM True or False

1. There are laws against Female Genital Circumcision in Afar region

2. Uncircumcised women get more infections

3. Female Genital Circumcision can cause infertility

4. There are different types of Female Genital circumcision

5. Female Genital Circumcision is legal in Afar region

6. Female Genital Circumcision can cause severe bleeding

7. Circumcised women are more likely to suffer from urinary incontinence

8. Female Genital Circumcision is not dangerous

9. Being circumcised makes no difference during childbirth

10. Female Genital Circumcision can give lethal complications

11. If the clitoris is not removed the baby will die during delivery

12. Circumcised women are less likely to catch sexually transmitted infections

13. Infants of uncircumcised mothers are more likely to die than those of circumcised mother

14. Female Genital Circumcision improves fertility

15. All women in Afar are circumcised

16. Female Genital Circumcision can prolong labor during childbirth

III. <u>Attitude questioners of FGM</u>

1. One is not a proper woman until you are circumcised

1. strongly agree 2.agree 3. strongly disagree 4.disagree

2. Female Genital Circumcision should be illegal

1. strongly agree 2.agree 3. strongly disagree 4.disagree

3. An uncircumcised woman is happier

1. strongly agree 2.agree 3. strongly disagree 4.disagree

4. It is not right to circumcise young children

1. strongly agree 2.agree 3. strongly disagree 4.disagree

5. Female Genital Circumcision should be voluntary

1. strongly agree 2.agree 3. strongly disagree 4.disagree

6. If the clitoris is not removed, a woman cannot please a man

1. strongly agree 2.agree 3. strongly disagree 4.disagree

7. Female Genital Circumcision is unnecessary

1. strongly agree 2.agree 3. strongly disagree 4.disagree

8. Each family should decide if they want to circumcise or not

1. strongly agree 2.agree 3. strongly disagree 4.disagree

9. It is in the woman's best interest to be circumcised

1. strongly agree 2.agree 3. strongly disagree 4.disagree

10. No woman should be circumcised

1. strongly agree 2.agree 3. strongly disagree 4.disagree

11. People who circumcise their children should be prosecuted

1. strongly agree 2.agree 3. strongly disagree 4.disagree

12. A circumcised woman is no longer a whole woman

1. strongly agree 2.agree 3. strongly disagree 4.disagree

13. Without circumcision a woman is unable to fulfill her intended role in marriage

1. strongly agree 2.agree 3. strongly disagree 4.disagree

14. It is important to talk about Female Genital Circumcision

1. strongly agree 2.agree 3. strongly disagree 4.disagree

15. I respect uncircumcised and circumcised women equally

1. strongly agree 2.agree 3. strongly disagree 4.disagree

16. Many people talk about Female Genital Circumcision

1. strongly agree 2.agree 3. strongly disagree 4.disagre

17. Men only like circumcised women

1. strongly agree 2.agree 3. strongly disagree 4.disagree

18. I respect the people that perform the circumcisions on women

1. strongly agree 2.agree 3. strongly disagree 4.disagree

19. Female Genital Circumcision is important

1. strongly agree 2.agree 3. strongly disagree 4.disagree

20 .FGM increase chance of marriage

1. strongly agree 2.agree 3. strongly disagree 4.disagree

21. FGM suppress high sexual desire

1. strongly agree 2.agree 3. strongly disagree 4.disagree

22. FGM preserve virginity

1. strongly agree 2.agree 3. strongly disagree 4.disagree

23. FGM is traditional custom

1. strongly agree 2.agree 3. strongly disagree 4.disagree

24. FGM is religious requirement

1. strongly agree 2.agree 3. strongly disagree 4.disagree

25 .Do you think that your attitude regarding FGM is currently, change?

A. Yes B. No

your answer for question number 25is yes, what is the factor for your attitude change?

A)Continuous training and education regard FGM.

B) Elaboration from religious leader in your area.

C) Strong legal enforcement in your area.

D) Continuous complaining through mass media.

F) Other please specify ----------.

27. What could be effective mechanism to change people‘s attitude regarding FGM?

1)Educating community, about the risk and consequence.

2)Involving religious and other influential person in educating the public.

3) Strong legal enforcement.

4) High participation of women and health professional.

5) Other please specify ----------.

Question related to impact

28. As result of FGM what types of problems are mostly occurred in your area?

1.Immediate problem

2.Excessive bleeding.

3.Severe pain.

4 .Shock.

5.Blood infection.

6 .Other please specify ----------.

29. Long term problem :

1.Divorce as a result of incompetence.

2.Difficulty in passing urine and menstruation.

3.Exposure to HIV and STD.

4.Problem during delivery.

5.Painful sexual intercourse.

6.Other please specify ----------.

