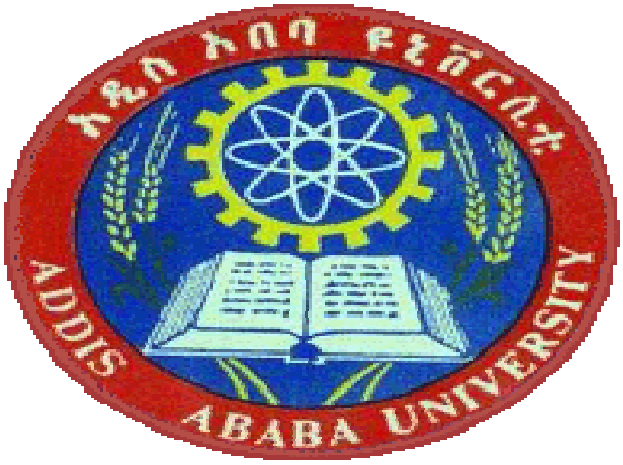
Addis Ababa University, College of Health Sciences,

School of Public Health

Ethiopia Field Epidemiology Training

Program (EFETP)



Compiled Body of Works in Field Epidemiology

By

Ashenafi Argata

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

May- 2013

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Advisors

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Approval by Examining Board

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Chairman, School Graduate Committee

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Advisor

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Examiner

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Examiner

Acknowledgments

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List of Abbreviations

AAU Addis Ababa University

AIDS Acquired immunodeficiency syndrome

ANC Antenatal Care

AR Attack Rate

ART Anti-Retroviral Therapy

AWD Acute Watery Diarrhea

BPR Business Processing and Reengineering

CBN Community Base Nutrition

CFR Case Fatality Rate

CI Confidence Interval

CMAM Community Based management of acute malnutrition

CTC Cholera Treatment Center

DPHP Disease prevention and health promotion

DW Deep well

EC Ethiopian Calendar

EFETP Ethiopia Field Epidemiology and Training Program

EFY Ethiopian Fiscal Year

EHNRI Ethiopian health and nutrition research institute

EPR Emergency Preparedness & Response

EPHA Ethiopian Public health Association

FGAE Family guidance association of Ethiopia

GC	Gregorian calendar
HC	Health Center
HDA	health development army
HDP	health development and planning
HDW	Hand Dug Well
HEW	Health Extension Workers
HH	House Hold
HHQC	Health and health related Quality Control
HIV	Human Immunodeficiency Virus
HO	Health Office
HP	Health Post
HR	Human resource
HW	Health Worker
HWTC	Household Water Treatment Chemical
IDSR	Integrated Disease Surveillance Report
IMR	Infant Mortality Rate
IRS	Indoor Residual Spraying
LBRF	Louse Born Rlapsing Fever
LLINS	Long Lasting Insecticidal impregnated bed nets
MS	Microsoft
NGO	Non Governmental Organization
OPD	Outpatient department

ORS	Oral rehydration salt
OTP	outpatient therapeutic feeding program
P.F	Plasmodium falciparum
PHEMC	Public health emergency management Core process
PHEM	Public Health Emergency Management
P.v	Plasmodium vivax
PUR	Purifier of Water
RF	Relapsing fever
RHB	Regional Health Bureau
RL	Ringer Lactate
RUTF	Redy to use therapeutic Food
SAM	Severe acute malnutrition
SC	stabilizing centre
SNNPR	South Nation and Nationalities Peoples' Region
SW	Shallow well
TFP	Therapeutic feeding program
UNICEF	United Nation Children Fund
VIPL	Ventilated and Improved Pit Latrine
WHO	World Health Organization
WorHO	Woreda Health Offic

Executive Summary

The Ethiopia Field Epidemiology Training Program (EFETP) is a comprehensive two-year competency-based post-graduate training and service program designed to build sustainable public health expertise and capacity. Inaugurated in February 2009, the EFETP has been tailored to the needs and priorities of Ethiopia, and is a partnership between the Federal Ministry of Health, Addis Ababa University School of Public Health, the Ethiopian Public Health Association and the U.S. Centers for Disease Control and Prevention (CDC). The program is modeled after the Epidemic Intelligence Service program (aka the "Disease Detectives") of the U.S. government. Other FETP programs are currently active throughout the world, and these programs work to build local capacity to respond to significant public health challenges.

Field Epidemiology is often referred to as "shoe-leather" epidemiology because the work is done in the field in communities[i]. Residents in the EFETP receive 25% of their training from short modular classroom courses designed to teach principles of epidemiology and public health. The remaining 75% of the training consists of a field residency program, which includes hands-on learning and service. Residents gain competency and experience at field bases within the Federal Ministry of Health and Regional Health Bureaus. The training is closely supervised, is competency-based, and is conducted on the job.

Residents in the EFETP investigate disease outbreaks, develop effective prevention and control measures, and work with disease surveillance systems to establish data-derived information about the health burden of reportable diseases.

Graduates of the program receive a Master of Public Health in Field Epidemiology and are assigned to positions that provide epidemiologic service to the Ministry of Health. An intake of prom

ising residents each year ensures that a steady stream of qualified field epidemiologists graduates and increases the capacity of the public health workforce.

It is the long-term vision of the EFETP to create smaller training modules for other public health field workers. The trainings will include both outbreak investigations and public health surveilla nce techniques, which are designed to increase the competencies of a broader range of public hea lth field workers throughout Ethiopia.

The mission of EFETP is to train a cadre of skilled public health professionals who provide in-se rvice assistance to advance and protect public health and contribute to evidence-based decision making.

During the residency time at SNNPR-Hawassa Field Base I completed my field work including outbreak investigations, analysis surveillance data, surveillance system evalution, description of a health profile report, writing of finalized scientific manuscript for peer review journals, abstract submition /presntation on 7th Global TEPHINET scientific conference, producing of two other abstracts writing protocol/proposal of epidemiologic research project, a summary of disaster situ ation visited/risk assessment, summary report on lab activities conducted,participation on health professional training and terminal evaluation on emergency nutrition project . Inorder to accompl ish all the above outputs of residency and other additional works,different techniques and method s were utilized.

The overall outputs of the two years field residency in the program are presented in a summarize d way as follows: in the outbreak investigations chapter two outbreaks were investigated and doc umented,Relapsing fever outbreak investigation in Yirgalem Town Prison,Sidama zone SNNP R in January 2012, andAWD out break investigation in Sidama zone SNNPR in June 2012. Thi s is followed by one report of surveillance data analyisis and one health profile report of Dale District, in August 2012. Additionally, a surveillance system evaluation of malaria reporting was

also done in Wondo Genet District, Sidama zone, SNNPR, in April2013. Finalized scientific m anuscripts submitted for peer reviwed journals and three abstracts were also prepared and submit ted for scientific conferences of which one was accepted for oral presentatonion in Aman,Jorda n in November 5,2012 at the 7th Global Scientific TEPHINET Conference. A report on health an d nutrition needs assessment (risk assessment) on prioritized ZOnes and Districts of SNNPR sta te and in Sidama ,Segene Area and South Omo Zones of SNNPR also conducted with other tea m members from Early Warning and Food Security Center, WHO, UNCEF and EHNRI.A finaliz ed epidemiologic reaserch project proposal on a title; Factors associated with under vaccination coverage of children less than one year of age in Yirgalem City Administration, Sidama Zone, Et hiopia , was done. Summary assessment report on Regional Lab was produced. Summary repor t on training conducted to health professionals was included. Lastly an emergency nutrition proj ect implemented by Plan International was evaluated with collaboration Bureau of Disaster Risk Management and Food Security.

Chapter I – Outbreak/Epidemic Investigations

1.1 Relapsing Fever Outbreak Investigation in Yirgalem Prison, Sidama Zone, SNNPR,Ethiopia, Feb. 2012

Ashenafi Argata

Abstract

Introduction: Relapsing fever is a recurrent febrile infection caused by various Borrelia spirochetes transmitted either by lice (epidemic louse born relapsing fever LBRF) or by ticks (endemic tick born relapsing fever TBRF). It was once a disease of global epidemic importance. However, largely as a result of the demise of the clothing louse Pediculus humanus, it is now restricted to areas where clothing lice are still common place.

Two species of Borrelia are associated with a relatively high rate of relapsing fever–related fatality include B recurrentis (the cause LBRF and the focus of this study) and B duttoni (the cause of TBRF). The body louse spreads during direct contact with infected people or indirectly when infested clothing is shared. In the 1st half the 20th century there were 50 million affected by RF with case fatality rates of 10% - 40%. Largest epidemics claimed 1 million lives during World wars I and II. Epidemics have been common in overcrowded situations with poor hygiene, children and women are more affected.Relapsing fever was the 7th most common cause of hospital admission and 5th most common cause of death in Ethiopia in 2004. Laboratory confirmed RF cases were identified in prison camps of Bahirdar and Mekele during civil war in Ethiopia in 1991.

Several confirmed cases of RF were identified in Yirgalem town prison in January 2012. The purpose of this investigation was to determine magnitude and etiology of the outbreak, to identify risk factors and risk group and use findings to undertake evidence based interventions.

Methods: Surveillance data of RF from line list and log books were reviewed. Clinical examinat ion of suspect cases was done. Blood samples were taken from suspected cases and laboratory te sted using Gimisa stain. Thick blood film was used. A case control study was conducted on 78

cases and 108 controls. Data were analyzed using Excel, Epi – Info 3.5.1 and ARC GIS was used

to create maps.

Results: From2604 prisoners a total of 831 cases and 1 death registered from January 15 to Feb.

14, 2012 in prison and after two weeks, due to relapse, 24 cases were confirmed and treated.The overall attack rate was 32% and case fatality rate 0.12%. Among cases 100% (831) were males a nd the age range from 15 to 78 years, median age 20, Mode 20 and mean age 22. From total su spected cases 560 (67%) were laboratory tested and 345 (62%) were confirmed cases of relapsin g fever as evidenced by presence of Borrelia recurrentis spps. in the thick blood samples tested. F rom total cases 823(99%), 780 (94%), 771 (93%), 756 (91%) and 20 (2.4%) developed, head ach e, vomiting, fever, Chills and jaundice respectively.

From respondents of the case contol study 29/78(37%) cases and 57/108(53%) took a body bath weekly (OR = 0.52, 95% CI (0.29-0.96) and From total cases 63/ 78 and 101/108 controls were

literate, OR=0.29,95%CI (0.1-0.75),the association was also significant. 37/78 cases and 66/108 controls wash their clothes weekly (OR = 0.57, 95% CI, (0.30-1.02), which

was not significant.

Conclusion & Recommendations: Overcrowding, close contact , water shortage and gap in kee ping personal hygiene in the prison contributed to the outbreak, The outbreak was contained due

to prompt intervention measures taken and intervention activities were recommended to prevent t he emergence of future outbreaks of relapsing fever.

Key Words: Crowding, close contact, Borrelia recurrentis, Relapsing fever, Sidama, Ethiopia

Introduction

Relapsing fever is a recurrent febrile infection caused by various Borrelia spirochetes transmitted either by lice (epidemic relapsing fever) or by ticks (endemic relapsing Fever). Relapsing fever was once a disease of global epidemic importance (1).

Two species of Borrelia associated with a relatively high rate of relapsing fever–related fatality include B. recurrent is (causes Louse born relapsing fever found in Africa, South America, Europe, and Asia) and B duttoni (causes Tick born relapsing fever found in East Africa and transmitted by the soft tick Ornithodoros moubata) (1).

The body louse spreads during direct contact with infected people or indirectly when infested clothing is shared. Body lice also spread when they leave a person with a high fever and crawl across a surface to infest a nearby individual. Again, the body louse is capable of rapidly building very high numbers and infesting large numbers of people living in conditions that are associated with overcrowding like disasters such as war, hurricanes, and earthquakes, where humans are crowded together without access to clean clothes, clean bedding, and periodic bathing.(2)

Louse born relapsing fever is endemic in Ethiopia and Sudan, especially during the rainy season. The disease typically occurs in areas of war, famine, mass migrations, or overcrowding. Homeless people in crowded shelters are also at risk of Louse born relapsing fever.(1)

Large outbreaks of louse-borne relapsing fever have occurred throughout the past century.

These outbreaks usually occur following man-made break downs in public health, as typified by the epidemic following World War II that involved about 10 million people, one million people died during these epidemics.(1)

The incidence and prevalence of the disease is very hard to estimate as they often goes unrec gnized or is misdiagnosed in the current era of easily available antibiotics. Endemic relapsin g fever is only encountered in the very southernmost regions of Europe (particularly Mediter ranean Spain and Asia Minor), but has an appreciable presence throughout the rest of thewo rld's continents, with the exception of Australasia. On the whole, endemic relapsing fever is unheard of in Britain and rare throughout Europe, except in travelers returning from areas w here it is encountered. Clusters of cases can occur in groups of returning travelers who camp in rural settings where the disease is endemic. Currently, epidemic relapsing fever is found only in Ethiopia and neighboring countries, although its occurrence among homeless people of industrialized European cities has been suspected but not confirmed.(2)

Tick born relapsing fever is endemic in Canada (southern portion of British Columbia), Mex ico,Central and South America, central Asia, Africa, the Mediterranean region, and Russia.L ouse born relapsing fever is mainly a disease of the developing world. It is currently seen in Ethiopia and Sudan. Famine, war, and the movement and groups of refugees often result in e pidemics of Louse born relapsing fever. (2) Italian workers reported an outbreak of tick born e relapsing fever from Lasta Awraja in Ethiopia, in 1937. However, it was not reported in re cent years.(1)

Ethiopia is main endemic focus of louse borne relapsing fever. It was reported as seven of to p ten leading causes of admission and death among adults in the country, in 2002/03. More t han 9000 cases were reported to the ministry of health in the same year(1). However, lack of diagnostic facilities in rural health set up and incomplete reporting make it difficult to estim ate total number of cases.(1) Several large epidemics were recorded in the country, usually

following war and famine. Localized epidemics continue to occur when circumtances beco me favorable. The latest epidemic occurred in 1991/92, at the end of the civil war in Ethiopi a. It occurred among military recruits returning their residence areas, and later spread to diff erent sections of the community, including schools (8).Among 389 patients from arsi, sout hern Ethiopia, during this epidemic, the case fatality rate was 3.5%. (1) An epidemiological study in Ethiopia showed that up to 60% of the inhabitants were infested with lice. Infestati on was more frequent in the high lands where people bath and wash closing less frequently, and uses more bedding. A more recent study of prevalence of lice infestation among school children showed that 66.8% of the students harbored body lice. The prevalence was signific antly higher in debre berhan, 76.4%, at an altitude of 2850 meters, compared to Gambella, 60.3%, located at an altitude of 485 meters above sea level. In urban areas, the disease occur s mainly among jobless migrants, daily laborers, prisoners and the poor. (1) During summe r 1991 an outbreak of louse-borne relapsing fever occurred simultaneously in two transit ca mps established for prisoners of war being returned from Eritrea at the end of the Ethiopian civil war.

Only antibiotic treatment was given at the Bahr Dar camp where the frequency of cases incr eased for 20 days. Vector control by delousing in addition to antibiotics was given at Mekel e camp where the frequency of cases fell over a similar period. Furthermore, there was a sig nificant correlation between the decreasing proportion of camp inhabitants that had not been deloused at Mekele camp each day and the numbers of patients with fever ($r = 0.89$, $p < 0.0$ 01). Taken together, these results confirm that effective control of an epidemic of louse-born e relapsing fever is dependent on efficient vector control in addition to antibiotic treatment a nd Laboratory training program.(6)

South Nation, Nationality and peoples Region (SNNPR) is Ethiopia's third largest national regional state, sharing national borders with Oromia and Gambella Regions. Based on the 2007 Population and Housing Census projection, in 2012, total population is about 16,738,177 with a 1:1 sex ratio. Age of the population is typical to developing countries, with 48 % under the age of 15 years, 47 % between 5-9 years, and 5 % aged 60 years and above. A large proportion of women (24%) are in the reproductive age (15-49 years) Regarding health infrastructure and delivery, SNNPR has 18 hospitals, 529 health centers, and 3498 health posts. Additionally, 8 hospitals. Thus, SNNPR has total of 26 hospitals, 529 health centers, and 3498 health posts. Potential health service coverage of the region for 2003EFY is estimated to be 90%.

The burden of disease in the region is mainly due to preventable communicable diseases, which are the common causes of morbidity, mortality and disability including persistent Acute Watery Diarrhea (AWD) and measles. SNNP regional state has experienced various health emergencies like drought and flood which have affected the health of the population in 2005/2006. Sidama zone is one of the fifteen administrative zones of SNNP Regional state. Administratively the zone is divided in to 21 districts and 524 rural and 31 urban kebeles having a projected total population of 3,288,080 among whom 18% are under five children and 4% Pregnant women.

The zone capital city is Hawassa which is located 275 kms from Addis Ababa in southern part of the region on the main road to Borena.The zone shares border with Oromia Region in south, North, East and wolayta in west.There are two hospitals,101 health centers and 521 health posts in the zone with potential health service coverage of 82%.Yirgalem is one of the

21 administrative districts of sidama zone, found 45 km south of Zonal city Hawassa south, and 320 km from Addis Ababa, It has 7 urban kebeles and 35,280 populations. From total p opulation male accounts 18,086 (51%) and female accounts 17,194(49%). Yirgalem prison i s one of the 23 prisons in SNNPR State. Prisoners come from 16 woredas. Aleta wondo318 (12%), Aleta Chuko304 (12%), Boricha284 (11%), Shebedino275 (11%) and Dale248 (10 %) woredas where many prisoners sent for different reason.

Ten years ago each room was built to hold 50-60 prisoners, but now a maximum of 186 pris oners reside in one room. Currently there are 2604, males 2565 (98.5%) and females 39 (1.5 %) prisoners. The prison clinic is comprised of 2 nurses and 1 laboratory technician, with lo w diagnostic facilities.

The prison is the site of recurrent malaria and relapsing fever outbreaks for last 3 to 4 years. One hundred eighty five and 304 cases of relapsing fever were reported to zone health dep artment from 21 districts year 2010 and 2011 respectively. From these totally reported cases , 264 cases were reported from yirgalem prison in two years. As of 17th January 2012, the re gion had reported 2 index cases with no death from yirgalem Prison and investigation was c onducted from Jan 18 – Feb 15, 2012.

Objectives

General: - To describe outbreak, identify the etiology and risk factors and recommend contr ol measures.

Specific:-

- To Confirm the etiology and describe the outbreak by person, place and time
- To determine factors contributing to the outbreak

- To make recommendation and communicate the result to the Prison, districts, zone, Region and EFELTP and for further research direction

Methods and Materials

Study area and period

The outbreak investigation was conducted in Yirgalem Town prison Sidama Zone, SNNP R egion. Study was conducted from January 18, 2012 to Feb, 15/ 2012. The affected prison w hich has 2604 prisoners, from these39 were females.

Study design and Sampling

Discussions with Regional, Zonal, and District surveillance officers & prison authorities wer e conducted We reviewed case register log books, line lists and daily reporting formats of m orbidity and mortality data from January 15 to Feb.14, 2012. An unmatched case-control stu dy was conducted from a convenience sample of 78 cases and 108 controls within the 16 pri soners rooms**.** Rooms were selected by using simple random technique.

Data collection

Secondary data: line-lists of relapsing fever cases were collected from prison clinic; we deve loped a structured questionnaire to interview cases and controls. Cases were identified using the WHO case definition and controls were identified among similar rooms of cases who di d not report clinical symptoms consistent with relapsing fever. Patient treatment and water s upply units were visited, square meters of prisoners rooms were measured. One year of relap sing fever data was reviewed from clinic by using the medical register books. Clinical labo ratory testing was done by using Gimisa stain. Official permission was obtained from prison

authorities and each case patient and control subject gave oral consent.Data was analyzed u sing Epi-info 3.5. and Excel.

WHO case definition was used

Suspected: Any person who presented with an abrupt onset of rigors with fever, usually re mittent, with headache, arthralgia and myalgia, dry cough, or epistaxisis.

Confirmed: Asuspected case with demonstration of Borrelia in peripheral thick blood film

Results

From 2604 prisoners a total of 831 cases and 1 death occurred from January 15 to Feb.14, 2012 in prison and after two weeks, due to relapse, 24 cases were confirmed and treated.

The overall attack rate was 32% and case fatality rate 0.12%. Among cases 100% (831) wer e males and the age range from 15 to 78 years, median age 20, Mode 20 and mean age 22.

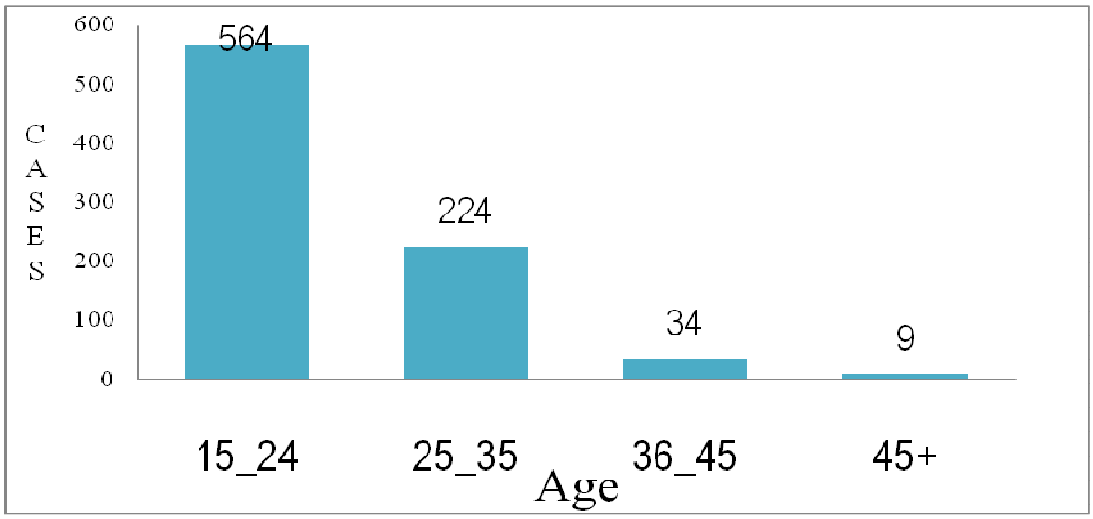

Fig.1.1.1 Relapsing fever cases by age group, Yirgalem Prison, Sidama Zone, SNNPR, Ethiopia

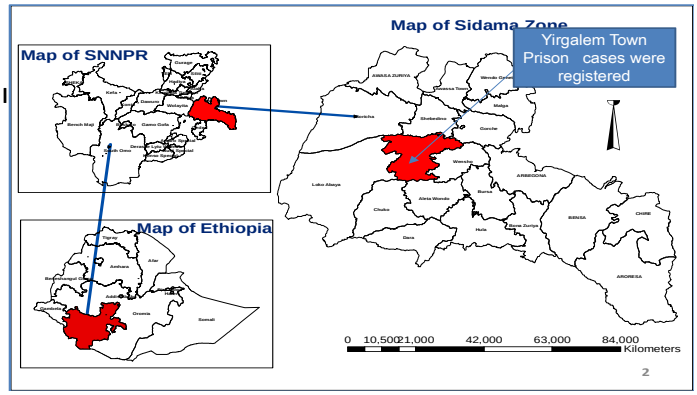

Fig.1.1.2: Relapsing fever cases, Yirgalem Prison, Sidama Zone,SNNPR, Ethiopia

Except for prisoners who live in TB and females room, all live in the rest of 15 rooms were affected by relapsing fever. Highest cases were registered in room two 90, attack rate was (51%), room twelve 71, attack rate was 38% and room one 71 attack rate was 38%. High attack rate was registered in room 15, 2, and 12 respectively.

Room No	Total prisoners	Cases	Attack rate (%)
1	185	71	38
2	176	90	51
3	173	56	32
4	176	51	29
5	172	51	30
6	174	52	30
7	176	50	28
8	186	51	27
9	176	56	32
10	185	58	31

11	188	57	30
12	188	71	38
13	188	51	27
14	184	52	28
15	19	14	74
16	19	0	0
17	20	0	0
18	19	0	0
Total	2604	831	32

Table:1.1.1Room number, prisoners in each room, cases and attack rate, Yirgalem prison, Sidama Zone, SNNPR

The onset date of the first cases was recorded on January 15, 2012. The highest cases were registered on 19/01/2012, 258 (30%) and 21/01/2012 133(16 %). Peak number of patients was noted on 18 January, 2012,that once index cases are identified, the infection spreads ex plosively, and that delousing procedures need to be implemented at the first evidence of an o

utbreak.

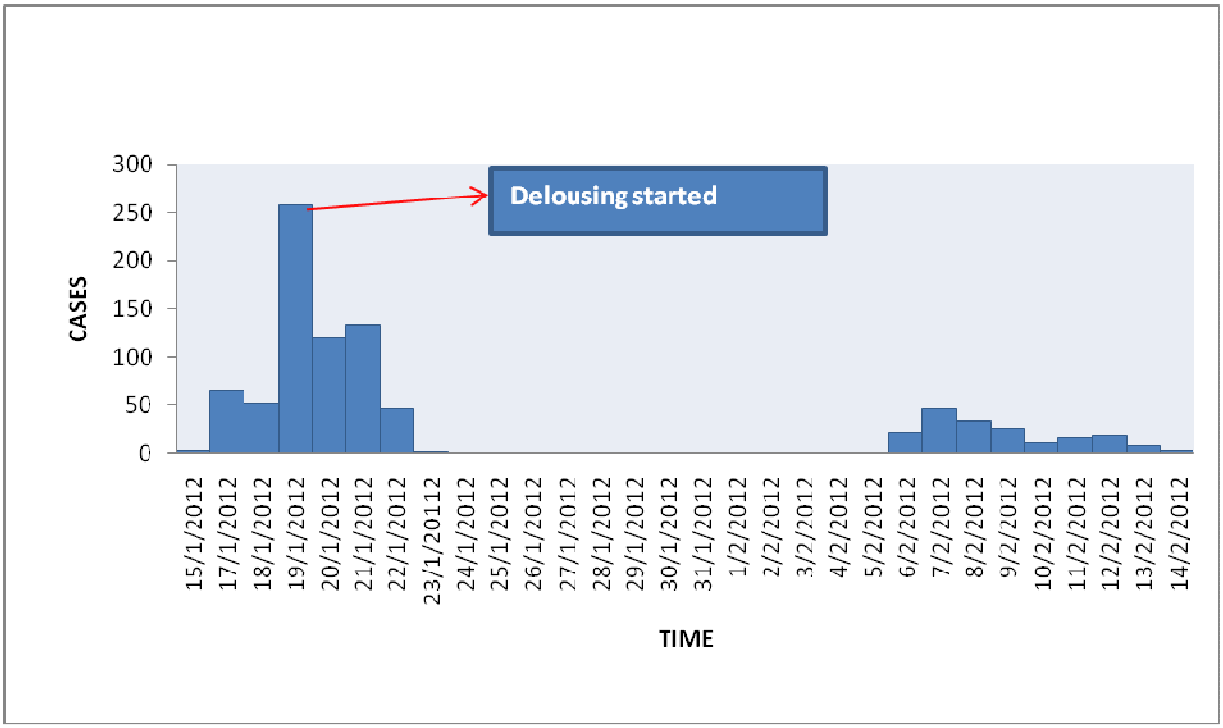

Fig.**1.1.3**Epi Curve of relapsing fever outbreak in Yirgalem Prison,Sidama Zone, SNNPR, 2012

From 560 laboratory tested Cases345 (62%) were positive for Relapsing fever. From total cases 823(99%), 780 (94%), 771 (93%), 756 (91%) and 20 (2.4%) developed, head ache, vo miting, fever Chills and jaundice respectively.

Sign Symptom	Cases	Percent
Head ache	823	99
Vomiting	780	94
Fever	771	93
Chills	756	91
Jaundice	20	2.4

Table:1.1.2 Sign and symptom of Relapsing Fever cases in Yirgalem prison Sidama Zone, SNNPR

Outbreak reported cases fell to zero for 11 days (Jan, 25/2012 to Feb.05/2012 and after whi ch there was a relapse on 06/02/2012 and in the relapse, 24 cases were registered.

There were 18 prison rooms and 15/18 contained patients with LBRF. Square meter of eac h room varies from42 m^2 to 98m^2 and. The attack rate for the entire prison was 32%, and the attack rate for affected rooms ranged from 27-74%.

Room #	# of Persons	# of LBRF Patients	Attack Rate(%)	Room Size(m^2)	Density (m^2 per person)	Comments
1	185	72	39	98	0.53	
2	176	93	53	96	0.55	
3	173	58	34	96	0.55	
4	176	51	29	96	0.55	
5	172	51	30	96	0.56	
6	174	54	31	96	0.55	
7	176	53	30	96	0.55	
8	186	54	29	96	0.52	
9	176	59	34	96	0.55	
10	185	61	30	98	0.53	
11	188	57	30	98	0.52	
12	188	76	40	98	0.52	
13	188	51	27	98	0.52	
14	184	52	28	98	0.53	
15	19	14	74	42	2.21	Stay<7days
16	19	0	0	42	2.21	TB Room

17	20	0	0	72	3.60	Females
18	19	0	0	72	3.79	Females

Table:1.1.3 Attack rate of louse-borne relapsing fever at the Yirga Alem prison by room nu mber and prisoner density

Recording, reporting and surveillance activities

We reviewed weekly surveillance data from the register book and reporting formats for the year 2011 and observed that cases were registered on the register book, but the weeklyrepo rt was not reported to next level . The team reviewed log books and reporting formats for th e year 2011, and found that clinic missed reporting registered relapsing fever cases some m onths and other months reported cases that were not registered on the log book.

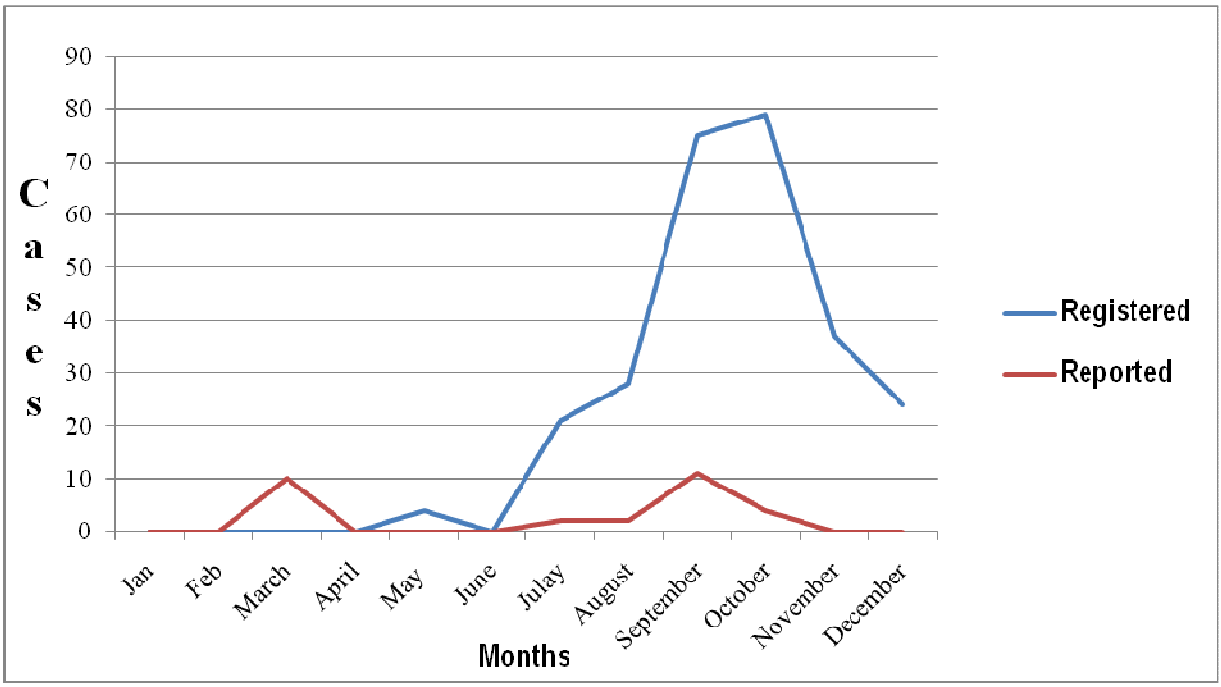

Fig.1.1.4 Registered and reported relpsing fever cases in Yirgalem Prison, for year 2011

Case-Control Study

A total of 78 cases &108 controls were interviewed, of which100 % were males &the minim um age 24, median 20 and maximum 75 years old. It was shown that fifty six percent 46/78 (59%) of cases and 53/108 (49%) of controls were farmers before they became prisoners.

72 percent 56/78 cases and seventy seven percent 83/108 controls were protestant in religion . Ninety three percent of cases and Ninety eight percent of controls were sidama, in ethnic, 19% (15/78) cases and 6%(7/108 controls were illiterate, 24% (19/78) cases and 30%(30/1 08 controls were 1-4 and 52% (41/78) cases and 52 % (56/108 controls were 5-8 grade in ed ucation status. No statistical difference was found on Age, Ethnicity and Religion compare d both cases and controls.

Thirty four percent (27/78) of cases and 32%(35/108) controls have soap during interview ti me.Thirty five percent (27/78), 15%(11/78), 13%(10/78) and 12%(10/78) stayed in their ro oms for 3,4,2,5 days before geting treatment respectively.

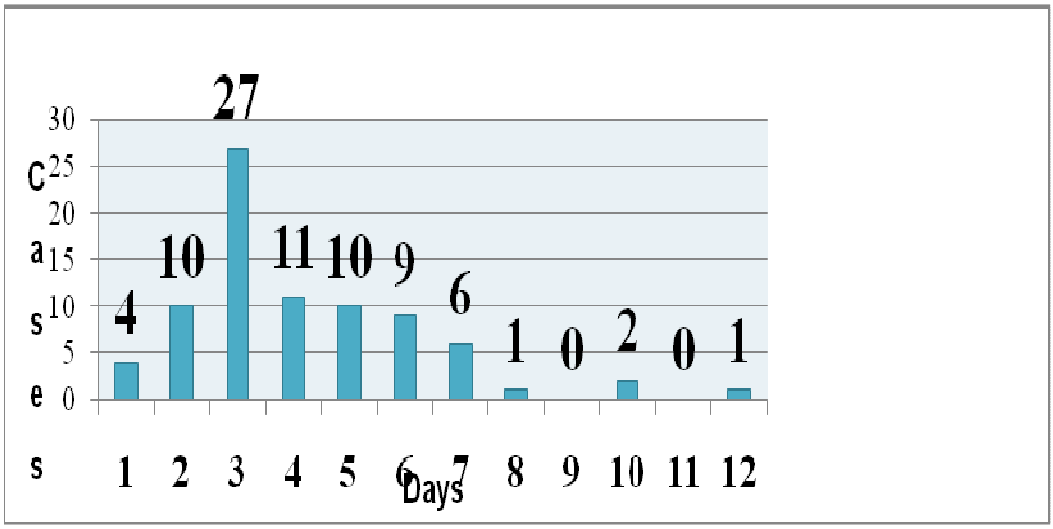

Fig 1.1.5 Days of cases stayed in their rooms before getting treatment

Taking body bath weekly more protective than not having taken a bath for more than one week. From respondents of the case contol study 22/78(28%) cases and 57/108(53%) took a body bath weekly (OR = 0.52, 95% CI (0.29-0.96) and From total cases 63/ 78 and 101/108 controls were literate, OR=0.29,95%CI (0.1-0.75),the association was also significant. 37/ 78 cases and 66/108 controls wash their clothes weekly (OR = 0.57, 95% CI, (0.30-1.02), which was not significant.

Risk Factor	Cases	Controls	OR	95%CI
Bathing => once per week	Y=29 N=49	Y=57 N=51	0.52	0.29-0.96
literate	Y=63 N=15	Y=101 N=7	0.29	0.1-0.75
Access to <5L water/day	Y=22 N= 56	Y=45 N= 63	0.55	0.29-1.03
Access to 20L water/day	Y=18 N=60	Y=21 N=87	1.24	0.61-2.53

Table 1.1.3 Risk factors For LBRF, Sidama Zone, January 2012

One hundred percent of the patients were treated with antibiotics and IV fluids .From all ca ses 80/81(98.8%) completely recovered from their illness. Ninety four percent (76/78) cases had fever. 83 %(67/78) of cases had vomiting and 100 %(78/78) had head ache. Of which 95%(74/78) had chills and 26 %(20/78) had epitaxs is and jaundice respectively.

Environmental and Hygiene Inspection

- A team had been visited prisoners rooms, measure the area of each room, observe prisoners personal hygiene and water sources and distribution points. Totally there were 16 male and 2 female prisoner's rooms and maximum area m^2 of rooms were 7*14 = $98m^2$(meter squ

are). Minimum area m^2 of rooms were 6*7 = 42m^2 (meter square). In each room maximum p risoners were 186 which is overcrowded, and minimum prisoners were 19. The living space for each prisoner in a room was waries from 0.52_3.79 m^2 /person, average 1.9 meter squar e/prisoner (standard=3.5meter square /person). Ninety five percent of prisoners use mattress which is made by grass and covered by fertilizer sack. No cases were registered in female ro oms which are less densely populated with only 19 and 20 female prisoners in each room. N inety five percent prisoners did not having alternative cloths for day and night; they used o nly one set of clothing for day and night. Water supply was not adequate; there was only

one distribution site for all prisoners for drinking, hygiene and sanitation purposes. The wat er reservoir leaked water and needes maintenance.

Action taken by investigation team and other staff

- Discussion was made with Region health bureau PHEM coordinator, zone and Town unit health heads, prison administrative heads and the technical teams at the epidemic site.
- The team received a brief from respected Prison administrative and health officials a nd made a short work activity plan.
- As per the consensus with the Prison officials, the team engaged in activating the Pri son epidemic response task force to participate in active case detection & educating the Pris oners in each room and at gathering to prevent and control outbreak.
- The team also conducted various activities like daily reporting cases to next level
- Supportive supervision in the treatment site.
- On job training have been conducted to health personnel who participated on case management and prevention and control activities

- Logistics, drugs and other medical supplies taken to the site collaboration with Regional health bureau and Zonal health department.
- Discussed with Regional prison commissioner, Sidama Zone Administrator, Zonal high court president and yirgalem prison administrator the way how minimize prisoners and construct additional rooms in the prison compound.

Challenges on intervention

- Shortage of water
- Over crowding
- Prisoners were not giving attention on personal hygiene and environmental sanitation.
- Prisoners were sent to prison from different districts were out of working hours, because of that it was difficult to shave their hair and delouse cloths.
- In adequate stock of drugs in the prison and Microscope not functioningwell

Discussion

There was suspected and confirmed LBRF outbreak in yirgalem prison, the onset date of the first case on January 15th 2012 in yirgalem prison. From 2604 prisoners a total of 831 cases and 1 death registered from January 15 to Feb.14, 2012 in prison. The overall attack rate & case fatality rate was 32% & 0.12 % respectively. Among cases 100% (831) were males and the age range from 15 to 78 years, median age 20, mode20 and mean age22**.** The reason for rapid spread of epidemic is due to overcrowding, poor personal hygiene, inadequate water supply and lack of alternative clothes for prisoners. So increased population density was a significant risk for contracting LBRF. The evidence showed that except TB room and females

rooms all prisoners who live in male rooms in overcrowding condition were victim to outbre ak. Data from register book finding showed that surveillance and case detection in prison

was poor. Clinic did not report cases in daily or weekly. Because of this and poor interventio n activities cases were increasing time to time since last year (2011).

Taking body bath weekly and being litterate more protective than taking body bath more tha n one week and being illiterate.

Conclusion

We investigated an outbreak of relapsing fever in a prison. Age groups 14-24, 25-35, and

36-45 were more affected than others. The absence of water in the prison, low awareness

on personal hygiene among prisoners , weak surveillance and response capacity may hav e contributed to increase the magnitude of the outbreak.

The CFR was low as compared with outbreaks investigated in other parts of Ethiopia. This could be due to early detection and treatment, good case management in the treatment site (1.9% in Asella Hospital, Arsi, Ethiopia, 3.6% in Hosaena SNNPR, Ethiopia and 4.6%Gond er Ethiopia).

This study did not disaggregate patients by sex and thus does not lend itself to make compar ison between males and females with relapsing fever. In conclusion this finding suggests tha t relapsing fever is a threat in the prison setting.

To prevent the reoccurrence of Relapsing fever outbreak the following action points have be en put as recommendation.

1. Strengthen the surveillance system to provide regular information.

2. Identify cases and report immediately to next level

3. Train prison health workers,mainly on RFcase management and Laboratory confirmation

4. Avail Microscope urgently

5. Organize zonal meeting session with representatives from all sectors including the zonal a dministrator to discuss the way how to minimize risk to prisoners.

6. Rapier hand pump well and find other water sources

7. Construct additional rooms for males

8. Change grass mats, find alternative clothes for day and night and provide soap for those who cannot afford for themselves.

9. Close supportive supervision and feedback from town health unit and Zonal health depart ment is very crucial.

Limitation

Because all cases were males, it is difficult to compare incidence and prevalence of Relapsin g fever in prison in both sexes

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1.2. **AWD Outbreak Investigation SNNP Regional State, Sidama Zone, Ethiopia**

Ashenafi Argata

Abstract :Since April 2006, Ethiopia has been reported AWD outbreaks. In total 51,074 cases an d 565 deaths (CFR=1.1%) have been reported from 8 regions, 47 zones and 146 woredas. In 200 8, 3945 cases and 25 deaths (CFR=0.6%) were reported from 55 districts of 7 regions. AWD out breaks have been reported repeatedly from Sidama Zone,SNNPR, 2006-2011 from different wo redas. In 2006, 7,330 cases (Aroressa, Bensa, Chire, Bona, Hula, Dara, Chuko and Aleta Wondo) in 2007, 288 cases (Dara, Chuko, Aleta Wondo, Hula and Bona) in 2010, 304 cases (Boricha, W ondo Genet and Malga) in 2011, 440 cases (Dara and Bona) were reported.