10 .Questionnaires for Case- control study on Outbreaks of Measles in Tigray Region

Case status= Case_____ Control_____

Name_____ Date of Data collection_____

Region_____ Zone_____ Woreda_____ Kebele_____ Got___
Respondent Status = Case_____Mother_____Father_____Other_____
Longitude: _____ Latitude:_____

I. Socio-demographic Characteristics

S.No	Question	Alternatives	Category
1.1	Sex	1.Male 2.Female	B
1.2	Age	Years____ Month_____	B
1.3	Occupation	1. Farmer 2. House wife 3.Student 4.Unemployed 5. Daily laborer 6.Merchant 7. Goverment 8. Others(specify)	B
1.4	Educational level	1.Illitrate 2.Read & write 3. Elementary 4.Secondary 5. college and above	B
1.5	Marital status	1.single 2.Maried 3.Diverced 4.Widowed 5. Under age of 18	B
1.6	Is there any sick person with rash,Fever,running nose or conjunctivitis	1. Yes 2.No	B
1.7	If Yes , number of sick person	_____	B
1.8	Were the case/ control Sick for Other disease 1 week back this disease	1. yes 2.No	B

II .Clinical history of the disease

2.1	What was the symptoms	1.Fever 2.Rash 3.cough 4.Coryza(runny nose) 5.Conjunctivities(Red eyes 6.Diarrhea 7.Pneumonia 8.Blurning of vision 9.Ear discharge 10.vomiting 11. croup	**C**
2.2	Date of onset of fever	_____/____/_____	**C**
2.3	Date of onset of rash	_____/____/_____	**C**

2.4	Date seen at health facility	_____/____/_____	**C**
2.5	Did you/he/she take treatment	1. Yes 2. No	**C**
2.6	If Yes, treatment taken	1.ORS 2.Antibiotics 3.Vitamin A 4.TTC ointment 5. Anti pyretic 6. supplementary food	**C**
2.7	Did you /he/she recovered after treatment	1.cured 2.partially improved 3. Deteriorated 4. Death	**C**

III. Risk factor

3.1	Did You ever vaccinated for measles?	1.Yes 2.No 3.Unknown 4. Not applicable	**B**
3.2	If yes last vaccination date	1._____/_____/___ by card 2._____/_____/____ by history	**B**
3.3	Number of vaccine doses received	1.One dose 2. Two dose 3. Three and above	**B**
3.4	Did you ever have measles infection?	1. Yes 2. No 3. Unknown	**B**
3.5	Did you have any travel history 7-8 days to areas with active measles cases before onset of symptoms	1.yes 2.No If yes where	**C**
3.6	Did you have any contact with confirmed or suspected cases of measles	1.yes 2.No	B
3.7	If yes in Qe.3.6 ,How	1. living together 2.Sleeping together 3.Playing together 4. admitted with suspected measles cases	B

3.7	Do you have any travel history four days before and after rash onset?	1. Yes 2. No 3. If yes, where_____	C
3.8	Do you have any contact history with someone else four days before and after rash	1.Yes 2.No If yes, when?	C
3.9	If yes for Qe.3.8 with whom	1. school friends 2.Neighbours 3. Market 4.other specify	C
3.10	Do you know modes of transmission for measles?	1.Yes 2.No	B
3.11	Nutritional status(MUAC)	_____cm	B
3.12	How many people sleeping together?	_____	B
3.13	Where do you go first if you get ill for measles?	1. health facility 2. Traditional Healer 3. Holy water 4. Stayed at home 5. other specify	B
3.14	If answer for Q 3.13 other than health facility, why?		B
3.15	How do you think people get measles?	1. contact with sick person 2. Wrath of God 3. Curse of other people 4. Other specify	B
3.16	Do you know measles is vaccine preventable?	1.yes 2.No 3. Do not known	B
3.17	Who do you think that can be affected by measles?	1.Children of aged less than 5 years 2. Children of aged less than 18 years 3.Women of any age 4. Any age group	B

		5. other_____	
3.17	How do you think measles can be cured?	1. Using modern medicine 2.Using traditional medicine 3. Holy water 4.By feeding nutritious food 5. Keeping the sick person indoor 6. other_____	B
3.18	When do you go to health facility if get ill for measles	1. Immediately 2. After a week	B

Annex 1 data collection tools

REGIONAL /ZONAL LEVEL QUESTIONNAIRE

Identifiers:

Interviewer Respondent

Date Surveillance System

Interviewer name Name of health facility

General

I. Availability of a National Surveillance Manual

1. Is there a national manual for surveillance?

   Yes / No / Not applicable / Unknown

2. ***If yes***, describe (last update, diseases included, case definitions, surveillance and control, integrated or different for each disease):

____2013_____

_____

_____

II. Case Detection and Registration

3. Do you have standard case definitions for the Country‘s priority diseases like malaria ?

   Yes / No / Unknown / Not applicable

4. **Obs [1 to n priority diseases] Observed** the standard case definition for (each priority disease)

   Yes No Unknown Not applicable

III. *Data reporting.*

Presence of recommended reporting forms in the country at all times over the past 6 months

5. Is the central level responsible for providing surveillance forms to the health facilities? Yes No Unknown Not applicable
6. ***If yes***, have you lacked appropriate surveillance forms at any time during the last 6 months?

   Yes / No Unknown Not applicable

7. What are the reporting entities for the surveillance system?

a. Public health facilities
b. NGO health facilities
c. Military health facilities
d. Private health facilities
e. Others_____

8. **Percent of district reports(either directly or through an intermediate level) received each reporting period at the central level during the past 3 months:**

   Number of reports in the last 3 months compared to expected number

   Weekly: /12 times the number of districts

   Immediately: /------ times the number of districts

9. **On time (use national deadlines)**

   Number of weekly reports received on time: /12 times the number of districts

10. Was there any report of the immediately reportable diseases in the past 1 month? Yes/ No
11. If yes, with in what time is the report received after detection of the case/ diseases?

a. Less than 1 hour
b. 2-24 hour
d. 3- 7 days
e. After 1 week

c. 1- 2 days

12. **Percent of districts that have means for reporting to next level by e-mail, telephone, fax or radio**

_____100%_____

13. **Capacity to report to next level by e-mail, telephone, fax or radio:**

How do you report?

a. Mail
b. Fax
c. Telephone
d. Radio
e. Electronic/mail
f. Others

IV. Data analysis

Does the regional level:

14. **Describe data by person** (case based, outbreaks, and sentinel)?

(Obs) Observed description of data by age and sex:

Yes No Unknown Not applicable

15. **Describe data by place?**

(Obs) Observed description of data by district (tables, maps)

Yes No Unknown Not applicable

16. **Describe data by time?**

(Obs) Observed description of data by time:

Yes No Unknown Not applicable

17. **Perform trend analysis?**

Obs Observed line graph of cases by time

Yes No Unknown Not applicable

18. List disease(s) for which line graph is observed

_____Malaria_____

_____

19. **Have an action threshold defined for each priority disease?**

Do you have an action threshold defined for malaria, Measles, and typhoid fever?

Yes No Unknown Not applicable

20. Who is responsible for the analysis of the collected data? ___Monthly

_____

21. How often do you analyze the collected data?

a. Daily
b. Weekly
c. Every 2 weeks
d. Monthly
e. Quarterly
f. As needed

22. **Have appropriate denominators?**

Obs Observed presence of demographic data (E.g. population by district and hard to reach groups)

Yes No Unknown Not Applicable

V. Outbreak Investigation

Percent of suspected outbreaks that were investigated in the past 6 months

23. Number of outbreaks suspected in the past year:__01_____
24. List the diseases: ___measls_____
25. Of those, number investigated: measls investigated_____

(Observe reports and take copies if possible)

Of the investigated outbreaks in the past 1 year, percent in which risk factors were looked for:

26. Number of outbreaks in which risk factors were looked for:_____

Of the investigated outbreaks in the past 1 year, percent in which findings were used for action

27. Number of outbreaks in which findings were used for action:____0%_____

[Observe report]

28. **Of districts that investigated an outbreak, percent that looked for risk factors**

Number of districts that looked for risk factors [observe in reports] ____0)%_____

29. **Of districts that investigated an outbreak, percent that used the data for action (action include containing outbreak, improving surveillance, community actions)**

Number of districts that used the data for action [observe in final report] _____0%_____

VI. Epidemic preparedness(relevant for epidemic prone diseases)

30. **Existence of a Regional/Zonal plan for epidemic preparedness and response**

    Obs Observed a written plan of epidemic preparedness and response Yes No Unknown Not applicable

31. **Existence of emergency stocks of drugs, vaccines, and supplies at all times in past 1 year:**

    Has the region had emergency stocks of drugs, vaccines, and supplies at all times in past 1 year?

    Yes No Unknown Not applicable

32. **Experience of a shortage of drugs, vaccines or supplies during the most recent epidemic (or outbreak)**

    Has the country experienced shortage of drugs, vaccines or supplies during the most recent epidemic (or outbreak)?

    Yes No Unknown Not applicable

33. **Existence of a standard case management protocol for AWD, Malaria, AFP (polio), measles**

    Obs Observed the existence of a written case management protocol for at least 1 priority disease

34. ***If yes***, list:_____

35. **Presence of a budget line for epidemic response**

    Is there a budget line for epidemic response?

    Yes No Unknown Not applicable

36. **I. Existence of a regional epidemic management committee**

    Observed minutes (or report) of meetings of epidemic management committee

    Yes No Unknown Not applicable

37. **Existence of a regional rapid response team for epidemics**

    Does the country have a rapid response team for epidemic?

    Yes No Unknown Not applicable

VII. Response to epidemics

38. **Ability of the regional level to respond within 48 hours of notification of most recently reported outbreak:**

Obs Observed that the central level responded within 48 hours of notification of most recently reported outbreak (from written reports with trend and intervention)

Yes No Unknown Not applicable

39. **Ability of the regional epidemic management committee to evaluate its preparedness and response activities:**

    (Obs) Has epidemic management committee evaluated its preparedness and response activities during the past year (Observe written report to confirm)?