Methods- A descriptive cross sectional study was conducted in five AWD outbreak affected wo redas in Sidama Zone, SNNPR from 29th May, 2012- 9th June, 2012.Surveillance data including line lists and registration books were reviewed and complied. Households where cases registered Kebeles were visited and House holds were interviewed. Discussions with key informants at w oreda, health facilities (hospital, health center and health post) and with kebele leaders were mad e. Data were entered and analyzed by Excel and Arc GIS used for mapping.

Result- The first case of acute watery diarrhea was admitted on 10th April 2012 in Bona Distric t Hospital from Bona Town. A total of 58 cases and no death were registered from April 10 to M ay 14, 2012. From cases 18 (33%) males and 39(67%)

females.The majority of cases 45(78%) reported from Bona District. From all (58) cases only 41 were reported to zonal health department/regional health bureau.

Conclusion- The 2012 AWD outbreak in Sidama Zone which started in a Bona District of Bona Town on April10/ 2012, spread to the four neighboring districts.Totally 58 cases with no death

had been reported from five districts.CFR was below standard, compared with similar study in Angola overall CFR was 3.75% in 2007, 12% was reported in 2008.Report deliance from dstrict to Zone were observed.Strengthening woreda rapid response team in their capacity,provision of complete CTC kits especially ORS, Ringer lactate for all AWD affected woredas, and provisio n of capacity building training for health professionals in areas of sanitation, hygiene, and AWD case management were recommended.

Key words: Acute watery diarreha, Vibro cholera,Sidama Zone,SNNPR

1. INTRODUCTION

Cholera is a diarrheal disease caused by infection of the intestine with the gram-negative bac teria Vibrio cholera, either type O1 or O139. Both children and adults can be infected. It is o ne of the key indicators of social development and remains a challenge to countries where ac cess to safe drinking water and adequate sanitation cannot be guaranteed.

There are over 100 vibrio species known but only the “cholerae” species are responsible for cholera epidemics(1).About 20% of those who are infected develop acute watery diarrhea – 10–20% of these individuals develop severe, watery diarrhea with vomiting. If these patients are not promptly and adequately treated, the loss of such large amounts of fluid and salts (m ore than 10-20 liters/day in severe forms) can lead to severe dehydration and death within h ours. The case-fatality rate in untreated cases may reach 30–50%.Treatment is straightforwa rd (basically rehydration) and, if applied appropriately, should keep the case-fatality rate bel ow 1%(1, 2).

Among people who develop symptoms, 80% have mild or moderate symptoms, while aroun d 20% develop acute watery diarrhoea with severe dehydration. This can lead to death if unt reated.

People with low immunity – such as malnourished children or people living with HIV – are at a greater risk of death if infected.(3)Two serogroups of V. cholerae – O1 and O139 – caus e outbreaks. V. cholerae O1 causes the majority of outbreaks, while O139 – first identified i n Bangladesh in 1992 – is confined to South-East Asia.

During the 19th century, cholera spread across the world from its original reservoir in the G anges delta in India. Six subsequent pandemics killed millions of people across all continent s. The current (seventh) pandemic started in South Asia in 1961, and reached Africa in 1971 and the Americas in 1991. Cholera is now endemic in many countries**. (3)**

Every year, there are an estimated 3–5 million cholera cases and 100 000–120 000 deaths du e to cholera. The short incubation period of two hours to five days, enhances the potentially explosive pattern of outbreaks**. (3)**

Annual global figures (2009) reported to WHO included 221,226 cases and 4,946 deaths fro m 45 countries (2). The majority of cases (98%) were reported from Africa where an autbrea k that started in 2008 and lasted for almost a year, spread to South Africa and Zambia. By th e end of July 2009, over 98,000 cases and 4,000 deaths were reported in this outbreak. Asia reported an 82% decrease in cases in 2009 compared to 2008**,** however, reports of acute wat ery diarrhea, many of which may be cholera, were not included (4)

Since April 2006, Ethiopia has been reported AWD outbreak. In total 51,074 cases and 565 deaths (CFR=1.1%) were reported from 8 regions, 47 zones and 146 Woredas. It also affec ted all sub-cities in Addis Ababa. In 2007 49,625 cases and 673 deaths (CFR= 1.4%) were r eported from 10 regions where 75 zones and 317 Woreda were affected. In 2008, 3945 case s and 25 deaths (CFR=0.6%) were reported from 55 districts of 7 regions.(2)

Sidama zone is one of the fifteen administrative zones of SNNPR .Administratively the zon e is divided in to 21 districts and 524 rural and 31 urban kebeles having a projected total po pulation of 3,288,080. There are two hospitals, 101 health centers and 521 health posts in th e zone with potential health service coverage of 82%.

AWD outbreak has been reported repeatedly from Sidama Zone from 2006-2011 in several different woredas. In 2006, 7,330 cases (Aroressa, Bensa, Chire, Bona, Hula, Dara, Chuko and Aleta Wondo) in 2007, 288 cases (Dara, Chuko, Aleta Wondo, Hula and Bona) in 2010, 304 cases (Boricha, Wondo Genet and Malga) in 2011, 440 cases (Dara and Bona) were rep orted.For thecurrent AWD outbreak in 5 woredas of Sidama zone (Bensa, Chire, Arbegona, Burse and Bona Zuria) , the regional health bureau requested partners working in the areas t

o involve in the rapid assessment of affected woreda in identifying the gaps and coming up with recommendations in the prevention and control of AWD.

All assessed woredas (Bensa, Chire, Arbegona, Bona-Zuria and Bursa) are neighboring and found in the south east part of Sidama Zone. They Each have 281,486; 128,273; 148,679; 1 48,679 and116, 143 population respectively. Currently there is one hospital, 23 health center s and 143 health posts are delivering health services to the community in all affected woreda s.

2. **Objectiv**e: To identify and confirm etiologic agent and identify the risk factors for AWD outbreak

2.1 SPECIFIC OBJECTIVES OF THE INVESTIGATION

1.To describe the distribution of the outbreak by person, place and time
2.To identify the risk factors for AWD transmission of outbreaks
3.To assess and identify the existing strengths and gaps in prevention and control of AWD
4.To look into needs of the affected areas and come up with long and short term assistance

3. Methods and materials

3.1 Study area: Five AWD outbreak affected woreda in Sidama Zone, SNNPR. Districts we re Arbegona, Bensa, Bona Zuria, Bursa and Chire and located in the south east part of Zone. All of them were bounded each other. The farthest Chire District was 210km and nearest di strict Bursa was 90km from capital city of Sidama Zone SNNPR.

3.2 Study period: 29th May, 2012- 9th June, 2012

3.3 Study subject: All peoples living in five AWD affected woredas of Sidama Zone, SNNPR

3.4 Study design: Descriptive cross sectional study was conducted in five AWD affected di stricts in Sidama zone, structured questionnaires were developed and data was collected by

using semi-structured questionaries. Surveillance data including line lists and registration bo oks were reviewed and complied, Discussion with key informants at woreda, health facilitie s (hospital, health centers and health posts) and with kebele leaders were made.Treatment sit es/CTC were visited. Water treatment distribution data were collected from targeted woreda s and water source, potable water and latrine coverage and utilization data in each woreda were collected. Sample households were visited to assess the availability and utilization of latrine in where the Kebele cases were reported. Four stool samples were taken and sent to Regional Laboratory in Hawassa. Data was entered and analyzed by Excel and ArcGIS was employed to draw maps.

4. PHEM guide line were used for case definition

Suspected Case:

- In a patient age 5 years or more, with severe dehydration or death from acute wat ery diarrhea.
- If there is a cholera epidemic, a suspected case is any person age 5 years or more with acute watery diarrhea, with or without vomiting

Confirmed Cases

- A suspected case in which Vibrio cholerae O1 or O139 has been isolated in the stool.

Team Composition and activities performed

The assessment was conducted by different team compositions from government and CSOs' (Civil Society Organizations) with different expertise at different levels namely kebele, wor

eda and institutions. The assessment team carried out meetings and reviewed the predesigne d AWD assessment checklist before going to the woredas. The assessment team used key in formants interview, observation and secondary data from health institutions to assess the ga ps by using the pre reviewed questionnaires for this assessment purpose. The meeting was

carried out with woreda administration, health office, water office, public health emergency focal persons together in woreda administration office. Besides, health facilities and establis hed CTC were also visited to observe their preparedness and response.

5. RESULTS

5.1Descriptive Epidemiology

A total of 58 cases and no death with zero case fatality rate were registered from April 10 to May 14, 2012. Forty six cases were treated in Bona District Hospital and the rest (12) cases were treated in Worancha Health Center (Bona District). The female to male sex ratio was 2 :1. The mean age distribution of cases was 29 years with a Median of 30 years; a range of 5 to 70 years was noted. Cases were from 5(Bona, Bensa, Arbegona, Bursa and Chire) district s. The majority of cases 45(78%) were reported from Bona district.From all (58) cases only 41 were reported to Zonal health department/Regional health bureau.

The first case of acute watery diarrhea was registered and admitted on 10th April 2012 in

Bona District Hospital from Bona Town. After two days admission he was discharged. He was driver and registered as residence of Bona Town, but after he discharged health personn

el's couldn't found him due to changing his residence area.

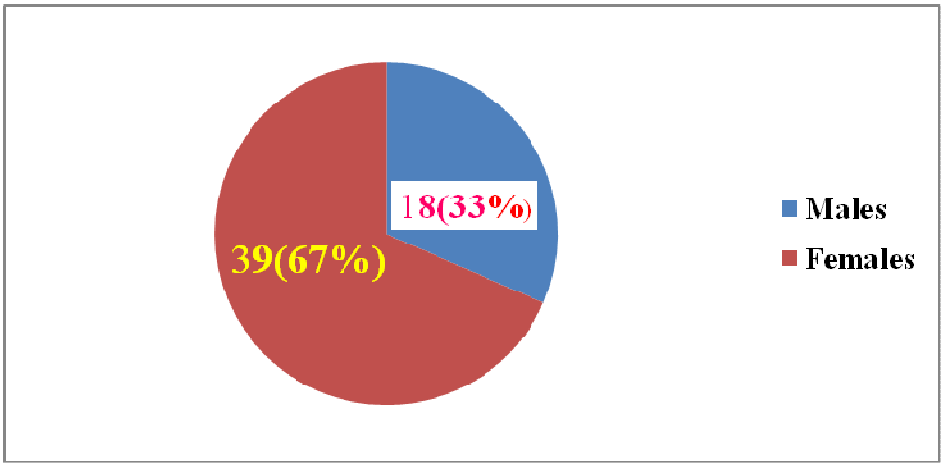

Fig. 1.2.1 AWD cases by sex, Arbegona, Bensa, Bona,Bursa, CHire,Districts,Sidama Zone,2012

The mean age distribution of cases was 29 years with a Median of 30 years; a range of 5 to 70 years was noted.

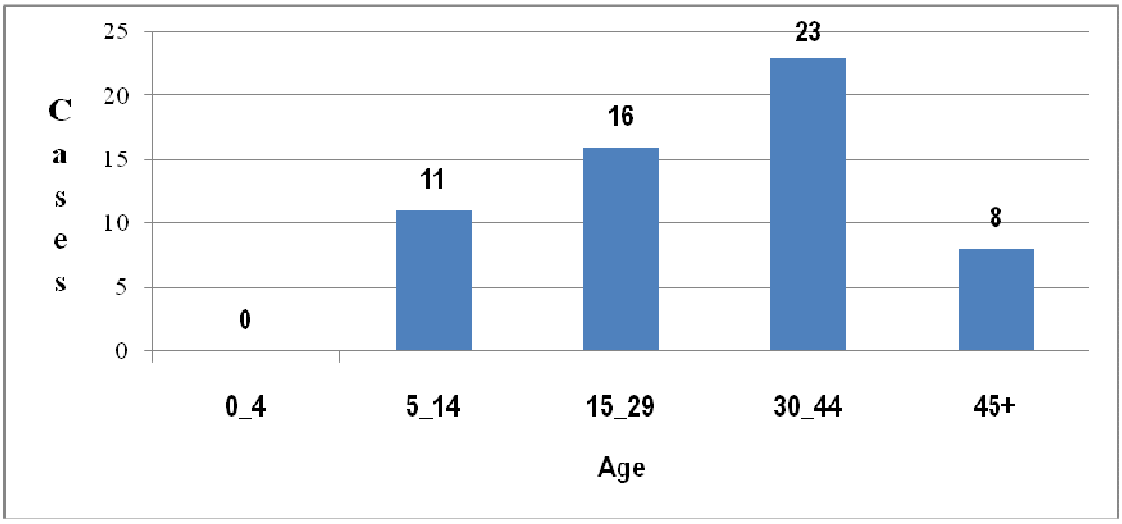

Fig1.2.2 AWD cases by Age groups, Arbegona, Bensa, Bona,Bursa, CHire, Districts,Sidama Zone,2012

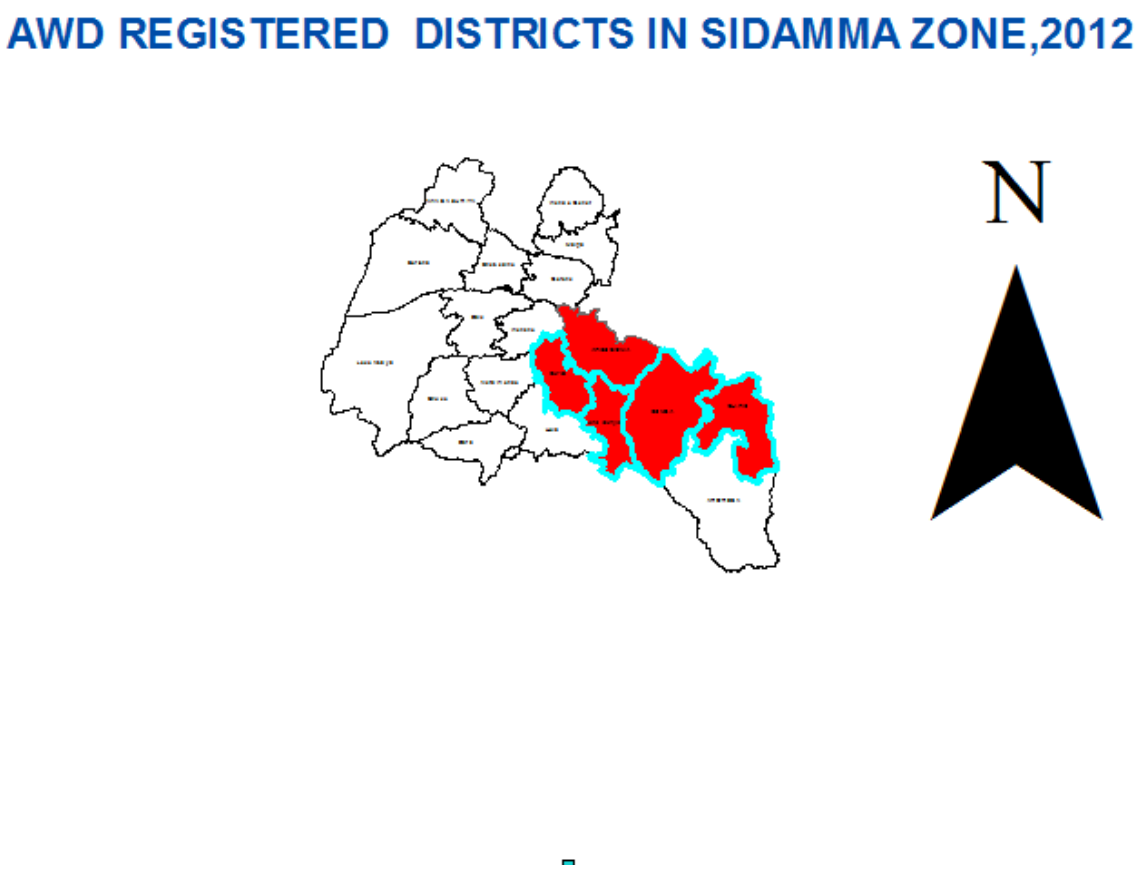

Fig1. 2.3 Districts where AWD cases registered in Sidama Zone, SNNPR,2012

Name of Districts	Population	Cases	Death	Attack Rate per 10,000	CFR
Bona	144,024	45	0	31.2	0
Bensa	281,486	9	0	3.2	0
Arbegona	148,679	2	0	1.3	0
Bursa	116,143	1	0	0.9	0
Chire	128,273	1	0	0.8	0
Total	818,605	58	0	7.1	0

Table1.2.1: Number of cases and attack rate by woreda,Sidama Zone,SNNPR,2012

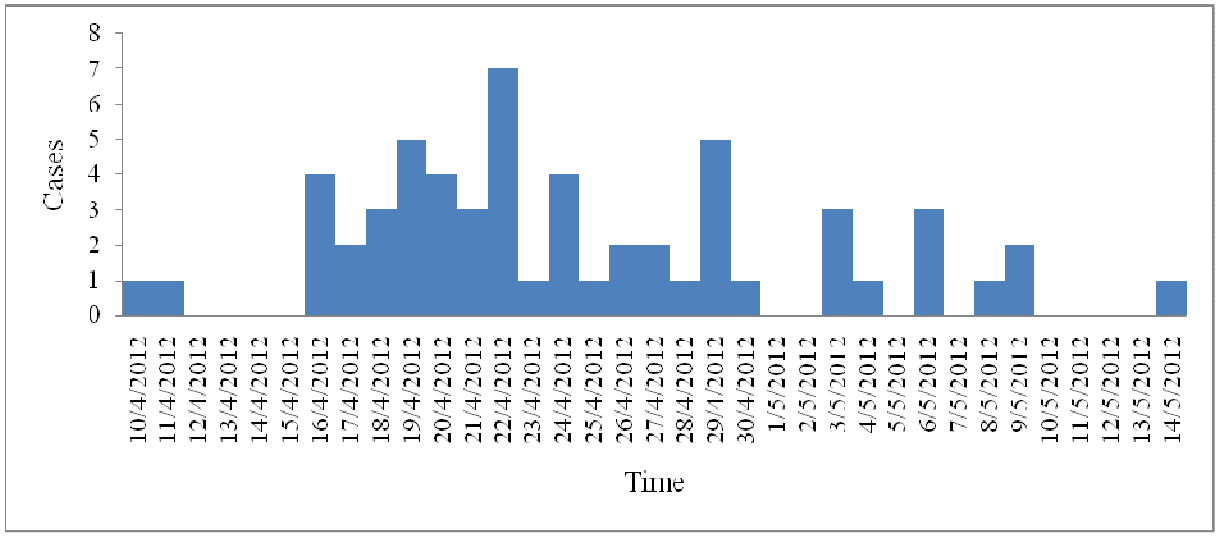

Fig 1.2.4 Epi Curve AWD outbreak Bona, Bensa, Arbegona, Bursa and Chire Disric ts, 2012

Of cases 45(77.6%) were severely dehydrated and 13(22.4%) were moderately dehydrated. Both severly and moderately dehydrated were admmited and equally treated by ORS, IV f luid and antibiotics. This may indicated training gaps among staff who involved on acute w atery diarrhea case management. Five cases were visited by team.

Of visited cases one had history of attending funeral cermony where cases registered kebe le prior to 5 days becoming sick.Two of them ate sugare cane from market where cases re gistered kebele prior to 4 days, both of them are sisters and live together.Only one had his try of contact with the similar cases. Five of them had latrines,use pipe water but, use protec ted spring when there were intruption of pipe water.

5.2Lab investigation

Four stool samples were taken and two stool samples were found Vibrio cholera O1 El Tor, serotype Ogawa was isolated at Regional Laboratory in Hawassa. It was sensitive to ampic illin, tetracycline, erythromycin, cefuroxime and ciprofloxacin, and was resistant to chloram phenicol, nalidixic acid and cotrimoxazole

5.3 Response actions

Rapid response team was organized in all the targeted woredas. However, only in Bona and Arbegona Woredas RRT is initiated with primary objective of sensitizing communities on A WD outbreak that has 7 members selected from different key stake holders. So far the com mittee accomplished the under listed activities in relation with the outbreak:

Regular meeting on daily basis to monitor the situation and to develop the following day tas ks. Communicate with the regional and zonal authorities to provide update and seek support mainly on drugs and water treatment chemicals.

Developed key messages in the local language and disseminated them in different communit ies' gatherings like religious meetings, health institutes, funeral ceremonies. Coordinated wi th humanitarian NGOs like Plan international to fill response gaps.

In Bursa, Bensa and Chire Woredas even if the rapid response team were organized but it w as weak in coordinating preparedness activities, taking actions and conducting regular meeti ngs

5.3.Logistic and Supply distribution

In Bona Woreda there were sufficient stock supply of ORS, Ringer lactate and other supplie s, but in the rest of targeted woredas there were no enough stock specially shortage of ORS at health post level.

Name of Woreda	ORS (Carto)	R/Lactate(Bag)	Doxycycline(of 100tabs)	IV cannula(Box)	Ciprofloxacin(of 100tabs)	Cotrimoxazole(of 1000tab)	Plaster(each)	Bandage(each)
Bona Zura	16	144	60	3	4	11	40	8
Bensa	8	168	40	1	7	10	10	6
Arbegona	0	0	0	0	0	0	0	0
Bursa	0	0	0	0	0	0	0	0
Chire	5	48	20	0	0	4	7	1
Total	29	360	120	4	11	25	17	15

Table 1.2.2: Drugs and other medical supplies distributed to AWD affected woredas (source SZHD)

Name of woreda	No of people targeted	No of HHs targeted	Bishan Gari (sachet)	Aqua Tab(stripe)
Bona Zuria	55,437	11,087	199,573	2,217
Bensa woreda	87,780	17,556	316,008	3,511
Arbegona Woreda	55,437	11,087	199,573	2,217

Table1.2.4: Second round dispatch of water treatment chemicals (Source: RWB)

6. Hygiene and Sanitation in CTCs

In Bona Zuria woreda there are two CTCs established and from them the CTC in Bona district hospital is well organized; that is the medical staff, cleaners and guards were assigned to do tasks only at CTC. However the CTC in Worancha Health centre lacks most of the under listed minimum standards

Proper CTC establishment as per the recommended guideline.

Safe disposal of excreta and vomits of patient.

Proper disinfection of patient beddings and clothing during admission and after discharge.

Adequate provision of safe water

In Bona district hospital CTC, even if the medical staff who were assigned at the CTC didn't get training in areas of Hygiene, Sanitation and isolation aspects they were doing very well in keeping isolation of the patient, teaching families to use hand washing and foot bathing on exit and they follow Standard protocol in the management of AWD and mixing disinfectant solution properly.

8.Water source and water coverage data

According to the woredas water office responsible persons, the main water sources of all tar geted woredas are springs, Shallow wells, Boreholes and rivers.

Woreda	Protected spring		Bore Hole		Hand dug Wel		Shall well		Coverage in %	Remark
	Functional	Non Functional	Functional	Non Functional	Functional	Non Functional	Functional	Non Functional		
Bursa									29	Not possible to get the data
Bona	91	77	2	2	1	1	0	0	34.5	
Arbe-Gona	120	25	2	0	8	2	0	0	28.4	
Bensa	168	12	0	0	0	0	31	20	22.58	
Chire	22	0	0	0	0	0	10	5	38	

Table 1.2. 5. Water schemes availability in each woreda,(Source: Woredas water office)

9.Water, Hygiene and sanitation in the communities

In all assessed woredas there is a good initiation and achievement in latrine coverage; Bursa 89%, Bona 96%, Arbegona 70%, Bensa 69% and Chire 79%.But no data were found on latri ne utilization rate in all assessed woredas.

Randomly selected five households of the targeted woredas where cases were registered visi ted. As it is observed during the visit, there was evidence of latrine use as indicated through the clear paths leading to the latrines. Almost all of the visited latrines are found to be dirty with poor or no superstructure.Only adult can use them and during the night as they do not p rovide any privacy

The pits are producing and harboring high density of flies. So, this is the fact that observed l atrine pits are incomplete and human waste containment is not being properly maintained.

Open defecation practices were also seen in few compounds of the HHs'. Besides, hand was hing facility and soap/ash were not available nearby latrines in any of the visited households

The delivery of health education campaigns on promotion of hygiene and sanitation in scho ols, market, health institutions and churches/mosques were well organized and strong in Bon a and Arbegona and the community has better awareness about mode of transmission and th e clinical manifestation of AWD. However, in Bursa, Bensa and Chire the community aware ness activities was not that much strong.

Four stool samples were taken and two stool samples were found Vibrio cholera O1 El Tor , serot ype Ogawa was isolated at Regional Laboratory in Hawassa It was sensitive to a mpicillin, tetra cycline, erythromycin, cefuroxime and ciprofloxacin, and was resistant to chloramphenicol, nal idixic acid and cotrimoxazole

10. Actions taken on prevention and control of AWD

10.1 At woreda level

Affected kebeles were visited by the woreda health office and person from woreda administ rative authorities

Case definition and other health education materials were developed by local language and distributed to different kebeles of the woredas

Information was disseminated about AWD to the community by using FM radio(Bensa wo reda)

Discussions were made with the community, community health promoters and health exten sion workers about sensitization and how to respond to the outbreak and measures to be take n .

Technical committees established at a health center and woreda level and were working on s upportive supervision, community awareness and distribution of the necessary drugs and ite ms to the affected kebeles

- Water guard was distributed in AWD affected kebeles
- Budget was allocated for prevention and control activities in Bona and Chire wor edas

10. 2. By Assessment team

- Distributed case management guide lines
- On job training was given to health professional on AWD case management
- Advise the coordination taskforce meeting to be held regularly with action oriented
- Suggested to establish and maintain daily case reporting from each Kebele
- The team suggested the woreda to prepare epidemic response plan

11.Identified Gaps

11. 1 Recording and reporting

- Poor recording and reporting observed during visiting health centres, for example in chire district daela health there were 6 cases registered as AWD cases, but not reported to district health office and to ZHD
- In Bona district Worancha health center 12cases were registered but not reported.
- Woreda health office was not received report on daily bases from expected health fac ilities due to transport problem and communication gaps. Due to above mentioned problem only 41cases were reported to Zonal health department/ regional health bureau

11.2 Coordination and Logistics

- Even if there were revitalized districts and Kebele Rapid Response Team, but not co nducted regular coordination meeting for early preparedness and surveillance on AWD prev ention and control activities.
- Absence of budget for training, drugs and for other logistics
- Transportation and fuel shortage to provide supportive supervision and coordination

11.3 CTC set up and case management

- Absence of CTC kits for preparedness and case management except Bona Zuria wo reda
- Skill gap among health professionals in areas of hygiene, sanitation, isolation of pati ents and case management
- Absence of water source and latrine in Worancha health center CTC
- Shortage of drug supplies at periphery health facilities(ORS)
- Shortage of AWD case definition protocols and case management guide lines

11.4 Water supply and usage of water treatment chemicals

- Poor coverage of potable Water access in all assessed woredas
- Absence of regular water quality monitoring and disinfection system of existing wa ter schemes
- Unavailability of complete kit for water quality analysis and disinfection of water schemes
- Knowledge gap in proper use of water testing kits among woreda water office techni cians
- Water treatment chemicals were not distributed to risk kebeles as intended from wor eda(Bensa Chire)

11.5 Community Hygiene and sanitation

- Awareness raising campaign at communal places like church/Mosques, schools, Mar ket and other community gathering places were not strong and regular
- Poor latrine utilization among community and unavailability of hand washing faciliti es nearby at house hold level
- Absence of waste disposal pit in the assessed house hold compound

12.Discussion and Conclusion

The 2012 AWD outbreak in Sidama Zone which started in a Bona District of Bona Town on April10/ 2012, spread to the four neighboring districts, Bursa, Arbegona, Bensa and Chire.

By May 14/2012,totally 58 cases with no death (CFR= 0 %) had been reported from five dis tricts. Females were more affected than males. The most affected district was Bona (AR = 0.03%). CFR was remained zero per cent with adequate treatment. When we compared with similar study in Angola overall CFR was 3.75% in 2007, 12% was reported in 20082005, C ameroon reported 2847 cases including 110 deaths(CFR 3.86%).The rapid extension of the outbreak and the size of the population exposed to the risk AWD and made the classical pre ventive and curative measures against AWD difficult to implement with short days, because of report delay due to communication gap from health facilities to district health offices.Th e epidemic curve has multiple peaks (Fig: 1) which suggest person-to-person transmission m ay have occurred after the initial cases.

Even if first registered case travelled from a different place, these investigations suggested t hat the outbreak might have been caused by initial case patient who came from another plac e and who was treated in Bona District Hospital was a source. We did not have any specifi

c explanation. But low coverage of safe and adequate water low utilization rate of latrines an d place to place people's movement may also attribute the spread of outbreak in four assess ed districts. However, when we observed Epi curve a certain amount of person-to-person tra nsmission may have attributed to wards the outbreak.

13. Recommendations

13.1Short Term

1. Strengthening Woreda and Zonal rapid response team in their capacity
2. Increase latrine utilization by encouraging superstructure building to allow privacy
3. Zone should be given capacity building training for health professionals in areas of Sanitation, Hygiene, AWD case management
4. Provision of training on hygiene, sanitation and proper utilization water treatment chemicals for health extension workers, WASH committee, volunteer health promoters and community influential persons water quality analysis and disinfection
5. Strengthening early preparedness and awareness raising campaign and community m obilization on hygiene and sanitation
6. Each woreda should be conduct active case search on additional AWD cases

13.2 Long Term

1. Zone and woredas give more emphasis to construction and rehabilitation of water s chemes
2. Strengthening of hygiene and sanitation promotion activities at the community level , health facilities, schools in order to prevent and control of AWD out breaks
3. Ensure adequate and safe water supply for the affected community
4. Strengthening of the existing IDSR system and extend it to health posts by using HEP and HDA

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Chapter II – Surveillance Data Analysis Report

Surveillance data of malaria cases reported to Sidama Zone Health Department,from 2007–20011

Ashenafi Argata

Abstract

Introduction: Malaria is endemic throughout most of the tropics. Of the approximately thr ee billion people living in 108 countries who are exposed, approximately 243 million will de velop symptomatic malaria annually.Around 863,000 deaths are caused by malaria each yea r; over 80 percent of the deaths occur among children in sub-Saharan Africa. Malaria is the number one health problem in Ethiopia with an average of 5 million cases a year. Surveilla nce can warn us about impending public health emergencies. It can reveal how well an inter vention has worked. And, with surveillance, we are better positioned to anticipate and respo nd to public health threats with effective policies and strategies.

In order to monitor the malaria morbidity and mortality trend, an unusual increases or decre ases of the disease, to ensure weekly surveillance data completeness and timeliness are man datory. This information is also needed to determine most appropriate and efficient allocat ion of public health resources and personnel. The purpose of this assessment was to deter mine magnitude and identify trends of malaria and use findings to undertake evidence based interventions and prevent and control problem of Malria in Sidama zone.

Methods and Materials: Cross sectional study was conducted using surveillance data of m alaria reported to Sidama Zone Health Department. Data was analysed using MS - Excel

Result :There were a total of 234,572 confirmed cases and 68 deaths from 2007-20011. Ou t of these, <5 years were 58632(25%). The majority of cases were > 15 years of age 176,12 0 (75%). Except in 2010 the number of cases declined between 2007 and 2011. Over all

CFR for five years was 0.03%. 151,013(64%), 79,161(34%) and 4398(2%) were plasimodi um falciparium,Plasimodium vivax and mixed (both falciparium and vivax) by species res pectively. Plasimodium falsiparium was domminant sspecies compared to others for all five years.Case fatality rate was low for all five years.

Conclusion: Magnitude and trend of malaria has shown significant decrease through out th e five year period from 2007-20011. Intrevention measures undertaken to prevent and contr ol malaria contributed to decreased magnitude and trend of malaria in the last five years. It was recommended to undertake further demand driven investigations and the results used to undertake evidence based interventions..

Key words: Malaria, Anopheles mosquito, Plasmodium Falciparum, Sidama, Ethiopia

Introduction

Malaria is endemic throughout most of the tropics. Of the approximately three billion people living in 108 countries who are exposed, approximately 243 million will develop symptomatic malaria annually. Most of these are attributable to P. falciparum (90 percent), but P. vivax and P. knowlesi can also cause severe disease. Around 863,000 deaths are caused by malaria each year; over 80 percent of the deaths occur among children in sub-Saharan Africa. Important components for reducing the burden of malaria morbidity and mortality include more sensitive diagnostic tools, effective use of antimalarial drugs, and improved personal protection and mosquito control. The approach to elimination or control of malaria includes these basics, along with improvements in tracking of human illness and parasite surveillance, and effective resource delivery.(1)

North of the equator, more droughts and lower rainfall have been recorded since 1972; and in eastern and southern Africa, there have been alternating dry and wet periods in relation to El Niūo. Since 1955, the increase in human population from 125 to 450 million has resulted in both expansion of land cultivation and urbanization. In stable malaria areas of West and Central Africa and on the Madagascar coasts, the endemic situation has not changed since 1955. However, in unstable malaria areas such as the highlands and Sahel significant changes have occurred. In Madagascar, cessation of malaria control programs resulted in the deadly epidemic of 1987-88. The same situation was observed in Swaziland in 1984-85. In Uganda, malaria incidence has increased more than 30 times in the highlands (1,500-1,800 m), Cultivation of valley bottoms and extension of settlements are in large part responsible for this increase, along with abnormally heavy rainfall that favored the severe epidemic of 1994(1). A similar increase in malaria was observed in neighboring highlands of Rwanda and Burundi,

and epidemics have been recorded in Ethiopia since 1958. In contrast, in the Sahel (Niayes r egion, Senegal), stricken by droughts since 1972.

Ethiopia's fight against Malaria started more than half a century ago. " Initially malaria cont rol began as pilot control project in the 1950's and then it was launched as a national eradica tion campaign in the 60's followed by a control strategy in the 70's."The effort has seen alte rnating periods of success and failures. "In 1976 the vertical organization known as the Nati onal Organization for the Control of Malaria and Other Vector-borne Diseases (NOCMVD) evolved from the Malaria Eradication Service (MES)". As is the case every where else.(2) Malaria is endemic; the disease is far from being conquered. The agent – plasmodium – has developed resistance to a number of drugs while the vector mosquito has learned to fend off theChemical onslaught launched by humans. The early 21st century fight in Ethiopia was gu ided by the Abuja (Nigeria) declaration with the following targets for the year 2005(2).
It is estimated that three-fourths of the land below 2000 meters is malarious with two-thirds of the country's population at risk. This makes malaria the number one health problem in Et hiopia with an average of 5 million cases a year between 2001-and 2005. The disease cause s 70,000 deaths each year and accountant for 17% of outpatient visits to health institutions. I t also accounts for "15% of admissions and 29% of inpatient deaths" a figure considered to be too low given that more than a third of the country's population does not have access to h ealth services.A number of contributing factors have been identified. The burden of malaria has been increasing due to a combination of large population movements, increasing large-s cale epidemics, mixed infections of Plasmodium vivax and
P. falciparum, increasing parasite resistance to malaria drugs, vector resistance to insecticide s, low coverage of malaria prevention services, and general poverty. Ethiopian adults, unlike their counterparts in more endemic areas, have relatively little protective immunity and are

also vulnerable to malaria. Epidemics, which traditionally occur every five to eight years, ar e a hallmark of malaria in Ethiopia. The epidemic of 1950 is estimated to have caused 3 mill ion cases and resulted in 150,000 deaths. Unstable and largely unpredictable malaria epidem iology makes surveillance, information management and logistics for vector control and pha rmaceuticals of paramount importance. Plasmodium vivax and Plasmodium falciparum com prise 40% and 60% of malaria infections respectively. Malaria and the timely arrival of rainf all are among the most crucial determinants of economic progress, with GDP growth rising and falling in Ethiopia in the aftermath of a rise or fall in rainfall amounts and the severity o f malaria transmissions.(2)

Surveillance can warn us about impending public health emergencies. It can reveal how well an interventin has worked. And, with surveillance, we are better positioned to anticipate an d respond to public health threats with effective policies and strategies.

In order to monitor the malaria morbidity and mortality trend, an unusual increases or decre ases of the disease, to ensure weekly surveillance data completeness and evaluating the effe ctiveness of malaria prevention and control programs and policies in the zone, ongoing anal ysis of the surveillance data collected from the health facilities should be analyzed and inter preted accordingly. This information is also needed to determine the most appropriate and ef ficient allocation of public health resources and personnel. I from EFETP,3rd cort, Addis Ab aba University conducted Sidama Zone five years malaria surveillance data analysis.

2.OBJECTIVES

General objective: To describe Sidama Zone malaria case trends by person, place and time, generate hypothesis from findings for further possible research and communicate findings f or those who work on control and prevention of malaria.

Specific objectives:

- To analyze and interpret the surveillance data in terms of time, place (geographical d istribution)

and person characteristics (age and sex)

- To identify magnitude of malaria burden in the zone
- To know the malaria trend
- To identify the domain species
- To come with relevant conclusion and recommendation based on the findings

- Sidama Zone malaria surveillance data was analyzed from March 1st to March 15, 2 012 in Hawassa

- **Design and data collection**

- A descriptive study was undertaken on the Sidama Zone malaria yearly surveillanc e data of 2007-2011 collected from SNNPR health Bureaue and Sidama Zone Health Depart men.

- To make data more completness and representativenss data was collected from two sources, from regular HMIS(2007-2008) and Zonal PHEM (2009-2011)

- Totally five years malaria data was collected and analyzed

- **Method of analysis**: Data was entered and analyzed by using Microsoft Excel.

4.Result

There were a total of 234,572 cases and 68 deaths registered from 2007-20011 out of these, <5 years were 25%.The majority of cases were ≥ 5 years of age 176,125(75%). Except in 2010 a decline in the number of cases is observed from 2007 and 2011. Over all CFR in 2007 was 0.05% and 0.01% in 2011.

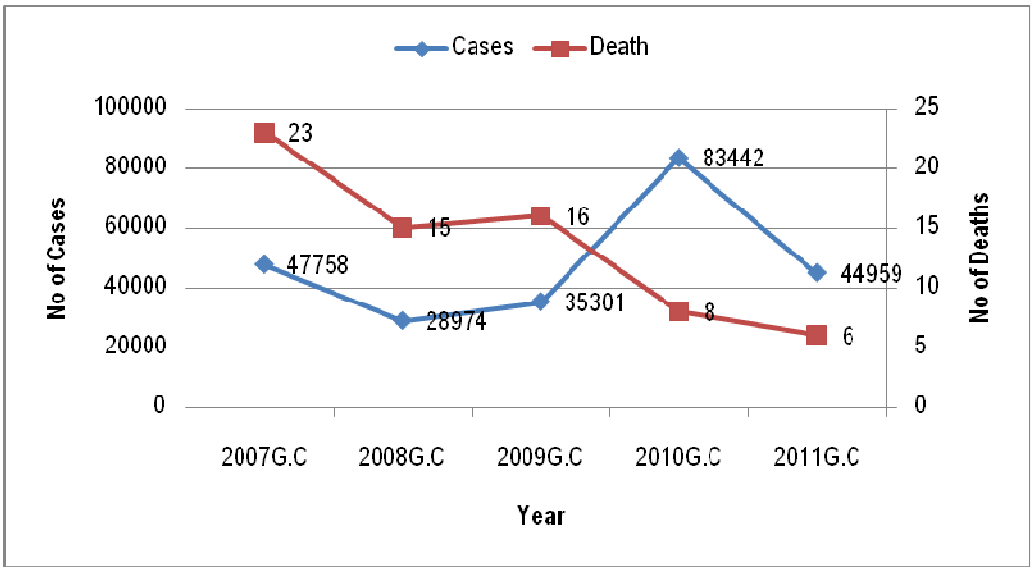

Fig 2.1.1 Malaria cases and deaths by five years SIdama Zone,SNNPR,201

From total 234,572 cases 176,125(75%) and 58,447(25%) were ≥5years and <5 years of old respectively.