    Yes No Unknown Not applicable

VIII. Feedback

Existence of a report or bulletin that is regularly produced to disseminate surveillance data:

40. How many feedback bulletin or reports has the regional level produced in the last year?

    ____no_____

41. **Obs:** Observed the presence of a report or bulletin that is regularly produced to disseminate surveillance data

    Yes No Unknown Not applicable

IX. Supervision

Percent of supervisors that made the required number of supervisory visits in the past 6 months

42. How many supervisory visits have you made in the last 6 months? ___1_____

    Obtained required number of visits from regional level ___centeral _____

43. The most usual reasons for not making all required supervisory visits. (Text) ___human resorce low and logistic vichle

X. Training

Percent of health personnel trained in disease surveillance

44. What percent of your subordinate personnel have been trained in surveillance? 0 Have you been trained in disease surveillance?

    Yes No Unknown Not applicable

45. ***If yes,*** specify when, where, how long, by whom? yes

Percent of health personnel that have received post-basic training in epidemic management

46. Have you received any post-basic training in epidemic management?

Yes the last 5 monthes

47. ***If yes,*** specify when, where, how long, by whom? unknown

48. **Obtain and analyze the content of the surveillance and epidemic management training**

Strengths_____

Weaknesses _____

Opportunities _____

Threats _____

XI. Resources

Percent of sites that have:

49. **Data management**

a. Computer
b. Printer
c. Photocopier
e. Statistical package
f. Data manager

50. **Communications**

a. Telephone service
b. Fax
c. Radio call
d. Satellite phone
e. Computers that have modems

51. **Budget line NO**

52. **Logistics no**

XII. Surveillance

Have a functional computerized surveillance network

53. Do you have a computerized surveillance network at this level?

Yes No Unknown Not applicable

Budget for surveillance

54. Is there a budget line for surveillance in the Regional Health Bureau budget?

Yes No Unknown Not applicable

55. ***If yes***, what is the proportion: %

Opportunities for strengthening surveillance

56. How could surveillance be

_____

_____

XIII. Surveillance Co-ordination

Existence of focal unit for surveillance at RHB level

57. **Obs** Is there a focal unit for surveillance at the MOH central level? [Observe organogramme of MoH to confirm]

Yes No Unknown Not applicable

Opportunities for integration

58. What opportunities are there for integration of surveillance activities and functions (core activities, training, supervision, guidelines, resources etc.)?

_____

_____

_____

Questionnaire for Attributes and level of Usefulness:

1. Total population under surveillance_____
2. What is the incidence / Prevalence of -------in your area/region in 2003EFY

- Measles _____ cases _____Deaths
- Malaria _____ cases _____Deaths
- Typhoid fever _____ cases _____Deaths

I. Level of Usefulness of the Surveillance System for these selected priority diseases

Does the surveillance system help?

2. To detect outbreaks of these selected priority diseases early? Yes/ No
3. To estimate the magnitude of morbidity and mortality related to this disease, including identification of factors associated with these diseases? Yes/ No
4. Permit assessment of the effect of prevention and control programs? Yes/ No

Observe (confirmation):

- interventions and diseases trends analyzed ---Available //Not available

II. Describe Each System Attributes:

i. Simplicity:

1. Is the case definition of AWD, malaria, AFP (polio), and measles easy for case detection by all level health professionals? Yes/ No
2. What are the organizations which need to receive reports of the surveillance data
3. Do you feel that additional data collected on a case are time consuming? Yes/No
4. How long it takes to fill the format? a, <5 minute b-10-15minuts c- >15 minutes
5. How long does it take to have laboratory confirmation of

A. Measles month
B. Malaria 30 minte
C. Typhoid fever 30 minte

ii. Flexibility:

1. Can the current reporting formats be used for other newly occurring health event (disease) without much difficulty? Yes/ No
2. Do you think that any change in the existing procedure of case detection, reporting, and formats will be difficult to implement? Yes /No

Comment:_____

_____

_____

iii. Data Quality: (Completeness of the reporting forms/and validity of the recorded data)

1. Are the data collection formats for these priority diseases clear and easy to fill for all the data collectors/ reporting sites? Yes/ No
2. Are the reporting site / data collectors trained/ supervised regularly? Yes/No
3. **Observe:** Review the last months report of these diseases

A. Average number of ***unknown or blank responses*** to variables in each of the reported forms

_____no_____

_____

B. Percent of reports which are complete(that is with no blank or unknown responses) from the total reports

_____no_____

_____

iv. Acceptability:

1. Do you think all the reporting agents accept and well engaged to the surveillance activities? Yes/No
2. If yes, how many are active participants (of the expected to)? _____
3. If No, what is the reason for their poor participation in the surveillance activity?