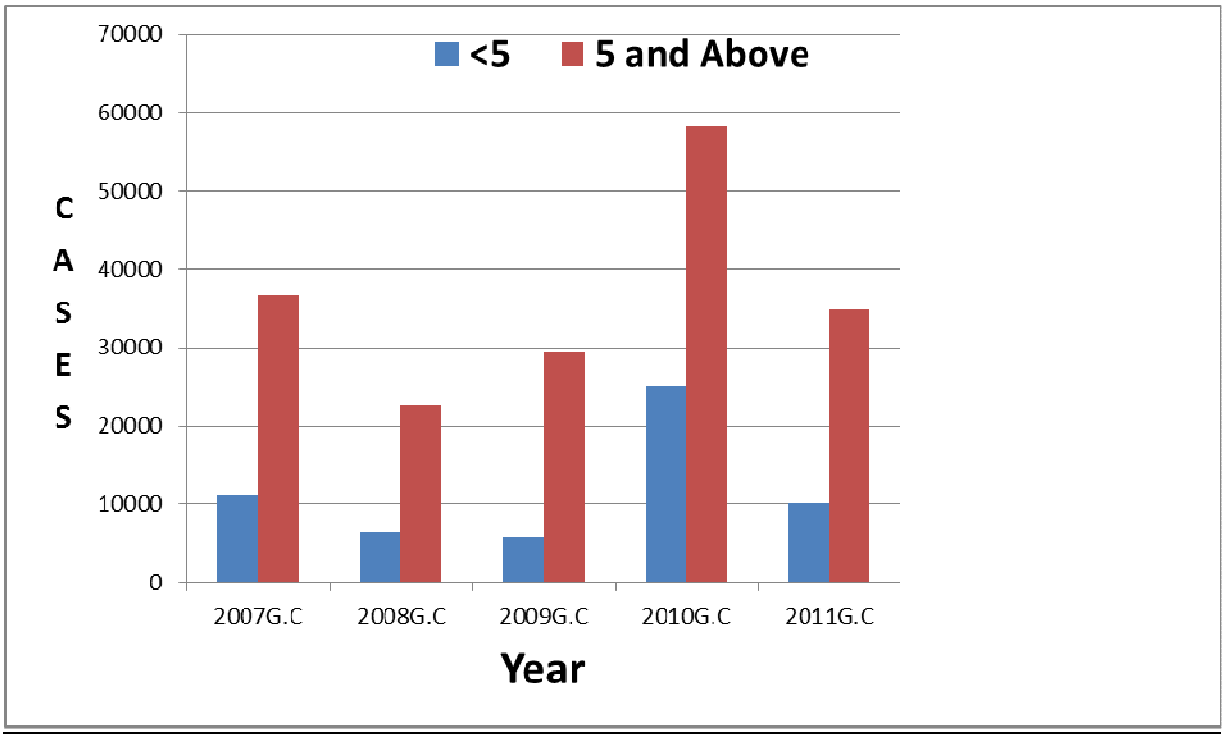

Fig 2.1.2 Malaria cases by age group Sidama Zone, SNNPR(2007-2011)

151,013 (64%), 79,161(34%) and 4398(2%) was plasimodium falciparium,Plasimodium vivax and mixed(both falciparium and vivax) respectively. So plasimodium falsiparium was dominant species compared to others for all five years .

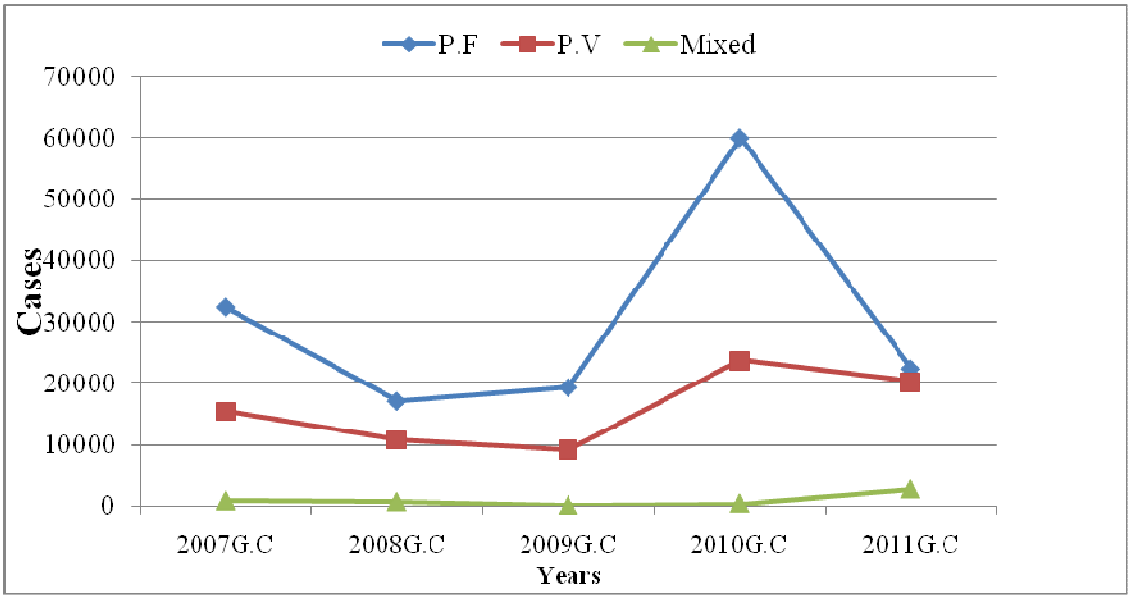

Fig 2.1.3 Malaria cases by species Sidama Zone(2007-2011)

Analzed data showed that 37,154(16%),113,859(49%) were Plasimoidium Falciparum in un der five and above five years respectively. And also 20,300(9%), 58,861(25%) were Plasim oidium Vivax in under five and above five years respectively. 993(0.4%), 3405(1.5%) were mixed(both Falciparium and Vivax) in under five and above five years.

Case fatality rate was low for all five years. This is may be early diagnosis and treatment or under report of deaths. So need farther investigation and study in the future

Year	Cases	Deaths	CFR
2007	47758	23	0.05
2008	28974	15	0.05
2009	35301	16	0.05
2010	83442	8	0.01
2011	44958	6	0.01

Table 2.1.1 Cases, Deaths & CFR, Malaria Sidama Zone, SNNPR (2007-2011)

5. Data recording and reporting

Data for year 2007-2008 was collected from Regional health Bureau HMIS data base and fo r year 2009-2011 from Zonal health department PHEM weekly report. Report sent from Zo ne to Regional health bureau did not conside, for some months it below to reported and for some months it above the reported. The other problem i found problem to analyze cases by specific age,sex and place beacuase of data incompleteness and inconsistency.

6.CONCLUSION AND RECOMMENDATION

Since cases were analyzed five years malaria cases and deaths trends, except for the year 2010 for rest of four years cases were declined. It indicated that malaria prevention and control interventions through health extension program brought major change.

Based on the findings, I recommend:

1.Give emphasis on data management,ensure data completness and timellness in all levels and years

2.Revise weekly data collecting format to include all age group for more be specific.

3. All reported data from Zones should be concide with regional health bureaue.

4. Sustain Exisiting health extension program throgh regular supervision,feed back, avail reporting format and logistics in different levels.

7. **Limitations**

- There was no data segregated by sex and place, it was limited only to categories to age
- The data was not completed for all years
- The variables to collect tata were not the same before PHEM and after PHE. The number of variables which can give more information about the diseases was reduced after PHEM core process established it changed or modified to two age group (<5&> 5) years since 2009.

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Chapter III – Evaluation of Surveillance System

Malaria Surveillance System Evaluation of, Wondo Genet District, Sidama Zone , South Nation, Nationalities and People's Regional State, Ethiopia

Ashenafi Argata

1.Introduction

Surveillance is the process of gathering, analyzing, and dissemination of information for the purpose of proper planning, implementation, and evaluation of health services/interventions. It is also defined as "Information for Action". A functional disease surveillance system is es sential for defining problems and taking action. Proper understanding and use of this essenti al epidemiological tool (public health surveillance) helps health workers at the woreda and h ealth units to set priorities, plan interventions, mobilize and allocate resources, detect epide mics early, initiate prompt response to epidemics, and evaluate and monitor health interventi ons. It also helps to assess long term disease trends. ([1])

Disease Surveillance is a key component of control programs and serves as the means of mo nitoring program success in public health importance. Public health surveillance is the ongoi ng, systematic collection, analysis, interpretation, and dissemination of data regarding a heal th-related event for use in public health action to reduce morbidity and mortality and to impr ove health. In routine surveillance systems, data on individual patients, which are recorded i n patient registers, are used to calculate the number of cases of reportable diseases diagnose d by health facility staff over a certain period of time. Data disseminated by a public health s urveillance system can be used for immediate public health action, program planning and ev aluation, and formulating research hypotheses.

The public health importance of a health event and the need to have that health event under s urveillance can be described in several ways. Health events that affect many people or requir

e large expenditures of resources clearly have public health importance. However, health ev ents that affect relatively few persons may also be important, especially if the events cluster in time and place--e.g., a limited outbreak of a severe disease([2])

At other times, public concerns may focus attention on a particular health event, creating or heightening the sense of importance. Diseases that are now rare because of successful contro l measures may be perceived as "unimportant," but their level of importance should be asses sed in light of their potential to re-emerge. Finally, the public health importance of a health e vent is influenced by its preventability. ([2]) Public health information systems have been defi ned to include a variety of data sources essential to public health action and are often used f or surveillance. These systems vary from a simple system collecting data from a single sour ce, to electronic systems that receive data from many sources in multiple formats, to comple x surveys. Evaluation of a public health surveillance system focuses on how well the system operates to meet its purpose and objectives.

The number and variety of systems will likely increase with advances in electronic data inter change and integration of data, which will also heighten the importance of patient privacy, d ata confidentiality, and system security. Appropriate institutions/agencies/scientific officials should be consulted with any projects regarding public health surveillance.

Effective communicable disease surveillance systems are one of the basic strategies of the n ational disease prevention and control. To this end continuous efforts are needed to identify problems and possible solutions to further improve the communicable disease surveillance s ystem. In general, the surveillance evaluation is aimed at describing the surveillance data an d evaluation surveillance attributes.

The changing trends of epidemic prone diseases coupled with unstable climatic condition an d increasing population movement have posed serious challenges in prevention and control of diseases. These conditions clearly showed the need to have timely, reliable, and complet e information for effective responses. However, efforts to collect, organize and utilize data from health services have not been successful for a long time due to inadequate trained pers onnel, poor data collection and processing system, and inadequate laboratory services. In ad dition lack of regularly updated guidelines, lack of coordination, lack of feedback system an d inadequate utilization of data for action have made disease surveillance a meaningless exe rcise([3]).

The evaluation of surveillance systems should promote the best use of public health resourc es by ensuring that only important problems are under surveillance and that surveillance syst ems perate efficiently. Insofar as possible, the evaluation of surveillance systems should incl ude recommendations for improving quality and efficiency, e.g., eliminating unnecessary du plication. Most importantly, an evaluation should assess whether a system is serving a usefu l public health function and is meeting the system's objectives ([2]). Because surveillance syst ems vary widely in methodology, scope, and objectives, characteristics that are important to one system may be less important to another. Efforts to improve certain attributes such as th e ability of a system to detect a health event (sensitivity) may detract from other attributes, s uch as simplicity or timeliness. Thus, the success of an individual surveillance system depen ds on the proper balance of characteristics, and the strength of an evaluation depends on the ability of the evaluator to assess these characteristics with respect to the system's requiremen ts. In an effort to accommodate to these objectives, any approach to evaluation must be flexi ble. With this in mind, the guidelines that follow describe many measures that can be applie

d to surveillance systems, with the clear understanding that all measures will not be appropri ate for all systems.([2])

The Government of Federal Democratic Republic of Ethiopia has embarked a country wide reform initiative aimed at bringing effectiveness and efficiency in execution of various work s using the Business Process Reengineering (BPR) as a tool. In line with this, the Federal Mi nistry of Health and its Agencies identified 7 core processes that will enable the fulfillment of sectoral visions and missions. Public Health Emergency Management (PHEM) is one of the core processes identified. ([1]) PHEM is the process of anticipating, preventing, preparing for, detecting, responding to, controlling, and recovering from the consequences of public health threats in order that health and economic impacts are minimized. PHEM is designed to ensure rapid detection of any public health threats, preparedness related to logistic and fu nd administration, and prompt response to and recovery from various public health emergen cies, which range from recurrent epidemics, emerging infections, nutritional emergencies, chemical spills, and bioterrorism. The activities under this core process are to be implement ed by appropriately trained and capable professionals. ([1])

This core process is comprised of four sub-processes which are: Public Health Emergency P reparedness, Early Warning, Response, and Recovery. In order to cope with the challenges of recurrent and emerging public health threats, the country, therefore, formulated this depen dable system to detect unusual health events timely and to institute appropriate response me asures promptly. While designing this process, best practices from around the world have be en adapted, tailored to the country's context taking into consideration the national threats an d the mission of the MoH. ([1])

The modern principles of emergency management and the implications of the International Health Regulation (IHR) 2005 are also clearly reflected in the system. Particular emphasis

was placed on risk based preparedness and capacity building which is considered to be a crit ical approach. The PHEM core process will provide the health sector with a system that is effective and efficient; and its implementation shall be on an accountability basis.

This guideline is therefore prepared to give guidance to all public health officers, stakeholde rs and development partners who taking part in public health emergency management, on ho w to implement the PHEM activities in a standardized way.

Ethiopia underwent different strategies to have functioning and effective surveillance syste m. Too often, however, surveillance data for communicable diseases are neither reported nor analyzed on time([4]As a result, the opportunity to take action with an appropriate public heal th response and save lives is lost. Even in cases where adequate information is collected, it is often not available for use at the local level. Cognizant of these problems African States a dopted integrated disease surveillance (IDS) as a regional strategy (resolution AFRO/RC48/ R2) for early detection and efficacious response to priority communicable diseases for the African region in September 1998, during the 48th Regional Committee for Africa meeting in Harare, Zimbabwe. Ethiopia as member state also endorsed this initiative and is using it with frequent revision of the list of priority diseases. ([1])

The FMoH/ PHEM of Ethiopia identified 20 top priority diseases which are epidemic prone, of international concern and diseases on eradication and elimination programs for surveillan ce activities ([4]). These diseases are monitored in each level at periphery to high level by a designated bodies through available means of communication- telephone, paper based report ing etc. Each reporting unit expected to report to next high level immediately and weekly ba ses. Malaria is of the

20 priority disease reported as weekly. It is significant disease burdens to the public. It is al so of the ten top diseases throughout the nation for more than a decade. Malaria epidemic is

becoming more frequent and dispersed to different corners of the country. The overall purpo se of surveillance of this disease is to monitor the trend against the seated tolerance limits, as early warning and early response system, and pick any deviation from the limit at the earl iest point in time for prompt response. Furthermore as early warning system, it guides risk mapping and preparedness; and prevention and risk reduction actions like early case detecti on and vector control.

For these purposes, malaria and other reportable diseases have case definition(s) and integra ted diseases reporting formats designed by the Federal PHEM; and reporting is institutional ized into the health facilities including health posts and health development army.

In the region, Zone and District malaria, is the major public healt problem of all the 20 prior ity diseases under Surveillance in the nation. In SNNPR, because of the climatic, environme ntal changes, inacceseble to health facilities, resource scarsity and in some place chemical a nd drug resistance, 75 % of the region is malarious and 75% of the populations are at risk of malaria. In the region, in 2012 of all outpatient and inpatient visited health facilities 2, 660,8 05 cases from these malaria cases were 21% (564,788 cases)(7).

In Sidama Zone, from 19 districts 16 districts are malarious also from total 524 kebeles 239 are (43 %) kebeles are malarious. From total 3,521,753 population 1, 527, 584(43%) are fo und to be risk of malaria. From week 1-52 (Jan.2012-Dec. 2012) a total of 101,677 cases of malaria were reported, from these 51,783(51%) were plasmodium Falciparum and 49,894(4 9%) were plasmodium vivax. From total 38 deaths registered in the Region 13(34%) deaths were due to malaria(8).

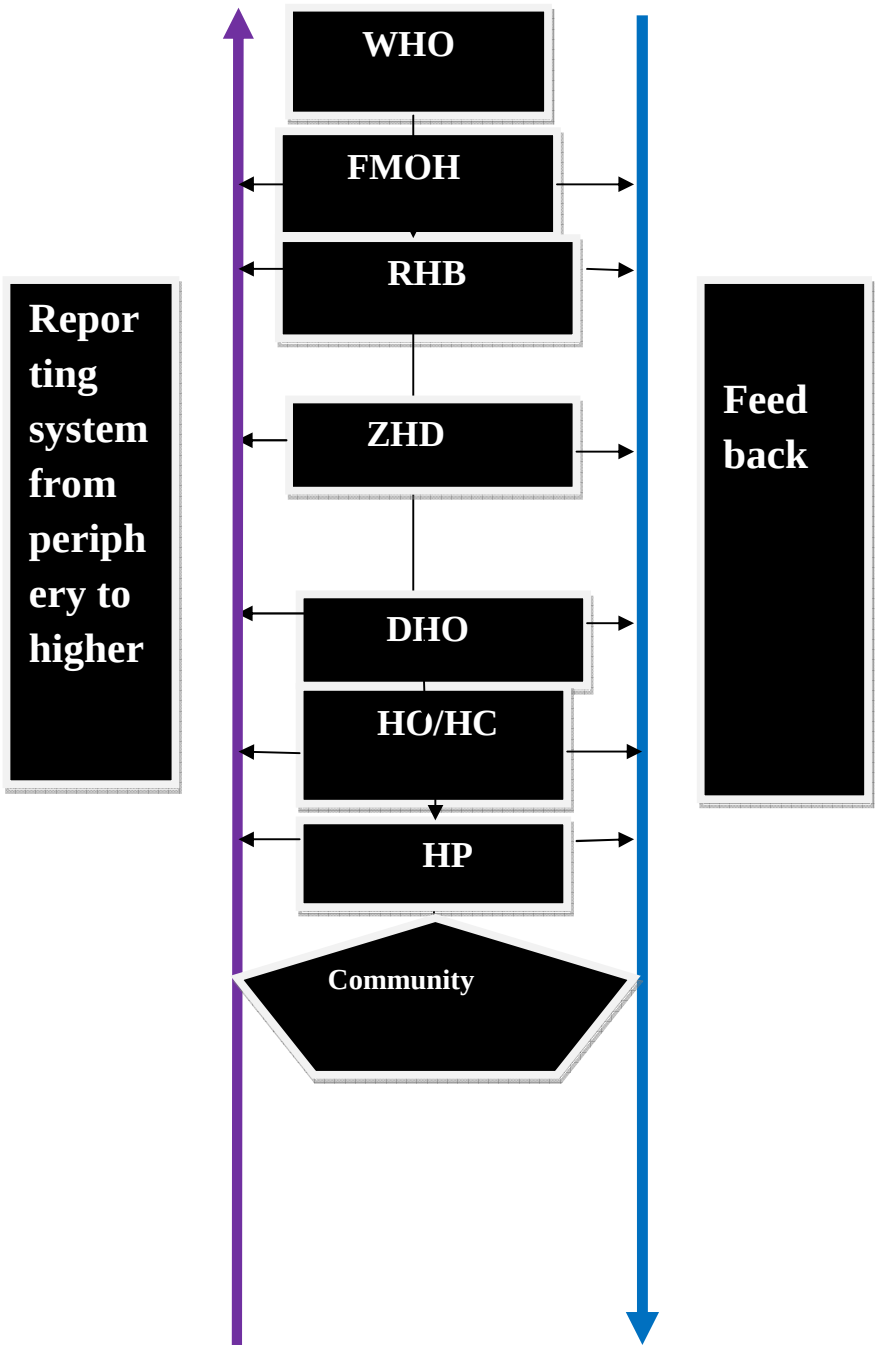

Figure 3.1.1 Flow diagram for malaria surveillance report among different level

(Source): Federal Democratic Republic of Ethiopia, National Technical Guideline

2.Rationale of the Study

Malaria is a public health priority problems and also epidemic prone disease and has impact on people's health in Ethiopia. It also first from ten top leading cause of morbidity in wondo genet district. The information generated from surveillance evaluation will be important to understand problems, suggest possible prevention and control measures. Also help to improve policy designi ng, resource allocation and public health decision making.

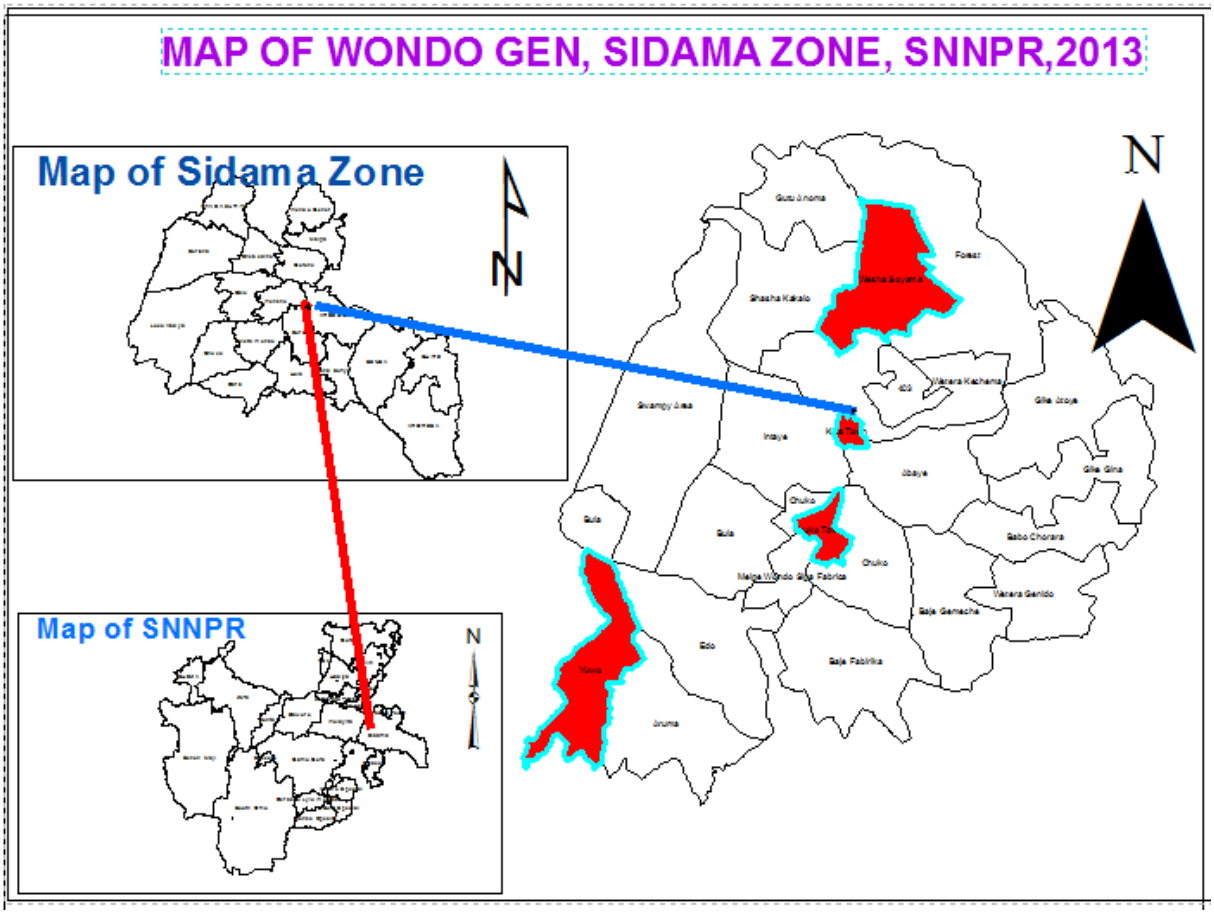

Fig.3.1.2 Map of SNNPR, Sidama Zone and Wondo Genet woreda

3.Objectives

3.1 General objective:

To assess the surveillance system of malaria and recommend based on the findings for futur e improvement.

3.2 Specific Objectives:

- To assess the core activities such as case detection, reporting, analysis and response surveill ance system in the study area
- To evaluate the attributes of the surveillance system of the malaria in the study area
- To assess the usefulness of surveillance system in early detection of malaria and to response outbreak.
- To recommend for improving quality, efficiency, and usefulness

4.Expected outcome of evaluation

To desiminate findings to respective sectors and stake holders and document lessons learne d.

To make recommendations for strengthening or improving surveillance system.

5.Methodology

Study Design and Area: A cross-sectional descriptive study was employed from 3-13 Mar ch 2013 inWondo Genet District, in Sidama Zone, and in SNNP Region. This evaluation of the surveillance system employed on selected priority disease malaria

Zone was selected for its easy accessibility and the relative high burden of the above selecte d disease for evaluation. The total population of Region, Zone and District is estimated to

be 17,353 928 3,406,616, 148,410 respectively (projection from the 2007 census). Distance of District from Hawassa capital city of Region is about 25km.and found eastern direction to Hawassa. The whole Region,Zone and Dstrict population is under surveillance for this disease.

5.1Study Design and Area:

The study was conducted from 3-13March 2013 in wondo Genet District, Sidama Zone health department, and SNNPR Health Bureaue.

Description of the surveillance system of the district, Zone and Region structure and the core activities of the surveillance system in the area was assessed. Flow charts of the surveillance system (participating agencies and information flow in the surveillance system), population under surveillance, case detection, data collection, reporting, and analysis, information for action and result dissemination and resources used in the surveillance system was assesse. The evaluation of the performance and attributes of the surveillance system was involve assessment of the usefulness of the surveillance system, simplicity of the system, sensitivity, Predictive value of positivity(PVP),flexibility, quality of the data, acceptability, representativeness, timeliness and stability of the surveillance system.

5.2 Study Units:

The study subjects were regional PHEM, zonal health department, District health office, 2 health centers and 2 health posts in the district. Selection of the zone and district health was on convenience whereas health centers and health posts were selected by using random sampling method. A total of 7 study units/sites were included in the study.

5.3 Data collection tools and methods

Semi- structured and structured questionarries was used to collect data. Data was also colle cted through observation and interview using structured questitionaires are adopted from W HO

standard questioners for surveillance evaluation(3). Secondary data source like (FMOH guid elines, Annual regional, Zonal and District performance report, from Stakeholder (WHO) an d other publication) was used.

5.4 Data Analysis

Microsoft-Excel and Arc GIS was used to enter and analyze quantitative data and to draw maps.

6.Etical Clearance

Institutional ethical clearance for acceptance of the study was obtained from, an ethical revi ew board in Addis Ababa University, SNNPR Health Bureau (Sidama Zone Health Departm ent), and letter was requested and obtained from selected districts Health office.

7.OPerational Definition

Acceptability: Will be measured quantitatively through reviewing completeness of report forms for the past three months and timeliness of data reporting

Accessibility: Ease which statistical information can be obtained from the Agency.

This includes the ease with which the existence of information can be ascertained, as well as the suitability of the form or medium through which the information can be accessed. The cost of the information may also be an aspect of accessibility for some users.

Accuracy:Degree to which a measurement or an estimate based on measurements represents the true value of the attribute that is being measured.

Simplicity : refers to the structure of the system and the ease of implementation.

Representativeness will be evaluated by comparing DHS and National malaria indicator survey and the number of health facilities actually covered by system compared with expected number of health units

Sensitivity of malaria surveillance will be assessed at the level of case reporting in health facilities through reviewing records in health facility including Government, private and NGO, preceding three months and compared with cases detected by the surveillance system in district.

Specificity: Measure of how infrequently a system detects false positive health events, i.e, the number of individuals identified by the system as not being diseased or not having a risk factor, divided by the total number of all persons who do not have the disease or risk factor of interest.

Stabilty; Reliability (ability to collect, manage and provide data properly without failure) and availability (ability to be operational when it is needed) of the public health surveillance system.

Timeliness; Interval between the occurrence of an adverse health event and (i) the report of

the event to the appropriate health agency, (ii) the identification by that agency of trends or outbreaks, or (iii) the implementation of control measures also “The variance between plann ed and actual dates for a product’s availability for a particular user audience. Multiple dates, each later one with increasingly accurate information, are possible.

Usefulnes;How helpful the system is to public health staff in taking actions as a result of in terpreting and analyzing its data.

Validity. Degree to which statistical information correctly describes the phenomena it was designed to measure. It is usually characterized in terms of error in statistical estimates and is traditionally decomposed into bias (systematic error) and variance (random error) compo nents. It may also be described in terms of the major source of error that potentially causes inaccuracy (e.g., coverage, sampling, non-response, response Positive)

Positive predictedvalue; Proportion of reported cases that actually have the health-related e vent under surveillance.

Flexibility -Ability of the surveillance system to accommodate changes in operating conditi ons or information needs.

Completness:Proportion of all expected data reports that were actually submitted to the pub lic health surveillance system.

8.Standard case definition

Suspected: Any person with fever or fever with headache, rigor, back pain, chills, sweats, myalgia, nausea, and vomiting diagnosed clinically as malaria

Confirmed: A suspected case confirmed by microscopy or RDT for plasmodium parasites

Community case definitions: Any person with fever OR Fever with headache, back pain, chills, rigor, sweating, muscle pain, nausea and vomiting OR Suspected case confirmed by RDT

Level	Respondent Unit
Regional Health Bureau (RHB)	PHEM staff
Zonal health office	PHEM STAFF/IDSR Focal Person
District Health Office	PHEM STAFF/IDSR Focal Person
Health Facilities	Head of Health Facility/ IDSR Focal Pers

Table 3.1.1 Respondents/Interviewees for malaria surveillance Evaluation Wondo Genet District, Sidama Zone, SNNPR Region 2013

9.Dissemination of the Study:

The result of the study was submitted to the SPH- AAU and the respective District health office, zonal and regional health bureau with hard and soft copies, and other stakeholders working in the area on malaria control and prevention program in the region and zone. The finding was presented to these parties with a half day meeting at the Regional Health Bureau. The research findings shall as well be published in national or international journals for the consumption of the wider national or international scientific community.

10.Result

The evaluation team were visited a total of 7of which 4,health facilities (2 health centers and 2 health posts), one district health office, one zonal health department and one Regional

health Bureau. Responsible and relevant professionals from health facilities to regional he alth bureau responded to the qualitative and quantitative provided the required information. The findings were compiled and analyzed the data gathered by the assessment team. By int erviewing surveillance focal persons at various levels of the health System, including observ ations and discussions with key informants. Generally malaria surveillance system is found to be functioning at all level. However, in some areas specially at health posts the quality of information generated needs improvement. The malaria data is being collected, was not

analyzed and not used for action . Inadequate coordination and supervision of the surveillan ce activities could have contributed to some of these shortcomings. Below are some the maj or findings of the assessment. Corrected knowledge of epidemic threshold of malaria ,The m alaria surveillance system has been useful in the zone. It was detected outbreaks in health ce nters and district of the zone.

11.Cases registration and reporting

Registration and reporting of priority diseases is important in surveillance. All visited healt h facilities have an outpatient register and inpatient register (where appropriate) for recordi ng cases. For example, the team counted the number of malaria cases in all the registers at fa cility level and compared the number to those found in the report format and tally sheets as an indicator of data quality.

Name of Health Facilit y	Completeness	Timeliness
Wosha HC	100	100
Wondo Genet HC	100	100

Chuko HP	100	100
Yuwo HP	100	100

Table 3.1.2 Completeness and Timeliness and reports at health facility level in wondo Gen et woreda, sidama zone,SNNPR Region 2013

HF/WOEDA	EXPECTED	REPORTED	%
Wondo Genet HC	48	48	100
Wosha HC	36	36	100
Chuko HP	12	12	100
Yuwo HP	12	12	100
Wondo Genet Health office	168	168	100

3.1.3 Timeliness of reports for last three months by Health facility and district in sidama zon e, SNNPR, 2013

The weekly reports on completness and timeliness showed that for all visited sites was very good. except for zone and region all were sent on time (100%) and completeness also 100 %. Zonal and Regional completeness was 92.7 % and 87 % respectively for year 2012.

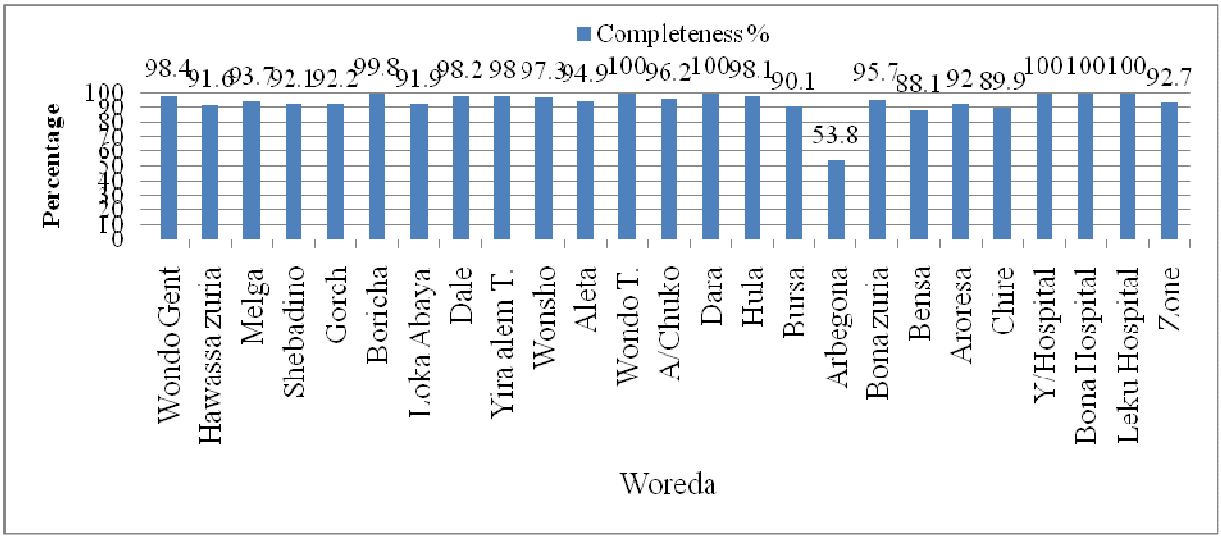

Fig.3.1.3 Weekly report completeness, Sidama Zone, SNNPR, 2012

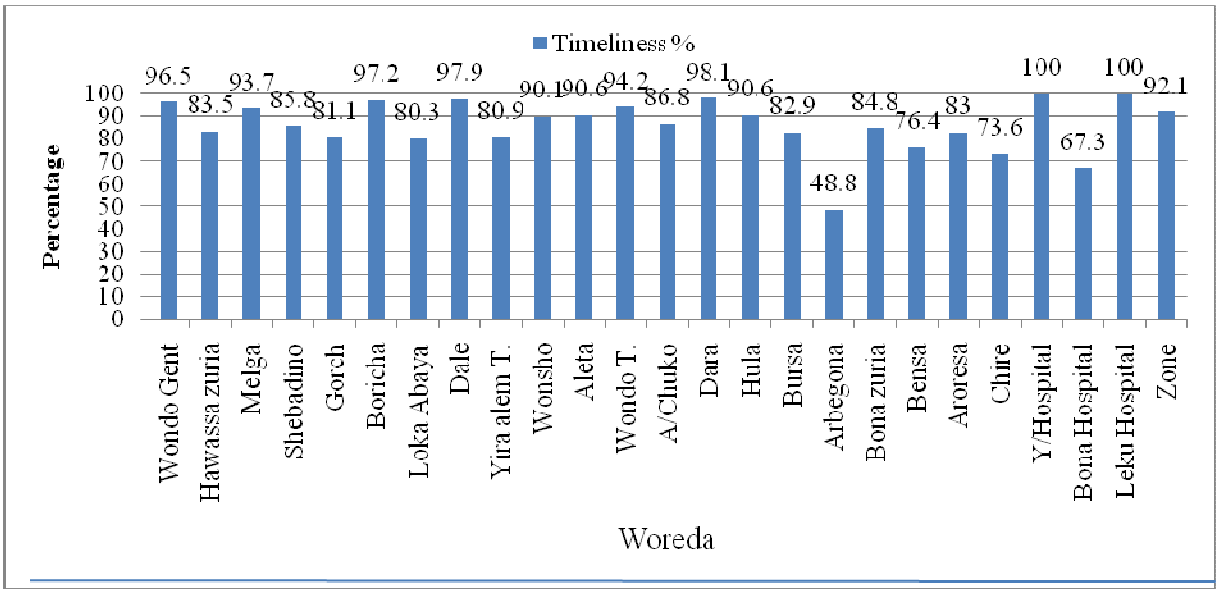

Fig.3.1.4 Weekly report timeliness by woreda, Sidama Zone, SNNPR, 2012

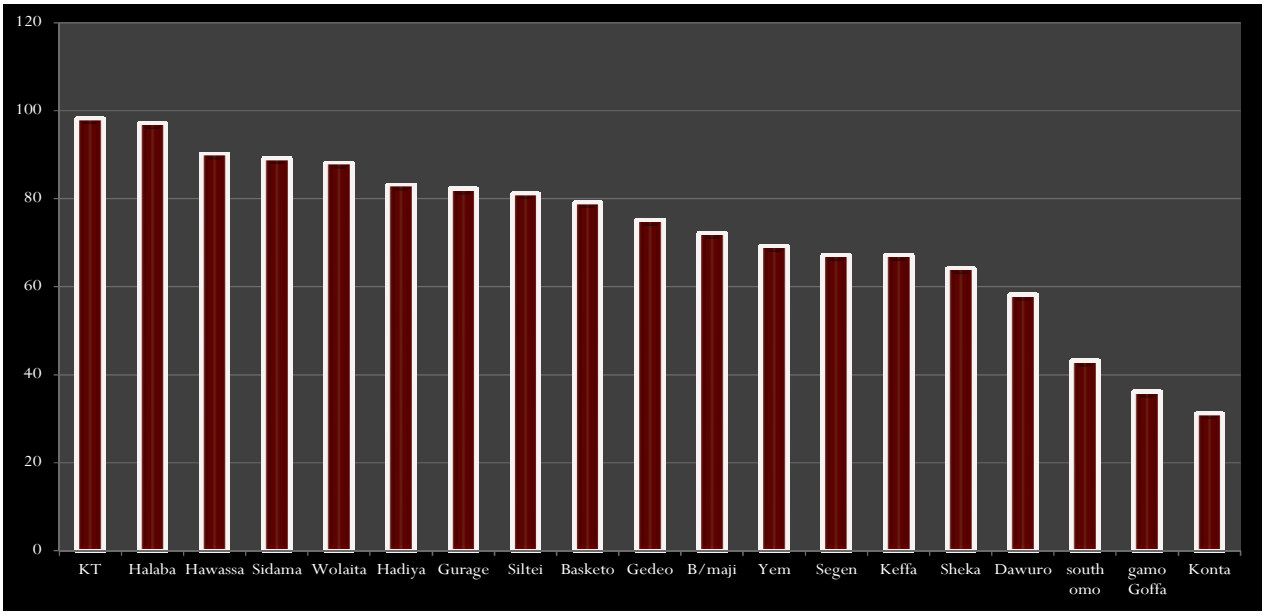

Fig.3.1.5Weekly report completeness SNNPR, by Zones and Sp.woreda, 2012

12.Data analysis and management

The integrated disease surveillance strategy recommends that collected data should be analy zed and used for action. The assessment found that no analysis of malaria surveillance data was done at health post level and very little analysis at health center. But from district to reg ional health bureau data was analyzed at weekly bases and used for action. The reason why health post staff was not analyzed is due to knowledge gap and lack of stationeries, calculato rs and multiple responsibilities.

Visited site	Number of respondent	Evidence of Graph	Percentage (%)
Region	1	1	100
Zone	1	1	100
District	1	1	100
Heath centre	2	2	100
Health posts	2	0	0

Table 3.1.4 Data analysis and management in, SNNPR, 2013

13. Description of the importance of malaria, in SNNPR, Sidama Zone and Wondo Genet District; and the relevance of the Surveillance system:

In the region, Zone and District malaria, is the major public healt problem of all the 20 priority diseases under Surveillance in the nation. In SNNP Regional state, because of the climatic and environmental changes, 75 % of the region is malarious and 75% of the populations are at risk of malaria. In the region, in 2012 of all outpatient and inpatient visited health facilities, 2, 660,805 cases malaria took 21% (with a total of 564,788 cases).