A. Lack of understanding of the relevance of the data to be collected

B. No feedback / or recognition given by the higher bodies for their contribution; i.e. no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Report formats are time consuming

E. Other:

_____

_____

v. Representativeness:

1. What is the health service coverage of the district/ zone/ region? ____87_____%
2. Do you think, the populations under surveillance have good health seeking behavior for these diseases? Yes / No
3. Who do you think is well represented by the surveillance data? the urban/ the rural

vi. Timeliness:

1. ----------
2. ----------

vii. Stability:

1. Was the new BPR restructuring affect the procedures and activities of the surveillance of these diseases? Yes/ No
2. Was there lack of resources that interrupt the surveillance system? Yes/No

DISTRICT (INTERMEDIATE LEVEL) QUESTIONNAIRE/woreda and Regional lab)

Identifiers

Assessment team_____ District name _____

Date _____ region/province _____

Interviewer_____ country _____

Respondent _____ surveillance system _____

Percent of districts with available national surveillance manual

1. Is there a national manual for surveillance at this site?

   Obs Observe national surveillance manual:

   yes

I. Case confirmation

Percent of districts that have the capacity to transport specimens to a higher level lab

2. Does the district have the capacity to transport specimens to a higher level lab?

   Yes

Percent of districts with guideline for specimen collection, handling and transportation to next level

3. Does the district have guidelines for specimen collection, handling and transportation to the next level?

   Yes

I. Data reporting

Percent of sites that have forms recommended for the country for that site at all times over the past 6 months

4. Have you lacked forms recommended for the country at any time during the last 6 months?

   Yes

Percent of health facilities that reported each reporting period to the district level during the past 3 months:

5. Number of reports received in the last 3 months compared to expected number

   Weekly: _____ /12 times the number of health facilities

   Immediately: _____/----- times the number of health facilities

On time (use national deadlines)

6. Number of weekly reports submitted on time: ____/12 times the number of health facilities
7. Number of immediately reports submitted on time: _____/3 times the number of health facilities
8. **Percent of districts that have means for reporting to next level by e-mail, Telephone, fax or radio**

   How do you report?

a. Mail

Strengthening reporting

9. How can reporting be improved?

_____

_____

II. Data analysis

10. I. Percent of sites that:

Describe data by person (case based, outbreaks, and sentinel)

Obs Observed description of data by age and sex

no

11. Describe data by place

Obs Observed description of data by place (locality, village, work site etc)

No

12. Describe data by time

Obs Observed description of data by time

No

13. Perform trend analysis

Obs Observed line graph of cases by time

No

14. List_____

_____

15. Have an action threshold for each priority disease

Do you have an action threshold for any of the country priority diseases?

No

16. ***If yes,*** what is it? _____cases _____% increase _____rate (Ask for 2 priority diseases)_

_____

_____

17. Have appropriate denominators

Obs Observed presence of demographic data at site (E.g. population <5 yr, population by village, total population)

No

18. Who is responsible for data analysis? NO anybody responsible for data analysis
19. How often do you analyze the collected data?

a. Daily no
b. Weekly no
c. Every 2 weeks no
d. Monthly no
e. Quarterly no
f. As needed no

III. Outbreak investigation

20. Percent of suspected outbreaks that were investigated in the past 6moths:

Number of outbreaks suspected in the past year6 months: no

List the diseases no

Obs Of those, number investigated (Observe reports and take copies if possible): no

21. Percent of districts that have ever conducted an outbreak investigation

[Number of districts assessed that have ever conducted an outbreak investigation, Number of districts assessed to obtain indicator] no

22. Has your district ever investigated an outbreak?

No

IV. Epidemic preparedness

23. Percent of districts that have a plan for epidemic preparedness and response

(Obs) Observed a written plan of epidemic preparedness and response

Yes

24. Percent of districts that have emergency stocks of drugs and supplies at all times in past 1 year

Has the district had emergency stocks of drugs and supplies at all times in past 1 year?

Obs Observed the stocks of drugs and supplies at time of assessment

Yes

25. Percent of districts that experienced a shortage of drugs, vaccines or supplies during the most recent epidemic (or outbreak)

Has the district experienced shortage of drugs, vaccines or supplies during the most recent epidemic (or outbreak)?

No

26. Presence of a budget line for epidemic response or access to funds for epidemic response

Is there a budget line or access to funds for epidemic response?

Yes

27. **Percent of districts that have an epidemic management committee**

Obs Observed minutes (or report) of meetings of epidemic management committee

Yes

28. Percent of districts that have rapid response team for epidemics

Does the district have a rapid response team for epidemics?

Yes

V. Response

29. Percent of sites that implemented prevention and control measures based on local data for at least one reportable disease or syndrome

Has the district implemented prevention and control measures based on local data for at least one reportable disease or syndrome?

Yes

30. Percent of districts that responded within 48 hours of notification of most recently reported outbreak

Obs Observed that the district responded within 48 hours of notification of most recently reported outbreak (from written reports)

Yes

31. Percent of districts that achieved acceptable case fatality rates (e.g. 10% for Meningococcal CSM 1% for Cholera) during the most recent outbreak

Obs Observed that the district achieved an acceptable case fatality rate for most recent outbreak (Observe from outbreak report)

Yes

32. Percent of epidemic management committees that have evaluated their preparedness and response activities during the past year

Obs Has epidemic management committee evaluated their preparedness and response activities during the past year? (Observe written report to confirm)

Yes

VI. Feedback

33. Percent of sites that have written report that is regularly produced to disseminate surveillance data

How much feedback written reports has the district produced in the last year?