In Sidama Zone, from 19 districts 16 districts are malarious also from total 524 kebeles 239 are (43 %) kebeles are malarious. From total 3,521,753 population 1, 527, 584(43%) are found to be risk of malaria. From week 1-52 (Jan.2012-Dec. 2012) a total of 101,677 cases of malaria were reported, from these 51,783(51%) were plasmodium Falciparum and 49,894(49%) were plasmodium vivax. From total 38 deaths 13(34%) deaths were due to malaria

Woreda	Total Kebele	Malarious kebele	Total Population	Population at risk	%
Aleta Chiko	28	21	203788	152841	75
Aleta Wondo	27	8	198060	58685	30
Aleta Wondo Town	4	4	26223	26223	100
Arbegona	38	0	171300	0	0
Aroresa	33	6	201979	36723	18
Awassa Zuria	23	23	166066	166066	100
Bensa	38	15	298049	117651	39
Bona Zuria	28	7	152499	38125	25
Boricha	42	42	280564	280564	100
Bursa	28	0	119473	0	0
Chirie	16	0	135821	0	0
Dale	36	26	218696	157947	72
Dara	35	12	187405	64253	34
Gorchie	21	0	165935	0	0
Hula	31	0	154839	0	0
Loka Abaya	26	26	117781	117781	100
Malega	23	4	135367	23542	17
Shebedino	36	25	225356	156497	69
Wenedo Genet	14	9	181964	116977	64
Wonesho	17	4	143231	33701	24
Yirgalem Town Adm.	7	7	37356	37356	100
Total	**551**	**239**	**3521753**	**1527584**	**43**

Table 3.1.5 Malarious kebele and malaria risk population, Sidama Zone, SNNPR, 2013

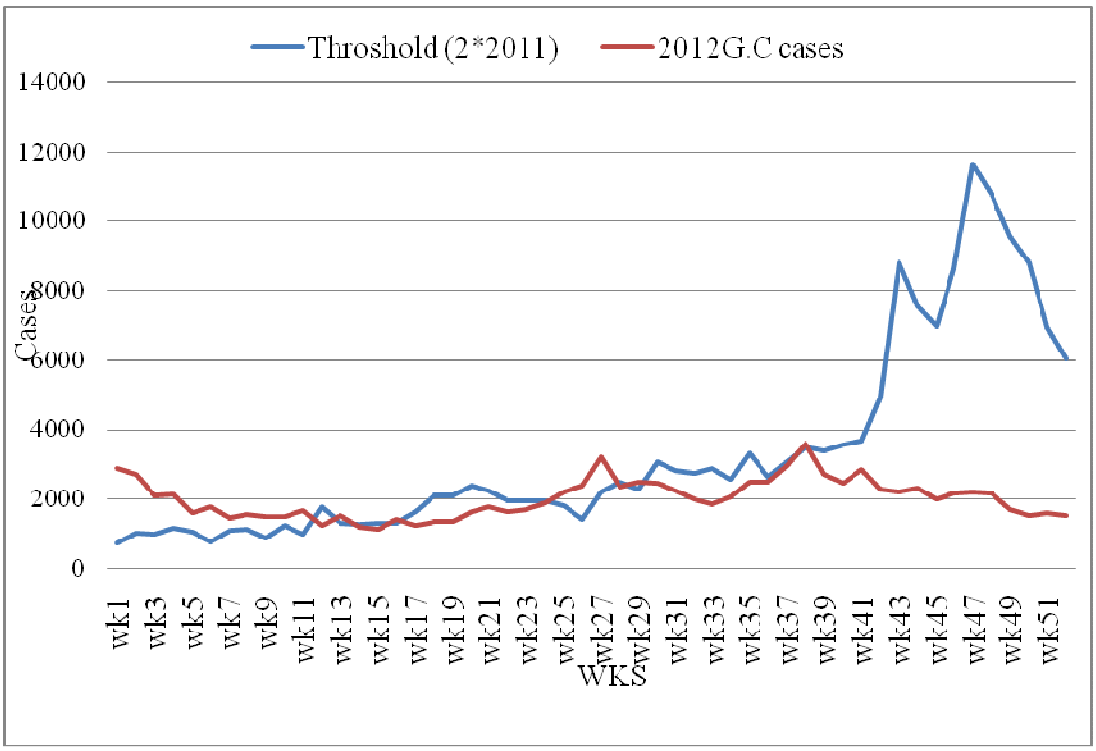

Fig.3.1.6 Weekly malaria trends in Sidama zone, January -December 2012

In Wondo Genet, 10(71%) kebeles are malarious kebeles from 14 kebeles. From week 1-52 (January-December 2012) a total of 4419 cases of laboratory confirmed malaria were report ed, from these plasmodium Falciparum accounts 2423 (55%) and 1996(45%)were plasmodi um vivax. From week 1-9 malaria cases were crosses the threshold, the explantion for this was during these weeks there were high mosquito breeding sites were found near rivers wh ich peoples using irrigation for their farm. The other reson mentioned was resistant of IRS c hemical which was sprayed during regurl period sprayed. Through different intervention a ctivities, for the rest of weeks cases became below threshold, to mention some of them, data compling and analysing, screening of all febrile cases in specfic kebeles,using of abate che mical and changing of IRS chemical,giving health education through health extention worke rs and health development army.

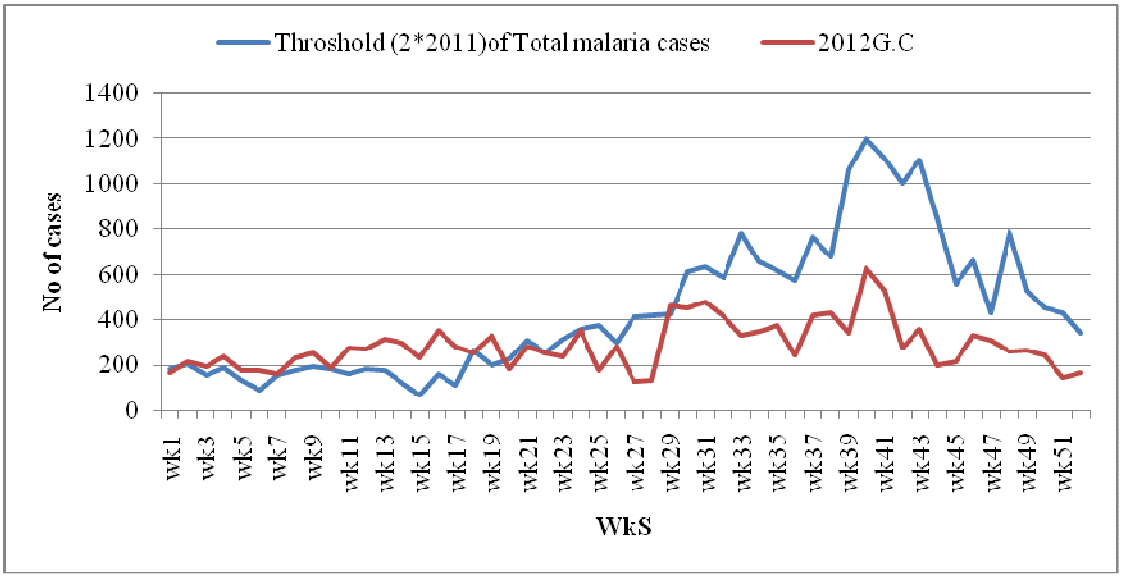

Fig.3.1.7 Weekly malaria trends Wondo Genet District, Sidama zone, January -December 2012

14.Epidemic Preparedness and response

Assessed district has experienced one or more types of outbreaks in the previous year's Measles and AWD) and all were responded within 48 hours of report to the respective health facilities and office. The sampled health offices (region, zone and district) responded that they set epidemic preparedness and response plans for their priority diseases, and have epidemic management committee with rapid response team. However, except for the regional health bureau and Zone which stock drugs and other supplies of about 80% and 60% of the last year consumptions, assessed district health offices and health facilities have no any stock, nor budget line for emergency. The epidemic management committee and the rapid response teams were activated only when there is an emergency events. Moreover, there were no regular monitoring and evaluation.

VARIABLES	RHB n=1	Zone n=1	District N=1	HF n=4
Observed written reports in %	100	100	0	0
Availability of emergency stock drug &supplies	80	60	0	0
experienced shortage of drug during recent epidemic%	20	40	100	100
presences of budgets line for epidemic response in %	100	70	0	0
Observed epidemic mgt meeting minutes in reports in %	80	80	30	0
have rapid epidemic response team in%	100	100	100	60

Table 3.1.6: Epidemic preparedness in Wondo Genet, Sidama Zone, SNNPR, 20113

15. Feedback and Supervision

Giving feedback is one of the ways to motivate staff and help to improve quality of report. This also serves as an assurance that what they are doing is appropriate and being continuou sly monitored. Except exchanging information by telephone, there was no written feedback given to respective health institutions, offices, and departments. Health system assessed was not supervised by respective departments and bureau for the last one year by using standard check lists.

16.Training

All assessed district health office, zone health department and region health bureau staff, res ponded that all the staff working on surveillance units got short term training of 6 days by th e Regional Health Bureau with collaboration of partners on Priority Reportable diseases &

case Definitions, Early Warning & Emergency Communication, Public Health Risk Assess ment, surveillance and epidemic management,. At the health centers, only the focal persons assigned for surveillance was trained, but the health care providers at health center and all h ealth extension workers serving at kebele (small unit administration) did not get training on surveillance.

S.No	Zone	Expected	Trained	%
1	Sidama	103	98	95
2	Gedeo	29	30	103
3	Hawassa City	7	7	100
4	Segen	27	27	100
5	Wolayta	73	58	79
6	Dawuro	23	19	83
7	Kambata Tambaro	29	31	107
8	Halaba	10	8	80
9	Basketo	3	3	100
10	Gurage	62	63	102
11	Yem	6	6	100
12	Konta	4	4	100
13	Hadiya	59	52	88
14	Silte	34	34	100
15	Bench Maji	36	33	92
16	Kefa	43	41	95
17	Sheka	12	12	100
18	Gamogofa	69	61	88

19	South Omo	27	26	96
	Region total	**656**	**613**	**93**

Table 3.1.7 Trained health professionals on Public Health Emergency Management /IDSR by Zones and special woredas, SNNPR,2012

17.Material resources available for surveillance

Resources for data management, communication, and logistics were all available at the regio n and Zone level.The PHEM/ surveillance units at the zone, district, and two health centers have telephone; the other two health posts did not have telephone. Fax machines, internet se rvice are functional at regional and Zonal level. Region, Zone, District and one health center have computers. All the health units assessed were complained about budget constraints exc ept the regional level.There was no a radio call system in any of the areas of the visited.

TYPES OF RESOURCE BY %	RHB N=1	ZONE N=1	DISTRICT N=1	HC=2	HP=2
Electricity	100	100	100	100	0
Motor Cycle	0	100	50	0	0
Vehicle	70	50	40	0	0
Stationary	100	100	50	30	0
Calculator	100	100	100	100	0
Computer	100	100	100	50	0
Printor	100	100	0	0	0
Telephone	100	100	100	100	0
Fax	100	100	0	0	0
Radio Communication	0	0	0	0	0

Poster	100	100	100	100	100
Megaphne	0	0	70	50	0
Flip Chart	100	100	100	100	100
TV set	100	100	0	50	0
Generator	100	0	0	0	0

Table 3.1.8 Distribution of Resources in Wondo Gent District,Sidama Zone,SNNPR,2013

18.Description of the performance and attributes of the surveillance system

Usefulness

Early detection of epidemics of diseases under surveillance was a common understanding of all the respondents as the major use of the surveillance system. So the use of the system for assessment of the effect of prevention and control programs was very good from region to di strict, but very limited to health centers and health post level. Moreover, this well understoo d use of the surveillance system has brought so many changes in the area of case detection, reporting and response following it. In general, the users of the surveillance system, though they understood the usefulness in this regard are satisfied with the system.

Case detection

In order to detect cases of priority diseases, health workers require adequate training on clini cal diagnosis and be equipped with appropriate case definitions. The MOH/PHEM were dist ributed disease specific case definitions for use by the health facility staff. When asked to na me the priority diseases in assessed site , over 80% of the respondents mentioned malaria, m easles, AFP, diarrhea, dysentery, and Acute watery diarrhea, neonatal tetanus.

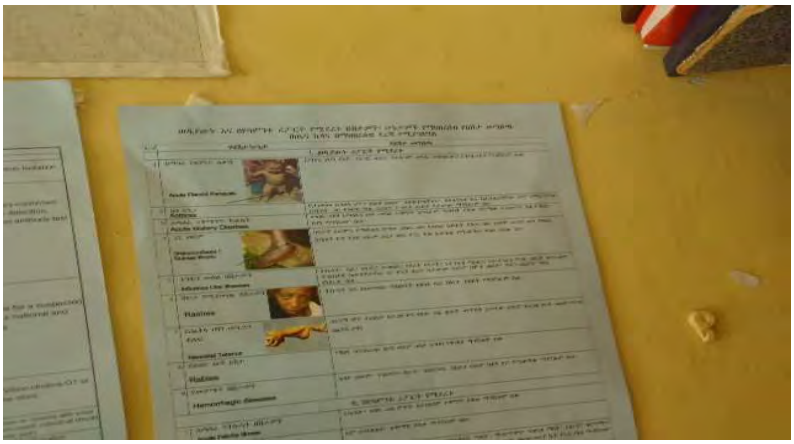

Fig 3.1.8 Community case definition posted at Choko Health post,Wondo Genet Woreda

From the assessment we found that majority of the health facilities (98 %) have national ID SR surveillance guidelines. These guidelines contain case definitions for priority diseases.

100% of the district,healthcenters and health post staff said that they have a mechanism to capture information on outbreaks from the community . This was mainly through health ext ension worker and newly established health development army . out of visted and interviw ed health facilties,district health office, Zonal health department and regional health bureau all(100%) were have reporting format which was distributed by federal PHEM in 2012.

Simplicity

In the detection of cases

All respondents agreed that the case definitions of this disease for identification of suspected case is easy to understand and apply by all levels of health professionals. But to confirm ca ses,it was found usually difficult for factors related to sample collection, transport and delay in laboratory result (up to 1 month) and sometimes shortage of RDT at health post level.

Flexibility

The previous IDSR system has been recently changed with the implementation of the curren t PHEM since 2009. This change has made the reporting format more flexible to report other newly occurring health event without much difficulty, and the formats are assumed to be ea sy and comprehensive, except for English language barrier particularly at the health post lev el. Respondents at district and health facilities pointed out concerns related to capacity build ing and intensive advocacy prior to any change in the system.

The Quality of data

The data quality was also assessed on the basis of completeness of the reporting format and the timeliness of the report as set in the guideline. Some of the missed variables in the week ly reporting formats and case based reports were observed at health centers level. The blank variables in the case based reports were hospital admission, date of admission, vaccination

history, locating information, address (urban/ rural). The major reasons were language barrie r and knowledge gap on health professionals and not considering some of the variable as im portant. There was data inconsistency also observed on registers and weekly report at healt h centers and health posts. The reporting sites were not well trained or regularly supervised in all visited sites. There were no regular crosschecking of the data and written feedback wa s given to next level.

Acceptability

The acceptability of the surveillance system assessed based on the engagement of the reporti ng health facilities and active participation in the case detection and reporting. In the zone, the engagement of the reporting district health offices and hospitals was as expected and the reporting rate of the health facilities in the zone was 92% as seen over 12 reporting weeks. The major reasons for not full engagement to the surveillance activity were poor means of communication in some remote health posts, lack of feedback and /or of dissemination of th e results or situations in their district, Zone or region, lack of training especially for health

extension workers, high turnover of trained staff from their focal points.

Sensitivity

The sensitivity of the surveillance of these diseases in the detection of the cases and outbreaks were seen separately:

The surveillance system to detect cases of malaria,

Since the surveillance system is based in the health facilities, the capacity of the surveillance system to capture cases in the community is dependent on different reasons: The health seeking behavior of the community- which was generally commented as good, particularly for malaria, though there is improvement with the HEP and health development army.

Surveillance system to detect an outbreak of malaria

The capacity of the surveillance system to detect an outbreak is influenced by the definition of the outbreak. In malaria, the sensitivity of the surveillance system is dependent on different reasons, like regular analysis of the data, definitions of the thresholds, case detection and reporting rate of the expected health facilities and so on.

The reporting rate of the health facilities was achieved with expected at Region, Zone, District and health centers. But at health posts there was no regular analysis of the collected data, and there are different definitions of thresholds - like "case build up"… And hence, the sensitivity of the cases detection and outbreak detection of the surveillance system is high.

Predictive value positive

It was not possible to measure the PVP of the surveillance system in our assessment of the surveillance of this disease. Because, the laboratory confirmation of all suspected cases by the case definition couldn't be possible to confirm by other laboratories to evaluate quality control , or not practiced . For example, malaria in non epidemic seasons and whenever RDT is available, the health posts treat and register only RDT positives; which seemed to be

100% PVP, but RDT negatives cases are usually referred and not registered.

Representativeness

The representativeness of the surveillance system is related to the health service coverage, th e report completeness, report timeliness of the health facilities, woreda health offices, Zonal health departments and Regional health bureau. Health seeking behavior of the community and the technical capacity of the health care providers representativeness of the system is lik ely to be good since established HDA .

Timeliness

The reporting rates of the health facilities in the health facilities, Woreda health office was 100% and zone and Regional health bureau was found to be 92% and 87%. Which reported, the number of facilities which reported timely and late was monitored by putting timely and late mark on paper.

Fig. 3.1.9Weekly Completeness and Timeliness Follow up chart Wondo Genet Woreda, Sid ama Zone, SNNPR, 2012

Stability

With the implementations of the new BPR restructuring, the procedures and activities of the surveillance of these priority diseases were affected because of demanding to have different category health professionals and capacity. Further change in this system and the work load will make the system more unstable, frequent staff turnover and resource scarcity. At initial point the change of IDSR to PHEM made the reporting rate to go down, but stability maint ained through intensive capacity building, resourse mobilization and extension of system to periphery level.

19.Discussion and Conclusions

The overall structural set up of the surveillance system by the reform with BPR and creation of responsible unit/focal person/persons from Regional Health Bureau to the community le vel is excellent. The RHB with collaboration of WHO were designed manual, trained volunt eers on community based IDSR. Now concept shifted to newly designed HDA.

The understanding of the healthcare providers including the health extension workers to the case definitions were found to be very good but the collected and registered data had not ana lyzed and used for action at health post level. Clinical registers and reporting formats were printed by Federal PHEM and distributed to all health facilities including health posts. In all health facilities cases definitions of all 20 priority reporting diseases were posted to the pub lic.

The structure of data reporting flow from the lower to the upper level is well organized and to strength the reporting system training was conducted for focal persons at each level and supporting supervision also made at region, Zone and district level, but no regular feedback was given. Each reporting unit use means and infrastructure like transport, telephone, radio, fax, email and computers for data management, analysis and reporting to next level. These

resulted the overall generation of reports by the expected health facilities and make the surv eillance system very good. Even if in few Zones and special woreda reports was delayed, in most zones and special woreda reports becoming improving through year to year. This high reporting rate analysis of the collected data at Region, Zone and woreda will make the surve illance system useful to meet its objectives.

The epidemic preparedness of Region and zone in terms of EPRP, logistics were good but pr eparedness at districts did only planning, with no financial and/ or logistic support, besides the epidemic response teams were initiated only during outbreaks and emergency events in a ll levels.

20.Recommendations

Over all designing structure and assigning focal persons on Public health emer gency management core processes and focal points enhances and improving surveillance system on data recording, collecting, organizing, reporting and ana lyzing.

From this assessment we suggested the following major recommendations for immediate, m edium, and some for long term implementation:

- The main source of surveillance data is from health facilities, so to get quality data should be minimize high trained staff turn over from Hospitals, Health centers as well from woreda health office
- Awareness creation and building positive attitude of the community for voluntary an d active participation in the diseases notification, should be maintained; the experience of th e community based surveillance should be more exploited and expanded by using newly est ablished Health development army.

- More emphasis should be given on capacity building of the focal persons/ health car e providers immediately after assigning/replacement in the disease detection and reporting and use of data for action
- To improve recording, reporting quality written feedback should be given at each lev el
- To make report completeness and timeliness at least above 95% at Zonal health depa rtment and above 90% at Regional health bureau Zone and region should be give more emp hasis for woredas, special woredas and Zones below expected report completeness and time liness.
- Regular revision of epidemic preparedness plan and local capacity and resource map ping should be done by district health offices, the Zonal Health Department and the Regiona l Health Bureau should follow and give feedback on regular basis at least biannually;

21.Acknowledgment

I gratefully appreciate Public health emergency officers at all levels of the regional health Bureau , district heath office staff and health workers in health centres and Health Extensio n workers for their full cooperation to give me relevant data and information.I would like also to acknowledge the collaboration of all staff of Sidama Zone health department. Finall y I would forward great appriciation to My mentor Dr. Meriawi Argaw for giving me a con structive comments on my work, specially during proposal preparation and report writing.

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Chapter IV – Health Profile Description Report

Dale District Health profile report, Sidama Zone, SNNPR, Ethiopia, August, 2012

Ashenafi Argata

Executive Summary

Introduction - The health profile description highlights several important aspects of public health data. Health Profile is now an established part of planning for health improvement. Data was collected, analyzed, and disseminated for decisions on the best information available. Morbidity, mortality, socio-demographic and vital statistics.Other data can be collected and that also 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, at district level.

From August-September 2012, Dale district health profile data was collected, organized and analyzed.

Methods - Semi- structured checklist was used to collect of health related description of Dale district profile from August 27 – September7 /2012.

Key informant Health, Finance, Education, Culture and Tourism sectors heads, professionals/experts was contacted. Demographic, epidemiologic and socio-demographic data of Dale district was assessed and described. Data was processed and analyzed by Microsoft excel. Finally the finding was communicated to Sidama zone health department, Dale district health office, partners and community. Permission was obtained from SNNPR health bureau and AAU (EFELTP Mentor, Advisors and Field base supervisor.) and local health office.

Results –The district has 36 rural kebeles and it has organized political and administrative structure. Twenty sectors are found in the district town (Yirgalem town).In 2004 EC (2011/2012), the district population was estimated to be 248,682 from which 50.6 % of them were males. All populations living in the district rural kebeles. About 95 % of the district populations were agriculture dependents. The district has 17 first cycle and 35 second cycle primary schools, and 2 secondary First cycle elementary schools (grade1-4) have a total student population of 33,640; from these 17,099(51%) were males. Second

cycle schools (grade1-8) have 16,152 students; with 50.6 %(8178) In the two high schools; there are 729 students (with 65.6 % (478) males and 34.4 %(251) females) students in grade 9-10.Forty -two (79 %)of schools have water supply in their compound, 40 (75.4 %) schools have latrine with separate male and female; and 13 (24.5%) has common latrine (for both sex).

From expected pregnant women79% attended ANC services and 3% women delivered by skilled health personnel in the same year. Potential health services coverage was 70%. Malaria is the top causes of morbidity at OPD in adult and pediatrics. Out of 20711 peoples (clients) screened (tested) for HIV 11(0.05%) clients were positive (new HIV cases). Totally 339 smear positive pulmonary TB patients were detected.

Conclusion – Maternal and Child health care services coverage including immunization was good but delivery attended by skilled health personnel was low, TB detection rate was greater than 100%, which implies strong collaboration with in health sector core processes and case teams and other sectors and partners. Important health indicator and ART/Pre-ART clients data was not obtained at district health office. Malaria is prevalent in the district and it is the leading causes of morbidity in adult OPD and pediatrics. Therefore, applying package malaria prevention and control strategy in the district is mandatory to combat the burden of malaria. From screened clients 10912 were males and 9799 were` females Out of total screened, 11(0.05%) clients were positive for HIV virus. Finding of result was discussed with district health office team, partners and Zonal health department.

Introduction

The formulation and implementation of policy and strategy is contingent upon the generatio n of an evidence-base data. As an essential tool for evidence-based program management an d its application is considered crucial for public health program development and manageme nt. Data can be generated at district and field levels and used for public health action at all le vels.

The health profile description highlights several important aspects of public health data. Hea lth Profile is now an established part of planning for health improvement. Data was collecte d, analyzed, and disseminated for decisions on the best information available. Morbidity, mo rtality, socio-demographic and vital statistics. Other data can be collected and that also 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 eva luation of health care including, most importantly, at district level.

Objectives

General Objectives: To assess and describe the Dale District, health profile and disseminat e the findings for those who use the findings for planning, decision making and resource allo cation.

Specific Objectives:

- To describe existing health infrastructure of the district
- To assess primary health care coverage of the district
- To generate data from the health profile description
- To present findings to District Administration, Sectors and stake holders

Methodology:

Health and other health related data of 2004 E.C (2011/2012) was collected in

Dale district, Sidama Zone, SNNPR from August 27 – September7 /2012.

Semi- structured quetioneraires was used to collect health and health related description of Dale district. Key informant sectors heads, professionals/experts was contacted. Socio-Dem ographic, Health indicators, infrastructures**,** Geography and climate, Administrative and pol itical structure and Productivity and Income data was assessed and described. Observation method also employed. Data was processed and analyzed by using Microsoft excel. Finally the finding was communicated to Sidama zone health department, Dale district health office , partners and community. Ethical permission was obtained from SNNPR health bureau and AAU (EFELTP Mentor, Advisors and Field base supervisor.)

Results

4.1 Historical background

Dale district located in the south of Hawassa, SNNPR state capital, 320km and 45km away from Addis Ababa and Hawassa respectively. It has an area of 276.88 square kilometers and 1,023.6 populations per square Km, and second highest next to Shebedino district in the zone.

It is situated between $6^0$44 degrees latitude North and $38^0$28 degrees east longitude that stret ches at the range of 1765 meters of altitude above sea level. The climate varies from seasons to season. It is cool for 7 months, during rainfall, from April- October and hot for 5 months from November- March in dry season. Temperature ranges 15 - 25 degree centigrade, and

total mean rainfall is 1400 mm/yr. Religious wise, 75% of the population is Christians (70 % protestant, 4.2% orthodox, 0.8% Catholic) and 8 % are Muslims and 17% cultural believe rs.

Fig4.1.1 Map of Dale District

4.2 Geography and climate

Dale district is one of the twenty one (21) woredas of Sidama zone, SNNPR state. The wore da is surrounded by four districts: Shebedino woreda in the North, Aleta wondo and Aleta C huko woredas in the south, Wonsho woreda in the East and Loka Abaya woreda in the wes t. Yirgalem is capital town for the district and it administratively separated from Dale distri ct and established as reform town since 1997E.C (2004 G.C.) The district is 85 % Woyina D ega, 10% Dega and 5% kola.

4.3 Administrative and political structure

Dale district has thirty six (36) rural kebeles. The district has its own council and representat ive in the federal parliament. There are twenty sectors offices Education, Finance Economic development, Agriculture, Culture and Tourism, Civil Service, Women and Children, Youth and Sport, Water development, Rural Road, Trade and Transport, Jousts and Security,office of Police,e (in the town (Yirgalem). The ruling political party in the district is the Souther n people's Democratic movement SPDM/EPRDF

4.4 Demographic Information

In 2004 E.C (2011/2012), the total population of Dale district is estimated to be 234,496of (Source: Dale district Finance and Economic Development) which 118,546 (50.6%) are males. Male to female ratio is 1.02:1. The age and sex structure is of pyramidal type, which is typical of a developing country that is wide at the base and sharp at the top. 44%, 52%and 4% are less than 15yers,15-65years and more than 65 years respectively. The population growth rate is 2.9%. Children Under one and under five years of age constitute 3.9% (9,145) and 11.8 % (27671) of the total population respectively. Women of childbearing age are 23.75 % (55,693) from total population.

Majority of district residence occupying 95 % of the landmass with more than 95 % of total population living within the district are sidama in ethnic group. The others 5 % composed, Amhara, Wolayta, Oromo, Kambata and others different ethnic groups. Sidamagna language is the dominant speaking language in the district and also is the official working language.

4.5 Productivity and Income

4.5 Productivity and Income

The district is green and fertile land suitable for agriculture. Totally there are 30,212 hectares in the district. From these 19,732.5 hectares are covered by permanent crops, 6337

hectares by seasonal crops, 1183hectares by forest, 284.5 hectares can cultivated but not cultivated yet and 245 hectares cannot be cultivated.(Source: Dale District Agriculture office) About of the district population living in the all rural kebeles and they are agriculture dependent. Maize, Teff, Enset, Sweet potato, and other roots product crops are the main products cultivated in the district in their descending order. Estimated number of hectares owned or cultivated per one farmer is o.5.The district has several investments such as Coffee processing industries. Three fourth of farmers are coffee farming which is back bone to building and supporting economic aspect of the district, Zone, Region and as well nation. There are others medium and small investments working in the woreda.

4.6 Education

The district has 17 first cycle and 35 second cycle primary schools, and 2 secondary. First cycle elementary schools (grade1-4) have a total student population of 33,640; from these 17,099 (51%) were males. Second cycle schools (grade1-8) have 16,152 students; with 50.6 %(8178) males. In the two high schools; there are 729 students (with 65.6 % (478) males students in grade 9-10.Forty -two (79 %)of schools have water supply in their compound, 40 (75.4 %) schools have latrine with separate male and female; and 13 (24.5%) have common latrine (for both sex).

4.7 Infrastructure

The district has a 24 hours electric service for 8(22%) rural kebels. There are a wireless telephone and mobile service in the district kebeles. A total of 32(88.9%) kebeles access to mobile and 36(100%) kebeles access to wireless communication. Regarding transportation, the district is crossed by main road from Addis Ababa Hawassa and to Moyale Kenya. About 100 % (36/36) of kebeles are accessible to transportation on dry season but only 18 (50%) kebeles are accessible all weather road.. From the district there are five main roads connecting these thirty six kebeles each other's.

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season but only 18 (50%) kebeles are accessible all weather road. From the district there ar e five main roads connecting these thirty six kebeles each others.

4.8 Dale district health system Organogram

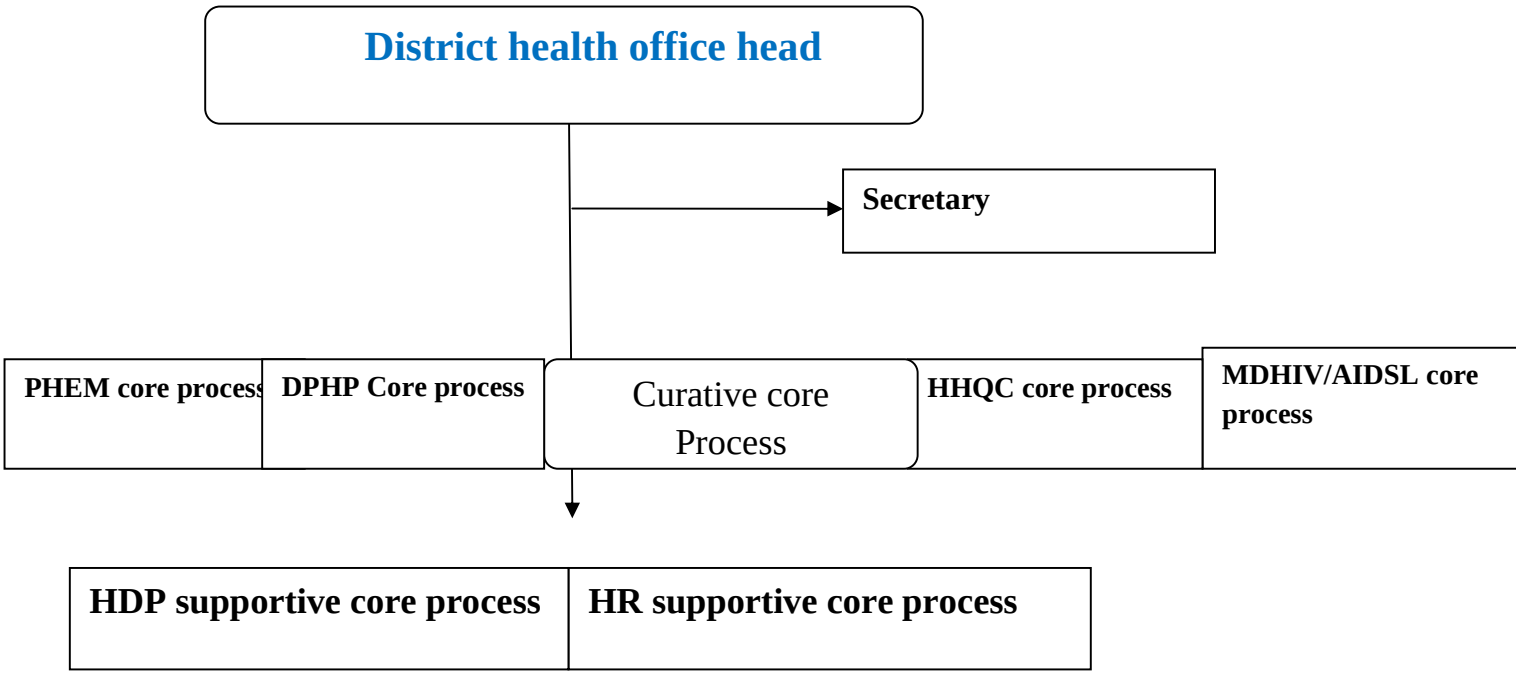

Fig. 4.1.2 Organization of district health office

The district health office structure is organized and is part of the woreda administrative coun cil cabinet. The district health office started to implement newly designed Business Process ing and Re-engineering (BPR), in 2009. According to the design the district health office str uctured five main core process and two supportive processes. In main time at health center l evel the processes are structured in three case teams (Out patient case team, Delivery case te am and Emergency case team) The district potential health services coverage was 70 % esti mated from seven functional health centers and 99.7% from thirty four health posts. These h ealth centers also giving VCT and PICT and PMTCT services.

S/N	TYPE	NUMBER	REMARK

1	Hospital	0	
2	Health Center	7	2 are not functional
3	Private HFs(clinics, diagnostic lab,drug stores)	3	NA
4	Health posts (HPs)	34	

Table 4.1.3 Availability of health facilities by type in Dale district –Sidama Zone,SNNP regi on, Sep.2012

4.8.2 The health service coverage of the district

Health indicators and vital statistics are important for estimation of country or district growt h. In Dale district, there are no data on vital statistics like infant deaths, under five deaths an d others crucial data.

S/N	INDICATORS	N (%)
1	Total population	**248,682** (100)
2	Male	**125,718** (50.6)
3	Female	**122,964** (49.4)
4	Under 1 years old	**9699** (3.9%)
5	Under 5 years old	**29,344** (11.8%)
6	Women 15- 49 years old	**59,062** (23.75%)
7	Pregnancy women	**9,699** (3.9%)
8	Rural	**248,682** (100%)
9	Surviving infant	**8704(3.5%)**
10	IMR/1000	No data
11	Under 5 MR/1000	No data

Table 4.1.4 Distribution of vital statistics in Dale District, SNNP region, 2011/2012

5. Immunization coverage

The district has conducted both static and outreach immunization services in 2011/2012. Ou t of **9,699** targeted populations, immunization coverage for children less than one year of ag e was 107.4% (9350/8704) for BCG, 100%(8968/8704) for Penta1, 98 % (8516/8704) for pe nta3, 96% and 96 % for measles and fully vaccinated respectively. PCP1 and PCP3 was 97 %and 66%. Dropout rate for Penta1to Penta3 and Penta1 to measles was 5% and 7% respect ively which is acceptable from the standard.

6. Mothers Health Services Coverage

Regarding ANC services, 79% (7635/9699) and PNC 50%, pregnant women were received t he services. Three percent of deliveries were attended by skilled health personnel. The distri ct contraceptive methods acceptance prevalence rate was 72% for women in the reproductiv e age group

7. Water supply and Sanitations

The health office disease prevention and health promotion core process in collaboration with HEWs created communities awareness of the district on the important of personal hygiene a nd environmental sanitation. As a result, the district latrines coverage and utilization was 98. 7% and 75 % respectively. This achievement reached by constructing latrines at each hous eholds (HHs) level and constructing communal latrines where peoples gathered area and roa d sides. From total 36 kebeles 15 were declared as free of open defecation. The district was used newly designed health development army strategy to reach each house hold on hygiene and sanitation as well for other health programs

In 2004 EC (2011/2012), the provision of safe water supply coverage was45.4%. The main water sources are Hand pump (52), borehole (42),Protected springs(89) unprotected springs(23).

8. Health education

There was no compiled data of health education provided but the services was conducted on family planning, ANC ,environmental sanitation, PMTCT, ITNs and others public health co ncerns in health facilities and peoples gatherings .

9. Top leading causes of outpatients visit (Morbidity)

Malaria is a public health problem presented both at outpatients and inpatients department of health facilities in the Dale district. A total of 8752 malaria cases were seen at outpatients departments and 2183 at inpatients in 2004 EC. The leading causes of OPD & IPD visit in the district are shown in tables 6&7 below

		Cases	
S/N	**Type of Disease**	No.	%
1	Malaria	8654	31
2	Intestinal Parasite	3307	12
3	UTI	2196	8
4	All Respiratory tract infection	2112	7
5	Typhoid fever	1476	5
6	Diarrheal Disease	1002	4
7	Gastritis	908	3

8	Pneumonia	707	3
9	STI	499	2
10	Skin Infection	469	2
11	All other diseases	6915	24

Table 4.1.5 Top ten causes of Morbidity in Adult, Dale district Sidama Zone,SNNPR, 2011/2012

		Cases	
S/N	**Type of Disease**	Number	percent
1	Malaria	1833	34
2	Diarrheal diseases	944	18
3	Pneumonia	599	11
4	All respiratory tract infections	500	9
5	Skin infection	197	4
6	All other diseases	1250	23

Table 4.1.6 Top five causes of Morbidity in under five, Dale district Sidama Zone, SNNPR, 2012

10. Endemic diseases

10.1 Malaria

Malaria is endemic 29/36(81%) kebeles in the district throughout the year with 176,925(71%) of population at risks of being infected by malaria. In 2004 E.C (2011/12), a total of 10,935 malaria cases were reported at outpatients and inpatient departments and 4323(50.6%) cases were plasmodium Falciparum and 4215(49.4%) cases were plasmodium vivax The rest(2397) cases were clinically treated for malaria at OPD level. In the year 2004 E.C (2011/2012) IRS was conducted in Fifteen (15) kebeles. From planned 27,108 households 24,159(89%) households were covered, and 87,225 populations protected from malaria.

Insecticide Treated Nets (ITNs) distribution was conducted in previous years as well in 2004E.C (2011/2012) and ITNs coverage is 100 % and Utilization rate were 51% in the district for the year of 2004EFY. The district has no shortage of coartem, RDT but there were shortage on budget Chemicals for indoor residual spray.

10.2 Tuberculosis and Leprosy

From total population 405 cases were expected to Pulmonary TB, from these (405) expected cases according national standard the district planed to detect 284 (70%) of total expected

TB cases. But the achievement was above the planned 339 (119%) from planned and 83.7% from total expected(2). The cure rate, default rate and treatment failure was 85%,5% and 0. 6% respectively. For achieving detection

rate more than planned was active and strong performance of TB reach program which is in digenous NGO established one year back. These also achieved due to strong collaboration

of district health office, health facility staff, health extension workers and by using newly de signed health development army. Concerning Leprosy no data was found.

10.3 HIV/AIDS

A total of 20711 peoples (clients) were screened for HIV through VCT, PICT and PMTCT services in the last one year. From screened clients 10912 (53%) were males and 9799 were females Out of total screened, 11(0.05%) clients were positive for HIV virus. The district health office in collaboration with NGO's supplied condoms in line with health education to prevent youth from HIV virus infection. A total of 125 PLWHA have had psychological, shelter and food support from woreda health office and NGO's. From 20 sectors offices 18/20(90%) contributed o.5% AIDS fund from their employees regularly in monthly bases and 18/20(90%) sectors were allocated 2% from their annual budget for HIV/AIDS prevention and control activities. ART and Pre-ART data were not available, in addition to

that HIV/AIDS incidence and prevalence were not known due to poor data organizing and analyzing.

Type services	Total screened	Positive	%
VCT	12908	3	0.01
PICT	1260	2	0.01
PMTCT	6543	6	0.03
Total	20711	11	0.05

Table 4.1.7 Clients screened by different services for HIV/AIDS status

10.4 Nutritional status and disasters

There was no significant nutritional problem in the district in 2004 E.C (2011/2012). But in 2003 E.C there were massive food security problem in the district. At the beginning of the y ear 2004 E.C, 403 under five children were registered and 2292 new admission was register ed. Totally 2695 malnourished children less than five years of age. From these 2474 cured a nd discharged,9 transferred out, at the end of the year 212 admitted at thirty six OTP sites. In addition in 3 SC sites there were 25 children at the beginning of the year and 380 childre n were registered in the year. From this 405 234 transferred to OTP program and the rest 17 1 children were cure.

These malnourish children were supported by UNICEF and Goal Ethiopia through Therapeu tic Supplementary Feeding , Community Based Nutrition, Productive Safety Net Program a nd others programs working toward improving nutritional status especially in under5 childre n, pregnant and

lactating women. Regarding disaster, the district has not been experienced to any disaster so far, yet no health and other health related events occurred.

S.No	Partner Name	Area of interest

1	Family Guidance Of Ethiopia	Reproductive health, HIV/AIDS,
2	GOAL Ethiopia	Nutrition
3	TB-reach	TB

Table:4.1.8 Partners acting on health activities in the district

11. Health budget allocation

In 2004 EY (2011/2012), a total budget allocated for health sector was 1,340,937 ET birr for Sallary, running cost and Capital project. Budget is utilizing as pull system (ordered by wor eda finance and economic officee by reqesition or approval of woreda health officee There was no others source of finance.

12. Human resource for health office (all type)

Category	Number	Remarks
Physicians	-	
Health officers	5	
Nurses	66	
Laboratory technicians	15	
Pharmacy	13	
Environmental health	3	
HEWs	72	
Administrative staff	92	
Others	4	2BSc
HDA	1874	

Table 4.1.8: Human resource working under Dale health office Sidama Zone, SNNPR regio n,sep.2012

Limitations

1. No historical information was registered in culture and tourism office in the district. Therefore, relevant information regarding district background was not obtained.
2. Health facilities were not recorded and reported admitted patient report
3. No vital statistics data were found at the district level due to lack of new HMIS reporting formats

Discussion

Malaria is a district public health problem leading by 31 % of the total diseases reported at o utpatient visited for adults and It is also the top leading causes of morbidity in pediatrics (34 .4%). There was no malaria death reported in the past one year. This is due to perhaps: Healt h facilities didn't reported death due to HMIS format which has no space for reporting death , health workers improved clinical diagnosis or it is because of 100% coverage of ITNs and i ntensive performance IRS, case management and availing of RDT and antimalaria drugs to peripheral kebeles.

Intestinal parasite (IP) was taking the second rank next to malaria with 12% followed by uri nary tract infection (8%) which are placed in the third level according to district priotization setting. However, no matter how malaria is being the leading causes of adult OPD visited, it reflected it endemicity in the district. With increased latrine coverage, utilization, newly de veloped health development army and more kebeles free of open defecation, intestinal paras ite became second leading cause of morbidity may arise questions.

Regarding tuberculosis, the district has achieved good performance in terms of case detectio n, treatment success and cure rate. But defaulter rate (5%) was above the expected need fur

ther strong effort. Generally in 2004 E.C, there were a total of 339 smear positive and 56 ext ra pulmonary tuberculosis cases diagnosed and reported in the district.

HIV/AIDS incidence and prevalence not known in the district. Out of 20,711 clients screen ed (tested) for HIV 53% of them were male. This revealed that there slight awareness from f emale clients' side or in other word, female clients have negative attitude or had other unkno wn reasons towards HIV testing services. Moreover, general population residing in Dale d istrict have good knowledge on HIV/AIDS as depicted in fig4 where clients tested by volun tary visited VCT rooms was more than provider initiative and counseling test (PICT) testin g . Therefore, social mobilization needs to be undertaken in-line with community conversati on.