Obs Observed the presence of a written report that is regularly produced to disseminate surveillance data (district and higher)

No

34. Percent of sites that have received a report or bulletin from a higher level during the past year on the data they have provided

How many feedback bulletin or reports has the district received in the last year?

Obs Observed at least 1 report or bulletin at district from a higher level during the past year on the data they have provided

No

VII. Supervision

35. Percent of individuals supervised in the past 6 months

How many times have you been supervised in the last 6 months? 2 times

Obs Observed supervision report or any evidence of supervision in last 6 months

Yes

36. Of those supervised in the previous 6 months, percent of individuals for which the supervisor from the next higher level reviewed surveillance practices appropriate to their level

Obs Observed supervision report or any evidence for appropriate review of surveillance practices

Yes

37. Percent of supervisors that made the required number of supervisory visits in the past 6 months

How many supervisory visits have you made in the last 6 months? 2 times

(Obtain required number of visits from central level)

38. The most usual reasons for not making all required supervisory visits. (Text)

Reason 1_____

Reason 2_____

Reason 3_____

VIII. Training

39. Percent of health personnel (in position of responsibility) trained in disease surveillance

Have you been trained in disease surveillance?

Yes

40. ***If yes,*** specify when, where, how long, by whom ? 2004, kombolcha and Awash

41. Proportion of districts with staff trained in surveillance and epidemic management

What percent of your personnel in the district have been trained in surveillance and epidemic management? yes

IX. Resources

42. I. Percent of sites that have:

Logistics

a. Electricity yes

b. Bicycles yes

c. Motor cycles yes

d. Vehicles yes

43. Data management

a. Stationery yes
b. Calculator yes
c. Computer yes
d. printer yes
e. statistical package yes

44. Communication

a. Telephone service yes
b. Fax yes
c. radio
d. Computers that have modems yes

45. Information education and communication materials yes

a. Posters
b. Megaphone
c. Flipcharts or Image box
d. VCR and TV set
e. generator
f. screen
g. projector(movie)
h. others specify

46. Hygiene and sanitation materials

a. Spray pump yes
b. Disinfectant yes

X. Surveillance co-ordination:

47. **Existence of a surveillance co-ordination focal unit or person at district level**

Is there a surveillance co-ordination focal point within the district epidemic management committee?

XI. Satisfaction with surveillance system

Satisfaction with the surveillance system

Are you satisfied with the surveillance system?

Yes

48. ***If no***, how can the surveillance system be improved?

_____

_____

---

49. Opportunities for integration

What opportunities are there for integration of surveillance activities and functions (core activities, training, supervision, guidelines, resources etc?)

_____

_____

_____I_____

_____

HEALTH FACILITY QUESTIONNAIRE

Identifiers

Assessment team _____Type of health facility _____

Date _____District _____

Interviewer _____ Region/province _____

Respondent _____Country _____

Name of health facility _____Surveillance system _____

1. **Percent of health facilities with national surveillance manual**

   Is there a national manual for surveillance at this site?

   Obs Observe national surveillance manual:

   yes

I. Case detection and registration

2. **Percent of health facilities that have a clinical register**

   Obs Observed the existence of a clinical register

   Yes

3. **Percent of health facilities that correctly register cases**

   Obs Observed the correct filling of the clinical register during the previous 30 days

   Yes

4. **Percent of health facilities that have standardized case definitions for the country's priority diseases**

   Do you have a standard case definition for: (each priority disease), malaria, TF, measles,?

   Yes

5. **Obs** Observed the standard case definition for: (each priority disease)

   Yes

6. **Percent of health facilities that use standardized case definitions for the country's priority diseases**

   Obs Observed the respondent correctly diagnosing one of the country's priority diseases using a standard case definition

   Yes

   (Select one of the priority diseases in the facility's clinical register and ask how they diagnosed it — interviewer should have the standard case definition from MOH)

II. Case confirmation

7. **Percent of health facilities that have the capacity to collect specimens (sputum stool, blood/serum and CSF)**

   Are you able to collect sputum Yes

   Stool Yes

   Blood Yes

   CSF at this facility? Yes

8. **Obs** Observed the presence of materials required to collect

   Stool Yes

   blood/serum Yes

   CSF Yes

9. **Percent of health facilities that have the capacity to handle specimens until shipment**

   Do you have the capacity to handle sputum, stool, blood/serum and CSF until shipment at this facility?

   Yes No Unknown Not applicable

10. **Obs** Observed presence of functional cold chain at health facility

    Yes

11. **Percent of health facilities that have the capacity to ship specimens to a higher level lab**

12. **Obs** Observed presence of transport media for stool at health facility

    Yes

13. **Obs** Observed presence of packing materials for shipment of specimens at health facility

    Yes

III. Data reporting

14. Percent of sites that have appropriate surveillance forms for that site at all times over the past 6 months

Have you lacked appropriate surveillance forms at any time during the last 6 months?

Yes

15. Percent of sites that reported accurately cases from the registry into the summary report to go to higher level

Observed that the last monthly report agreed with the register for 4 diseases (1 for each targeted group [eradication; elimination; epidemic prone; major public health importance])

a. **Obs** Measles Yes

b. **Obs** Malaria Yes

c. Obs Typhoid fever Yes

16. Percent of sites that reported each reporting period to the next higher level during the past 3 months

Number of reports in the last 3 months compared to expected number

Obs Weekly: 12 /12 times the number of sites

Obs immediately: 12 /-- times the number of sites

17. On time (use national deadlines)

Obs Number of weekly reports submitted on time:-12/12 times the number of sites

Obs Number of immediately reports submitted on time: times the number of sites

18. Percent of HF that have means for reporting to next level by e-mail, telephone, fax or radio

How do you report?

a. Mail d. Radio

b. Fax no e. Electronic

c. Telephone f. other specify

19. Strengthening reporting

How can reporting be improved?

_____

_____

_____

IV. Data analysis

20. Percent of site that Describe data by person (outbreaks, sentinel)

Obs Observed description of data by age and sex

Yes No Unknown Not applicable

21. **Describe data by place:**

Obs Observed description of data by place (locality, village, work site etc)

Yes No Unknown Not applicable

22. **Describe data by time**

Obs Observed description of data by time

Yes No Unknown Not applicable

23. Perform trend analysis

Obs Observed line graph of cases by time

Yes No Unknown Not applicable

24. **Have an action threshold for each priority disease**

Do you have an action threshold for any of the Country priority diseases?

Yes No Unknown Not applicable

25. ***If yes,*** what is it (Ask for 2 priority diseases)? _____cases ____ % increase _____rate

26. Who is responsible for data analysis? no doing data analysis

27. How often do you analyze the collected data? no analyze data

a. no Daily
b. no Weekly
c. no Every 2 weeks
d .no monthly
e. no quarterly
f .no as needed

28. Have appropriate denominators

Obs Observed presence of demographic data at site (E.g. population <5 yr., population by village, total population)

Yes No Unknown Not applicable

V. Epidemic preparedness_____

29. Percent of health facilities that have a standard case management protocol forepidemic prone diseases

Obs Observed the existence of a written case management protocol for 1 epidemic prone disease

Yes No Unknown Not applicable

VI. Epidemic response

30. Percent of sites that implemented prevention and control measures based on local data for at least one epidemic prone disease

Has the health facility implemented prevention and control measures based on local data for at least one epidemic prone disease?

Yes No Unknown Not applicable

31. Percent of sites that achieved acceptable case fatality rates (e.g. 10% for Meningococcal CSM 1% for Cholera) during the most recent outbreak

Obs Observed that the health facility achieved an acceptable case fatality rate for most recent outbreak

Yes No Unknown Not applicable

VII. Feedback

32. Percent of sites that have received a report or bulletin from a higher level during the past year on the data they have provided

How many feedback bulletin or reports has the health facility received in the last year? ___

Obs Observed at least 1 report or bulletin at the health facility from a higher level during the past year on the data they have provided

Yes No Unknown Not applicable

33. Percent of health facilities that conducted at least semi-annual meetings with community members to discuss results of surveillance or investigation data

How many meetings has this health facility conducted with the community members in the past six months? _____

Obs Observed the minutes or report of at least 1 meeting between the health facility team and the community members within the six months

Yes No Unknown Not applicable

VIII. Supervision:

34. Percent of individuals supervised in the past 6 months

How many times have you been supervised in the last 6 months? no

Obs Observed supervision report or any evidence of supervision in last 6 months

Yes No Unknown Not applicable

35. Of those supervised in the previous 6 months, percent of individuals for which the supervisor from the next higher level reviewed surveillance practices appropriate to their level

Obs Observed supervision report or any evidence for appropriate review of surveillance practices

Yes No Unknown Not applicable

IX. Training

36. Percent of health personnel trained in disease surveillance and epidemic management

Have you been trained in disease surveillance and epidemic management?

Yes No Unknown Not applicable

37. ***If yes,*** specify when, where, how long, by whom?_____

_____

X. Resources

38. Percent of sites that have Logistics

a. Electricity
b. Bicycles
c. Motor cycles
d. Vehicles

39. Data management

a. Stationery
b. Calculator
c. Computer
d. Software
e. Printer
f. Statistical package

40. Communications

a. Telephone service
b. Fax
c. Radio call
d. Computers that have modems

41. **Information education and communication materials**

a. Posters
b. Megaphone
c. Flipcharts or Image box
d. VCR and TV set
e. Generator
f. Screen
g. Projector (Movie)
h. Others

42. Hygiene and sanitation materials

a. Spray pump
b. Disinfectant

43. Protection materials (list) _____ _____ _____

_____

_____

XI. Satisfaction with surveillance system

44. Satisfaction with the surveillance system

Are you satisfied with the surveillance system?

Yes No Unknown Not applicable

45. *If no*, how can the surveillance system be improved? _____

_____

46. Opportunities for integration

What opportunities are there for integration of surveillance activities and functions (core activities, training, supervision, guidelines, resources etc.)