The district recorded sustainable immunization coverage in the year targeted to children less than one year old to prevent them from vaccine preventable diseases. The overall provision of safe water supply reached to 45.4 % coverage. Currently, there was no serious problem of malnutrition in the woreda. UNICEF and Goal Ethiopia project working on assessing nutriti onal status In the year identified 2695 under five children were registered on OTP and 40 5 on Sc with nutritional problem.

Conclusion and Recommendations

Conclusion – Maternal and Child health care services coverage including immunization wa s good but delivery attended by skilled health personnel and female enrolment to high scho ol was low, TB detection rate was greater than 100%, which implies strong collaboration wit h in health sector and with other sectors and partners. Important health indicator and ART/P re-ART clients data was not obtained

at district health office. Malaria is prevalent in the district and it is the leading causes of mo rbidity in adult OPD and pediatrics. Therefore, applying package malaria prevention and co ntrol strategy in the district is mandatory to combat the burden of malaria. From screened cli ents 10912 were males and 9799 were females Out of total screened, 11(0.05%) clients were positive for HIV virus. Finding of result was discussed with district health office team, part ners and Zonal health department. All maternal and child health care service, TB-detection

rate should be maintained. Special emphasis should be given for skilled health personnel del ivery and low female high school enrolment .

Acknowledgement

I would like to express my gratitude to Dale district disease prevention and health promotion officer Million Gebre Kidan, experts of district education office, Experts of district Finance and Economic office and water resource office for their contribution during health profile da ta collection period.

Next my deep cheerful will be to Mammo Gabiba who is elder of the district for telling me t he historical background of the district.

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Chapter V – Scientific Manuscripts for Peer reviewed Journals

Outbreak of Louse-Borne Relapsing Fever in a Prison,Sidama Zone,Ethiopia, 2012

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Abstract.

Introduction: Louse-borne relapsing fever (LBRF) is an epidemic prone disease caused by the spirochete, Borrelia recurrentis, and mortality rates can reach 70% if untreated. In January 2012 suspected cases of relapsing fever were reported from the Yirgalem Prison in the Sidama Zone of southern Ethiopia. We investigated to confirm the etiology, identify risk factors, and establish control measures.

Methods: We defined a suspected case of relapsing fever as any person with abrupt onset of rigors with acute or remittent fever, chills or headache along with accompanying symptoms of arthralgias, myalgias, dry cough, or epistaxsis. A confirmed case was defined as a suspected case with demonstration of Borrelia in a peripheral blood film. We conducted an active case search in the prison, reviewed prison logs, and conducted an unmatched case control study.

Results: We identified 831 suspected and confirmed cases and one death. The overall attack rate was 32%, and the case fatality rate was <0.1 %. Lab tests were performed on 560 patients and 345 tested positive for Borrelia species with thick blood film microscopy.

From respondents of the case contol study 22/78(28%) cases and 57/108(53%) took a body bath weekly (OR = 0.33, 95% CI (0.26-0.94) and the association was significant. 63/ 78 cases and 10 1/108 controls were literate, OR=0.29,95%CI (0.1-0.81),which was also significant. 37/78 cases and 66/108 controls wash their clothes weekly (OR = 0.57, 95% CI, (0.30-1.02), which was not s

ignificant., living in a cell with an average of 3.15m^2per person, and having more than 20 liters of water a day for consumption and hygiene were protective. Fifteen of 18 prison rooms had patients with LBRF and the average prisoner density in those rooms was 1person per0.55m^2.

Conclusion: We confirmed an outbreak of relapsing fever with a high attack rate in an. Overcrowding and poor hygiene contributed to the outbreak. The outbreak was contained due to prompt treatment and environmental control measures.

INTRODUCTION

Louse-borne relapsing fever (LBRF) has been called the “most epidemic of the epidemic diseases” and has been responsible for outbreaks affecting millions of people(Bryceson et al., 1970). An epidemic of LBRF in Napolřon’s army is believed to have contributed to Napolřon’s defeat in Russia(Weeks, 2010), and it is estimated that five million people died in Eastern Europe from LBRF associated with the social disruption following World War I(Raoult and Roux, 1999).

LBRF is caused by the spirochete, Borrelia recurrentis, and is spread person to person by the body louse, Pediculus humanus humanus(Barbour and Hayes, 1986). The incubation period is 2-14 days, and infected individuals typically have an acute onset of fevers as high as 43ćC lasting three to six days, followed by “relapses” of fevers of shorter duration. Untreated, LBRF can have high mortality rates ranging from 10-70%(Barbour, 2012). Crowded and unhygienic living conditions foster the spread of lice from one person to another, and, as noted, wars and socio-political upheavals make large-scale epidemics possible. Although LBRF affected more than 15 million people in Europe, Asia, and Africa in the early 20th century, today LBRF primarily is found only in the horn of Africa(Bryceson et al., 1970, Ahmed et al., 1980, Almaviva et al., 1993, de Jong et al., 1995). The disease remains endemic in Ethiopia, and outbreaks have occurred among students, soldiers, and refugees.(Mekasha and Meharie, 1996, Brown et al., 1988, Borgnolo et al., 1991, Ramos et al., 2009) In January 2012 suspected cases of relapsing fever were reported from the Yirga Alem Prison in southern Ethiopia. We investigated to confirm the etiology, identify risk factors, and establish control measures.

BACKGROUND AND METHODS

The Yirga Alem prison is located 320km south of Addis Ababa in the Sidama Zone of the South ern Nations, Nationalities, and People's Region (SNNPR), Ethiopia. Sidama Zone is a major cof fee producing area with 3,406,616 people and a population density of 521 persons / km^2; 5% of t he population lives in urban areas. (Ethiopian Central Statistics Authority, 2007There are two hospitals, 101 health centers and 521 health posts in the zone. The town of Y irga Alem is one of 21 administrative districts within Sidama Zone and has a population of 41,07 2). (Ethiopian Central StatisticsAuthority,2007 The prison in Yerga Alem housed 2,604 prisoners in 18 rooms (cells) at the time of the outbreak.

Descriptive Epidemiology

We used the World Health Organization case definition to define a suspected LBRF case as any person presenting with abrupt onset of rigors with acute or remittent fever, chills or headache alo ng with accompanying symptoms of arthralgias, myalgias, dry cough, or epistaxsis. We defined a laboratory confirmed case as a suspected case who was determined to have Borrelia in a periph eral blood film sample.

From 18 January 2012 to 15 February 2012 we conducted an investigation to identify all suspect ed patients with LBRF at the Yirga Alem prison. We reviewed prison clinic medical records dur ing the investigation period and for one-year prior to the investigation. We developed line lists a nd reviewed patient registers. We also reviewed health records from the zonal health department to determine the number of reported community-based cases of LBRF in Sidama zone during 20 10 and 2011.

Laboratory Investigations

Blood samples were collected from 811 patients with suspected LBRF and evaluated for Borrelia species using thick blood films stained with a Wright-Giemsa stain.

Case Control Study

We conducted an unmatched case-control study from 18 January 2012 to 15 February 2012. We designed a structured questionnaire in Sidamigna language, interviewed 78 patient-cases and 10 8 controls, and translated the questionnaire back to English. We recruited a convenience sample of control subjects from prisoners of the same gender and sleeping room who had not been ill wit h symptoms of LBRF. We collected information about demographic characteristics, hygiene, wa ter use, frequency of bathing, washing, shaving, and clothing changes. We calculated odds ratio s using Epi Info version 3.5.1. Oral consent was obtained from all participants prior to interview s.

Environmental Investigations

We evaluated living quarters and conditions, including examining clothing and bedding, and dete rmined the size of prison cells and population density per cell. We investigated water systems an d water sources in the prison. We also conducted open-ended interviews with regional, zonal, an d district surveillance officers and prison authorities.

RESULTS

Descriptive Epidemiology

During our investigation we identified 831 patients between 15 January and 14 February 2012

who were suspected of having had louse-borne relapsing fever, and 560 were tested for LBRF wi th blood smears. Three hundred forty-five (40%) of the patients had laboratory-confirmed louse

borne relapsing fever, and the remaining patients had symptoms consistent with LBRF and were epidemiologically linked to a laboratory-confirmed cases.

The epidemic was explosive in onset with 377 suspected cases in the first four days followed by a second smaller peak of disease activity two weeks later (Figure 1). The index patients were dia gnosed with LBRF on 15 January, 2012, and the peak number of patients was noted on 18 Januar y, 2012. The second smaller peak of disease activity included 24 patients who had been treated d uring the first wave of disease, but had either treatment failure or reinfection. The last patient wa s treated on 14 February 2012, and there were no additional prisoners diagnosed with LBRF duri ng a four-week period of active surveillance following the outbreak.

There were 18 prison rooms and 15/18 contained patients with LBRF. The attack rate for the e ntire prison was 32%, and the attack rate for affected rooms ranged from 27-74% (Table 1). All LBRF patients were male; females had two separate dormitories and were not affected. Males h oused in a dormitory reserved for prisoners with tuberculosis also were not affected.

Increased population density was a significant risk for contracting LBRF. The average populatio n density for the 15 dormitories with LBRF was 1person per 0.55m^2, whereas the unaffected thre e dormitory rooms had an average population density of 1person per 3.15 m^2. The living conditi ons for females differed from that of men; females did not share a bed, had a bed with linens that could be cleaned, and had a change of clothing. No females developed LBRF. There was one p atient who died, and the case fatality rate for the outbreak was 0.12%. The median age of the pati ents was 20 years (range: 15 - 78 years). Of the 345 patients who had laboratory confirmed LB RF, 314 (91%) had fever, 336(96.8%) had headache, 186(53.9%) had vomiting and 298(86.4%)

had chills 20(5.8%) had jaundice. Data on other symptoms associated with RF were not collecte d.

We also reviewed health records from the zonal health department and found that in 2010 there were 185 LBRF patients reported from Sidama zone (total population 3,232,308) and in 2011 the re were 304 LBRF patients (2010 incidence = 5.7/100,000 persons; 2011 incidence = 9.4/100,00 0 persons). Out of the 389 patients diagnosed with LBRF in 2010-2011in Sidama zone, 264 (68 %) had been from the Yirga Alem prison.

Case control study

We interviewed 78 case-patients (mean age = 22 years (range 15-55 years) and 108 control subje cts (mean age = 26 years (range: 15-75 years)). From respondents of the case contol study 29/7 8(37%) cases and 57/108(53%) took a body bath weekly (OR = 0.52, 95% CI (0.29-0.96) and Fr om total cases 63/ 78 and 101/108 controls were literate, OR=0.29,95%CI (0.1-0.75),the associa tion was also significant. 37/78 cases and 66/108 controls wash their clothes weekly (OR = 0.57 , 95% CI, (0.30-1.02), which was not significant.

Access to more than 20 liters of water a day used for consumption and hygiene was also protect ive (odds ratio = 1.45, 95% confidence interval = 0.69-3.05.60/81 (74%) cases and 87/108(80%) controls had less than 20litters per a day. There was no statistical difference between the case-p atients and control subjects with regard to, ethnicity, religion, former occupation and availability of soap.

Environmental Investigations

The prison was built in 2002 and each dormitory was built for a maximum capacity of 60 prisoners. We found up to 186 prisoners in a dormitory room and a population density nearly two persons per square meter. Ninety-five percent of prisoners used mattresses made of grass and covered with a fertilizer sack, which could not be cleaned or disinfected easily. We found an inadequate water supply for prisoners, as there was only one distribution site for all 2,604 prisoners for drinking and hygiene.

Treatment

All patients with confirmed or suspected LBRF (N=831) were treated with either three days of oral tetracycline 250mg four times a day or treated with a single dose of either oral doxycycline 100mg or intramuscular penicillin G procaine dosed by weight. More specific data on the percentages and types of patients treated with specific antibiotics were not available. Three hundred forty-seven of the 855 treated patients (41%) developed Jarisch-Herxheimer (JHR) reactions, but data about which antibiotics were associated with JHR were not available.

Public Health Actions

Prison health workers implemented an active case detection system to identify, triage, and treat patients starting 15 January 2012. On 18 January 2012 our public health team initiated a delousing program, which included washing all clothing and linens in boiling water, cleaning prison rooms with 10% bleach solution, changing all bedding, and shaving scalp hair for all male prisoners. We conducted a health education program and developed training materials for prisoners and prison staff.

Prison officials increased the supply of water available to prisoners by transporting water from o utside sources. Prisoners were transferred to temporary tents outside of the prison, and prison au thorities released 269 prisoners to reduce density and crowding. After the outbreak prison author ities began work on constructing additional rooms for the prison.

DISCUSSION

Our investigation confirmed previous descriptions and reports of the unique characteristic of LB RF to disappear and then recur in dramatic outbreaks years or decades later(Cutler, 2006). Ramos et al. conducted a review of medical records from 1997-2007 for patients diagnos ed with LBRF at a major referral hospital in Shashamane, Ethiopia, 60km from the Yirga Alem prison. They found a declining incidence of LBRF in the area, with the annual incidence falling from 90 LBRF patients per 100,000 outpatient visits in 1997 to 0 patients in 2006 and 2007. They concluded "no new cases of the disease have been detected in this area since early in 2005, raising the possibility that the disease is no longer locally endemic." (Ramos et al., 2008).

We determined in our review that starting in 2010 there were again scattered cases of LBRF in th e same area of southern Ethiopia, which culminated in the large outbreak at the prison in Sidama zone in 2012.

This behavior of LBRF has been noted during previous outbreaks in other countries, albeit on a much larger scale. For example, LBRF caused major epidemics in North Africa during World W ar I, but then disappeared and researchers "could find no trace of it." However, "after more than twenty-five years of quiescence" relapsing fever "grew into an epidemic of vast proportions, wh ich… spread like a wave, swamping first Algeria and then Morocco" during World War II. The outbreak eventually affected more than a million people and resulted in at least 50,000 deaths(Ga ud and Morgan, 1948).

There are no known hosts for Borrelia recurrentis other than humans, and it remains unclear as to what becomes of the organism during the long intervals of quiescence when few or no cases of LBRF are seen in a region. Forty years ago Bryceson et al. summarized this by saying, “little is understood

of where it (LBRF) lurks between epidemics and of how it suddenly springs up after silent interv als of everal years.”(Bryceson et al., 1970)

Our investigation also illustrated how rapidly an epidemic of LBRF can evolve and highlighted t he importance of vector control. There were 855 suspected patients reported within a one-month period, but a low case fatality rate was achieved. We attribute this to the rapid diagnosis and tre atment accompanied by a modification of environmental conditions and effective vector control. Previous studies have shown that both vector control and prompt antibiotic therapy are critical in containing outbreaks(Sundnes and Haimanot,

1993).The presence of a contained population made rapid diagnosis and treatment possible durin g this outbreak.

The Yirga Alem prison likely has been a source for the recent recurrence of louse-borne relapsin g fever in areas of southern Ethiopia. We have recommended improving case reporting and conti nuing rapid treatment for suspected cases in the future. We also have recommended the impleme ntation of effective vector control measures within the prison, including improving personal hygi ene, reducing crowding, and creating access to washing facilities.

Although LBRF historically has been global problem affecting most regions of the world, it is no w confined to the horn of Africa and Ethiopia in particular. Notably the origin of other previous regional epidemics has been traced to Ethiopia; the large LBRF outbreak in Africa during World War II mentioned above is believed to have originated in Ethiopia(Bryceson et al.,

1970)SPARROW 1962.

History has shown that sociopolitical unrest involving war, mass migrations, and/or extreme poverty creates the conditions for large outbreaks of LBRF. Given the recent political disturbances, large displacements of people, and deteriorating social conditions in countries in relative proximity to Ethiopia such as Somalia, Sudan, Eritrea, Democratic Republic of Congo, Syria, and Libya, the potential for another large outbreak of LBRF outside of Ethiopia exists. The finding of a patient with louse-borne relapsing fever from a homeless population in France highlights that spread of LBRF outside the endemic focus of Ethiopia does occur (Brouqui et al., 2005).

The interaction between humans, lice, and *Borrelia recurrentis* is complex and many factors, such as the ability of the LBRF to disappear and then reappear in epidemic proportions, remain poorly understood. Unfortunately, there have been no entomological studies on lice and *Borrelia recurrentis* in Ethiopia, and more research is needed to better understand these enigmatic relationships.

Acknowledgements

We appreciate the assistance from the health professionals and administrators from the Yirga Alem prison clinic, Yirga Alem Hospital, Yirga Alem town health unit and health center, the Sidama Zone Administrator and health department and the regional health bureau.

Figure 5.1.1 Number of patients with louse-borne relapsing fever by date of diagnosis, Yerga Alem prison, Ethiopia, 2012.

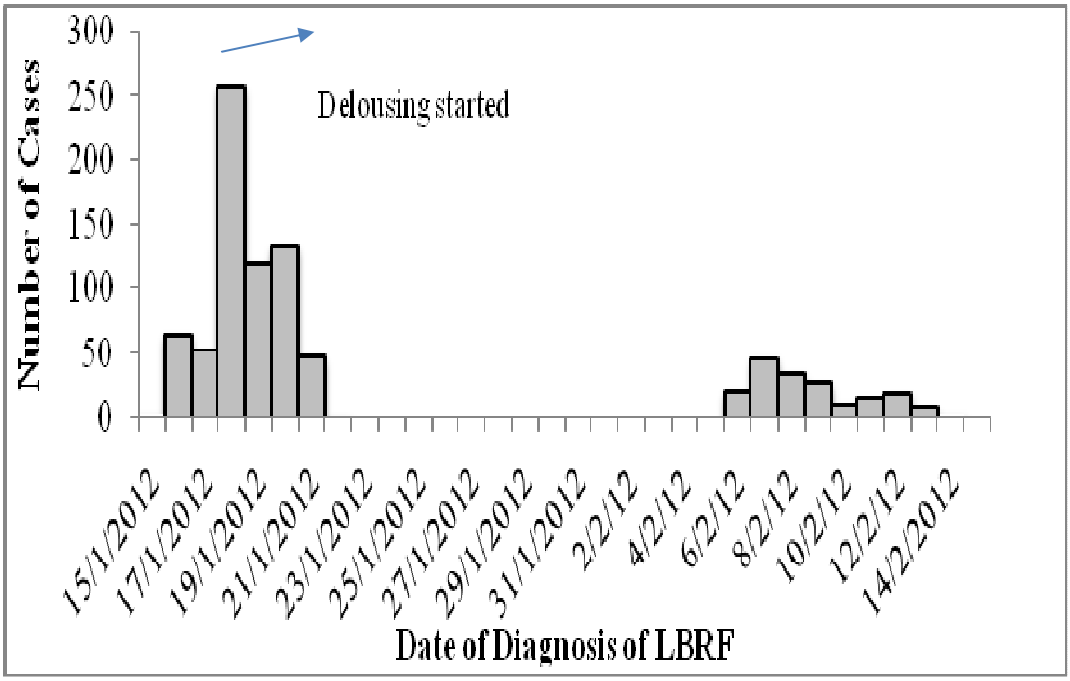
Number of Cases
300
250
200
150
100
50
0
Delousing started
15/1/2012
17/1/2012
19/1/2012
21/1/2012
23/1/2012
25/1/2012
27/1/2012
29/1/2012
31/1/2012
2/2/12
4/2/12
6/2/12
8/2/12
10/2/12
12/2/12
14/2/2012
Date of Diagnosis of LBRF

Table 5.1.1. Attack rate of louse-borne relapsing fever at the Yirga Alem prison by room number and prisoner density.

Room #	# of Persons	# of LBRF Patients	Attack Rate(%)	Room Size(m^2)	Density (m^2 per person)	Comments
1	185	72	39	98	0.53	
2	176	93	53	96	0.55	
3	173	58	34	96	0.55	
4	176	51	29	96	0.55	
5	172	51	30	96	0.56	
6	174	54	31	96	0.55	
7	176	53	30	96	0.55	
8	186	54	29	96	0.52	
9	176	59	34	96	0.55	
10	185	61	30	98	0.53	
11	188	57	30	98	0.52	
12	188	76	40	98	0.52	
13	188	51	27	98	0.52	
14	184	52	28	98	0.53	
15	19	14	74	42	2.21	Stay<7days
16	19	0	0	42	2.21	TB Room
17	20	0	0	72	3.60	Females
18	19	0	0	72	3.79	Females

Table 5.1.2. Symptoms associated with louse- borne relapsing fever in patients from the Yirga Alem prison (N = 345).

Symptoms	Number (%)
Fever	314 (91)
Headache	336 (96.8)
Vomiting	186 (53.9)
Jaundice	20 (5.7)
Chills	298(86.4)

Table5.1.3 Room number, prisoners in each room, cases and attack rate, Yirgalem prison, Sidama Zone, SNNPR

Room No	Total prisoners	Cases	Attack rate (%)
1	185	71	38
2	176	90	51
3	173	56	32
4	176	51	29
5	172	51	30
6	174	52	30
7	176	50	28
8	186	51	27
9	176	56	32
10	185	58	31
11	188	57	30
12	188	71	38
13	188	51	27
14	184	52	28
15	19	14	74
16	19	0	0
17	20	0	0
18	19	0	0
Total	2604	831	32

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Chapter VI – Abstracts for Scientific Presentation

6.1. **TEPHINET 7th Global Scientific Conference - 2012**

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Ethiopia FETP

6.1 Outbreak of Relapsing Fever in a Prison – Sidama Zone, Ethiopia, 2012

Abstract:

Introduction: Louse-borne relapsing fever is an epidemic prone disease caused by the spirochete , Borrelia recurrentis, and mortality rates can reach 70% if untreated. In January 2012 suspected cases of relapsing fever were reported from the Yirgalem Prison in the Sidama Zone of southern Ethiopia. We investigated to confirm the etiology, identify risk factors, and establish control me asures.

Methods: We defined a suspected case of relapsing fever as any person with an abrupt onset of f ever, headache, arthralgias and myalgias, dry cough and epistaxisis and a confirmed case as a sus pected case with demonstration of Borrelia in a peripheral thick blood film. We conducted an ac tive case search in the prison, reviewed prison log books, and compiled line lists. We compared c ases with unmatched controls using a questionnaire interview. We also collected laboratory spec imens for blood film and conducted an environmental inspection of the prison. Data were analyz ed using Epi Info version 3.5.1.

Results: We identified 831 suspected and confirmed cases and one death. The overall attack rate was 319/1000 and the case fatality rate was <0.12 %. 560 (67.3%) were laboratory tested and

345 (62%) tested positive for Borrelia recurrentis. From respondents of the case contol study 22/78(28%) cases and 57/108(53%) took a body bath weekly (OR = 0.52, 95% CI (0.29-0.96) and From total cases 63 / 78 and 101/108 controls were literate, OR=0.29,95%CI (0.1-0.75),the association was also significant. 37/78 cases and 66/108 controls wash their clothes weekly (OR = 0.57, 95% CI, (0.30-1.02), which was not significant.

Conclusion: We confirmed an outbreak of relapsing fever with a high attack rate in a prison sett ing. Overcrowding and unhygienic personal and environmental conditions may have contributed to the outbreak. The outbreak was contained due to prompt treatment and the provision of adequa te water for personal hygiene.

Key Words: Relapsing fever, Borrelia recurrentis, prison, Ethiopia

6.2. Surveillance data of Malaria Cases reported to Sidama zone health department,

(2007 - 20011),April 2012

Ashenafi Argata

Introduction: Malaria is endemic throughout most of the tropics. Of the approximately three bil lion people living in 108 countries who are exposed, approximately 243 million will develop sy mptomatic malaria annually.Around 863,000 deaths are caused by malaria each year; over 80 per cent of the deaths occur among children in sub-Saharan Africa. Malaria is the number one health problem in Ethiopia with an average of 5 million cases a year and 9.5 million cases per year Sur veillance can warn us about impending public health emergencies. It can reveal how well an inter vention has worked. And, with surveillance, we are better positioned to anticipate and respond to public health threats with effective policies and strategies.

In order to monitor the malaria morbidity and mortality trend, an unusual increases or decreases of the disease, we must ensure weekly surveillance data completeness. This information is also needed to determine most appropriate and efficient allocation of public health resources and pers onnel. The purpose of this assessment was to determine magnitude and identify trends of malar ia and use findings to undertake evidence based interventions and prevent and control malaria in Sidama Zone.

Methods and Materials: A cross sectional study was conducted using surveillance data of mala ria reported from 21 districts of Sidama to Sidama Zone Health Department. Two source data

(HMIS and PHEM data was used.

Result :There were a total of 234,572 cases and 68 deaths from 2007-20011. Out of these, <5 ye ars were 58632(25%). The majority of cases were > 15 years of age 176,125 (75%). Except in 2 010 the number of cases declined from 2007 and 2011. Over all CFR for five years was 0.03%. 151,013(64%), 79,161(34%) and 4398(2%) were plasimodium falciparium,Plasimodium vivax and mixed (both falciparium and vivax) by species respectively. Plasimodium falsiparium was domminant sspecies compared to others for all five years.Case fatality rate was low for all five y ears.

Conclusion: The magnitude and trend of malaria has shown significant decrease through out the five year period form 2007-2011. Intrevention measures undertaken to prevent and control malar ia contributed to this decrease in magnitude and trend of Malaria in the last five years, this may be periodical changing climatical conditions and other related factors attributed to decreased bur den of malaria in the zone. Further demand driven investigations have to be undertaken and their results used to undertake evidence based interventions was recommended.

Key words: Malaria, Anopheles mosquito, Plasmodium Falciparum, Sidama, Ethiopia

Chapter VII – 'Narrative Summary of Disaster Situation Visited

Belg season Emergency needs assessment report Sidam, Segen and South Omo Zones,SNN PR, June 2012

Ashenafi Argata

Executive summary

Federal Disaster Response Management and Food Security Coordination with a Multi-agency mid- Belg Emergency Need Assessment were conducted. The teams have conducted the emergency need assessment in SNNPR, from 12-26 June 2012.

The main aim of the mission is to assess the extent, types, magnitude, severity and likelihood of different hazards (drought, human epidemics, conflict, floods, etc) and risks to the populations in the most vulnerable Woreda sand determine gaps in the capacity of the health system to address anticipated/impending risks and existing threats in order to*inform* organisational decisions about response, to justify response decisions and appeals for funds. In view of the above aim three teams were deployed; one in Hadiya and KembataTembaro, Guraghe and Silte zones, second in Sidama Segen areas Peoples Zone & South Omo zones and third in Wolayta and Gamo Gofa Zones of selected hot spot and vulnerable woredas.

Methodology and procedure employed were Initial briefing from regional, zonal and Woreda Health Offices and relevant experts at all levels. Using standardized administered structured check list data were collected on health and nutrition from zones and woreda health offices, further complementary information gathered by reviewing secondary data. The teams finally joined together and compiled one report that was done during assessment days and debriefed and discussed the summarized finding at all levels.

Finding: In all the visited woredas, among Top five causes of morbidity malaria is the leading ca use in both under five and above five years ages. Among epidemic prone diseases, again malaria is th e leading high likely followed by AWD. There is also a malaria case build up in most visited woredas.The presence of endemic malaria kebeles,potential breeding sites(interrupting rivers, low IRs and ITNs cover

age <80%(in some woredas) for malaria. The presence of AWD in the past 3 years in some woredas likel y indicates a risk for epidemics to occur. In view of the existing indicators and associated factors, M alaria, Meningitis, Malnutrition, Measles and AWD are the main health and nutrition emergencie s anticipated in the region for the upcoming six months.

Some visited zones and woredas lack emergency preparedness and response plan document and there is n o emergency preparedness fund. There are gaps of emergency drugs and supplies specially Pastorex (rapid diagnostic test) and LP set for Meningococcal meningitis and CTC kits for AWD. There i s enough supply of coartem and RDT for malaria but some woredas reported shortage of coartem . Due to the various interventions that have been made in hot spot woredas of the visited Zones currently, OTP/SC admission started to decline in the month of May. There are enough therapeutic supply especiall y plump nuts, shortage on F-75 and F100 reported all visited woredas

Emergency assistance (health and nutrition) needed during the next six months of the year 2012 due to acute problems estimated for the upcoming 6 months period

The main challenges encountered: absence of emergency preparedness and response fund and operatio nal cost. Shortage of coartem in some woredas. Unavailability of malaria monitoring chart at some w oreda and zonal level, Problem on data availability and data analysis for action .Delivering OTP an d SC supplies from RHB to woredas and Sites was found the main challenge to respective woredas. Thos e who discharged cured from therapeutic feeding program was not referred and linked to targeted supple mentary feeding program.

Recommendation: Prepare epidemic preparedness response plan, Allocate budget for emergency response. Use data for action, referral systems from OTPs to supplementary feeding and to other emergency responses should be strengthened further

1. Background

The Southern Nations, Nationalities and People's Region (SNNPR) is located in the Southern an d South-Western part of Ethiopia. It is bordered with Kenya in South, the Sudan in South West, Gambella region in North West and surrounded by Oromiya region in North West, North and Ea st directions. It roughly lies between 4.43^0 - 8.58^0North latitude and 34.88^0- 39.14^0 East longitudes. The total area of the region estimated to be 110,931.9 Sq. Km which is 10% of the country and in habited by a population size of about 17,353,928 in2012 G.C, 20% of the total population of the c ountry. The population density of the region became 142 persons per sq.km, which makes the reg ion one of the most populous parts of the country. The region is a multination consists of about 5 6 ethnic groups with their own distinct geographical location, language, cultures, and social ident ities living together.

The region is at present divided into 15 zones (sub-divided in to 136 Woredas) and 4 special Wor eda, This again divided into 3678 rural Kebeles. Regarding urban areas there are 22 town administrat ion and 114 certified towns with municipal city status totally having 238 urban Kebeles. There are 8 Zonal Hospitals, 12 District Hospitals, 165 Health Centers, 237 developing health centers, & 2,720 h ealth posts, totally 3,142 health facilities are available in the region. Based on this strategy the health service coverage of the region is encouragingly increased during the last decade.

The potential health service coverage of the region reaches 80%. The burden of disease in the regio n, measured by morbidity and premature mortality from all causes comes primarily from prevent able causes. The underlying causes of most of the mortalities and morbidities are mostly attribute d to lack of clean drinking water, poor sanitation, and low public awareness of environmental he alth and personal hygiene practices. Federal Disaster Response Management and Food Security Coordination with a Multi-agency mid- Belg Emergency Need Assessment were

conducted. The teams have conducted the emergency need assessment in SNNPR, from 12-26 June 2012.

The main aim of the mission is to assess the mid Belg season performance and its implication on the future food security prospect of the community. In view of the above aim three teams were deployed; one in Hadiya(Shashego, Gibe,westand East Badwachoworedas) and KembataTembaro, Guraghe (Sodo and Marekoworedas) and Silte(Sankura ,Silte and Lafuroworedas) zones; second in Sidama (Loka Abaya and Bensaworedas), Segen areas Peoples (Konso and Burjiworedas) Zone & South Omo zones(BenaTsemai and Hamerworedas));and the third in Wolayta (Boloso Sore, Boloso Bombe and Humboworedas) and GamoGofa (Kucha,MerabAbaya,ArbamenchZuriyawordas)Zones.

The areas of our assignment for the non-food team (health and nutrition) for group one are Sidam a, South omo and Segen Zones of SNNP region. After briefing at regional level, the team visited zonal health department and selected woreda health offices in these 3 zones.

Zones	Total population	No of Woredas	Health Facilities		
			Hospitals	Health centers	Health Posts
Sidama	3,422,500	21	2	102	521
Segen	673,220	5	1	26	125
South Omo	661,550	9	1	26	209

Table 7.1.1 Background information of the zones

	Antigens	
Zone	Penta3	Measles
Sidama	98%	93%
Segen	79%	72%
South Omo	76%	64%

Table 7.1.2 Antigen Coverage by Zones

2.Objectives

- To assess the extent, types, magnitude, severity and likelihood of different RISKS in the r andomly selected Woredas

- To determine gaps in the capacity of the health system to address anticipated/impending r isks and existing threats

- Based on the findings, to develop Response plans

3. Methodology

The Belg Public Health and Nutrition emergency need assessment has been conducted in 22 selected Woredas of Nine Zones and one special woreda of SNNPR from 12-26 June 2012. Existing health, water, Education, Agriculture department and woreda offices records and reports were reviewed to obtain data on leading causes of morbidities and mortalities, health human resources, immunization and ITN coverage epidemic prone diseases, malnutrition, current stocks emergency drugs and medical supplies were registered by using data collection checklists. Interviews was made with Zonal and Woreda officials and health professionals at woreda health office to obtain in depth understanding about major health problems, occurrence, distribution, and duration of the disease outbreaks, current preparedness status, and response capacities situation also assessed. Initial briefing was made about current food, health and nutrition situation from regional officials and senior experts. Debriefing the final findings was

conducted to woreda and Zonal heads and officers. Finally after compiling all data, meeting was held at Regional level and concusses was made on findings.

4. Findings of the Assessment

Reviews of morbidity records and reports of the studied Zones Woreda health offices, and region al health bureau indicate, communicable diseases such as malaria, measles, AWD and malnutriti on have been identified to be the registered major outbreaks in Segen, South Omo and Sidama

Zones. Malaria was the top leading cause of morbidity onvisited woredas.

4.1Malaria:

In all the visited woredas, malaria is the leading cause among top five morbidity in both under fi ve and above five years ages. It also a major problem in all visited zones; beside this, there was a lso malaria case load increased in Sidama Zone Wondogent woreda and Segen Zone Konso wor eda in the year 2012.Malaria is also endemic in most woredas of visited Zones for example, in Si dama zone, 15 woredas out of 21 are malaria endemic. Except Bensa woreda in sidama Zone, the rest visited woredas; malaria is first under five and above five years leading cause of morbidity

The risk factors attributed for the epidemic to occur in the region were as follows:- Most Zonal kebeles are endemic for malaria and breeding sites were present, interrupted or potentially interru pting rivers were present, un protected irrigations were present at the area .Some woredas LLIN S coverage were < 85% and most woreda due to lack of budget the indoor residual spray (IRS) were not conducted.

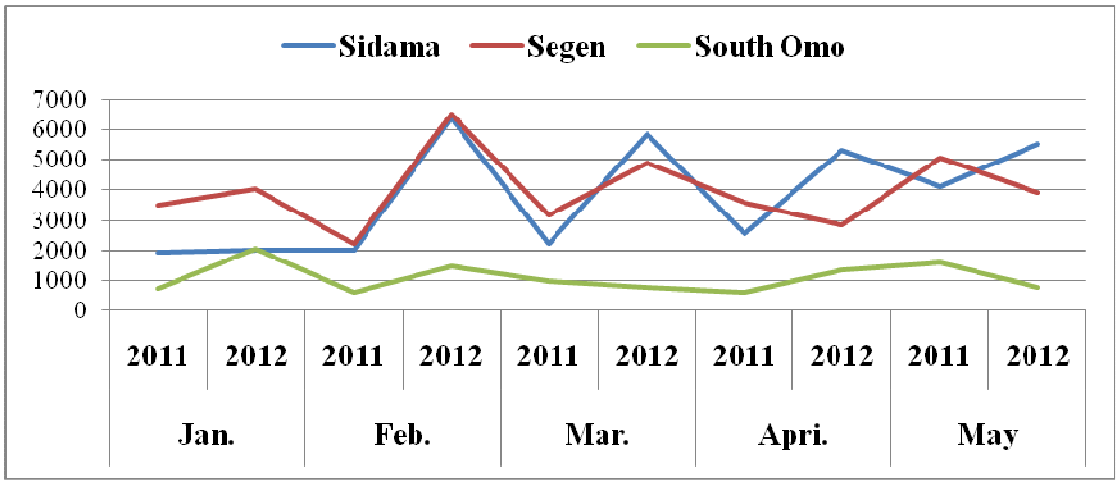


Fig 7.1.1 Trend of Malaria cases in visited Zones, January – May 2011 vs 2012

Except south omo Zone malaria case load increase in sidama and segen area peoples Zones for th e year 2012 compared to year 2011. This may be due to improving and access health service infr astructure and quality to the community. In other way it may be increase of potential breeding sit es due to interrupted rain fail. So to rule out the success or problem further study may need.

		Total	Malaria cases				
Zone	Woreda	Popula	Jan.	Fb.	Mar.	Apr.	May
Sidama	Loka Abaya	114,463	520	631	440	341	668
	Bensa	289,649	301	380	410	374	325

Segen	Konso	244,447	5499	4866	2850	1835	2656
	Burji	65,208	757	373	315	368	382
South Omo	Benatsemai	64,132	721	215	527	770	374
	Hamer	68,250	332	305	50	148	166

Table 7.1.3 Trend of Malaria cases in visited woredas, January - May 2012

No	Zone	Woreda	LLINS- coverage in 2011 by %	IRS coverage in 2011 by %
1	Sidama	Bensa	90	NA
		Locka abaya	95	100
2	Segene A/people	Burije	ND	NA
		Konso	95	90
3	S/Omo	Bena Tsemaye	87	85
		Hamer	75	65

Table 7.1.4 LLITN-Coverage by woreda(2011)

4.2 Acute Watery Diarrhea:

AWD outbreak was recuring in Sidama Zone since 2006-2011 in different woredas. In 2006, 7,3 30 cases (Aroressa, Bensa, Chire, Bona, Hula, Dara, Chuko and Aleta Wondo) in 2007, 288 case s (Dara, Chuko, Aleta Wondo, Hula and Bona) in 2010, 304 cases (Boricha, Wondo Genet and

Malga) in 2011, 440 cases (Dara and Bona) were reported. Also there were AWD outbreak in Se gen Zone (Konso) 2009/2011 and South omo Zone (Dasenc) 2009.

Among the 3 three visited zones; Sidama Zone has been affected by AWD outbreak during the last five months of the year 2012. According to the Sidama zonal health department report (ZHD), a total of 41AWD cases and no deaths registered. In Sidama zone Bona, Bensa, Dara, Aroressa, Chire, and Wondogent where woredas experienced recurrent AWD outbreak for last 3-4 years

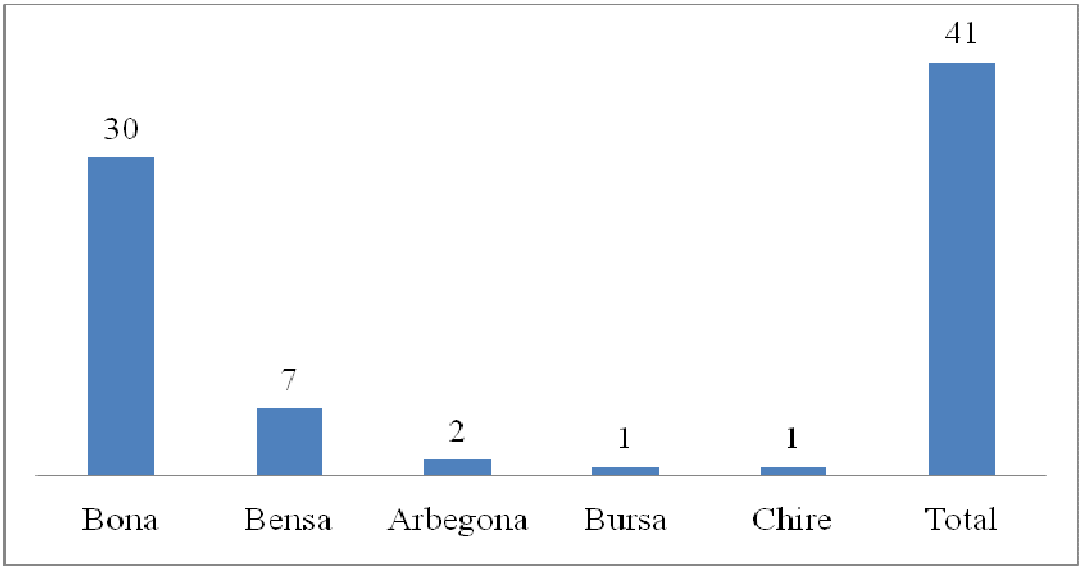


Figure 7.1. 2 Total Acute Watery diarrhea cases in Sidama, April - May 2012

4.3 Measles:

There was Measles outbreak in Sidama Zone in ten districts and 139 kebeles in the year 2010. A total of 17,709 cases 5 deaths with case fatality 0.1 registered.

Woreda	Kebele Affected	Cases	Death	Case Fatality rate
Malga	19	1314	5	0.4
Hawassa	21	632	0	0.0
Hula	14	995	6	0.6
Bona	5	871	1	0.1
W/Genet	9	65	0	0.0
Aroresa	33	8163	0	0.0
Bensa	23	5123	0	0.0
Bursa	3	41	0	0.0
Chire	11	441	0	0.0
Wonsho	1	64	0	0.0
Total	139	17709	12	0.1

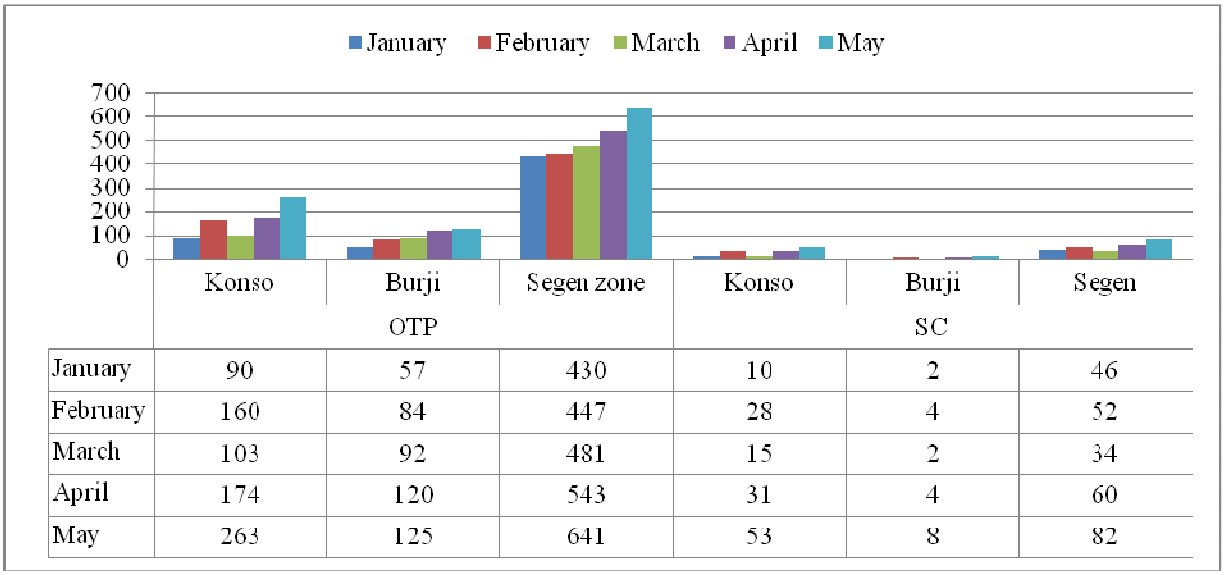
Table: 7.1.5 Measles cases by woreda and Kebele Sidama Zone 2011

Among the visited zones and woredas, no measles epidemic was reported from woredas January-May 2012. **Nutrition situation**

I. Segen area people zone

In general, because of countrywide staple food price inflation, failure of short cycle and early maturing varieties and various supplies - demand related factors followed by the erratic nature of the year 2012 Belg rain, the food security situation for the poor and very poor households is getting worse. As per the Zonal Agriculture office short term cycle and early maturing crops (haricot bean) was totally damaged. In Konso and some parts of woredas. In a normal year these crops can bridge the food security gaps in such hunger season, as a result the admission of SAM cases increases as compared with the same months of previous year report.

Admission in OTP /SC for the last five months was collected from Konso, Burji woredas and the zone to reveal the malnutrition trend. SAM cases have been increasing markedly since March 20 12 onwards in all woredas of Segen zone. As per the Zonal Health department strongly suggested , in the coming two to three months the admission trend will increases significantly since the exis ting household food security situation gets worse. Prevalence trend of SAM cases in Konso and Burji woredas and Segen zone were presented as follows.



	OTP			SC		
	Konso	Burji	Segen zone	Konso	Burji	Segen
January	90	57	430	10	2	46
February	160	84	447	28	4	52
March	103	92	481	15	2	34
April	174	120	543	31	4	60
May	263	125	641	53	8	82

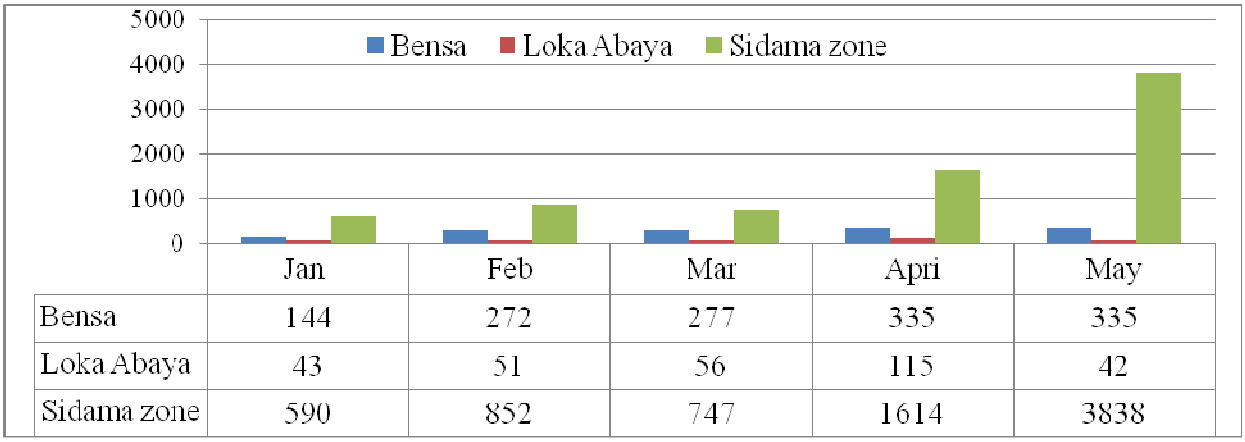
Fig 7.1.3 New admisssion cases in Konso,Burji and Segen zone Jan-May,2012

In the zone, eight health facilities delivering the inpatient service. All 53 OTP sites in Konso and 24 OTP site in Burji are delivering outpatient care and submits regular report on monthly basis. Regarding the supplies in the assessed woredas, there was no shortage of Ready- to-use therapeut ic food/RUTF/ in the past five month period. However, they are experiencing with the shortage of F-100 regularly. Supplementary food is delivered for eligible in EOS 16th round re-screened a nd those children discharged from out patient programme/OTP/.

II. Sidama Zone

Predominantly nine woredas were affected with Belg production loss in the zone. Loka Abaya and Bensaworedas are among the others. In Loka Abaya, it was strongly addressed that the intensity and coverage of Belg rain by far very weak as compared with the reporting period of previous years and it had also dry spell in between. As a result, the expected yield loss increased to 32% in the woreda. With respect to malnutrition, in Sidama Zone ,currently 24 stabilization centre including Yirgalem and Bona hospitals delivering inpatient service and all health posts in 17 woredas offering outpatient therapeutic care for SAM cases.

Nowadays, food insecurity situation is the most pressing problem in these two woredas (Loka Abaya and Bensa) sharing with the others that result in marked increment of malnourished children both in magnitude and severity. The admission of new SAM cases in OTP/SC is getting increasing and presented as follows.



	Jan	Feb	Mar	Apri	May
Bensa	144	272	277	335	335
Loka Abaya	43	51	56	115	42
Sidama zone	590	852	747	1614	3838

Fig:7.1.4 admission of SAM cases in Loka abaya,Bensa and Sidama zone,Jan-May, 2012

As it can be seen from the chart, SAM case admission for the previous five consecutive months h ad increasing and in Loka abaya woreda, only in the month of May started to decline due to the emergency response TSF made in all food in secured and families of their child discharged fro

m OTP programme in Loka abaya woreda. However the TSF supply was not consistent in with the number of screened children and communicated with the respective bodies about the issue.

However, unlike, previous years, the zone tried to link OTP service and other emergency respons e. Households with a child admitted the OTP/SC has got the priority to receive either emergency food assistance or to be included in the supplementary feeding programme. All 25 OTP/SC in

Loka abaya and 37 OTP/SC in Bensa woreda reports regularly on monthly basis.

Regarding the OTP/SC supplies in the assessment woredas, there was no shortage of RUTF for

the previous months. However, there was extreme shortage of F-100 in all woreda as well in the zone. The other most important problem was transportation of OTP/SC supplies to woreda and fa cilities level and it is still unsettled in all areas

III. South Omo zone

South Omo zone also shares factors contributing food insecurity situation. There was also delay of Belg rain for 1-2 months, distribution was erratic and low to medium in intensity. The food se curity gap bridging short term crops were yet not matured. Consequently, the admission of SAM cases in all woredas steadily increases as compared with the previous months.

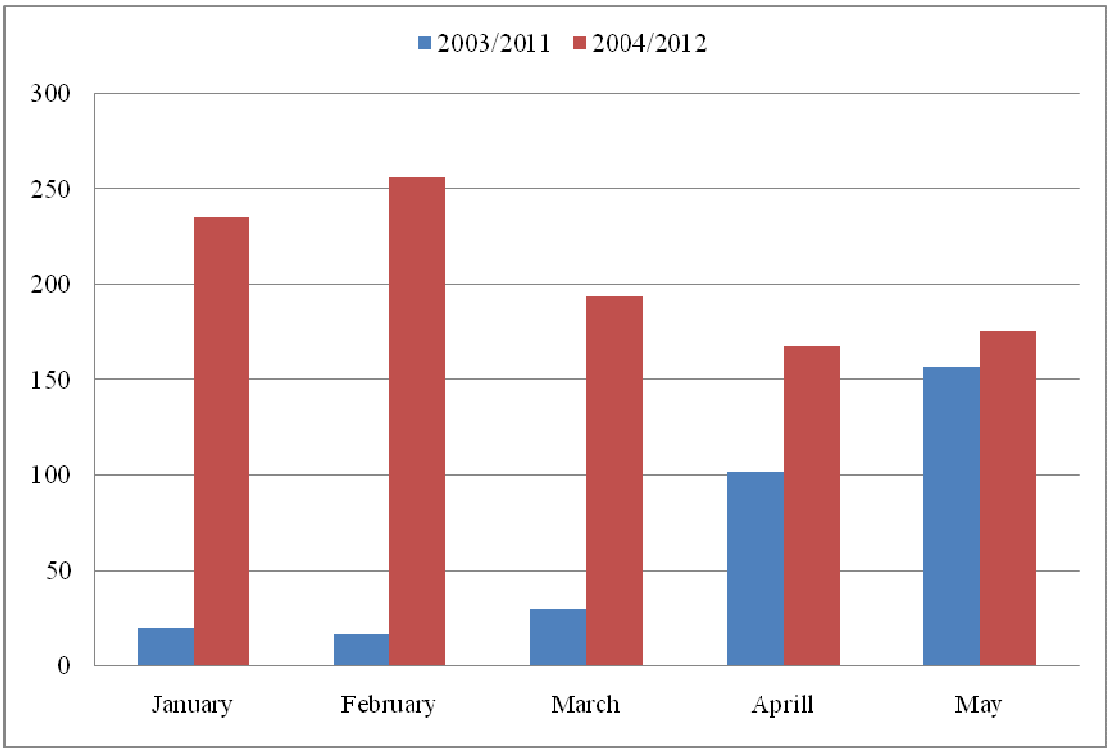


Fig:7.1.5 OTP admisssion trend in South omo zone 2011 vs 2012

- Among the seven woredas delivering SAM management in South Omo zone, Hamer and Bena tsemay woredas were considered.
- Three health facilities (Jinka Hospital, Koybe and Turmi HCs) delivering inpatient servic e and 163 Health post in seven woredas are also delivering OTP service in the zone. Regarding the logistics supplies currently there is a good of RUTF can serve the coming one months and no stock out experienced yet. However, therapeutic milk (F-100) for inpatient service to date one of the demanding problem in the zone. There is also no TSF programme for children discharging from OTP in the zone.

5.Coordination

Rapid Response Team (RRT) at woreda level has been established but only functional during out break. Konso woreda was allocated budget (146,000 birr) for drugs, Fuel and perdiem for emerg ency response. The rest woredas were not allocated for emergency/epidemic preparedness and re sponse at woreda level. In addition, visited woredas were not having adequate stock of drugs & medical supplies for major epidemic prone diseases like malaria, AWD, measles, dysentery and relapsing fever. And no epidemic preparedness plan in all visited Zones and woredas. Data on m ajor epidemic prone diseases has been collected from selected woredas of the 3 respective Zones.

6.Challenges and Recommendations

- Delivering supplementary food on regular bases should be given especial focus so as to achieve sustainable decline in SAM cases and improve the food security situation.
- Reportedly, malnutrition might increase over and above the existing rate after June 2012. Prepositioning adequate OTP/SC supplies should be given especial focus by the RHB and UNIC EF among others.
- Delivering OTP and SC supplies from RHB to woredas and Sites was found the main cha llenge to respective woredas. Delivering supplies at OTP/SC sites and woredas should be a priori ty for NGOs working on Nutrition emergency.
- Shortage of household food availability would be apparent in the upcoming months and thus existing emergency and PSNP responses should continue without interruption for the comin g two months.
- Referral systems from OTPs to supplementary feeding and to other emergency responses should be strengthened further.

7.Gaps identified

- Rapid response team were not active
- No prepared plan and budget to response health emergencies and outbreaks
- In adequate stock of drugs and other medical supplies at Zonal as well woredas(F100 and F75 in all woredas, coartem in South omo Zone and Loka Abaya woreda of Sidama Zone)
- Turnover of trained health professionals
- Problem on data availability, accessibility, and data analysis for action in some Zonal health department and woreda health offices
- Shortage of water treatment Chemicals
- Shortage of IRS chemicals for malaria prevention and control
- Deliance of rain fall my increase risk of malaria and AWD outbreak and increase house h old food insecurity.

8. Vulnerability Mapping Across Zone

The year 2012 belg assessment apart from assessment of food security situations includes social sectors (Health, Nutrition and education). To this end hot spot woredas which were experiencing ongoing outbreaks, high case load malaria, and Malnutrition prevalence and might need emergen cy interventions for the upcoming six months period are identified. Based on the previous epide mic history and existing prevalence trend that all sample woredas assessed during the period wou ld be vulnerable to health (malaria, AWD, Measles, Meningitis), and Malnutrition.

The main outbreak prone diseases likely to occur are malaria, malnutrition, measles and AWD.

The table below shows woredas with the outbreaks likely to occur in the next six months.

Type of Emergency	Possible time of occurrence
AWD	May- September
Malaria	September- October
Measles	September –December
Malnutrition	July -August

Table 7.1.6 Time Frame for the possible Outbreaks and health emergencies in the next six mont h (July – December)

9.Recommendation

- Revitalize established rapid response team from Zone to kebeles
- Prepare epidemic preparedness response plan
- Allocate budget for emergency response
- Avail drugs and medical supplies to response outbreaks

Give in-service and refreshment training for health professionals on epidemic response, Malnutr ition, EPI, Malaria, Measles.

- Data should be analyzed and used for action
- IRS chemical and budget should be provided to implement spray as soon as possible
- Prepositioning adequate OTP/SC supplies should be given especial attention by the RHB and partners.
- Facilitate transportation of OTP/SC supplies to the facility level duly considered.

11.Acknowledgement

The assessment team would like to thank the Head of the Public health emergency management core process(PHEMCP) and respective Zonal health department staff and offices of the 6 selecte d Woredas and health workers for providing valuable information during our field visits.

I would like to extend my thanks to School of Public health for facilitating this assessment progr am and EPHA covering related costs during the field work.

Chapter VIII – Protocol/Proposal for Epidemiologic Research Project

Factors Associated with Low vaccination coverage of children 12-23 years of age in Yirgalem City Administration, Sidama Zone, Ethiopia, 2013

Ashenafi Argata

1. Introduction

1.1 Back Ground

Over the course of the twentieth century and into the twenty-first, vaccines have been developed to reduce the morbidity of devastating vaccine-preventable diseases. (1)

All countries have national immunization programmes, and in most developing countries, children under five years old are immunized with the standard WHO recommended vaccines that protect against eight diseases – tuberculosis, diphtheria, tetanus (including neonatal tetanus through immunization of mothers), pertussis, polio, measles, hepatitis B (HepB), and homophiles influenza (Hib). These vaccines are preventing more than 2.5 million child deaths each year. This estimate is based on assumptions of no immunization and current incidence and mortality rates in unimmunized children (2).

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immunization (EPI) was initiated in 1980. The objective of the National Immunization Policy was to reduce mortality and morbidity in children from the EPI target diseases through the immunization of all children under the age two in the first five year, but later after 1986 it was revised to focus children under one year of age in order the child exposure time to natural infection. The program had been planned to make immunization services available to 10% of the population in 1980 and to increase immunization access by 10% each year and reach to 100% coverage **(3).**

Ethiopia is one of the lowest performers in all MDGs.(3) The under-5 mortality rate in Ethiopia is 88/1000 (3).

In fact, a child in Ethiopia is 30 times more likely to die before age 5 than a child in Western Europe (Millennium Development).(3) Children are the most vulnerable segment of the population, but many of the ailments that cause death in this population can be avoided by completion of routine childhood vaccination.

In Sidama zone the immunization coverage from routine reports showed that higher in the rural districts than Yirgalem Town. According 2011 Zonal annual immunization report, 87% children were fully immunized and dropout rate was 5.5% and 9.7% for penta1 to penta3 and penta1 to measles respectively.

But fully immunized children were 70% for Yirgalem district and dropout rate was 19.6% and 18.7% for penta1 to penta3 and penta1 to measles respectively.

Despite the increased report immunization coverage of measles in Ethiopia, the disease has continued to be the main childhood health problem in the country. It attributed to 4% of child and infant deaths in 2004 which was highest of the world (4). Immunization is one of the national child survival strategies in Ethiopia to reach DPT3/measles vaccination coverage of (**3)** 90% in 2010, which planned to decrease mortality under five ages of year by 2% (7) and immunization is the key to achieving the millennium development goals (MDG) specially to reduce the child mortality (2) and proportion of children immunized against measles is one of the indicator of health MDG 4 target 4 for decreasing the child mortality and morbidity from measles (8). But in Ethiopia the incidence of measles has increased from 3.19/100,000 (1964 confirmed cases) in 2009 to 7.35/100,000 (3121 confirmed cases) in 2010**(7).**

According to the national health and demographic survey of Ethiopia 2011, the total Penta3 and measles coverage was 38.5% and 37% respectively. Children in urban areas are more than twice as likely as rural children to be fully vaccinated (48 percent compared with 20 percent, respectively). Regionally, children with full vaccination coverage range from a high of 79 percent in Addis Ababa and 59 percent in Tigray and Dire Dawa to a low of 9 percent in Afar(8).

The study done in Ambo Woreda in 2003 showed that immunization coverage by routine vaccination was less than 20% with card and less than 50% with card and history (9).

In Ethiopia, low access to services, inadequate awareness of caregivers, missed opportunities, and high dropout rate are major factors contributing to low immunization coverage (10).

Therefore, the aim of this study was assess factors affecting the immunization status among children 12-23 months of age in Yirgalem Town and to generate data that could be used for better planning and strengthening of immunization services.

2. LITERATURE REVIEW

2.1. EPI target disease and vaccines

The EPI has eight most common vaccine preventable diseases which greatly affects the children. These include tuberculosis, measles, poliomyelitis, whooping cough, diphtheria and tetanus, Hep B, invasive Hib disease. Currently, the EPI administers eight vaccines: BCG (tuberculosis vaccin e), oral polio vaccine (OPV), diphtheria-pertussis-tetanus (DPT) vaccine, hepatitis B (HepB) vac cine, measles vaccine, yellow fever vaccine, and heamophilus influenza type b and tetanus toxoi d (TT) vaccines (11).

In Ethiopia, currently the EPI program has eight vaccine preventable diseases. These are HepB a nd Hib in addition to the six known EPI program disease.

In Ethiopia, vaccination is given on routine and outreach bases. The routine vaccinations services are given starting from birth, should be completed before one year of life by all children. BCG a nd OPV0 are administered at birth, while three doses of OPV and pentavalent vaccines are given at interval of four week duration; at 6, 10 and 14 weeks, and measles vaccine is given at the age of nine months. If the children did not start immunization at birth, the first doses will be given at the 6th week and the child will not take OPV0 vaccine (12).

2.2. Immunization coverage in Ethiopia

Data sources for immunization coverage in Ethiopia are frequently obtained from the Ministry of Health and surveys. The National Demographic and Health Survey of 2000, 2005 and, 2011

provides the immunization status of the children. According to the national health and demographic survey of Ethiopia 2011, the total Penta3 and measles coverage was 38.5% and 37% respectively. Children in urban areas are more than twice as likely as rural children to be fully vaccinated (48 percent compared with 20 percent, respectively). Regionally, children with full vaccination coverage range from a high of 79 percent in Addis Ababa and 59 percent in Tigray and Dire Dawa to a low of 9 percent in Affar (8).

According to 2007/08 health and health related indicators of Ethiopian, the DPT3/pentavalent and measles coverage was 76% and 66% respectively. While the coverage for full immunization of children was 54% (13).

2.3 Factors affecting immunization status of children

Various socioeconomic and demographic factors may influence immunization coverage of children. Maternal characteristics, sex of child and birth order of the child, place of delivery and antenatal care (ANC) follow up, household income/economic status, knowledge about immunization and vaccine preventable disease, and residence are the main factors associated with immunization coverage among children.

2.3.1. Maternal characteristics

Maternal characteristics are the most known determinant factors of child immunization. A comparative study done among slum and non slum dwellers in Bangladesh children age of 12-23 months of age in three zone of Dhaka demonstrated that complete coverage is associated with educational status of the mother, income and living conditions (14).

The study revealed that mothers with lowest education, households with limited monthly income and people living in slum area were less likely to complete a child immunization. It also indicated that children whose mothers were born in a rural area or an urban slum, and those

whose mothers were aged less than 30 years are 0.35 and 0.43 times less likely to be fully immunized respectively (18). But in Kenya young age of mothers was associated with high immunization coverage as compared with the older mother (15).

2.3.2. Knowledge of care takers on immunization

Knowledge is another factor which affects the immunization status of the child. These include knowledge and attitude toward vaccination and vaccine preventable disease. Study done in Nigeria on determinants of immunization status children in rural area showed that mothers of higher knowledge score more fully immunize their children. Also more than half of mother can correctly calls the symptoms of vaccine preventable disease. And 99% the mothers felt immunization is good for the child (16).

In another cross sectional study done in Sudan showed that walking time to the nearest place of vaccination strongly influenced the correct vaccination status of the child. Children of mothers who have better access to vaccine services (less than 30 minutes walking time to the nearest place of vaccination) were 3.4 times more likely to have had the correct vaccinations than were children of mothers who have to walk 30 minutes or longer

2.3.3 Reason for non immunization

Different reasons are given by mothers/caretakers not to immunize their children. These include parental lack of knowledge of benefit of immunization and immunization schedules, health facility related problems, cultural and religious reasons, maternal and children illness' are identified by many studies. In Bangladesh it was showed that programmatic factors are linked to drop out from immunization. In the study lack of information about schedule of session and non holding of session according to schedules were commonly cited reasons for dropouts. The other

reasons identified were no idea about doses; vaccinator did not inform about subsequent doses, refusal by health professionals due to lost card or vaccine exhausted (17).

3.Objective

General: To determine immunization coverage, and identify factors associated with under-vaccination or not vaccination of children under one year old in Yirgalem city Administration.

Specific objectives:

- To determine the coverage for the Eight EPI vaccines among under one years old children in Yirgalem city Administration.
- Identify factors for low or not vaccination among children living in Yirgalem town
- To assess demographic, socio economic and health service factors affecting immunization status among children aged 12-23 months
- To assess the knowledge of the mother/caretakers on immunization and vaccine preventable disease
- To see the effect of knowledge of mothers/caretakers on the immunization status of children

4.Methods and Materials

Study Area:-Yirgalem town administration, Sidama zone, Southern Nations, Nationalities and People's Regional State (SNNPR), Ethiopia. The district town Yirgalem is located 320 km south of Addis Ababa, and 45 km south of Hawassa (the capital of SNNPR state). According to the 2007 census, the estimated total population of the district in 2012 is 40,207 and the total number of households is 8, 206. (7) About four percent of the total population is children at the age of 12 to 23 months. The district has 6 urban kebeles (the smallest administrative units Ethiopian) with 32 villages, all are urban kebeles. There is one Zonal hospital, in the district, one health centre,

one non-governmental clinic and 2 health posts. Potential health coverage for year 2011 was 100%.

Study period: - Study will be conducted from July 1-15, 2013

Study Design: - Two stages Epi cluster survey method will be used. Villages are the sampling units for the first stage and Households are the sampling unit for the second unit.

To perform PPS sampling, first, we need a listing of every village and an estimate of its population size, then, next, cumulate the population size from village to village. Calculate sampling interval by dividing the total population by the numbers of villages to survey. Use random number between one to sampling interval by using a random number table. Continue to select villages by adding the sampling interval cumulatively to identify 2^{nd}, 3^{rd} and……n.

Source population:-All household with children of 12-23 months residing in Yirgalem Town constitutes the source population of the study.

Study population:-The study population of this study was all children in the age group of 12-23 months of age living within eligible household in randomly selected kebeles and villages in the Town. Mothers'/caretakers were also studied about their knowledge on the child immunization

Sample Size: To determine total children for the survey we will use70% immunization coverage of the town, the design effect of 2 and ±10% precision. Totally 224 children will be selected from randomly selected villages, according to their proportionate population size.

Sampling Methods: In order to create a sampling frame: all 32 villages will be registered. Households in each village will be registered. No inaccessible areas in the town, so all listed villages will be included in the study. We will take each village as a unit from which each village will be selected based on the Probability population size- pps. Based on this calculate the sampling interval; and each cluster will have chance on the calculate cumulative population. We will divide the total population of the villages (40,207) by the 32 villages to be selected to obtain

the sampling interval. To select the Starting house hold**,** the initial household will be selected randomly.

For each household, if there are more than one eligible children in the household, we will collect data on the youngest eligible child only. To collect data we will use the infant immunization card, history from mothers or care takers, and

BCG scar. Also data will be collected from health center EPI register or card, if card will not available in the child's house.

Study variables

Dependent variable

Immunization status of children aged between 12-23 months

Independent variable

Socio demographic characteristics of mothers/caretakers

Sex of child

Knowledge of mothers/caretakers

Family size

Number of child ever born

Experience of child death

Birth order

Residence

Time of travel to reach the nearest health facility

Place of delivery

Maternal tetanus toxoid immunization

ANC follow up

Family income

Data collection:-Data on immunization history will be collected in two ways, based on the availability of immunization card and mothers/caretakers verbal report. After a child aged between 12-23 months was identified from the household, mothers/caretakers of the child will be asked for the presence of child's immunization card. For the child with immunization card, the information on the doses and types vaccine received by the child will copied from the card. If immunization card will not available for the child, the mothers/caretakers will be asked for immunization history. The number of doses the child took and how (the route of vaccine administered) the child took the vaccine was the way by which immunization history will be asked. Information on other variables will be asked directly from the child's mother/caretaker

Training of data collectors and pre-testing:-Ten nursing graduated data collectors and one supervisor will be recruited and received two days intensive training before data collection. Training will be given by Amharic on how to ask and fill the question, selection criteria of households and children, and how to approach the mothers/caretakers.

Questionnaires will be pretested for completeness and appropriateness to the local context on 20 households in one of the kebeles not selected for the study. Based on the results of the pre-test some questions will be modified.

Data quality control

The questionnaire used for study will be adopted from demographic health survey (DHS) and fro m the prior researches done in other places, and then developed according to the local context.

Both data collectors and supervisors will check every day filled questionnaires in the field for co mpleteness before they return from field. Data collectors will be asked to return and complete for the incomplete questionnaires. Principal investigator will check every questionnaire every day af ter data collection before data entry.

Operational definitions

Documented dose: Dose of a vaccine child received recorded on immunization card.

Dose by history: Dose of a vaccine child received as reported by mother.

Invalid dose: Dose of a vaccine received at a time interval shorter than or at younger age than recommended by WHO.

Valid dose: Dose of a vaccine received at a right interval and age as recommended by WHO; in case of BCG, card or history plus scar.

Fully vaccinated: A child 12-23 months old who received one dose of BCG, one dose of measles, and three doses of Penta/OPV before her/his 1st birthday.

Validly fully vaccinated: A child 12-23 months old who received valid doses of the stated vaccines before her/his 1st birthday.

Coverage by card only: Coverage will calculate with numerator based only on documented dose, excluding from the numerator those vaccinated by history.

Coverage by card plus history: Coverage calculated with numerator based on card and mother's or care giver report.

Coverage by documented dose: Coverage excluding those vaccinated by history both from the numerator and denominator.

Maternal immunization awareness score (MIAS): Sum of correct answers of mother to the questions on EPI vaccines.

Literate: mother with formal education or able to read and write.

Penta1 to penta3 defaulter rate: the percent of children vaccinated for Penta1 who defaulted for penta3.

Penta1 to Measles defaulter rate: the percent of children vaccinated for Penta1 who defaulted for measles.

4.14. Inclusion and exclusion criteria

Inclusion criteria

Households with at least one living children of aged between 12-23 months were eligible for the study. In case of two or more children the youngest child by age was selected and in case of twin both children were included.

Exclusion criteria

Households without children aged between 12-23 months not included.

Data processing and analysis

Data will be coded and entered into computer by using EPI Info version 7.1 for analysis. Univariate analysis will be used to describe the data using percentage. Binary logistic regression will employed to determine the odds ratio for both multivariate and bivariate analysis. Bivariate analysis will be used to assess the association between independent and dependent variables.

Then all variables that show statistical significant in the bivariate analysis will included in multivariate logistic regression to determine the factors associated with immunization coverage among children aged between 12-23 months. The result of the study will be presented by tables and charts.

6.Ethical clearance

Ethical clearance for the study will be obtained from Addis Ababa University School of Public Health Institutional Review Board. And official support letter from the school of public health will be written to administrative body of Yirgalem town. Data collection will undertake after permission is obtained from the Yirgalem town municipality. Study participants will be asked for their consent before asking for any information and written and oral informed consent will be taken from every study participants. Purposes of the study will be explained for the every study participants and they will be asked for information only after they give their consent. No person will be obligated to participate to study without his/her consent.

7.Dissemination of the results

The finding of the study will be submitted to the school of public health at Addis Ababa University. The result will also be submitted to the SNNPR State Health Bureau, Sidama Zone health Department and Yirgalem Town Health Office. The finding will also be presented for different work-shops and seminars and will be published in a peer reviewed journal.

WORK PLAN AND BUDGET PROPOSAL

Table: 8.1.1 WORK PLAN OF THE STUDY

NO	ACTIVITIES	April	May	Jun.	Jul.	Aug.	Sep	Oct.
1	Final proposal writing and submission for the FELTP coordinators, resident advisors and Regional health bureau							
2	Ethical clearance and resource securing							
3	Recruitment and training of data collectors							
4	Pre testing							
5	Data collection							
6	Data entry and cleaning							
7	Data analysis							
8	Report writing (1st and 2nd draft)							
9	Presenting report to District, Zone,							
10	Presenting Abstract to Regional HB ,FMOH and AFENET Conference							
11	Publishing research finding on Journals							

BUDGET PROPOSAL

Table:8.1.2 BUDGET PROPOSAL

Activities	**Quantity**	**Rate pay/day ETB**	**Duration of work/ day**	**Total(ETB)**
I. Personnel (predim)				
A. **Training and pre test**				
1. Trainees	7	200	10	14000
2.Principal Investigator	1	400	3	1200
3.Supervisors	2	400	3	2400
4**. Tea/ Coffee for trainees**	10	25	3	750
B. Data collection				
1.Data collectors	7	200	10	14000
2.Principal investigator	1	400	10	4000
3.Supervisors	2	400	10	8000
Personnel total				**44,350**
II. Equipment And Supplies				
A.Stationery and other material total				

Item	**Unit**	**Quantity**	**Price**	**Total Price**
3. Pen	Each	20	3	60
4. pencil	Each	20	2	40
5. Eraser	Each	20	2	40
6. Sharpener	Each	20	3	60
7. Note Book	Each	20	10	200
8.Flash Disk	Each	(4GB)	500	500
9. CD recorder	Each	10	0:00	100

10. Mobile card	Each	6	100	600
11. Bag	Each	1	550	500
12. Hard disc	Each	1	2000	2000
13. clip board	Each	20	20	400
Duplicating paper	Box	10	100	1000
Total				**5500**
Grand total				**49,850**

Assurance of the principal investigator

The undersigned agrees to accept responsibility for the scientific ethical and technical conduct of the research project and for provision of required progress reports as per terms and conditions of the Research Publications Office in effect at the time of grant is forwarded as the result of this application.

Name: ASHENAFI ARGATA

Signature_____

Date of submission: _____

Approval by the primary advisor:-

Name: _____

Date_____

Signature_____

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Chapter IX – Other Additional Output Reports

9.1 Summary training report

Southern nation nationalities and people's regional health bureau (PHEM) in with collaboration of plan international southern branch office organize on job training for hospital and health cent er public health emergency management focal persons.

Training days was from 18-22/04/2012, Training venue, Yirgalem Fura research and developme nt institute hall, Participants were selected from Sidama zone, 100 health centers and 2 Hospital s**.** They were clinical and public health Nurses by profession.

General Objective: To strengthen Public Health Emergency Management activities such as Ris k assessment Early Warning, Preparedness, prompt response, and rehabilitation at the Facility L evel.

Specific Objectives

- To introduce PHEM core process guide lines
- To develop baseline data, determine resources needed and information on health sector e mergency preparedness
- Understand the steps of outbreak investigation and management
- Able to explain the significance & principle of information presentation
- To improve the ability of health workers to detect and respond to priority communicable diseases
- To strengthen the capacity of HF to conduct effective surveillance activities,
- To create linkage between the community and health delivery system
- To reduce mortality and disability by ensuring proper case management

- To improve the use of information for decision making,
- To improve timeliness and Completeness of weekly IDSR report

The main training Topics were:-

- The Training Objectives
- Early Warning & Emergency Communication
- Public Health Risk Assessment
- Public Health Emergency Preparedness
- Public Health Surveillance & lab. Investigation
- Priority Reportable diseases & case Definitions
- IDSR
- Community based -IDSR
- AFP, Measles & NNT Surveillance
- Health Information Presentation
- Outbreak investigation
- Responding to an Outbreak
- Malaria Epidemic Management
- Post Epidemic Evaluation
- PHEM Formats & Reporting systems
- International health regulation (IHR)
- Monitoring & Evaluation

Methodology

- Power point Presentation
- Participatory/Two way
- Experience sharing
- Group work and Discussion
- Pre & Post test Evaluation

Topics I prepared and presented was List of Priority diseases, Case Definition of priority disease s and Preparedness. All power point presentations attached with the training document

9.2 Summary of laboratory Activity Report

Introduction

Laboratory Medicine is a discipline that comprises a number of subjects, professionals in order to analyze, clinical samples to produce evidence based information for the users of the laboratory and manage both infectious and non infectious diseases. Southern Nation, National Peoples Regi onal Health Bureau Laboratory department was established in 1992. Since then, it had been give n muchclinical and public health services services at it's bases and different field sites.

Since 2009 Regional health Bureau Lab. is one of newly designed supporting process from eight preocess in the health Bureau.In addition to this four Lab. branches was established in different s ites these sites are, South Omo,Arbaminch,Hosaina and Mizan.

There are 1 Msc, 5 Bsc 2 assistances and 2 cleaners at Regional Lab and 11 Lab techinolgists at f our baranches. Laboratory department has it's free building 12 rooms and 6 benches in each roo m. It has 24hrs eletric power services and one Genaretor for back-up power sourece for Refrige rators, Lab machines,

Water distilator, Computers, Fax Machine, Internet and other equipment. It is using Telephone, Post, Fax, email and hard coppies to commuinicate reports and other information with National and Zonal offices.

Core components / disciplines of Regional Laboratory

- Bacteriology
- Serology
- ELISA
- Parasitology
- Involvements in quality assurance for the various disciplines of clinical laboratories. Example:TB,Malaria,and HIV/AIDS
- Selection of the best antibiotics for the treatment of bacterial infectionsand monitoring the efficacy of drugs
- Selection , procurement of laboratory logistics for diagnostic laboratories both at national and regional levels
- Involvement in surveillance of infectious and non infectious diseases in the country
- Infection prevention control in the laboratories as well as in the health institutions
- Provision of laboratory information for GOs, NGOs, public at large
- Roles in data handling and reporting that is generated in the laboratory
- Involvement in basic and applied research: problem oriented research: media preparation,

- Production and optimization of equipment for laboratories in collaboration with other par ties.

- Conducting of supportive supervision to respective Zones,Hospitals and Laboratory bran ches

Training

- Training has been conducted for Regional Lab and Branch Lab. staff on AWD,MAlaria, Meningitis and other epidemic prone diseases. Last training was given from Feb.26-30/2013 on Meninigitis

Reagents

Avialable reagents are purchasing from market,and some are distributing from National(EHNRI). There were seroius shortage on Pastorex and LP set for meninigitis test.

Specimen Collecction,Labeling and handling

All necessary requet is filling on forms with specific patient identifications and registered on log book or electronic record. Samples also sending to refereal laboratories for more confirmation th rough different transport media. All specimen results areaccordngly reporting to specific Zones, Districts as well to National at daily,weekly and montly bases.

Accordin it's activities and Biosefty materials availability Regional laboratory seetted as level 3

9.3 SNNPR, REGIONAL HEALTH BUREAU REGIONAL WEEKLY PHEM BULLET N

Week 13 March (25 – 31, 2013)

1: Data Completeness

In the epidemiological week 13, 15 zones and three Special woredas submitted PHEM report to r egional health bureau. From 4434 health institutions expected to report 3990 of them reported o n time as per plan. Regional completeness rate was 90 %. Data completeness performance rate a mong reported zones and Special woredas included that of Kambata and Tembaro Zone, and Ha wassa City administration is (100%), Wolayita zone (99 %), Hadiya and Bench Maji Zones (97 %),Sidama and Keffa (96%), Dawro zone (91%), Gedeo (90 %), Segen zone (89%) South Omo a nd Sheka (87%), Silte (84 %), Gurage (80%), Gamogofa (74%). Completeness rate for special w oredas included that of Alaba special woreda (100 %), Yem (92%) Basketo (91 %) and Konta (7 3 %) respectively.

2: Malaria

A total of 47959 confirmed and clinical Malaria cases were reported from 15 zones and 4 special woredas to SNNPR regional health bureau during week 13 of 2013. Among cases reported Gam o Gofa was reported 7396 (15%), Gurage 4309 (9 %), and Sidama 4187 (9 %), Kambata Tamba ro and Halaba Special woreda reported3937 (8%)and 3799 (8%) respectively. Wolayita, Silte an d Hadiya were reported 3573(7%), 3520(7%), 3404 (7%), cases respectively. The rest eight zone s and three special woredas were reported 6 and below 6 percents of malaria cases.

Gamo Gofa Zone

Out of total malaria cases reported to the region 7396 (15%) were from Gamo Gofa zone. Zonal malaria trend in the last three weeks shows increasing pattern. Case load of Malaria of this zone i

n this week was higher than that of 12th week (which was 6,653) cases of Malaria. Zonal data co mpleteness rate was 74 %. Positivity rate for P. Falciparum in this week was 66.4 %. Positivity r ate for P. Falciparum was almost higher to that encountered in the 12th week (61.2%). At prese nt there is case building of malaria in the zone. So further ongoing surveillance activities need to be undertaken to treat ongoing cases and prevent and control reemergence and spread of malaria outbreak in the zone.

Gurage Zone

Out of total of Malaria cases reported to the region 4309 (9 %) were from Gurage zone. Zonal tr end of malaria in the last three years showed gradual decreasing pattern but case load of malaria slightly increased as compared to that seen in weeks-10,11and 12. Positivity rate for P. Falciparu m in mentioned week (13) was 62.4 % which was 5.5% higher than that was encountered in wee k twelve (which was 56.9 %). Data completeness for the zone was 80 % lower than by 8 %, the proportion seen in the 12th epidemiological week) which entails that improvement in performan ce rate is very essential to enhance progress in malaria prevention and control activities for best r esults to be achieved.

Sidama Zone

Sidama zone reported 4187 (8.7 %) clinical and confirmed cases of Malaria in this week. Zonal malaria trend in the last three weeks report showed that stability pattern for wk,10,11and 12,repo rted cases were 4145, 4147, 4150 respectively . Positivity rate for P. Falciparum in this week was 44 % proportion of which was similar that occurred in week eleven and twelve (44 % and 42 % respectively) epidemiological weeks of the year. Data completeness rate for the zone was 98.4% and 96% in the twelfth week and this week respectively which indicates that performance level

of this zone is relatively higher as compared to many zones which reported this week and magni tude of malaria in hot spot woredas of this zone showed decreasing pattern. Virtue of abovement ioned evidences clearly showed that this zone was not in any situation/form of malaria epidemic.

Kambata Tambaro Zone

Kambata Tambaro Zone contributed 3937(8.2 %) confirmed and clinical cases of malaria among others who reported surveillance data of malaria to the regional health bureau. Trend of malaria i n the last three weeks showed stable pattern as compared to this week (13^{th}). Positivity rate for P. Falciparum was 48.6 % proportion of which was significantly similar as compared

to rate encountered in week10,11 and13 epidemiological weeks (48 % and 49 % and 50.9% resp ectively) of the year. Data completeness rate of this Zone for this week (13^{th}) was 100 %.Surprisi ngly enough data completeness performance rate achieved by Kambata Tambaro Zone for last fo ur weeks was 100 % (for each week). Similarly Hawassa city and Halaba Special woreda had bot h registered performance rate of 100 % in each of last four weeks. It could be quite of the essenc e that such best practices developed in mentioned areas need to be shared by other special wored as and zones to enable them improve and increase levels of their data completeness performance rate to most dependable proportions required. Moreover it could be realized without any doubt t hat such levels of achievements in performance rates can play very vital role in prevention and c ontrol of ongoing outbreaks and future reemergence and spread of epidemic prone diseases partic ularly in mentioned areas with very high performance rates.

Wolayita Zone

Gurage zone reported 3573 (7.5%) confirmed and clinical cases of malaria to regional health bur eau. Last three weeks zonal malaria trend shows increasing pattern except including this week.

Reported cases for wk-10, wk-11 and wk-12 were3039, 3265 and 3373 respectively. Proportion of reported cases malaria showed marked increase. Positivity rate for P. Falciparum in this week was 83.2 % .This proportion was slightly lower as compared to 86 %, 85%and 85% which was

encountered in week tenth, eleventh and twelfth weeks. Data completeness was 98.7% which wa s relatively higher as compared to that seen in other zones and special woredas. Further interventi on activities need to be undertaken to increase completeness rate and thereby prevent and control outbreaks of malaria in the zone.