_____

_____

_____

LABORATORY ASSESSMENT TOOL

General information		
Name of the laboratory		
Address of the laboratory:	Telephone 0336660785 Fax e-mail	
Level of the Laboratory :	Regional	
Affiliation of the Laboratory :	**Public**	
Name of head of Laboratory	**Kefene kelbecha**	
Building Facilities and utility services		
Is the laboratory in a free-standing building or part of larger structure?		
How many rooms with bench space are there in the laboratory Does the Laboratory have the following services available? Electricity/Running water	**11 rooms** **Yes available electricity and running water**	

Is there a back-up power source in case of power failure(e.g. emergency generator)?	Yes	
Refrigerators/freezers	Yes No	
Computers	Yes No	
Other(specify)	Yes NO	
What types of communications systems are available?	**Telephone and email**	
Post	No	
Telephone	Yes	
Fax	No	
E-mail (no. computers)	Yes No	
Laboratory staff		
Medical Laboratory Professionals **Number** MSc, Bsc Dipoma	**- BSC degree 3 professionals** **- Diploma 4 professionals**	
Administrative staffs and Cleaner	**Administrative staffs 4 and cleaner 2 staffs**	
Has training been conducted for the laboratory staff on	**NO has training been conducted**	
AWD		
Malaria	**3 times**	
Other epidemic prone diseases (briefly describe)	**No has training been conducted in other epidemic prone disease**	

If yes when was the last training been conducted for your laboratory staff?	**14/9/2005**	

Reagents

Where you are getting your reagents?	From PFSA (P fund supply agency
Was there shortage of reagents in the last six month which are used for identifying diseases	Yes
If Yes What Are the most important reasons?	Lack of funds Lack of information Un prioritizing others(specify) if not available in PFSA
What type of water is used for preparation of media and reagents?	
Deionized Distilled Distilled Tap water	No Yes No

Tests performed at the laboratory

Disease	**Specimen type**	**Assay Performed**	**Yes**	**No**	**Number/ Month**
Meningitis	CSF	a. Cell count b. Latex agglutination c. Gram stain d. Culture e. Identification tests f. A-M susceptibility		No cell count ,no latex agglutination ,no identification test ,no A-M	

				susceptibility	
Watery diarrhea (cholera)	Stool	Microscopy of wet preparation Culture-TCBS Culture-Alk. Peptone Sero typing		No sero typing ,No culture -Alk	
Malaria	Blood	Thick/Thin film ,RDT	Yes		
Measles	Serum,Throat swab,conjunctivalswab	IgM by, EIAOther serological test,Virus isolation		No Igm by, EIA others serological test ,No virus isolation but on the process to start	
Yellow fever	Blood, postmortem/live	IgM/Virus isolation		NO	
Suspect typhoid or brucellosis	Blood, Serum	Culture Identification tests A-M susceptibility Serological tests(WWF)	Yes widal test		
Hepatitis	Serum	Anti-HAV IgM Anti-HbsAg Anti-HCV IgM	Yes		
VHF	Serum/tissue	IgM/Virus detection		NO	

	specimen				
AFP	Stool	Virus detection		No	

Specimen collection, labeling and handling

Do request forms contain **ALL** of the following patient information: Specimen source, date and time of collection, type of test requested?	Yes
Are specimens that are received labeled with the patient‘s name and unique identifiers?	Yes
Does the laboratory have a logbook/electronic record of all specimens Sent for diagnostic testing?	Yes
Are specimens discarded after testing, or are they stored?	Discarded Stored
Does you laboratory refer bacteriology isolates or serum samples to a reference laboratory?	Yes
If yes, reason for referral (□ □ all)	
Confirmation Identification of unknown organism Test not performed on site	Yes Yes Yes No
Number of sample referred in the last six month?	NO
Types of transport media used (□ □ all that apply)	
Trans-isolate Cary and Blair Viral transport medium	Yes Yes Yes
Other (describe):	

Reporting procedures

Are records kept of the number and type of tests performed and results?	Yes
Does the laboratory have a list of diseases that are supposed to be reported to the Ministry of Health?	Yes

Does the lab staff know what diseases should be reported?	Yes
Does the lab provide regular reports of patients with notifiable diseases to any of the following Ministry of Health offices/institutions?	
District Health Office	Yes
National / MOH level	Yes
If reports are submitted, how frequently?	
Weekly Monthly Quarterly Other	No No Yes No
Quality control procedures and programs	
Does the laboratory use any system for internal quality control?	Yes
Does the laboratory participate in any external quality assurance or proficiency schemes?	Yes
Was there any general laboratory supervision conducted to this laboratory?	Yes
If yes, how often in for the last one year?	one times/two times/ three and more
Does your laboratory have a system for regularly monitoring of quantities of reagents and materials so that there is warning if stocks become low?	Yes

Questionnaire for Attributes and level of Usefulness:(this will do with attributes)

1. Total population under surveillance all population of the region
2. What is the incidence / Prevalence of -------in your area/region in 2003EFY

- Measles _____ cases _____Deaths
- Malaria _____ cases _____Deaths
- Typhoid fever _____ cases _____Deaths