Silte ZOne

Silte zone reported 3520 (7.5 %) confirmed and clinical cases of Malaria to regional health burea u. Zonal malaria trend shows gradual decreased compared with the last three weeks. Malaria case s reported for wk10-wk12 was3640, 3717 and 3661 respectively. Positivity rate for P. Falciparu m in this week was 68.6 %.It showed that minor decrease from week11and 12,but increase from wek10 Positive rate for week10-week12 was 65%,73%and 71%. Data completeness rate for this zone was 83.8 % and this relatively higher level of performance could contribute to ongoing prev ention and control efforts through reducing magnitude of malaria in woredas particularly in some of the woredas of this zone. Magnitude of malaria in the zone was among top five areas with hi ghest number. Ongoing surveillance and related intervention measures have to be undertaken to deal with problems of Malaria and other epidemic prone diseases in this zone.

Hadiya Zone

Hadiya Zone reported 3404 (7.1 %) confirmed and clinical cases of Malaria to regional health bu reau. Malaria trend in the last three weeks shows increasing pattern except in week twelve, wher e case load of malaria decreased markedly. Positivity rate for malaria was 52.9%, which showed

gradually increasing from week ten to Wk-12 and decreased in wk-13.Positivity rate from wk10-wk12 was 50%, 53%and 57% respectively. Data completeness rate was 96.8 %. Even though the re was no outbreak of malaria in the Zone, proportion of case load increased in the last two week s as compared to other three weeks. The need to strengthen levels of undertaking ongoing surve illance activities manage cases actively and use findings to prevent and control future reemergen ce and spread of malaria and other epidemic prone diseases in the Zone.

Dawuro Zone

Dawuro zone reported 3064 (6.4%) confirmed and clinical cases of Malaria to regional health bu reau. Dramatic increment was observed in this week compared to last three weeks. 1655, 2774an d 2456 cases were reported from wk10-wk12 respectively. This week's positivity of P.Falciparu m was 73.6% and that of week ten; eleven and twelfth were72%, 70% and 68% respectively. Dat a completeness of the zone was 90.5 %. Trend of malaria showed increasing pattern except for w eek ten where case load of malaria showed rapid increase.

Hawassa City

Hawassa City reported 2987 (6.2%) confirmed and clinical cases to the regional health bureau. P roportion of cases that were positive for P. Falciparum was 46.2 % in this week and were 53%,42 % and47% (in the 10^{th},11^{th} and 12^{th} weeks) and data completeness rate of this zone was 100 %.

Last three weeks trend of malaria in this zone showed more or less similar. Reported cases of ma laria for last three weeks (wk-10 to wk-12 was 2951, 3008 and 2735 respectively. This good achi evement on completeness should be maintained and all Zones and special woredas also should be taken as lesson to increase their completeness.

Segen area people Zone

Segen zone reported 1899(4 %) clinical and confirmed cases of malaria to regional health bureau . P. Falciparum positivity rate was 69.7%. Data completeness rate was 88.8 % which showed imp rovement as compared to previous weeks therefore unreserved efforts should be made to improv e completeness, timeliness and management performance of dynamic cases encountered as well

Bench Maji Zone

This zone reported 148 (3.1%) confirmed and clinical cases of malaria to regional health bureau. Positivity rate for P. Falciparum was 62.2 %. Its proportion of data completeness increased to (97 .2 %) as compared to 12th week which was 85%. Trend of malaria in the last three weeks shows s imilar pattern.

South Omo Zone

This zone reported 813 (1.7 %) confirmed and clinical cases of Malaria to regional health bureau . Last three weeks trend of malaria in this zone shows decreased pattern. Positivity rate for P. Fal ciparum was 75.6 % which was higher than that

encountered in week 10,11and 12 which was 64%, 65%and 67.3respectively. Data completeness rate was 94.9%. Ongoing surveillance and active case management together with related activitie s need to be undertaken to reduce levels of reemeregence, spread and mitigation of adverse effect s of malaria in the zone.

Sheka zone

Sheka zone reported 664 (1.4 %) clinical and confirmed cases of malaria to regional health burea u. Last three weeks trend of malaria for the zone shows decreasing trend except for the week 11 r eported 933cases. Positivity rate for P. Falciparum was 45.9 % which was very significantly low

er than that encountered in week eleven (89%). Report completeness rate was 86.6 % and current ly this zone is not in epidemic. Undertaking further ongoing surveillance activities and use findin gs to undertake evidence based interventions was recommended.

Kefa zone

Kefa zone reported 230 (0.5 %) clinical and confirmed cases of malaria to the regio n. Positivity rate for P. Falciparum was 43 % which was lower than week ten and w eek eleven. Report completeness rate was 96 %. Last three weeks trend of malaria of this zone showed similar

trend. Activities to maintain levels of report completeness and prevent and control future reemergence and spread of malaria were recommended.

Konta and Basketo Special woredas

Konta and Basketo Special woredas reported 137 (0.3 %) and 111 (0.2 %) respectively, confirme d and clinical cases of malaria to regional health bureau. Report completeness rate of mentioned special woredas in that order was 91% for Konta and 73 % for Basketo respectively. Positivity f or P. Falciparum was 40.6 % and 85.4% respectively. Last three weeks trend of malaria in these t wo special woredas showed more or less similar pattern. None of these special woredas were in e pidemic situation at the end of this week. Yem Special Woreda Report was not submitted to regi onal health bureau for this week to regional health bureau

WK	Total malaria	PF & pv +ves	P.F +ve	PF (%	Deaths	CFR (%)
10	45199	12190	7136	59	0	0
11	46478	13307	8045	60	3	0.6
12	45590	12460	7371	59.2	1	0.2
13	47959	13545	8300	61.2	4	0.8

Total	185226	51502	30852	60	8	0.004

Table :9.3.1 Depicting total confirmed and clinical cases, positivity of cases by species and deaths due to malaria by weeks in SNNPR, April 2013

3. Measles:

A total of 80 suspected cases of measles with no death were reported from different zones to regional health bureau.One of the drawbacks of this surveillance data is that even though name of reporting zone was included in the report there was no mention of name of Woredas and kebeles where these suspected cases had occurred. This may create difficulty in undertaking descriptive analysis of data (analysis by time, place and person) to produce evidence based findings which will be used to undertake evidence based interventions to deal with problems of Measles. Magnitude of Measles in this week (week 13) markedly decreased as compared to previous three weeks wk 10, wk 11 and wk 12 of 2013 where reported cases of Measles was 165, 106 and 150 suspected cases of Measles in decreasing order of reported weeks and 10thth, 11th and 12th weeks of 2013. The fact that number of reported cases of Measles in this week (week 13) showed marked decrease as compared to previous epidemiological weeks greatly suggests that the need to maintain ongoing surveillance including timeliness and completeness and use of findings in prevention and control interventions should not be underestimated.

4. Meningococcal Meningitis:

A total of 74 suspected cases and 1 deaths (CFR 1.4 %) of Meningitis were reported to regional health bureau in this (week 13 / 2013) epidemiological week. There were a total of 64 suspected cases and 2death,wk-10,190cases and 2deaths and 92 suspected cases and 2deaths of Meningococcal meningitis reported to regional health bureau in epidemiological weeks of 10, 11 and 12 respectively.

5. Bilateral Oedema in < 5 years Children

A total of 1006 outpatient cases, 128 inpatient cases with 2 inpatient deaths were reported from z ones and Special woredas of SNNPR to regional health bureau this week. 237,189 and 112 were reported from Sidama, Wolayita and Hadiya. Trends of last three weeks (wk 10, 11 and 12 /201 3) showed relatively decreasing pattern in reported outpatient and inpatient cases (1618, 1291 an d 1070 in week 10, 11 and 12 respectively). There were 1, 2, 0 reported inpatient deaths in ten, el even and twelve epidemiological weeks.

6. Typhoid fever

In this week 5582 outpatient and inpatient s with no deaths were reported from zones and special woredas of SNNPR to regional health bureau. There were 5659, 6105 and 5828 reported outpati ent cases of Typhoid fever in the epidemiological weeks of (week 10, 11 and 12/2013. Last three weeks trend shows more or less similar.

9.4 TERMINAL EVALUATION REPORT "EMERGENCY HEALTH AND NUTRITION ASSISTANCE TO VULNERABLE CHILDREN AND WOMEN, SIdama AND GEDEO ZONES,SNNPR,2013

Ashenafi Argata

Executive Summary

The following document represents a final evaluation of the Plan international Ethiopia OCHA funded Project on emergency health and nutrition assistance to vulnerable children response to Reduce Acute Malnutrition and Improved Access to Nutritional Support. The overall goal of the project was to enhance child survival and improve the quality of life, health and nutritional status of children, pregnant lactating women in the target area. The project had four primary pillories, including a targeted supplementary feeding program (TSFP), out patient therapeutic program (OTP), stabilization center (SC) and community mobilization (capacity building.

The project , implemented in four districts of the zones including Bensa, Bona Zuria and Dara in Sidama Zone and Wonago District in Gedeo Zone based on emergency targeting guidelines that focused on level of vulnerability to acute and moderate malnutrition, age and reproductive status of women (lactating and pregnant women) Project beneficiaries, particularly within the nutrition component, were the most vulnerable in society and included children under the age of five, pregnant and lactating women. Within the nutrition component, the program exceeded its initial planned beneficiary numbers, reaching a total of 3149 children under five, pregnant and lactating women.

Through use of Outpatient Therapeutic Programs (OTP), Stabilization centers (SC), within health facilities supplementary feeding components and a strong capacity building component that supported health facilities staff and worked with community based management of acute malnutrition (CMAM) to identify and refer cases to health centers. The nutrition component of the project

demonstrated achievements that met GAM and SAM standards and aligned with the national gui delines for management of severe acute malnutrition. Strategies used within this project aimed at ensuring long term sustainability of project activities. One key aspect of this was immediate inte gration of Outpatient Therapeutic Programs (OTP) and Stabilization Centers (SC) activities withi n health facilities.

Although some impressive work has been done by the project, particularly related to transporting referred children from health posts to health centers and to hospital, providing food for mothers or for care takers at SC, active involvement on measles and AWD outbreak prevention and contr ol activities including financial support, provision of furniture's for district health office, health centers and health posts. Through project interventions, it was determined that capacity buildin g should be a holistic approach, flexible and have to be provided at the early stages of Project im plementation. Critically important as well is the issue of the project.

sustainability after phase out and key issues related to supply transport, referral system, food for care takers at SC site and logistical support are seen as important obstacles to ensuring long term uptake of activities by health facilities over time. These issues as well as other key findings, with conclusion and recommendations for improved implementation and lessons learned for future pr ogramming are included in the following report.

Background

Normally, almost all woredas in SNNPR receive bimodal rainfalls that are meher and belg seaso ns with 60% and 40% production share respectively.

However change in weather condition, inadequate and erratic nature of rainfall had negatively aff ected living status of the population in the previous years. Especially, the extended dry condition and delayed belg rain of 2012 was resulted about 80% loss of sweet potato production. Conseque

ntly, in SNNPR, around 27 woredas were classified as hot spot priority one (FENCU, April 2012) including Wonago, Dara, Bona and Bensa woredas where Plan International Ethiopia has been implementing emergency nutrition response (CMAM) interventions since July 2012 up to now (initial phase July- December 2012 and with no cost extension period of January-February 2013) Plan International Ethiopia has established two satellite project offices one at Bensa town and on e at Dilla town) that work closely with its regional office based at Hawassa.

TFP admission have been increasing across the regions particularly during hunger seasons betwe en February to May where it reaches a peak and starts to stabilize at higher level throughout June to August.

SNNPR is one of the regions that have been experiencing the largest increase in close load comp ared to other regions accounting for about 29%, 31% and 34% of the entire close load in the cou ntry in 2010, 2011 and 2012 respectively.

According to the NMA forecast for the first half of 2013, Belg rain is forecasted to be below nor mal in belg dependant areas across the country including SNNPR "Moreover, below normal rainf all is expected to be more pronounced over southeastern region, where Belg is the major rainy se ason" and "Near normal Belg rain is most likely to prevail across central eastern and southern re gions".

Emergency health and nutrition assistance to vulnerable children response to Reduce Acute Maln utrition and Improved Access to Nutritional Support. The overall goal of the project was to enha nce child survival and improve the quality of life, health, and nutritional status of children and w omen, within the target area. The project targeted most vulnerable sections of the community in

four Woredas (districts) of SNNPR, in Sidama and Gedeo Zones including Bensa, Bona Zuria, D ara and Wonago. These target areas were selected based on the level of the impact of the emerge ncies such as the level of acute malnutrition within the population.

Emergency health and nutrition assistance to vulnerable children and women response to Reduce Acute Malnutrition and Improved Access to Nutritional Support and plan international Ethiopia Project was implemented from June 2012 to December 2012 with a specific objectives aimed at reducing acute malnutrition among children under five years of age and improved access for nut ritionally vulnerable populations to community-based nutritional management.

Evaluation Methodology

This report is based on field data collected by evaluating team members in all target areas. The fi eld work was conducted in close collaboration with plan international Ethiopia field staff and sup port of offices in Bensa district Sidama Zone and Dilla in Gedeo Zone. Data was collected durin g the period February 25-30, 2013.

The evaluation process used was a participatory learning evaluation process, which aimed to inv olve and enhance learning for all parties involved. The primary data collection and analysis proc ess was essentially a participatory approach, which involved a number of project stakeholders an d service providers and participates in the assessment of the project strategies and outputs.

In order to collect reliable data that will generate the intended results, information was collected from different sources and triangulated to ensure consistency and accuracy. The means of data co llection for this evaluation was primarily – (1) quantitative data collection from secondary source s and (2) qualitative data collection from primary sources through informal interviews with a nu mber of key informants at different level and with a variety of stakeholders at project closing me eting.

Primary sources included project staff, service providers, and government officials, as well as fr om the evaluation team observations at the field level.

Secondary sources included the project proposal, progress and final reports and health facility rec ords. The data was collected from different sources using a variety of data collection check list specifically developed by evaluation team members.

Key Informant Interviews were conducted with *Woreda* Health office, *Woreda* Early warning an d food security Office. Data gathering and consensus building meetings with project staff were a lso conducted at the project level during the debriefing of the evaluation results with plan interna tional Ethiopia Hawassa main office officials and project staff. 5implementing staff and 31 gover nment officials and program implementing workers were involved in the evaluation process. In total 35 individuals were participated in the evaluation.

The strengths and weaknesses of the project were thoroughly analyzed with all project stakehol ders, including project staff, service providers and other stakeholders such as government official s and health center heads. This ensured a participatory evaluation approach and integration by in volving program stakeholders in information provision and assessment of the results of the proje ct.

In order to review the changes brought about by the project interventions, to learn about project implementation strategies and highlight lessons learned that will be used to develop recommenda tions for future program design and implementation.

NAME	ORGANIZATION	POSITION
Ashenafi Argata	RHB(SNNPR)	EFETP, resident
Yohannes Gebeyehu	BOA(SNNPR)	EWR Expert
Wond wosen Jimma	Plan International	
Woreda Representative	WoHO,WoEWRFS	

Table:9.4.1 Evaluation Team Composition

No.	Woreda	Institution	Contact persons	Position	Remark
1	Wonago	Woreda Health office	Markos Deyasso	- Zone D/P/P/C	
			Tewolde Tesfaye	- Head,Ho	
			Mestewat Feyissa	- Dupty head Ho	
			Gezahegn Abera	- Devt.Plan, Ho	
		WoA	Abebe Ejigu	- EWRFS coordinator	
		Health center	Tamiru Jillo	- HC Head	To see SC
		Tumata chirachaHealth post	Frehywot Negash Ayelech Hirbe	- Extension workers	
2	Dara	Woreda Health office			
		WoA			
		Dara Health center			
		Kumato Health post	Birtukan Matewos	Extension worker	
3	Bona zuria	WHO			
		WoA	Yohannes Markos	EWRFS coordinator	
		Bona hospital			
		Bona kike Health post	Demekech Dawit		
4	Bensa	WHO			
		WoA	Abriham	EWRFS expert	
		Daye Health center			
		Bensa ware Health post			

Table: 9.4.2 Visited woreda health offices and institutions

Evaluation Findings

4.1. Profile of beneficiaries and support arrangements

The beneficiaries were chosen based on emergency targeting guidelines: Their level of vulnerabil ity to acute and moderate malnutrition, age and reproductive status of women (lactating and preg nant women). The majority of project beneficiaries, especially within the nutritional component, were the most vulnerable in society. Targeted beneficiaries for the nutrition component included children under five, pregnant and lactating women.

4.2. Project Coverage

Through the Emergency Nutrition Response for Acutely Malnourished Children, Pregnant and L actating Women to Reduce Acute Malnutrition and Improved Access to Nutritional Support plan international Ethiopia Project, and its implementing government partners reached a total of 8,88 8 people (severely and moderately acute malnourished children under the age of five years, preg nant and lactating women in four distracts of the Sidama and Gedeo Zones in SNNPR.

From four districts three (Bensa, Bona Zuria) were from Sidama Zone and one (Wonago) was fro m Gedeo Zone. Of the total beneficiaries assisted by the project, 488 children under five with sev ere acute malnutrition. Compared with the original plan (2,094 children), the project was able to see achievements below the original planned number and percent 488 (23%). 7485 children were planned to be served by OTP program, the project was able to see achievements above the origin al planned number 8400 (112%). This is due primarily to the accesses of service to all kebeles, c ommunity awareness, training of health extension workers and HAD on CMAM.

From 8400 OTP admitted children 6,971(83%) were cured and discharged from the program and also from 488 SC admitted children 473 (97%) cured and discharged. Currently 1429 and 10 chi

ldren serving on OTP and SC program respectively. Coverage and cure rate are the most importa nt indicators of how well a project is meeting the needs of the objectives. Thus, in terms of cover age plan international Ethiopia and its implementing government side demonstrated the impleme ntation of a high quality program due to high coverage. Similarly 2541 under five children and 1 977 pregnant and lactating women serving on TSFP program and currently all of them are in the program. For this purpose 191.625MTCSB/Famix and 54.78MT vegetable oil were distributed.

These project beneficiaries were reached through 124 OTP and 4 SC sites in four districts of proj ect areas. Under these four districts, the project established and strengthening 10 SCs, and 124 O TP sites for admission and treatment of malnourished children across the project area. Based on t he discussion with the project staffs it was clear that standard nutrition survey has not been cond ucted in the project area. The standard survey would have provided clear estimate on the prevale nce of acute malnutrition in children and adults and provide estimate on retrospective mortality, morbidity, vaccination coverage and vitamin 'A' supplementations status and food security situat ions of the *Woredas*. In addition it help to measures the impact of the nutrition program of plan i nternational Ethiopia and to identify gaps and to recommend appropriate action based on the find ing. Hence, apart from the information provided above, it is not feasible to quantify the coverage of the nutrition interventions.

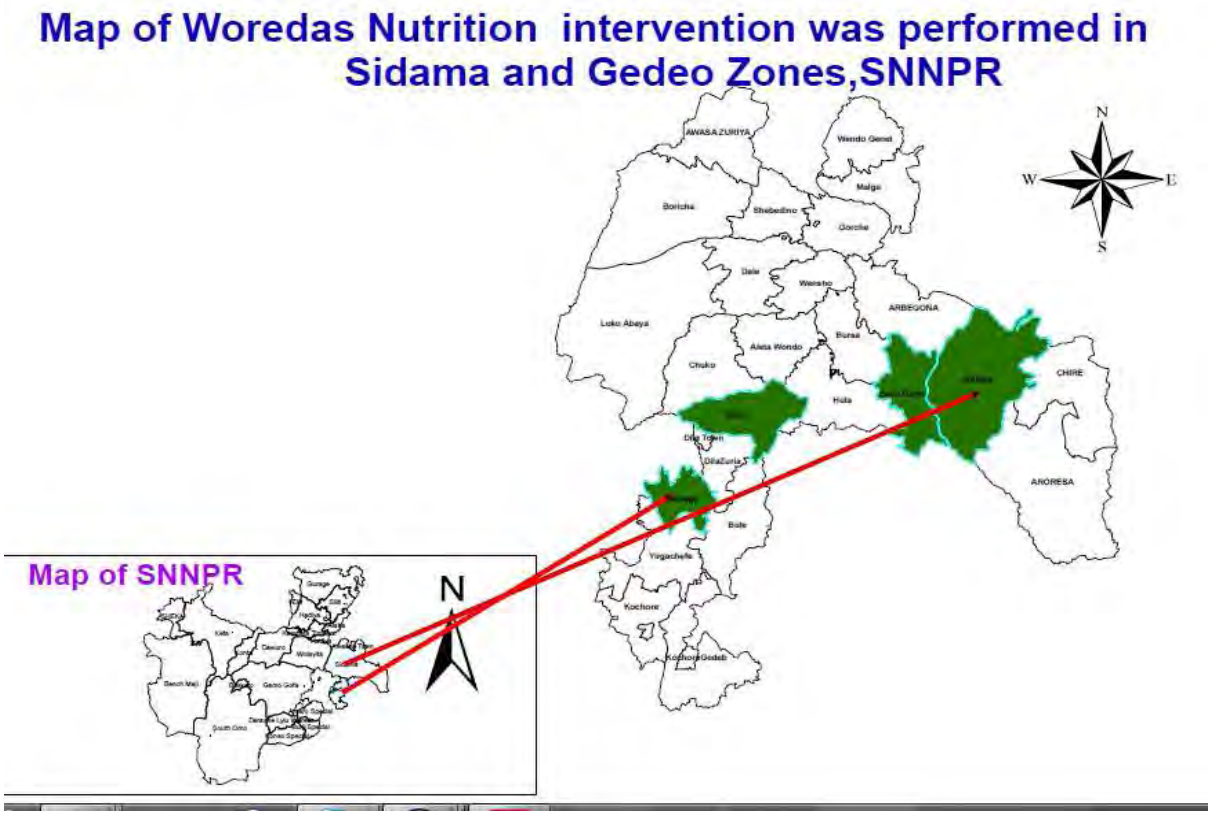

Fig.9.4.1 Districts Emergency Nutrition Implemented

No.		New admission						
	Woreda	Aug	Sep	Oct	Nov	Dec	Jan	Total
1	Wonago	83	141	270	67	197	74	832
2	Dara	236	244	188	170	117	80	1035
3	Bona	77	91	37	74	45	40	364
4	Bensa	104	165	259	111	187	92	918
	Total	500	641	754	422	546	286	3149

Table:9.4.3 Program Beneficiaries by Program Components

5.3. Type of services and achievements

The Emergency health and nutrition assistance to vulnerable children to Reduce Acute Malnutriti on and Improved Access to Nutritional Support and plan international Project was intended to im

plement between the periods July 2012 to December 2012. But due to delay on agreement signin g it was forced to start on August 2012 and extended to February 2013. Within target operational areas, the project has aimed to enhance child survival and improve the quality of health, and nutr itional status of children, women. In this regard the project implemented main project component that directly contributes to the fulfillment of the project objectives. This mainly focuses on nutrit ional support.

Although this report is a terminal evaluation of a project it is also important to highlight the root causes that resulted in project initiation. Based on the analysis of the information obtained in the field during the evaluation, the main contributing factors for increased levels of under five child malnutrition in the project area include

Overcrowded families, especially households with three or more children under five.

Households with structural food deficits (children from chronic food insecure households).

Lack of awareness related to child feeding practices and cultural taboos about children where ch ildren are given less of a priority status within the family.

Neglect and lack of care for children by busy parents.

For the sake of clarity, the nutritional component activities and the results of each activity are su mmarized under the three main components approach as follows: (a) Outpatient Therapeutic Pro gram (OTP), Stabilization Center (SC), Targeted Supplementary Feeding Program (TSFP),Capac ity Building (community mobilization; transport and logistics; supportive supervision; review me eting, reporting and recording and referral system).

5.3.1 Outpatient Therapeutic Program (OTP)

The project in collaboration with its implementing government system provided an Outpatient T herapeutic Program (OTP) to those with moderate acute malnutrition (MAM) with no medical co mplications. The OTPs provided ready-to-use therapeutic food (RUTF) and routine medicines to

treat simple medical conditions. The OTP centers were designed to provide health post/kebele ba sed treatment and rehabilitation, where children are expected to attend the OTP center on a weekl y basis for checkups and additional supplies of RUTF.

At the initial stage of the project plan international staff members and health extension workers were more intensively involved in the day to day implementation at the OTP centers. Though thi s ensured that government staff members were engaged and learning on-the-job, formal training. Over time, government health staff took over the daily routine work at the OTP centers while pla n international Ethiopia involvement near the end of the project was limited to logistic and techni cal support activities. Currently almost all OTP centers are well integrated with government healt h facilities at the *Woreda* and *Kebele* levels and the government staff is fully involved in the impl ementation of the programs – with the exception fear of plampynut provision interruption due to transportation problem to health posts.

In addition, it was found that in most cases, sites that the evaluation team visited noted that proje ct staff members were performing routine reporting and analysis tasks. As a result, government st affs at health facilities were not always familiar with reporting protocols and procedures and repo rts were not found at the health facility level. With regard to the supply of routine drugs and RU TF, It was noted that there have not been any shortages of routine drugs, RUTF or OTP cards at targeted health facilities. It was clear that the logistic support - including the transportation and di stribution of all necessary materials to each OTP center – had been provided by project. However , during interviews with the implementing government staffs at all levels (*Woreda* health office, staff of health centers and health posts), there appeared to be serious concern about the sustainabi lity of this after the life of the project.

Though children with severe acute malnutrition were identified through *Kebele* health extension workers, trained on CMAM. The actual admission to the OTP was conducted (by health professi

onals) through anthropometric measurements of weight for height < 70% MUAC < 11 cm with e dema. A similar methodology was utilized to measure the progress and discharge of beneficiaries from the program.

5.3.2 Stabilization Center (SC)

Stabilization Centers (SC) are established to provide intensive inpatient services for acutely maln ourished children with medical complications. These centers provide 24- hour intensive care unt il the children are well enough to continue with outpatient care. Though it is recognized that inpa tient treatment poses challenges in terms of economic cost, family member care and support and reduction of the social support network for affected households, it is the most effective way to tre at children requiring inpatient care at local health centers. The project established ten Stabilizatio n Centers across target areas. From ten established SCs four, one in each district were currently fully giving services and rest six SCs were fully equipped and ready for service. Using the agree d upon protocols, children were admitted to the SC for inpatient management when an infant was < 6 months old and had severe wasting and edema of both feet, and when children were 6 to 59 months old with poor appetite, medical complications or have grade +++ edema.

One of the most important parts of the SC is providing support for child mothers or care takers while they are away from their home and stay at the SC. In this regard the project has provided th e basic supplies for the child mothers or care takers, including food and sanitation materials. Ho wever, one of the major challenges found by the evaluation team was maintaining the food provi sion. With regard to the cure rate almost all SCs across the project had high cure rates and lower defaulter rates. The low level of defaulter rate might have been due to the support provided to chi ld care takers while they were in the SC.

5.3.3 Targeting Supplementary Feeding Program (TSFP)

Targeted Supplementary Feeding Programs (TSFP) provides dry take-home rations.

The objectives of supplementary food programs for the moderately malnourished in general are:

- To prevent further deterioration in the nutritional status of moderately malnourished child ren.
- To improve the nutritional status of moderately malnourished children.
- To reduce relapse of malnutrition.

Project was originally designed to support 15% of peoples missed from EOS program.

Famix was distributed to beneficiaries with oil. Overall, a total of **4518** malnourished children, pr egnant and lactating women were identified and received blended food

across the project area.

The implementation of this sub component was done through the coordination of four entities, in cluding plan international Ethiopia, the Woreda Health Office, the Woreda early warning and foo d security office and the community through Food Distribution Agents.

A total 120 distribution sites that were established and were used as distribution centers for the T SF program. As most of the TSF distribution points were established with the full involvement o f the community, the distribution centers were accessible by the community. The majority of the target population is within less than one day's return walk (including time for treatment) of the di stribution center for supplementary feeding.

In addition the targeted supplementary feeding programs are linked to the local health structure a nd the standard protocols were followed to identify health problems and children are referred to a ppropriate centers based on their condition.

As per the national standard guidelines, the amount of targeted supplementary food that should b e provided per child per month is 6.25kg Famix and 1kg oil.

5.3.4 Capacity Building

The capacity building sub component of the project encompass a number activities including creating understanding among the community about the cause and consequence of the malnutrition. In addition this sub component includes strengthening local emergency preparedness and response mechanisms through awareness raising education, the establishment of a functional information flow system for early warning and preparedness, and maximizing the service capacity of local institutions by providing

training to health professionals, through provision of logistic and supportive supervision, proper reporting and recording, and establishment of effective referral system. To this end, the project have developed different training package for various group of project participant, depending on their involvement in the project, including the community nutrition volunteer, health professionals, health extension workers and plan international Ethiopia staff.

The project was designed with hierarchical referral system which link TSFP, OTP to SC, and higher level hospitals and health centers with a two way referral system. So the project was provided vehicles to transport cases from kebele to health center and hospital. In few cases the project also gave financial support for transport for those discharged from health center.

6. Financial Expenditure

Description	Unit	Duration (month)	Cost/Unit USD	HRF Budget	NGO Contribution	Total Project Budget	Expenditure	Remaining Balance
1.Local Staff	38	6	413	94,215	49,995	144,210	66,999	77,210
Category Subtotal				**94,215**	**49,995**	**144,210**	**66,999**	**77,210**
2.OPERATIONAL PROJECT COS								

T (including rental)								
2.1Communications	2	5	540	4,482	918	5,400	2,507	2,893
2.2Office rent	2	5	690	5,727	1,173	6,900	4,355	2,545
2.3Office supplies	2	5	540	4,482	918	5,400	5,112	288
	Category Subtotal Operational Costs			**14,691**	**3,009**	**17,700**	**11,973**	**5,727**
Description	**Unit**	**Duration (month)**	**Cost/Unit USD**	**HRF Budget**	**NGO Contribution**	**Total Project Budget**	**Expenditure**	**Remaining Balance**
3.RELIEF ITEMS								
3.1NFI	18,000	1	0.20	3,600		3,600	665	2,935
3.2Food				-		-		-
3.3Medicines	2,094	1	5.00	10,470		10,470	6,718	3,752
3.4Material	54,321	1	3.41	185,079		185,079	111,100	73,979
	Category Subtotal Relief Items			199,149	-	199,149	118,483	80,666
4.TRANSPORT AND STORAGE COSTS								
4.1Vehicle rental	5	6	3,075	86,715	5,535	92,250	63,508	28,742
4.2Maintenance				-	-	-		-
4.3Fuel	5	6	500	14,100	900	15,000	11,288	3,712
4.4Freight	378	1	90	34,001		34,001	18,051	15,950
4.5Storage	2	6	330	3,960		3,960	-	3,960
	Category Subtotal Transport and Storage			138,776	6,435	145,211	92,846	52,365
5.Audit (budget u								

p to maximum of US$ 1,500 - OCHA will hire external auditors)								
5.1 Project Monitoring	7	6	450	18,900		18,900	12,729	6,171
5.2Evaluation	1	1	7,500	7,500		7,500	-	7,500
	Category Subtotal Accountability			26,400	-	26,400	12,729	13,671
TOTAL				473,231	59,439	532,670	303,031	229,639
Administrative Cost (Max. 10% of Total)				33,126		33,126	29,787	3,339
GRAND TOTAL				**506,357**	**59,439**	**565,796**	**332,818**	**232,978**

Table:9.4.4 Financial Utilization

7. Program Sustainability

Based on the assessment of the evaluation team it was determined that a number of key factors were taken into consideration from project start up to ensure a more sustainable model.

The program was also able to strengthen the capacity of a large group of individuals, who at different levels – health centers, communities, government agencies, etc. are now fully aware of strategies needed for management of severe acute malnutrition at the community level. One aspect of sustainability that requires close attention in the future is the supply chain aspect, which is relatively weak at the Woreda level. Essential medicines, RUTF and other supplies should be readily available for distribution to health centers and health posts. So that they can appropriately treat and manage cases of moderate and severe acute malnutrition. Though the project provided logistical support during the implementation period, no plan for transferring this function for future was developed. This could be a major factor in limiting the success of the project in the future. This will be ensured more likely if adequate supervision and monitoring systems are put in place. This oft

en is an issue of prioritizing resources and ensuring that adequate funds are provided at the Wore da level for logistics transport.

In order to ensure sustainability a program such as this is required to develop a detailed exit strat egy that can ensure that all components can be fully supported by local entities upon close out in order to sustain management of severe and moderate malnutrition at the community level.

8. Exit Strategy

Although the original proposal did not explicitly outline the exit strategy, it was noted that every effort has been made to ensure the smooth transition and handover of most of the Activities to th e Government health offices and others. The attempted made by the project for the smooth transit ion and integration of the activities into the existing government health program was, in health ce nters is successful. However, for instance health post staff, Project staff and woreda officials are not aware of the phasing out of the project. In addition, there has been no plan on how to handle the transport and logistic support that are required to run smoothly the OTP after the project phas e out. As such, the logistic and transport support to the decentralize OTP cannot be easily taken on by the Government, because of capacity and resource limitations.

During the evaluation, *Woreda* health officials, Health center and health post staff specifically no ted that the transport and logistics issue will compromises the continuous supply of materials and ultimately the sustainability of the project benefit. Beside these all most all officials noted that due to food security problem in the coming months there will be more malnourished children, pr egnant and lactating women are expected.

9. Lessons Learned

- The project work closely and collaborately with woreda health office, early warning and food security office, other government offices, health center and health post staff

- Continuous supply distribution to health post is key point to strength OTP as well SC, so these were accomplished by the project.
- Food provision for care takers at SC was increase severe malnutrition cure rate and decr ease defaulter rate
- Logistics supported by the project to woreda health offices, health centers and health post s will improve health services of the community.
- Training of health workers, health extension workers and community members brought to decrease moderate and severe acute malnutrition beneficiaries.

10. Identified gaps

- No monthly and quarterly progress report have been given to zones and woreda from the project
- Written feedback was not given to respective offices, health centers and health posts afte r supportive supervision
- Project hand over strategy was not developed
- The quality of Chairs and office table purchased by project was not good
- Ideas produced and message given to health extension workers from project supervisor s were not uniform
- Financial report include only up December, so it is difficult to judge financial utilization

11. Limitations

Due to time constraint evaluation team didn't reach to communities, so these report did not inclu de ideas about beneficiaries

12. Conclusions and Recommendations

Malnutrition and micronutrient deficiencies may result in a range of conditions, which adversely affect the health and well being of individuals. In severe cases, they can be life threatening. Whet her in mild or severe form, the consequence of poor health and nutrition results in a decrease in o verall quality of life and educes levels of human development potential. In this regard to project has improved the awareness of the communities, especially among mother who has visited the T SFP, OTP, SC and through CMAM about the cause of malnutrition among children, early detecti ons and management of malnutrition.

The project also has saved significant number of children lives through the TSFP, OTP, SC progr am. Although some advances have been made, improvements are still necessary, particularly the need to increase knowledge of mothers on the preparation of a varied diet for the children and im provement of the local health institution capacity. Capacity building activity should be holistic ap proach, flexible and has to be provided at the early stage of project implementation so as to respo nd to emergencies. The project has provided different types of logistics at early and late stage in the project life.

In conclusion, from the information gathered and observations carried out in the field, plan intern ational Ethiopia has been implementing successful activities which achieved the stated objective s. It also clear that the project implementation strategies and approached was appreciated by mai n woreda officials including health workers and extension health workers in the four woredas vis ited. Health facilities have started treating malnourished people as one of their routine activities

like other health activities. The livelihoods of the majority of the communities in the visited wore das depend on the production of coffee and some annual crops which are to be harvested on Octo ber.

After mid March, stocks of most households living in area will be completed and as a result of which this areas will be at risk. In addition, based on the previous years trend of SC and OTP ad mission, we expect an increase in the admission of children with SAM from February to May. Th e prediction from woreda Health Office and EWRFSWP is that, the food security situation will deteriorate by the coming months.So, the team recommends that;

- The situation of food security is getting worse on the coming months due to the productiv e assets of most poor households are depleted. So to rebuild household assets and overcome the malnutrition problem, besides of the EOS program the intervention of other stakeholders will be very important to fill the gap that is not covered by the program.
- The food security of people in coffee growing areas of Sidama and Gedeo depends on the production and price of coffee. This year production of coffee is better than last year but the pric e has reduced by 50%. Last year the average price of a kilogram of red cherry coffee was around 13birr and that of the dry coffee was 30birr but this year red cherry coffee was around 7birr and that of the dry coffee sold 16birr. In relation with deteriorated purchasing power and escalating prices of food grain, food security is expected to further deteriorate in the visited woredas. There is a need to closely follow situations in the coming months and response accordingly.

Annexes

Annex1:

Woredas at risk, type of risk, risk population and estimated budget in visited

Zone	Woreda at Risk	Type of Risk	At Risk Population	Estimated Budget in Birr
Segene are a people	Konso.	Malaria	244,447	146,000 birr
		AWD	48,889	
Sidama	HawassaZuria,Wondogenet,Shebedino, Boricha,Loka,Dale, Aleta Wondo,Aleta Chuko,Dara,Bona,Bensa,Aroressa, Wondo genet Dara, Hula,Bursa,Bona,Bensa,Aroressa,	Malaria	1,063,509	6,927,914
		AWD	305,923	326,052
	Chire Boricha,Loka, Dale, Dara,Bona, Bensa	Malnutrition	36,196	439,357

South Omo	South Ari	Land Slide	21953	534,781
	Dasench	Flood	60,808	
	Dasench,Benatsemi, Salamago,Gnagatom ,Hammer	Malaria	243140	1,870,069

Annex2:

Stock estimation for next 6 months (July-Dec.2012) South Omo Zone

Drugs and Medical supplies		**Total Requirement**	**Available**	**Gap**
Meningitis vaccine				
Drugs	Coartem	6616	0	6616
	Oily CAF	564	0	564
	Doxcycline	174	36	138Box
	Ringer Lactate	3539	180	28372
	ORS	11246	2000	9246
	Amoxicillin Suspension	33078	100	32978
	Cotrimoxazole Suspension	39693	200	39493
	Tetracycline Ointment	794	100	694

	Vitamin A	200 tin	20 tin	180 tin
	F-75	3000 sachet	0	3000 sachet
	F-100	2000 sachet	0	2000 sachet
	Plampy nut	550 box	100 box	450 box
Lab supplies	RDT (malaria)	200000	93750 test	106250
	Pastorex (Meningitis)		0	
	LP set		0	
	TI bottle		0	
CTC Kit (AWD)			0	
Medical Supplies	Glove	200box	100 box	100box
	Syringe	500box	0	500box

Annex3:

Table: Stock estimation for next 6 months (July-Dec.2012) Sidam Zone

Drugs and Medical supplies		**Total Requirement**	**Available**	**Gap**
Meningitis vaccine&				
	Oily CAF	2438vials	0	2438vials
	Doxcycline	410Box	160Box	250
	Ringer Lactate	3539	180	3359
	ORS	19172	2000	17172
	Amoxil Suspension	2443	800	1643
	Cotrimoxazole Suspension	3645	300	3345

	Tetracycline Ointment	2419		2419
	Vitamin A	439	70	369 tin
	F-75	2319 sachet	0	2319 sachet
	F-100	3879 sachet	0	3879sachet
	Plampy nut	20,000 box	100 box	19,900 box
Lab supplies	RDT (malaria)	33,237	15,531	17706
	Pastorex (Meningitis)		0	
CTC Kit (AWD)			0	
Medical Supplies	Glove	372box	69 box	303box
	Syringe	1329box	37	1292box

Annex4:

Stock estimation for next 6 months (July-Dec.2012) Segen area people Zone

Drugs and Medical supplies		Total Requirement	Available	Gap
Meningitis vaccine				
Drugs	Coartem	290,545tabs	12,0001abs	278,545
	Oily CAF	564	0	564
	Doxcycline	794	36	758
	Ringer Lactate	2844	75	2769
	ORS	11246	2000	9246
	Amoxaciln Suspension	3307	100	3207
	Cotrimoxazole Suspension	3969	200	3769
	Tetracycline Ointment	794	100	694

	Vitamin A	200 tin	20 tin	180 tin
	F-75	3000 sachet	0	3000 sachet
	F-100	2000 sachet	0	2000 sachet
	Plampy nut	550 box	100 box	450 box
Lab supplies	RDT (malaria)	20000	9375 test	10625
	Pastorex (Meningitis)		0	
	LP set		0	
	TI bottle		0	
CTC Kit (AWD)			0	
Medical Supplies	Glove	200box	100 box	100box
	Syringe	500box	0	500box

Annex 5

Subject: Submission of 22nd EPHA conference Presentation report

1st day(01/11/2011

- Program agenda was announced by Dr Wagari Deressa /EPHA V/Presidemt
- Welcome address and EPHA 2010/2011 summary report were presented by Dr. Tewabec h Beshaw/ EPHA President
- Key notes were presented By CDC and Packard Ethiopia representatives
- Opening remark by state minister Dr. kebede worku (FMOH)
- Award was given by Dr. kebede worku(FMOH) for Senior Public health professionals (for Dr.Teshome Gebre,Dr. Alemayew Worku and for Young researcher Ato Kebede Deribe)
- Award also has been given for two institutions (ALERT and Hamelin Fistula Hospitals)

- After tea break research Presentation on Alcohol, Tobacco and substance Abuse was pre sented by Prof. Tilahun Teshome,Dr.Yeraswork Admassie and Dr.Negussie Tefera

During their Presentations

Alcohol, Tobacco and Substance Abuse are creating major problem on social, Health and Econo mical aspects in the Globally, continentally and as well Nationally.

From listed:

- Developing dependency to substance
- Economy crises
- Divorce and leaving children out of school
- Criminal
- Increasing of accidents due to driving after drinking alcohol
- Risk of HIV/AIDS and other STI diseases
- Risk of lung cancer
- School dropout are main problems
- Food security problem

Discussion were made by participants based on presentations .The same day afternoon Session R esearch papers presented by different presenters, the topics was:

- Prevalence and predictors of Chat chewing among School going Adolescents
- Effect of Khat (Catha Edulis) on Bronchial Asthma in Jimma University Specialized Hos pital Adult chest Clinics

- Prevalence of Substance Use and its Determinants among High school Students in Addis Ababa

The same discussion held by participants and presenters also responded for the questions and for comments.

2nd day Panel Discussion on Child Health in relation to MDG4

The main topics were:

- Epidemiology of Child by Dr. Tedbab Degefe
- Policy and Strategy issues on government side by Dr.Nighist Tesfaye
- Child survival programs, Opportunities &challenges by Dr.tesfaye Bulto

According to their presentations in Ethiopia under five Child mortality rate becoming decreasing by intervention of child health programs. But still now neonatal mortality was not decreased as e xpected. Pneumonia, Diarrhea, Malaria and Measles are major causes for under five mortality. Participants have been made hot discussion on presented topics and for warded important messag e to government and partners.

The same day afternoon Session Maternal health relation to MDG5

Three presenters were presented the strengthening and challenges on maternal health programs

Major causes of pregnancy related maternal deaths are:

- Delay in decision to seek care
- Delay in reaching care
- Delay in receiving care(indicate that quality of health care services)

On 3rd day morning Panel Discussion held on Human Resource for health

- Overview of Human Resource
- Strategy on human resource development on government side
- Quality Assurance
- Human resource for health and brain drain are main topics. After presentation many issues were r aised from the participants. To mention some of:
  - Retaining of qualified professionals in government health facilities
  - Incentives
  - Quality of training
  - Methods of quality assurance of training universities(private and government)
  - How to accommodate professionals after finishing their regular training

  Presenters responded for all mentioned issues above accordingly.

On 3rd day afternoon session

- 2010/2011 annual EPHA performance and Audit report presented
- At last resolution passed by all conference participants specially on Alcohol,Tobacco and subsiste nce abuse **Lesson I have been gained from three days meeting is:**
  - The importance of awarding professionals and institutions to encourage them for future s uccess
  - If we use available resources exhaustively and create multi sectoral approach we can red uce maternal and child mortality
  - Over all government policy and strategy directions
  - Millennium development Goal achievement and challenges
  - How to prepare research, design methodology, prepare data collection tools, organize coll ected data, organize, analysis etc.

- How to present research findings to different type audience and for such large group
- How to respond for questions arising from participants
- At tea break and lunch time I have got chance to meet with my senior professionals (teac hers) and friends. So we share experience
- At the same time I tried to see research presented by posters on the wall

Note: These are few from the presentations and observations. So there are many issues can be ela borated.

Finally I would like to thank EPHA, EFELTP coordinators for facilitating us to attend this impor tant conference. To encourage students I hope for future the same plan will be organized.

Ahenafi Argata

3rd cohort EFELTP Resident

Annex6:

Subject: 13th World congress on public health Summary Report

Theme of the congress was Towards Global Health Equity: Opportunities and Threats"

1st day (23/04/2012(morning session)

- Different topics presented in separate halls
- I attended a work shop organized on Counterfeit
- Objectives of the topic were to give latest information on the issue and discuss strategies an d recommendations relevant to the region.
- Group work were held and presented after discussion

Afternoon Session (opening Ceremony)

- Cultural show by Ethiopian National Theater Group
- Agenda was announced by Dr Mengistu Asnake
- Welcome remark on behalf of EPHA by Dr. Tewabech Beshaw/ EPHA President
- Welcome remark on behalf of WFPHA by Prof. Urlich R Lasser/ WFPHA President
- Key note address was made by WHO, AFRO regional director
- Official opening of the congress done by Prime Minister Meles Zenawi
- Ceremony for the life time achievement and award was given to Margaret
- Welcome reception was made to all participants by FMOH/EPHA in millennium hal l

2nd Day (24/04/2012)

- Awardees was given to African Medical and research Foundation(AMREF)
- Towards global achievement of the MDG's: Opportunities and threats in the African Region was presented by Luis G Sambo
- Towards global Health equity: Opportunities and threats presented by Dr. Tedros Adhano m
- Towards global achievement of the MDG's: Roadblock in the African Region was presented by Dr.Moustapha Magumu.
- I had opportunity to visit posters in Abay Poster Exhibition hall which presented on Materna l and child health, Communicable and non communicable disease.
- Addressing New born deaths to reach Ethiopia's MDG 4: On this issue 5presenters presente d their research results and hot discussion was made by participants.

3rd day (25/04/2012

Award was given to Professor Redda TekkleHaimanot for his founder of grarbet Tehadiso Mahib er and published over 70 scientific papers and for his contribution to population health. After rew ard morning session in main hall three presentations performed.

- Health equity from the African perspective was presented by Professor Redda TekkleHaima not.
- Global inequity in the access to primary health care presented
- Accountability and Governance presentation also made

After presentations discussion was made by participants. The main issues raised during discussio n was, Break vicious circle of poverty from developing countries, Frequent health personnel turn out, Health equity is the heart on public health. As usually poster presentation visited by partici pants. Multidisciplinary investigation to unravel the cause for unidentified liver disease in tgray was presented by 5 presenters. During presentation stated that, most affected groups were, males and 5-14 years age group. Cases were seen since 2001. After all presentation participants forwar ded questions and comments and presenters were responded to the raised questions.

4th day (26/04/2012)

Three presentations on:

- How to achieve Global security
- The emergency in the Horn of Africa and the Sahel: Food availability and public health
- Global campaign on urbanization and health was presented. Discussion was held after prese ntations in morning session. On topics new vaccine initiatives toward improving child survival a nd achieving Mdg4 was presented after tea break.

5th day (27/04/2012)

African Federation of Public health association, The association of public health in Africa, The Global health of the European Union and public health cooperation in the region and Building s trong network for the advancement of the public health agenda was presented by African, Europe an American presenters.

Polio eradication strategy in Global, Regional and countries context were presented. Finally closi ng ceremony was held.

Lessons gained from five days congress meeting were:

- The importance of awarding professionals and institutions to encourage them for future suc cess
- If we use available resources exhaustively and create multi sectoral approach we can reduc e maternal and child mortality
- Millennium development Goal achievement and challenges
- How to present research findings to different type audience and for such large groups
- How to respond for questions arising from participants
- At tea break and lunch time I have got chance to meet with my senior professionals (teacher s) and friends. So we share experience
- The way how to present posters

Finally I would like to thank SPH, EPHA, EFELTP coordinators for facilitating us to attend this i mportant congress meeting. To encourage students I hope for future the same plan will be organi zed.

Ashenafi Argata

3rd cohort EFELTP Resident

Annex7:

Subject: 7th TEPHINET Global Scientific congress Summary Report

Theme of the congress was Communicable and Non- Communicable: Public health challenges fo r response

1st day (10/11/2012(morning session)

Pre-conference Work shop

- Different agenda was designed and presented in separate halls
- I attended a work shop presented on international health regulation
- On this issues on Pro-Med and Global health map presented in different presenters
- Participants from different countries express their experience
- Digital disease detection and reporting issue was mentioned
- Strong integration FETP with other disciplines on disease surveillance

Afternoon Session (opening Ceremony)

- Cultural show by Jordanian special group
- Official opening of the congress done by Ministry of health Minster
- Welcome cocktel reception was made to all participants by Jordanian MOH/ in Meriden H otel.
- Our group had meeting with coordinator and advisers to discuss on the issue of oral and p oster presentations

2nd Day (11/11/2012)

Vaccine preventable disease session was held on session 2

On this session:

- Transmission of measles in an era of elimination in Australia', 2000-2011
- An outbreak of viral hepatitis A Associated with possible contaminated school well in one middl e school, in china
- Measles outbreak in Adults Tigry Region in Ethiopia,2012

These three presentations presented on morning session, after each presentation questi ons and comments rose from audinience and presenters responds accordingly.

After lunch poster presentations presented by different countries on separate topics, we in group had opportunity to saw posters and shared idea with presenters and other audiences.

After tea break we four presenters from our country were presented on vector born disease these including Acute febrile illness (By Abyot Bekele), Malaria outbreak

(By Gole Ejeta and Gemechu Befa) and finally I presented my presentation on topic of Relapsin g fever outbreak in prison. As previously stated above there were so hot discussion and questions were raised from program coordinators and audience as whole. It was good opportunity for me t o have exposure on how to present, respond for questions and comments on such scientific confe rence.

3rd day (12/11/2012

In morning session as previous days I attended vaccine preventable and vector born disease prese ntations in section one.

After lunch also attended poster presentations and non communicable disease presentations

4th day (13/11/2012)

It was free day for tour to visit Jordan historical places

5th day (14/11/2012)

Presentations on food and water born diseases

In these presentations:

- AWD outbreak in Khemabeh village of Tharparkar,Sindh Pakistan
- Outbreak investigation of Acute watery Diarrhea (AWD) in village Chari Muhammad(KM) Dast i, District
- A case- control study on a cholera outbreak in Nabua, South Luzon, Philipines,2012

I have got chance to learn many good things on outbreak investigation in different countries and different context.

6th day (15/11/2012)

Oral and poster presentations were performed in different sessions (rooms) in the morning and af ternoon. Especially I attended Multi drug resistant on TB presentations. Meanwhile there were gr oup photo session for all participants from the world.

At last there was panel discussion with guests from different countries on global health issues. At last conference was official closed by Jordanian MOH, Minster.

Lessons I gained from six days conference meeting were:

- The importance of enhancing surveillance activities through different disciplines, like Pro-med a nd Global health mapping
- How to present outbreak investigation, Surveillance data analysis and research findings to differ ent type audience and for such large groups (Both oral and Poster presentations)
- How to respond for questions raised from participants
- At tea break and lunch time I have got chance to meet with different countries FETP Coordinator s, graduates and trainees. So we shared experience with each other

Finally I would like to thank SPH, EPHA, EFELTP coordinators for facilitating us to attend this i mportant scientific congress. Also I would like to thank Dr.Lucy, Dr.Getahun, and

Dr, Zegeye for their unreserved effort to help us on editing our power points.

Ashenafi Argata

3rd cohort EFELTP Resident

Annex8: Draft Questionnaire for investigation of RF outbreak in Yirgalem Prison

A) Identifying/demographic information:

1. Full Name : _____
2. Age :_____
3. Sex : M / F
4. occupation_____
5. Education status_____
6. Religion A. Protestant B. Orthodox C. Catholic D. Muslim E. Others_____
7. Ethnicity A. Sidama B. Wolayta C. Amahara D. Oromo E. Others_____

B) Clinical picture/illness information:

8 Did you have illness of RF? A.Yes B. No

If No for Question No 8 Skip to--17

9. Date of onset of symptoms _____/_____/_____

10. Duration of illness before visiting treatment site _____days / hours

11. Symptoms of the disease;

10.1. Head ache: Yes / No

10.2. Vomiting; Yes / No

10.3. Fever: Yes/No

10.4 Chills Yes / No

10.5 Jaundice Yes/No

10.6 Epistaxis Yes/No

12. Blood sample collected for laboratory diagnosis Yes / No: if yes:

13. Result A. Positive B. Negative

14. Treatment Given/Taken Yes / No

15. did you recover completely: Yes / No

16.if yes; Date _____/_____/_____

C/ Hygiene and Sanitation

17-Howmany prisons live in this dorm?_____

18. How is Condition of wall A/ wooden B/ Plastered with mud C/ Plastered with cement D/Other

19. Do you have jerican or other material to collect water? Yes/ No

20. Do you have Soap to take bath and wash hand and cloth? Yes/ No

21. Frequency of taking bath. A. one times/week B. Two times/ week C. one times/month

D 2 times/ month E. others (Specify)_____

22. Frequency of washing cloth A. one times/week B. Two times/ week C one times/month

D Two times/ month E. others (Specify)_____

23. Is water supply enough for taking bath and washing cloth? Yes/NO

24. Daily supply of water for drinking. A. 0ne litter B. 2litter C. Three litter D. four and above litter

25. Daily supply of water for personal hygiene. A. 5 litter B. 10 litter C. 20 litter D. 30 and above litter

C) Knowledge

26. Do you know about communicable disease? Yes/ No

27. If yes from where you got information? A. Radio B. School C. Health institution D. Prison

28. If at prison by whom health education given? A. Health committee B. Prison health personnel D. Town health unit E. FLTP resident team

29. Do you know the causes of RF: Yes/No If Yes?

30. What it is? A. Body louse B. Tick C. Mosquito D. Flies E. Others (Specify)_____

31. Do you know the method of prevention of RF: Yes/No If Yes?

32. What are they?

A. Personal hygiene B. Environmental sanitation C. Spray insecticide

D Others (Specify)_____

D) Attitude

33. Do you think personal hygiene and environmental sanitation are important to prevent major epidemics? Yes/No

E) Practice

34. Did you shave your hair before outbreak? Yes/No

35. Did you shave your hair after outbreak? Yes/No

36. Did you delouse your cloth? Yes/No

37. What is your role to prevent and control AWD, RF, Malaria and TB?

Annex9: Quetionnaire for surveillance system evaluation

REGIONAL /ZONAL LEVEL QUESTIONNAIRE

Identifiers:

Assessment team Respondent

Date

Surveillance System Interviewer

_____

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):
   _____
   _____
   _____

II. ***Case Detection and Registration***

3. Do you have standard case definitions for the Country's priority diseases like AWD, AFP (polio), malaria, and measles?
   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 Regional/Zonal 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 Regional/Zonal 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
c. 1- 2 days
d. 3- 7 days
e. After 1 week

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

_____

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
f. Other

IV. ***Data analysis***

Does the regional/Zonal 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
_____
_____
19. **Have an action threshold defined for each priority disease?**
Do you have an action threshold defined for AWD, Measles, AFP (polio), malaria?
Yes No Unknown Not applicable
20. Who is responsible for the analysis of the collected data? _____
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:_____
24. List the diseases: _____
25. Of those, number 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:_____
[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]
_____

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]
    _____

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/Zone 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 Region/Zone 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/Zonal epidemic management committee**
    Observed minutes (or report) of meetings of epidemic management committee
    Yes No Unknown Not applicable

37. **Existence of a regional/Zonal 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/Zonal level to respond within 48 hours of notification of most recently reported outbreak:**

Obs Observed that the regional/zonal 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/zonal 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/zonal level produced in the last year? _____
41. **Obs:** Observed the presence of a report or bulletin that is regularly produced to disseminate surveillance data
Yes No Unknown Not applicable

Percent of Zones/Districts that conducted at least semi-annual meetings with PHEM Focal persons and stake holders to discuss results of surveillance or investigation data

How many meetings has this RHB/Zonal health department conducted with the community members in the past six months? _____

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? _____
Obtained required number of visits from regional/zonal level _____
43. The most usual reasons for not making all required supervisory visits. (Text) _____
_____
_____

X. *Training*

Percent of health personnel trained in disease surveillance

44. What percent of your subordinate personnel have been trained in surveillance? _____
45. Have you been trained in disease surveillance?
Yes No Unknown Not applicable
46. ***If yes,*** specify when, where, how long, by whom?
_____
_____

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

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

Yes No Unknown Not applicable

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

_____

_____

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

Strengths_____

Weaknesses _____

Opportunities _____

Threats _____

XI. ***Resources***

Percent of sites that have:

50. **Data management**

Computer

Printer

Photocopier

Data manager

Statistical package

51. **Communications**

Telephone service

Fax

Radio call

Satellite phone

Computers that have modems

52. **Budget line _____**
53. **Logistics _____**

XII. ***Surveillance***

Have a functional computerised surveillance network

54. Do you have a computerised surveillance network at this level?

Yes No Unknown Not applicable

Budget for surveillance

55. Is there a budget line for surveillance in the Regional Health Bureau/zonal health department
56. Yes No Unknown Not applicable
57. ***If yes***, what is the proportion: %

Opportunities for strengthening surveillance

58. How could surveillance be improved?

_____

_____

XIII. ***Surveillance Co-ordination***

Existence of focal unit for surveillance at RHB/Zonal health department level

59. **Obs** Is there a focal unit for surveillance at the RHB/Zonal health department level? [Observe organogramme of RHB/Zonal health department to confirm]
    Yes No Unknown Not applicable

Opportunities for integration

60. 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 region

- Malaria _____cases _____Deaths _____

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

Does the surveillance system help

1. to detect outbreaks of these selected priority diseases early? Yes/ No
2. to estimate the magnitude of morbidity and mortality related to these disease, including identification of factors associated with these diseases? Yes/ No
3. 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

Malaria

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

_____

_____

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

_____

_____

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 region / zone/? _____%
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

Identifiers

Assessment team
Date
Interviewer
Respondent

District
Region_____/Zone_____
country
surveillance system

Percent of health facilities with available national surveillance manual

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

   Yes No unknown Not Applicable

I. Case confirmation

Percent of health facilities 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 No Unknown Not applicable

Percent of health facilities 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 No Unknown Not applicable

II. 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 No Unknown Not applicable

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 health facilities that have means for reporting to next level by e-mail, telephone, fax or radio**
   How do you report:

a. Mail
b. Fax
c. Telephone
d. Radio
e. Electronic
f. Other

Strengthening reporting

9. How can reporting be improved?

_____
_____

III. Data analysis

10. I. Percent of sites that:
Describe data by person (case based, outbreaks, sentinel)
Obs Observed description of data by age and sex
Yes No Unknown Not applicable

11. Describe data by place
Obs Observed description of data by place (locality, village, work site etc)
Yes No Unknown Not applicable

12. Describe data by time
Obs Observed description of data by time
Yes No Unknown Not applicable

13. Perform trend analysis
Obs Observed line graph of cases by time
Yes No Unknown Not applicable

14. List:

_____
_____

15. 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

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)

Yes No Unknown Not applicable

18. Who is responsible for data analysis? _____
19. How often do you analyze the collected data?

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

IV. Outbreak investigation

20. Percent of suspected outbreaks that were investigated in the past 6moths:
Number of outbreaks suspected in the past year6 months:_____
Obs Of those, number investigated (Observe reports and take copies if possible): _____

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]

22. Has your district ever investigated an outbreak?
Yes No Unknown Not applicable

V. Epidemic preparedness

23. Percent of health facilities that have a plan for epidemic preparedness and response
(Obs) Observed a written plan of epidemic preparedness and response
Yes No Unknown Not applicable

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 No Unknown Not applicable

25. Percent of health facilities 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)?
Yes No Unknown Not applicable

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 No Unknown Not applicable

27. **Percent of health facilities that have an epidemic management committee**

Obs Observed minutes (or report) of meetings of epidemic management committee
Yes No Unknown Not applicable

28. **Percent of health facilities that have rapid response team for epidemics**
Does the district have a rapid response team for epidemics?
Yes No Unknown Not applicable

VI. Responses

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 No Unknown Not applicable

30. **Percent of health facilities 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 No Unknown Not applicable

31. **Percent of health facilities 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 No Unknown Not applicable

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 No Unknown Not applicable

VII. Feedback

33. **Percent of sites that have written report that is regularly produced to disseminate surveillance data**
How many 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)
Yes No Unknown Not applicable

34. **Percent of health facilities 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

Yes No Unknown Not applicable

Percent of health facilities that conducted at least semi-annual meetings with IDSR Focal persons and health extension workers to discuss results of surveillance or investigation data

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

VIII. Supervision

35. Percent of individuals supervised in the past 6 months

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

How many times have been conducted supervision to your health facilities in the last 6 months?_____

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

Reason 1_____

Reason 2_____

Reason 3_____

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

Yes No Unknown Not applicable

37. 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

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

Have you been trained in disease surveillance?

Yes No Unknown Not applicable

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

_____

40. 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? _____

X. Resources

41. I. Percent of sites that have:
Logistics

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

42. Data management

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

43. Communication

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

44. 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. Other:

45. Hygiene and sanitation materials

a. Spray pump
b. Disinfectant

XI. Surveillance co-ordination:

46. **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?

XII. Satisfaction with surveillance system

47. Satisfaction with the surveillance system
Are you satisfied with the surveillance system?
Yes No Unknown Not applicable

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.)

_____
_____
_____

HEALTH FACILITY QUESTIONNAIRE

Identifiers

Assessment team
Date
Interviewer
Respondent
Name of health facility

Type of health facility
District
Region_____/Zone_____
Country

---

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 No Unknown Not applicable

I. Case detection and registration

2. **Percent of health facilities that have a clinical register**
   Obs Observed the existence of a clinical register
   Yes No Unknown Not applicable

3. **Percent of health facilities that correctly register cases**
   Obs Observed the correct filling of the clinical register during the previous 30 days
   Yes No Unknown Not applicable

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) AWD, AFP (polio), measles, malaria?
   Yes No Unknown Not applicable

5. **Obs** Observed the standard case definition for: (each priority disease)
   Yes No Unknown Not applicable

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 No Unknown Not applicable

   (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 Y N U N/A
   Stool Y N U N/A
   Blood Y N U N/A
   CSF at this facility? Y N U N/A

8. **Obs** Observed the presence of materials required to collect
   Stool Y N U N/A
   Blood/serum Y N U N/A
   CSF Y N U N/A

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 No Unknown Not applicable

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 No Unknown Not applicable

13. **Obs** Observed presence of packing materials for shipment of specimens at health facility
    Yes No Unknown Not applicable

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 No Unknown Not applicable

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 Y N U N/A

b. **Obs** Malaria Y N U N/A
c. **Obs** AFP (polio) Y N U N/A
d. **Obs** AWD Y N U N/A

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

17. On time (use national deadlines)

Obs Number of weekly reports submitted on time:-_____ /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
b. Fax
c. Telephone
d. Radio
e. Electronic
f. Other

19. Strengthening reporting

How can reporting be improved?
_____
_____
_____

IV. Data analysis

Percent of sites that:

20. 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? _____

27. How often do you analyze the collected data?
a. Daily
b. Weekly
c. Every 2 weeks
d. Monthly
e. Quarterly
f. 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 for epidemic 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?_____

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***

Percent of sites that have:

38. 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. VCD and TV set
e. Generator
f. Screen
g. Projector (Movie)
h. Other:

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.)

_____
_____
_____

Health Post Level 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 No Unknown Not applicable

I. Case detection and registration

2. **Percent of health facilities that have a clinical register**
   Obs Observed the existence of a clinical register
   Yes No Unknown Not applicable

3. **Percent of health facilities that correctly register cases**
   Obs Observed the correct filling of the clinical register during the previous 30 days
   Yes No Unknown Not applicable

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) AWD, AFP (polio), measles, malaria?
   Yes No Unknown Not applicable

5. **Obs** Observed the standard case definition for: (each priority disease)
   Yes No Unknown Not applicable

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 No Unknown Not applicable

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

II. Data reporting

7. 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 No Unknown Not applicable

8. 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 Y N U N/A
b. **Obs** Malaria Y N U N/A
c. **Obs** AFP (polio) Y N U N/A
d. **Obs** AWD Y N U N/A

9. 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 times the number of sites

Obs immediately: /-- times the number of sites

10. On time (use national deadlines)

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

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

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

How do you report?

a. Mail
b. Fax
c. Telephone
d. Radio
e. Electronic
f. Other

12. Strengthening reporting

How can reporting be improved?

_____

_____

_____

III. Data analysis

Percent of sites that:

13. Describe data by person (outbreaks, sentinel)
    Obs Observed description of data by age and sex
    Yes No Unknown Not applicable

14. **Describe data by place**
    Obs Observed description of data by place (locality, village, work site etc)
    Yes No Unknown Not applicable

15. **Describe data by time**
    Obs Observed description of data by time
    Yes No Unknown Not applicable

16. **Perform trend analysis**
    Obs Observed line graph of cases by time
    Yes No Unknown Not applicable

IV. Epidemic response

17. **Percent of sites that implemented prevention and control measures based on local data for at least one epidemic prone disease**
    Has the health post implemented prevention and control measures based on local data for at least one epidemic prone disease?
    Yes No Unknown Not applicable

V. Feedback

18. **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

19. **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 post team and the community members within the six months

Yes No Unknown Not applicable

VI. Supervision:

20. Percent of individuals supervised in the past 6 months

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

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

Yes No Unknown Not applicable

21. 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

VII. Training

22. 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

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

VIII. Resources

Percent of sites that have:

24. Logistics

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

25. Data management

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

26. Communications

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

27. **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. Other:

28. Hygiene and sanitation materials

a. Spray pump
b. Disinfectant

29. Protection materials (list) _____ _____ _____

_____

_____

*IX. Satisfaction with surveillance system*_____

30. Satisfaction with the surveillance system

Are you satisfied with the surveillance system?

Yes No Unknown Not applicable

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

_____

32. Opportunities for integration

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

_____

_____

_____

Annex9: Data collection tools for health profile description

Historical Aspects of the area (Culture & truism office).

Woreda at a glance: where it is_____

The name (how why)_____

How the woreda was formed_____

Any other historical aspect_____

1. **Geography and Climate (including map, altitudes, agro ecological zones etc…)**

Woreda map_____

Location (distance and direction) _____ _____

Altitude _____

Annual rain fall (average)_____, annual temp(average)_____

Climatic zones_____ _____ _____

Accessibility (main roads)_____

2. **Administrative setup**

Total no. of kebeles: rural_____Urban_____

Woreda boundaries North_____south----------

East_____ west_____

3. Demographic information

Population: Total_____ urban_____Rural_____

Male----------Female---------- sex ratio(M:F)----------

Under 1yrs_____. Under five yrs_____. < 15 years_____.>64 years_____

Women 15_49 years of age_____

Total population by Kebele (each kebele pop) _____

Ethnic composition/language 1._____ 2._____ 3_____

4. Economy (mainstay of the economy, average income levels etc) Main source of the economy1._____2_____3._____4._____

Average income per HH/year_____

5. Education

Schools: primary_____ Secondary_____ High schools_____, TVET/colleges_____

Water supply: schools with adequate water supply_____ primary_____ Secondary_____ High schools_____, TVET/colleges_____

School enrolment: Primary, Male _____ Female_____ Secondary, Male _____Female_____ High school, Male _____Female_____

Toilets: schools with functional latrines (male____ female_____)

Schools with anti HIV/AIDS clubs_____

6. Health delivery system

6.1 District **Health Structure/**organ gram

6**.2 Health Facilities**

Type	**Number**	**Total No. of beds**
Hospital Zonal		
Hospital District		
Health center		
Private		

HFs(clinics/diag.lab/drug stores) and Rural drug vender		
Health posts		

6.3 Health institution to pop ratio:

Hospital: Pop----------. HC: Pop---------- HP: Pop----------

Potential health service coverage----------

7. Facilities (Transport, Telecommunication, Power supply,)

How many of the health centers have access to Water_____(% transportation_____(%) telecommunication_____(% Electric power_____(%)

How many of the health posts have access to Water_____(% transportation_____(%) telecommunication_____(% Electric power_____(%)

8. Medical equipment and transport facility

How many of the health centers have Motor cycles_____, Functional refrigerators_____ Computers _____

How many of the health posts have Functional refrigerators_____

9. Human resource for health (all type)

Type	No.	Remark
Physicians		
Health		

officers		
Nurses all types		
Midwifes		
Lab.		
Pharmacy		
Env. health		
HEWS		
others		

Doctor: pop ratio_____, Health officers: pop ratio _____Nurse: pop ratio_____ midwifes: Pop ratio _____HEW: pop ratio_____

10. **Vital Statistics and Health Indicators**

Infant Mortality Rate (IMR) _____(T**otal <1yr deaths this yr_____)**

<5yr deaths_____) total still births_____ Total neonatal deaths_____ Child Mortality Rate_____(**this year's total** Crude Birth Rate_____Crude Death Rate_____Maternal Mortality Rate_____ Contraceptive Prevalence rate_____ANC coverage _____PNC coverage _____ Percentage of deliveries attended by skilled health personnel_____

11. Immunization Coverage;

BCG _____. OPV3_____

Measles_____. Penta1_____. penta2 _____Penta3_____PCP_____, DOR_____TT2+(P/W)_____TT2+(NPW)_____

12. Health **budget allocation**: Gov't---------- (break down to d/t activities NGO---------- (purpose/programs) at least 5yrs_____

13. Disaster situation in the woreda

Was there any disaster (natural or manmade) in the woreda in the last one year?_____ If yes what are they?_____ _____ _____

Any recent disease outbreak/other public health emergency_____

If yes cases_____ and deaths_____

14. **Top causes of morbidity and mortality**

Top ten leading causes of OPD visit (morbidity):

Adult			Pediatrics	
	Number	Percent	Number	Percent
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Top ten causes of admissions

Adult			Pediatrics	
	Number	Percent	Number	Percent
1				
2				
3				
4				

5				
6				
7				
8				
9				
10				

Top ten causes of deaths (mortality).

Adult		Pediatrics
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

15. Community Health Services;

Number and activities provided by community health workers namely

No of TBAs)_____

CHWs/CHPs/HDA_____

HEWs_____

Others_____

16. **Environmental Health & sanitation.**

Total HH's_____

Latrine coverage_____(%) & utilization rate_____

Water supply Coverage_____

others_____

17. Health Education

_____

_____

_____

18. Endemic diseases;

Malaria:

Total malarious kebeles_____ & Pop at risk_____

ITNs coverage (including current dist) _____ is IRS performed in this year (No of kebeles)_____,Covered(___%) HH's_____ covered_____(___%) Population_____Covered (__ %)

Total cases/yr_____ deaths/yr_____, <5yr cases_____ deaths_____

Is there malaria epidemic? If yes identify kebeles, cases and deaths_____

Supplied (Coartem, RDT, etc) shortage _____

Other issues_____

TB/Leprosy

Total tested _____Total TB cases_____ PTB negative_____ PTB positive____ Extra PTB _____Positive percent from tested (_____)

TB detection rate _____

TB cure rate _____

TB Rx success rate _____

TB defaulter rate_____

Death on TB _____(_____%)

Total TB patients screened for HIV_____Positive_____(_____%)

Total Leprosy cases_____ on Rx_____

HIV/AIDS;

Total people screened for HIV (last one year)_____Positive_____(_____%)

VCT Plan vs achievement _____ PITC Plan vs achievement _____PMTCT Plan vs achievement _____

HIV prevalence_____

HIV Incidence (new cases/yr)_____

Total PLWHA_____

ON ART_____on Pre-ART_____

Main streaming: Sectors started main streaming_____(_____%)

Sectors allocated 2% from their budget _____(_____%)

HIV prevention activities: Total kebeles performed CC regularly _____(_____%)

19. Nutrition (malnutrition related OTPs, SC, TSF, CBN and PSNP activities)/HO & Early warning

Total OTP sites_____, total admissions to OTP/yr_____

Total SC sites,_____, Newly opened/yr_____, total admissions to SC/yr_____

Is there TSF (targeted supplementary feeding) program in the woreda_____?

CBN program_____Other_____

General food security condition_____

Essential drugs (Is there are shortage):

_____

What do you think the major Health problem/s of the woreda?

20. Discussion of the highlights and the main findings of the health profile assessment and description

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21. Problem identification and Priority Setting – set priority health problems based on the public health importance, magnitude, seriousness, community concern, feasibility etc,

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ANNEX 10: QUESTIONNAIRES FOR VACCINATION COVERAGE ASSESSMENT

1. Child birth date day month year/

Or Age of child in months_____

2. Sex of the child 1= male 2= female

3. Number of children's older siblings_____

4. Family size_____

5. Mother's age _____

6. Mother's marital status

1= single 2= married 3= separated 4= divorced

5= widowed

7. Mothers educational status

1=illiterate 2=read and write 3= grade 1-8 4= grade 9-12

5=college/university

8. Number of children ever born by the mother_____

9. Number of children alive _____

10. What is occupation of the mother?

1= House wife

2=government employee

3=merchant

4= daily laborer

5= others, specify_____

11. What is your family monthly income per month? _____

12. Ethnicity

1=Sidama

2=Amhara

3=Wolayta

4=Others

13. What is your religion?

1=orthodox

2= protestant

3=catholic

4= Muslim

5= other specify_____

14. Have you attended antenatal care during your last pregnancy?

1= Yes 2= No

15. If yes, how many times did you attend? _____

16. Have you received tetanus vaccination during your last pregnancy?

2=Yes 2= No

17. If yes, how many injections did you received? _____

18. Where did you deliver your last baby?

1= at home

2= at health institution

3=other_____

Access to vaccination service

19. Is there any health facility which vaccination service near to you?

1=Yes 2=No

20. If yes to above question which health facility is near to you?

A. health center

B. hospital

C. health post

D. private clinic

21. How does it take you to reach there in minutes?

A. Less than 15 minutes

B. 15-30 minutes

C. 30-1hour minute

D. > 1 hour

Questions on immunization

22. Do you heard about vaccination and vaccine preventable disease?

2=Yes 3=No

23. If yes to above question, from where do you heard about the vaccination and vaccine preventable disease?

1=Radio

2=Television

3= from friends/peers

4=from school

5=Health personnel

6=other, specify _____

24. Do you mention the objective of vaccinating a child?

1=to prevent the disease

2=for specific disease

3=for child health

4=don't know

5=other, specify _____

25. How many vaccine preventable diseases do you know?_____

a. Measles

b. Tetanus

c. Pertusis

d. Tuberculosis

e. Diphtheria

f. Polio

g. Hepatitis b

h. Homophiles influenza b

26. How many vaccination sessions are needed for a child to be fully protected?

2= one

3= repeated

4= five

5= don’t know

27. Do you tell me the age at which the child begins immunization?

1= just after birth

2= one month after a birth

3=any time

4=after one year

5= I don’ know

6=other specify_____

28. At what age the child should complete immunization? _____

29. Do you think vaccination will make your child sick?

1= Yes 2=No 3= don’t know

30. Do you bring a sick child for vaccination?

1=Yes 2=No

31. Does your child take any vaccination?

1=Yes 2=No

32. Do you have a card where vaccinations are written down?

1= Yes 2= No

33. Copy the immunization data from the card.

Vaccine taken	**Day**	**Month**	**Year**
BCG			
OPV0			
OPV1			
OPV2			
OPV3			
Pentavalent1			
Pentavalent2			

	Pentavalent3
	Measles

34. Has a child had any vaccinations that are not recorded on this card, including vaccinations given in a national immunization day campaign?

1=Yes 2= No 63

35. If question above question is no, did a child ever have any vaccinations to prevent him/her from getting diseases, including vaccinations received in a national immunization day campaign?

1= Yes 2=No 3= don't know

36. Please tell me if the child had any of the following vaccinations

a. A BCG vaccination against tuberculosis, that is, an injection in the arm or shoulder that usually causes a scar

Yes____ No_____

b. Polio vaccine, that is, drops in the mouth?

Yes_____ No_____

c. Was the first polio vaccine given in the first two weeks after birth or later?

Yes_____ No_____

How many times was the polio vaccine given _____

d. A pentavalent vaccination, that is, an injection given in the thigh or buttocks?

Yes_____ No_____

How many times pentavalent vaccination is given? _____

e. A measles injection that is, a shot in the arm at the age of 9 months or older – to prevent him/her from getting measles?

Yes_____ No_____

f. Does the child have a BCG scare on his/her upper left arm? Observe Yes__ No ___

If the child does not receive any vaccination ask the following

37. What are the reasons for the not receiving any vaccine? If the child has not received any vaccine yet

a. Absence of health facility in the locality

b. Health workers did not come and give vaccine at our village

c. Vaccination is of no use

d. Vaccination hurts children

e. Religion and culture refute vaccination

f. Lack of awareness about vaccination

g. Fear of side effect

h. Others

38. What are the reasons for defaulting? If child is a defaulter)

a. Vaccination site is far-away

b. Vaccination time is inconvenient

c. Absenteeism of vaccinators

d. Lack of awareness on the importance of vaccination

e. Not knowing vaccination time and site

f. Not knowing whether to come back for second and third vaccination

g. Others

CURRICULUM VITEA (C.V)

1. Name:- Ashenafi Argata

Nationality. Ethiopian

Sex. Male

Age. …50

Date of birth. 26/02/1963

Marital Status Married

Address. Hawassa, Tel. (046,) 221, 50, 65 Offices

(046,) 220, 21, 22 Residence

Mobile 09, 11, 82, 64, 67

Email address argataashenafi@yahoo.com

2. Educational Back Ground.

Name of school	Year attended	Degree/Diploma/certificate	Year received
.DDilla, Teacher, Education and Health science College	**2002-2004**	**Bsc degree on public health**	**2004**
Ji Jimma institute of health science	**1985-1987**	**Diploma/Nursing**	**1987**
Yirgalem senior sec. high sch.	**1980-1983**		
Yekatit 25 secondary school	**1976-1978**		
Bera Primary school	**1969-1975**		

3.Work Experience

Work place (Name of institution	Region	Zone	Position	Year
AA,University	AA		EFETP-trainee	2011-2013
Sidama Zone health Dep.	SNNPR	Sidama	Public health Emergency Management head	May/2009_ 2011 Mar. 27/2010
Sidama Zone health Dep. SNNPR	SNNPR SNNPR	Sidama	Health Ser.& Human Res. Development head	2006-2009 (April)
Sidama Zone health Dep.	SNNPR	Sidama	Health Program head	2005
Sidama Zone health Dep.	SNNPR	Sidama	Communicable Disease control head	1998-2001
Sidama Zone health Dep.	SNNPR	Sidama	Disease prevention &control head	1993-1997
Bore woreda health office	Oromia	Borena	Head District health office	1990-1992
Bensa Health centre	SNNPR	Sidama	Technical head	189
Areka Health centre	SNNPR	Wolayita	Staff Nurse	1987-1988

LANGUAGES PROFICIENCY

Local

Sidamigna and Amharic - fluent in listening, speaking, writing, reading.

International

English - fluent listening, speaking, writing, and reading.

4. Detail of training and workshop certificates are:

Training title	Organized by	Date started	Date Finished
DQS	WHO	Dec. 21/ 2010	Dec. 25/ 2010
TOT training on Health Management information system(HMIS)	JSI/HMIS- scaling up Project	21sep./ 2010	24sep./ 2010
TOT training on Public Health Emergency Planning and Management	Jimma University	Jan 25, 2010	Jan. 30, 2010
TOT on Civil service Reform sub Programs, Executive and Leadership skills	Sidama Zone Capacity Building Dep.	April2, 2007	April14,2007
TOT on Health care finance implementation	ESHE/USAID	Jun 12, 2006	Jun 16, 2006
Ethiopian Contraceptive Logistic System(ECLS)	Deliver/USAID	Feb 28,	Mar 2,

		2006	2006
TOT Community health Promoters	ESHE/USAID	Aug 10, 2004	Aug 12, 2004
Operational Research	Jimma University	Jun 26, 2000	Jul 8, 2000
Computer Training	Hawassa University	Jun 15, 1997	Oct 15, 1997
Maternal and Child health Family planning	FGAE(Ethiopia)	Mar 30, 1988	Apr 30, 1988
Integrated community Assessment and Planning	JSI/ESHE	Jan 27, 1997	Feb 10, 1997
Health Management	Regional health Bureau	Feb 20, 1995	Mar 5, 1995
Expanded Program on Immunization	Ministry of health	Dec 29, 1986	Jan 6, 1987

5.Other specialization: In addition to these I have been participated in different level w orkshops, seminars. Also I have experience on job training of health workers, CHW and health extension workers training.

Beside to these I have had a chance to exposure visits two African countries (Kenya &U ganda)

KEY EXPERIENCE

- Plan, monitoring and evaluation of community health activities
- Supervising health extension program and woreda health office as well as health centr es activities
- Coach community based reproductive health agent training.
- Attending regional, zonal and woreda annual planning and review meeting
- Participating regularly zonal management, health management information system com mittee meeting and submit plan and achievement report to zone and region.
- Developing zonal health profile
- Organizing and leading different types of training (health personnel, health extension w orkers and community health promoters)
- Evaluating financial utilization in health centres and hospitals
- Prepare proposals for projects related to community health activities
- Leading Emergency out break management (like early warnings, preparedness, response and post epidemic evaluation) activities in different districts.

Major Tasks Accomplished

- Trained and coached Woreda Program Management Teams, Community Facilitators and other stakeholders in planning and implementation of community based health activiti es
- Strengthened all district health offices and health centres the prevention and control of epidemic and communicable diseases.

- Participated on terminal project evaluation which was intervened by GOAL and Finland AID in three districts.(Boricha, Shebedino and Hawassa zuria)
- Set a monitoring system to follow up and manage community health activities
- Advised and mentored Community Facilitators in integrating maternal and chilled healt h care programs including family planning.
- Avail newly hired health personnel for hospitals and health centres
- Facilitated spring and latrine construction activities in all districts which was supported by IRISH AID
- Lead Income Generation activities in wotera Resa health centre after phase out of the Fi nland Mission.

7. Membership/professional, Organization = Ethiopian Public health Association

I certify that the above statement is correct to the best of my knowledge.

Signature_____

References:

Mr. Kare Chawicha Head Regional Health Bureau Tel.09-16-58-04-25

Mr.Basamo Deka MIS-scaling up project head Tel.09, 11 35, 70,02

Mr. Tilahun Tafesse Sidama Zone health Department PHEM head Tel. 09-26-52-50-61

Declaration

I, the undersigned, declare that this is my original work and has never been presented by another person in this or any other University and that all the source materials and references used for this thesis have been duly acknowledged.

Name: Ashenafi Argata Almaso

Signature: _____

Place: ddis Ababa

Date of Submission:

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

Name of advisor: _____

Signature: _____

Date: _____